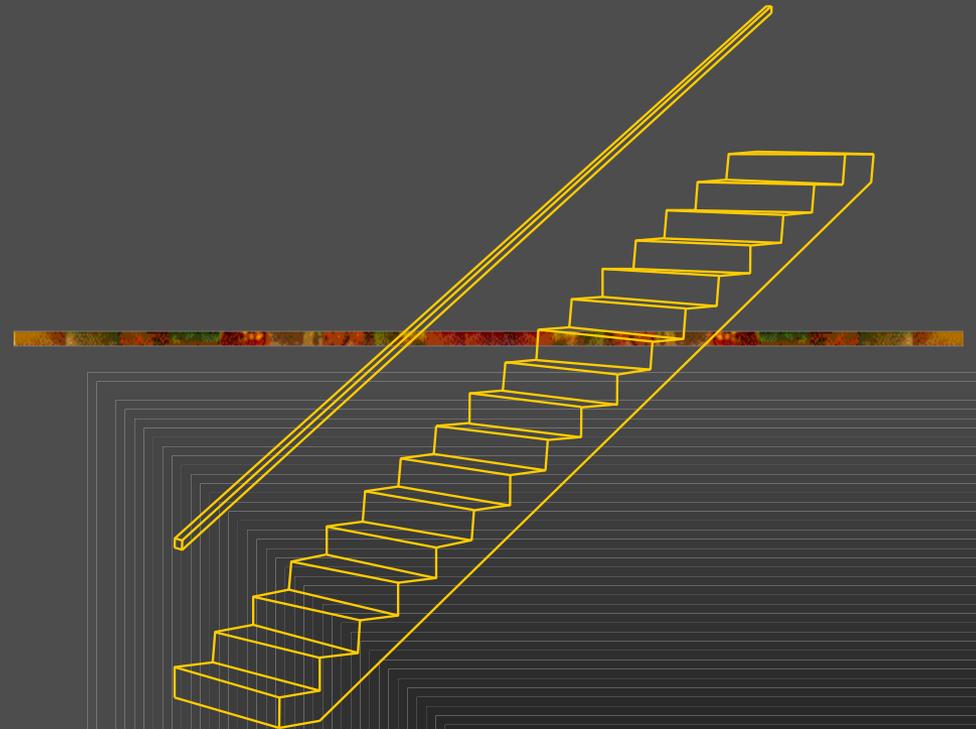
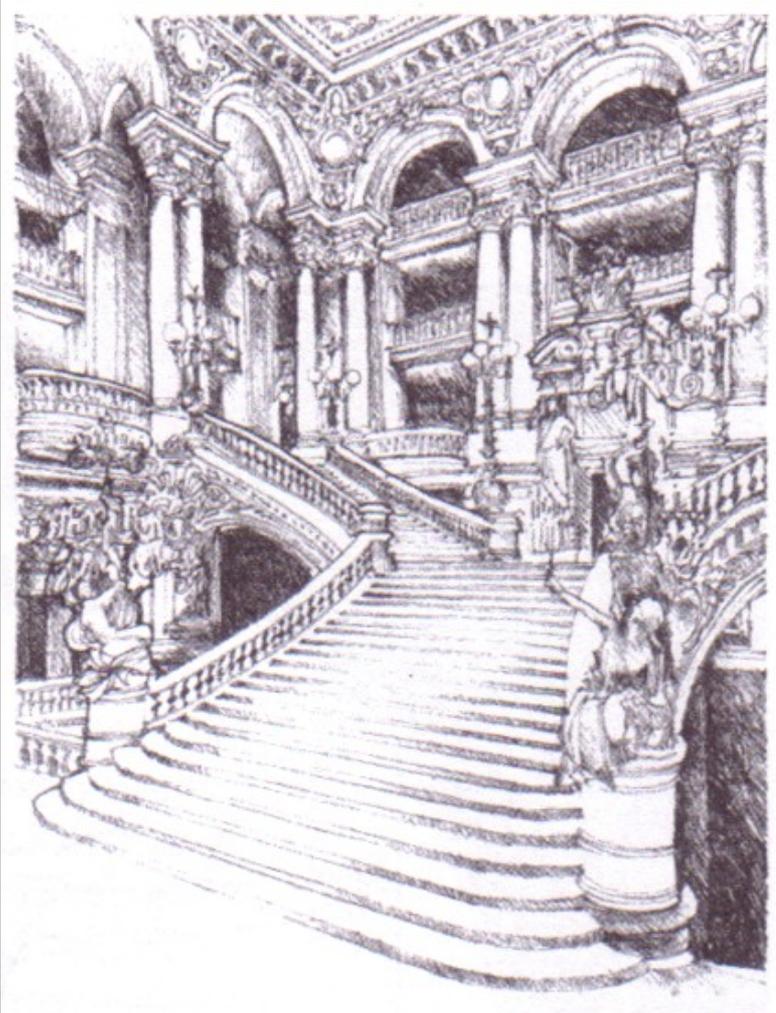
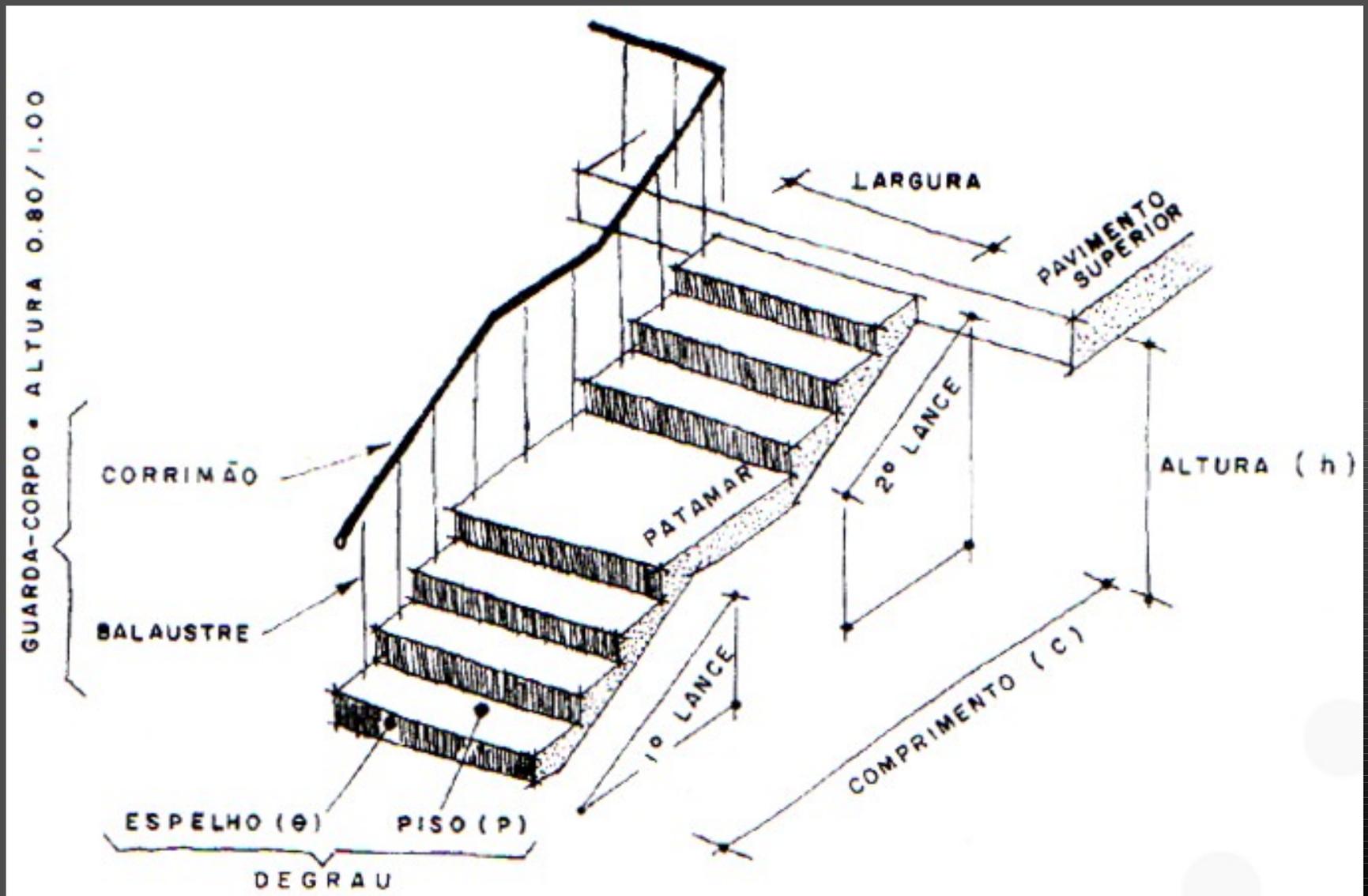


desenho de escadas



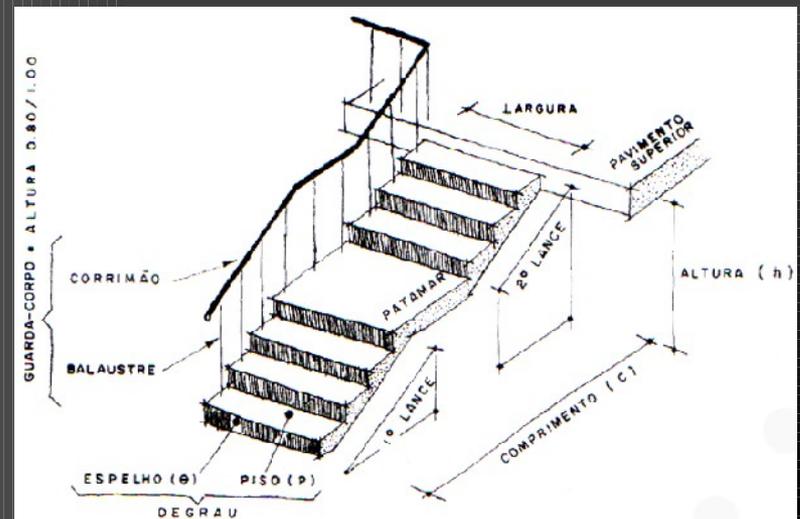
DESENHO DE ARQUITETURA I
PUC-RIO

terminologia



medidas

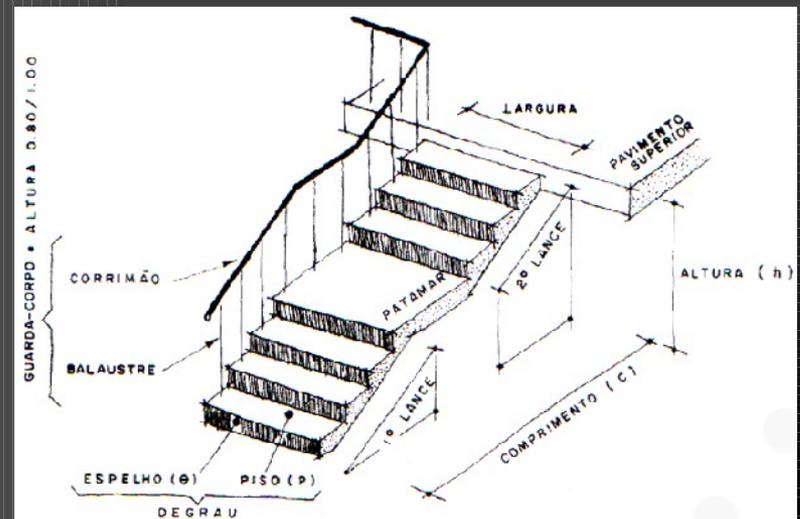
- espelho: 16 a 18cm
 - pode ser menor para escadas externas, correspondendo a um aumento do piso
- piso: 28 a 32cm
- altura:
 - quando o lance de escada tiver mais de 14 degraus, deve-se usar um patamar
- largura útil – distância entre guarda-corpos: 120cm
 - corrimãos dos dois lados
- linha de piso – linha imaginária traçada ente 50 e 60cm do guarda-corpo
 - escadas e rampas helicoidais e casos especiais



fórmulas

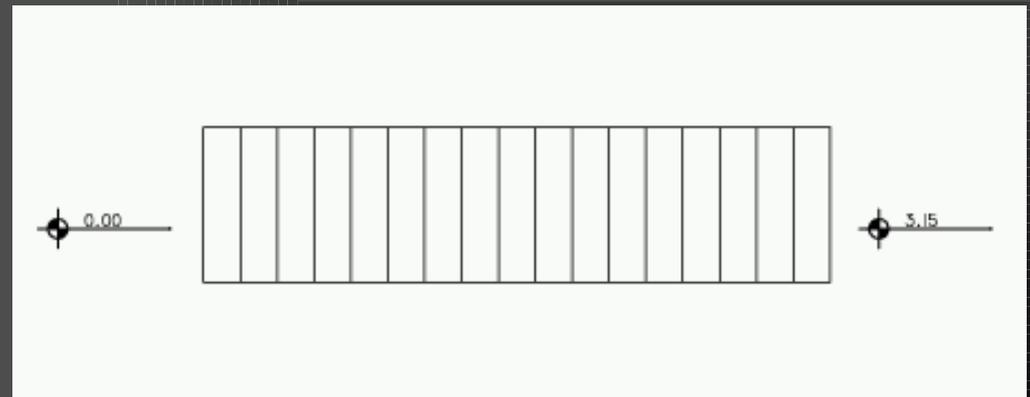
- $n = h/e$
 - n – quantidade de espelhos
 - h – vão a ser vencido (altura)
 - e – altura do espelho
- escada sem patamar:
 $c = p(n-1)$
 - c – comprimento
 - p – profundidade do piso
 - n – quantidade de espelhos
- escada com um patamar:
 $c = \text{patamar} + p(n-2)$
 - patamar: profundidade do patamar

- Blondel (fórmula de conforto):
 $2e + p = 63 \text{ a } 65 \text{ cm}$



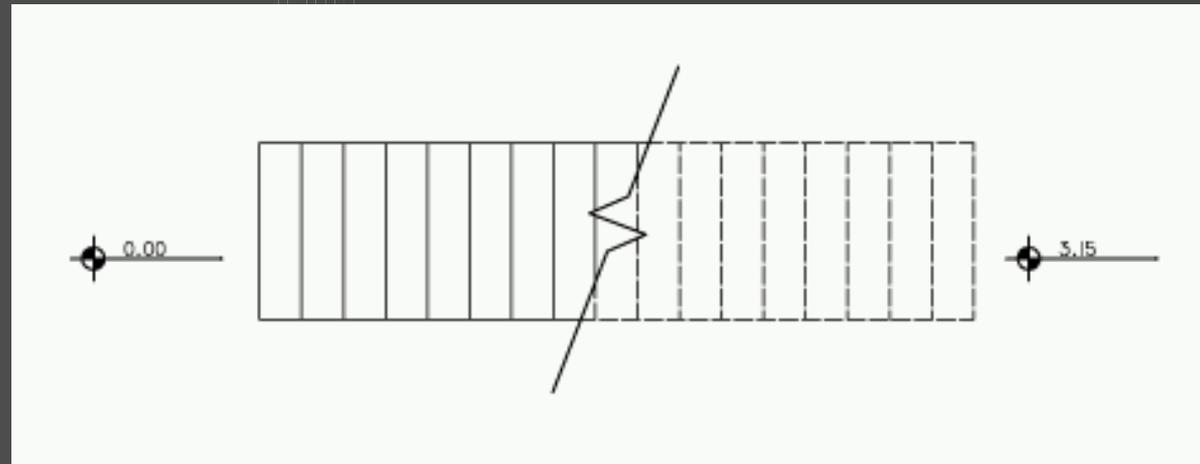
Planta

- Cálculo da escada
 - escolha do espelho
 - escolha do piso
 - cálculo da quantidade de espelhos
 - cálculo do comprimento da escada
 - Marque o comprimento (desenvolvimento) total da escada (isso evita acúmulo de erros)
 - Marque os lances da escada e os patamares
 - Marque os degraus
- para $h=3,15\text{m}$ e $e=17,5\text{cm}$
 - $p=28$ a 30cm ; adotado 28cm
 - $n=3,15/0,175=18$
 - $c=(18-1)*0,28$
 - opção sem patamar



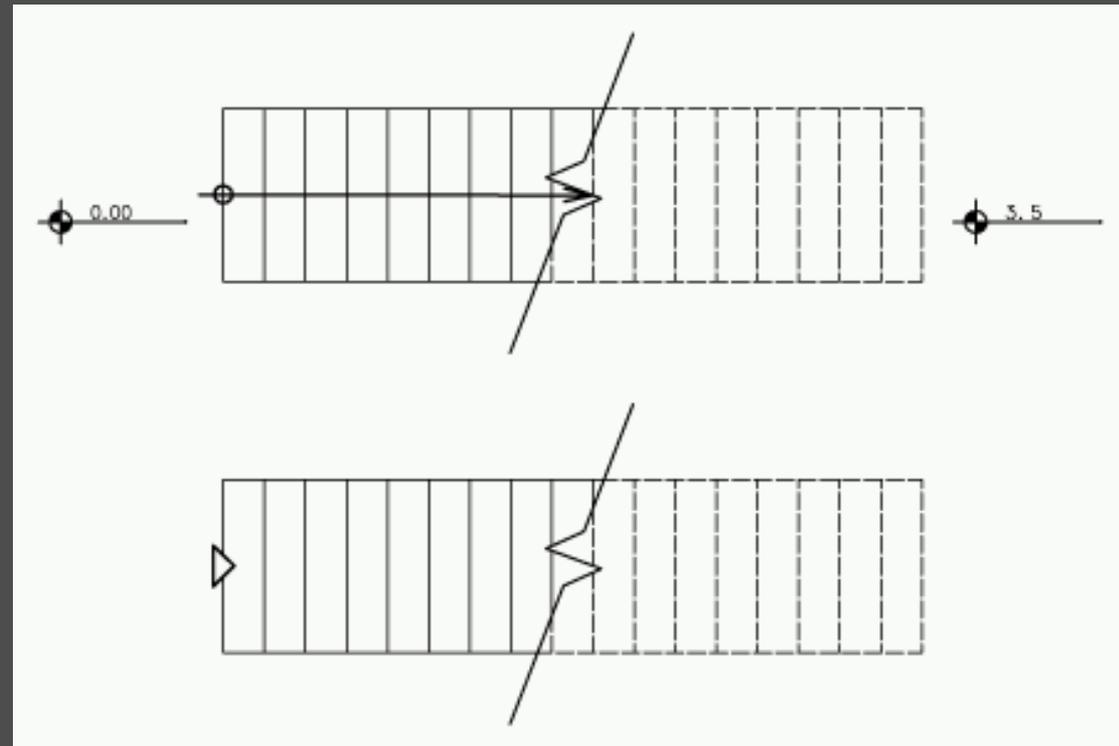
Planta – pavimento inferior

- Desenhando o pavimento inferior, lembre-se que o plano que define a planta baixa passa a $\sim 1,50\text{m}$ do chão.
 - Por convenção, do meio da escada em diante, a representação é tracejada.



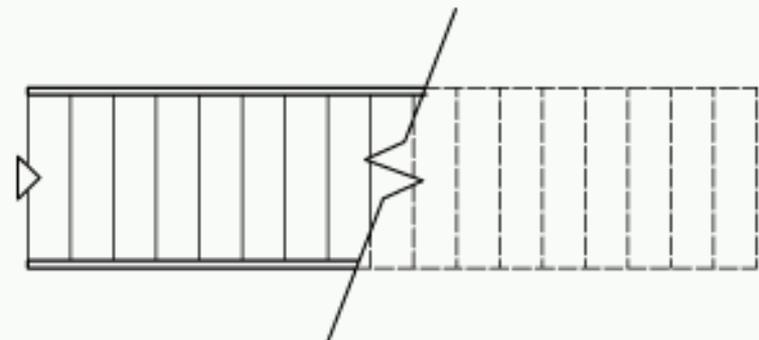
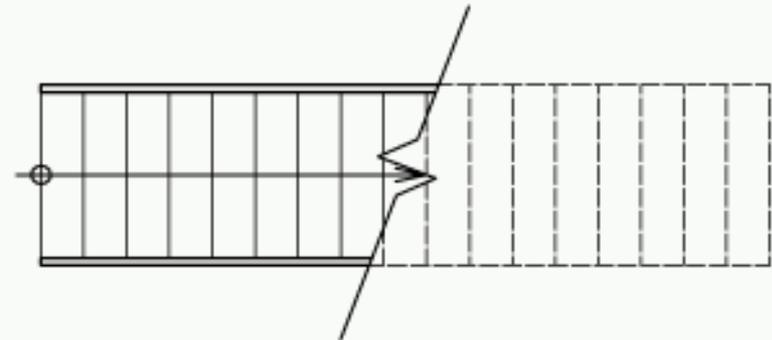
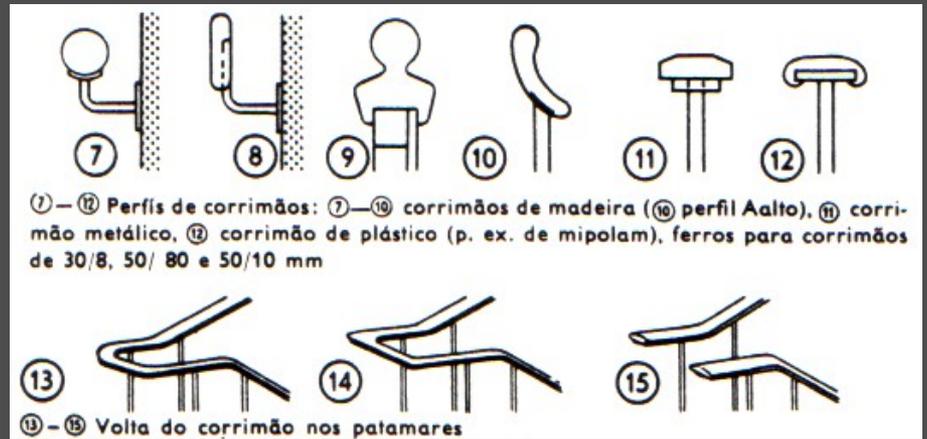
Planta – pavimento inferior

- É preciso acrescentar o sentido de escada
 - sentido ascendente
 - sentido a partir do pavimento desenhado



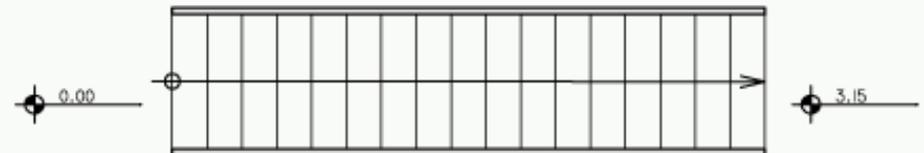
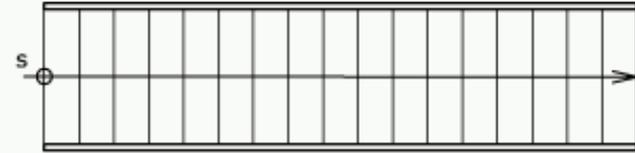
Planta – pavimento inferior

- Não esqueça o corrimão ou guarda-corpo, desenhado conforme o caso.



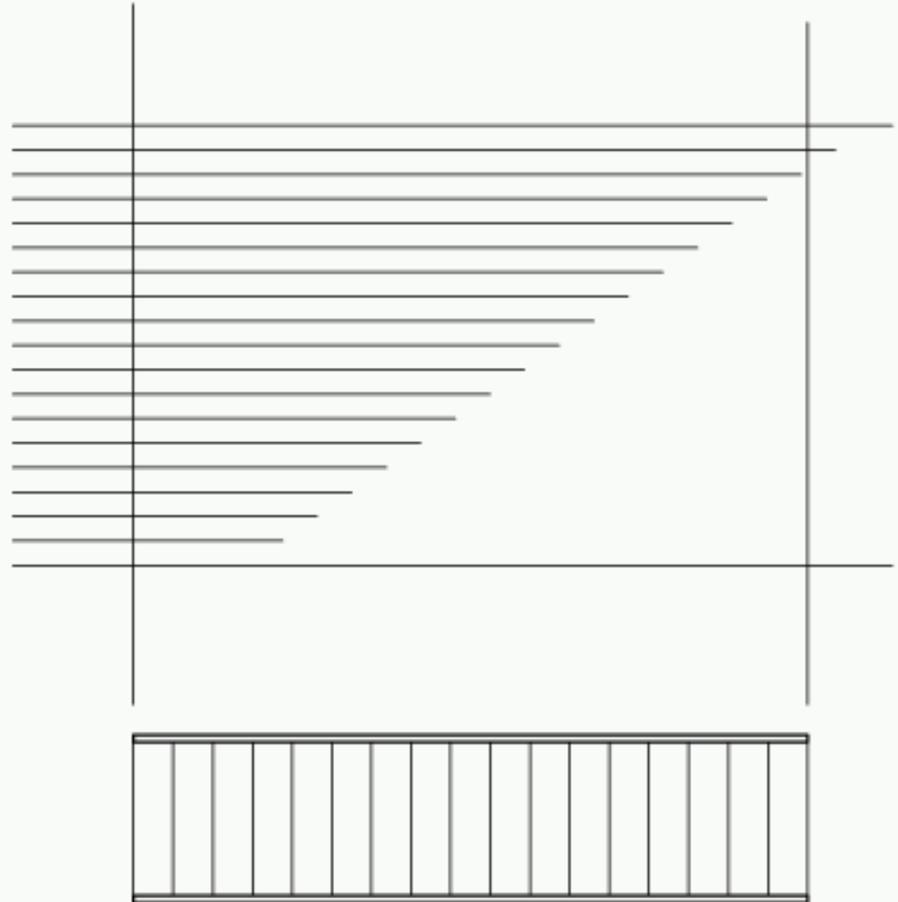
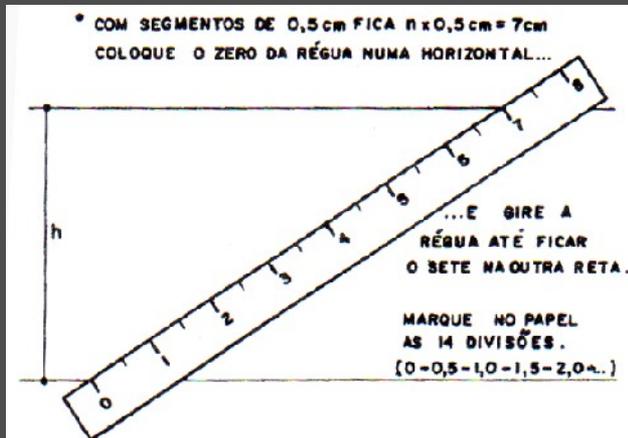
Planta – pavimento superior

- Desenhando o pavimento superior, todos os degraus são vistos – até o **limite de visibilidade** da laje, claro.
- É conveniente indicar o sentido da escada
 - Normalmente, é indicado o sentido ascendente.
 - Caso se indique o sentido descendente, deve-se acrescentar a palavra “desce” ou a letra “d” junto à seta.
 - nesse caso, pode ser interessante usar “s” ou “sobe” para indicar subida.



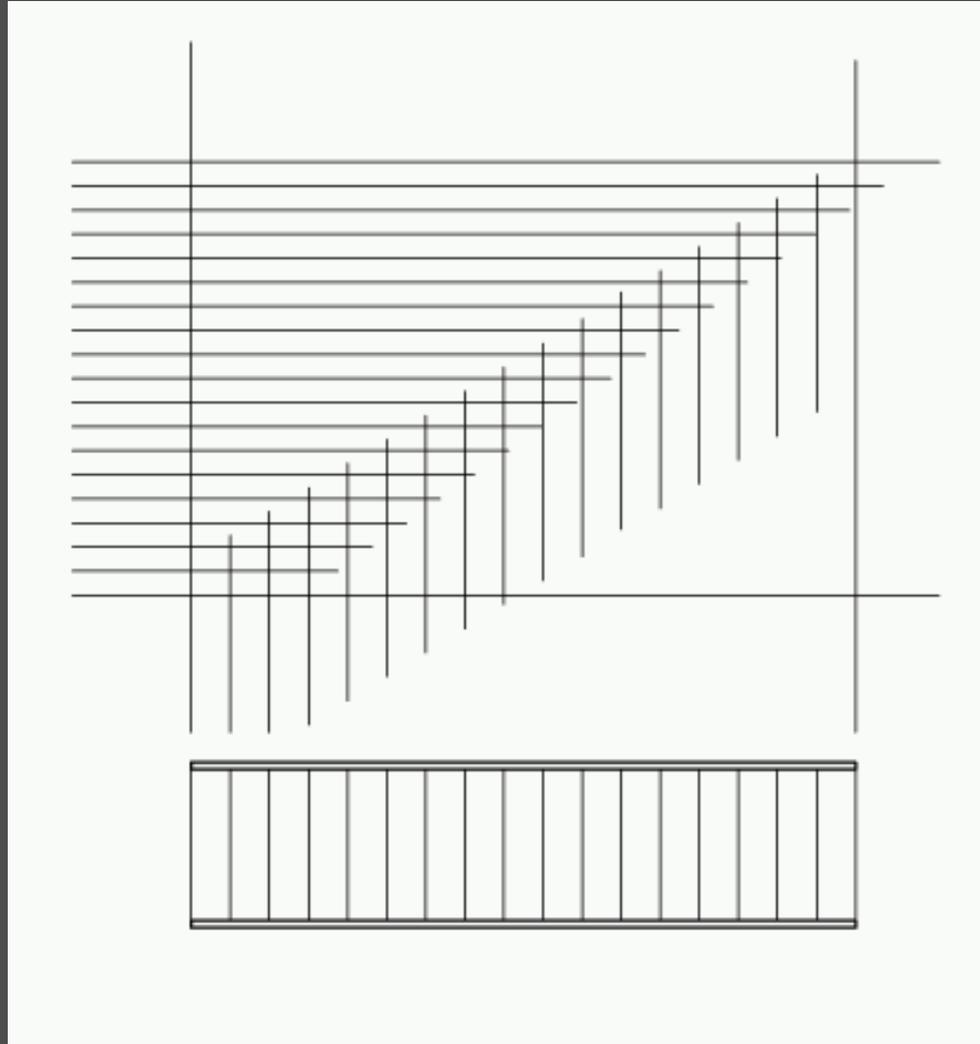
Corte

- Primeiro, traçar os pisos que a escada vai unir.
 - lembre-se, depois, de marcar as lajes
- Marcar os degraus extremos.
- Marcar as alturas dos pisos, usando divisão proporcional



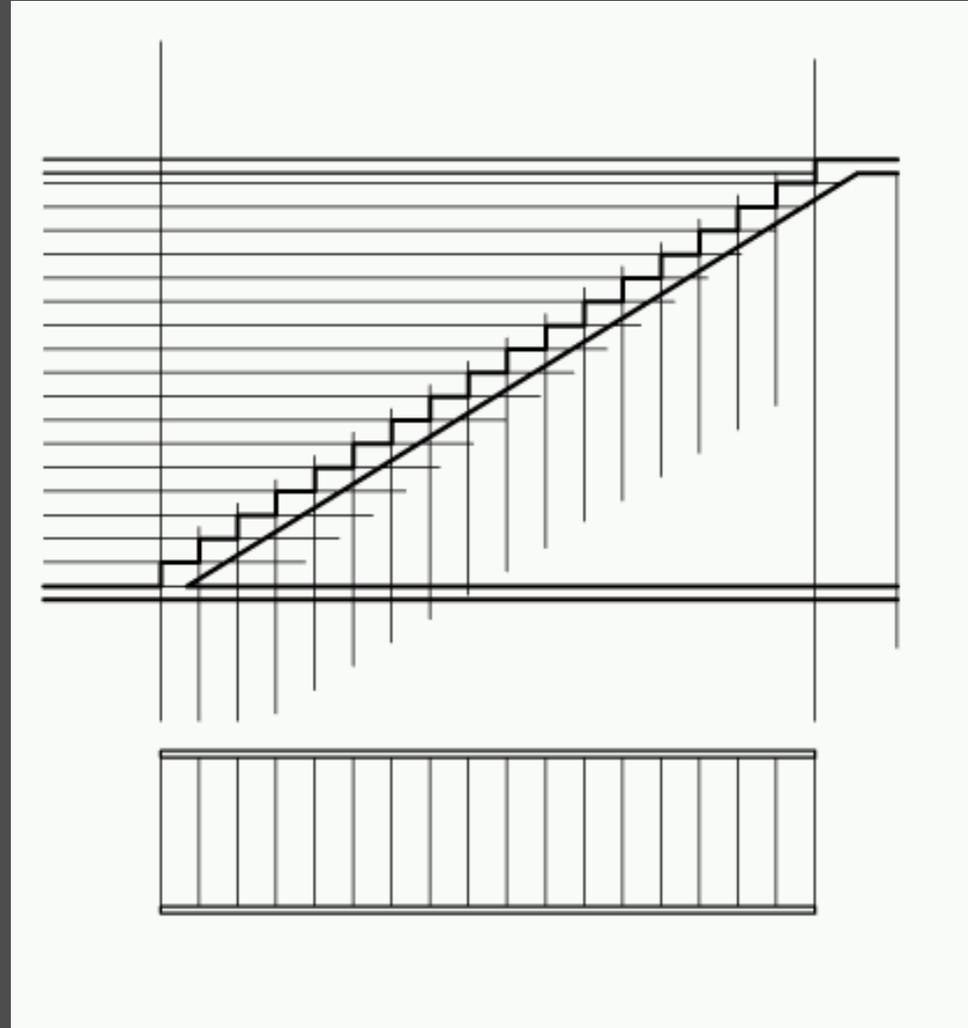
Corte

- Marcar os pisos, de preferência aproveitando a escada em planta
 - A planta ajuda a não esquecer dos patamares



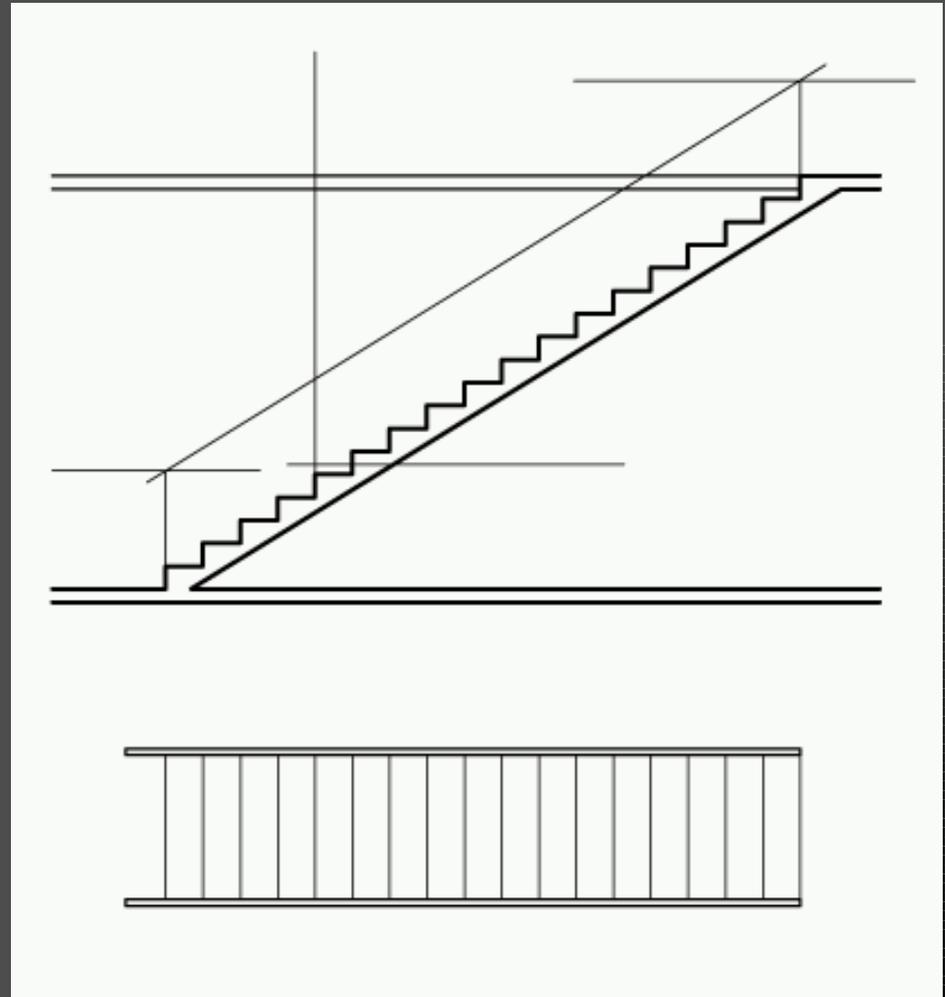
Corte

- Marcar a escada
- Marcar a laje da escada (10cm abaixo) e do piso, de acordo com a necessidade
- Não esquecer da laje em vista, depois da escada, quando for o caso



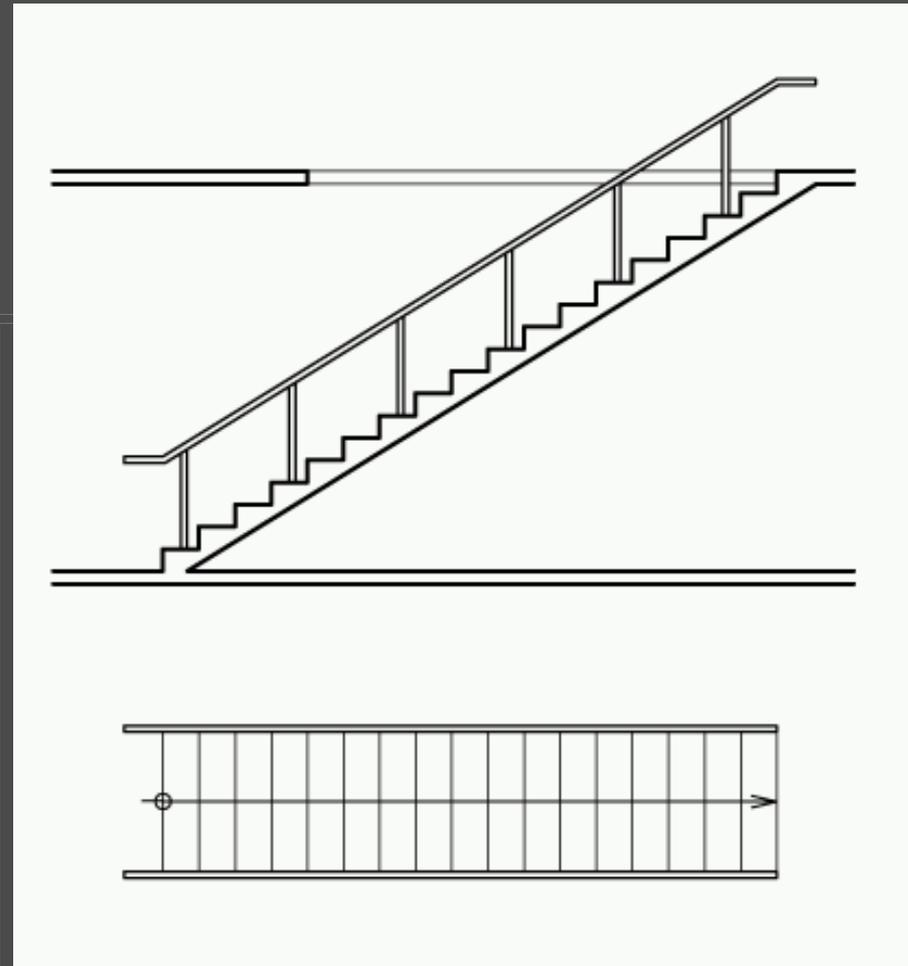
Corte

- Adicionar corrimão e balaustrada, de acordo com o projeto.



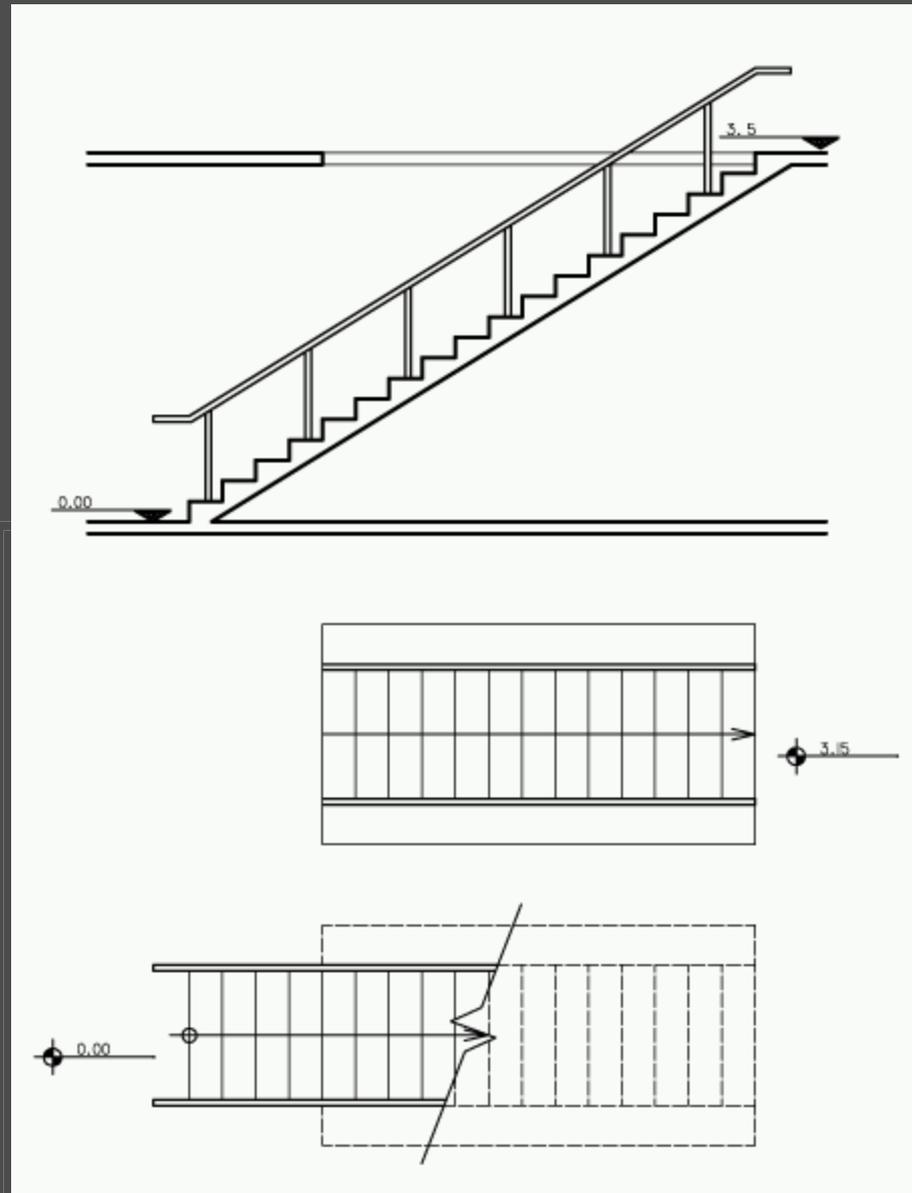
Corte

- Não esquecer dos valores de traço.
 - O corrimão aparece em vista
 - Os degraus cortados devem estar em traço forte.
 - Os degraus em vista e a laje em vista devem estar em traço fraco.



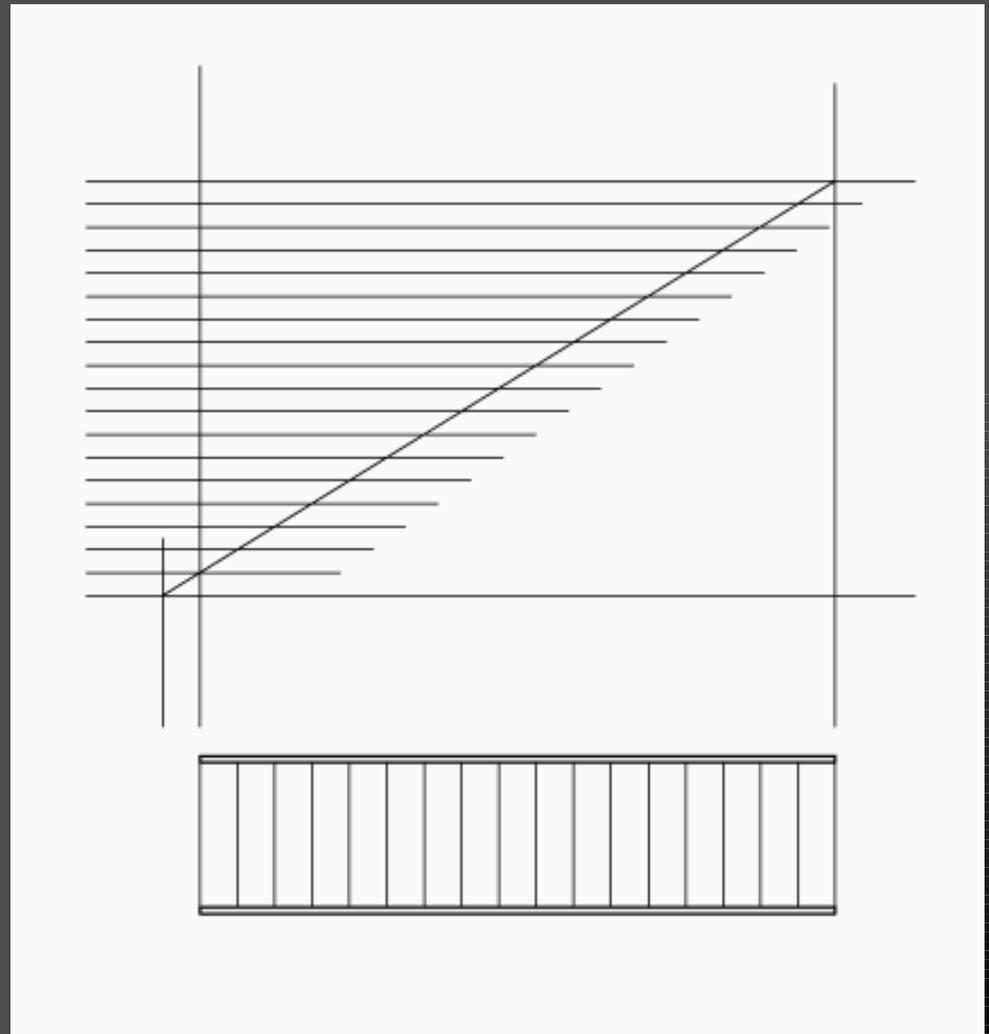
Corte

- Verifique a laje e corrija as plantas de acordo
- Não esqueça dos níveis



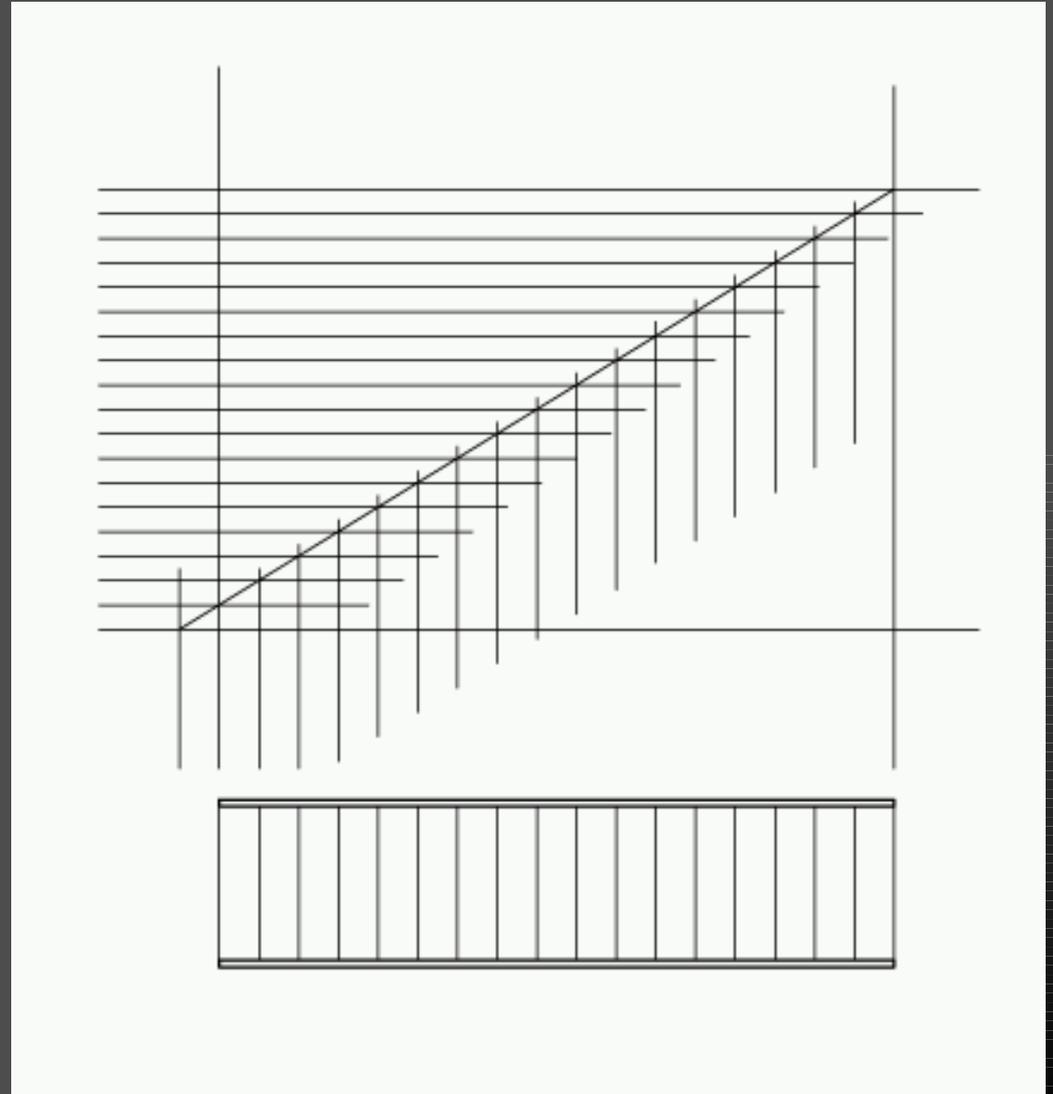
Corte – segunda opção

- Outra maneira, mais simples, de marcar os degraus da escada em corte é pela marcação da reta que passa pela aresta dos degraus
- Marcar um piso antes do piso inferior no limite inferior da escada
- Marcar a reta desse ponto inicial ao fim da escada



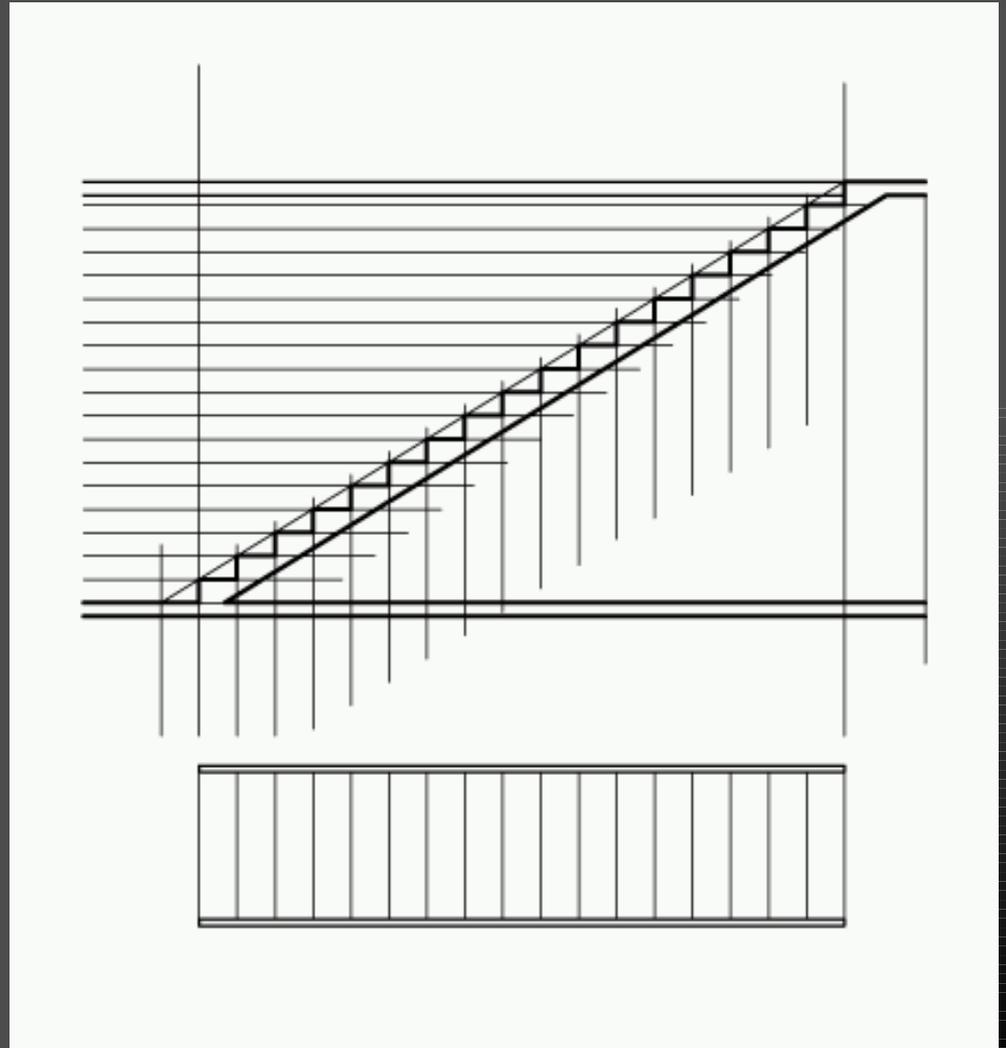
Corte – segunda opção

- Os degraus serão feitos para baixo, a partir dos pontos de cruzamento



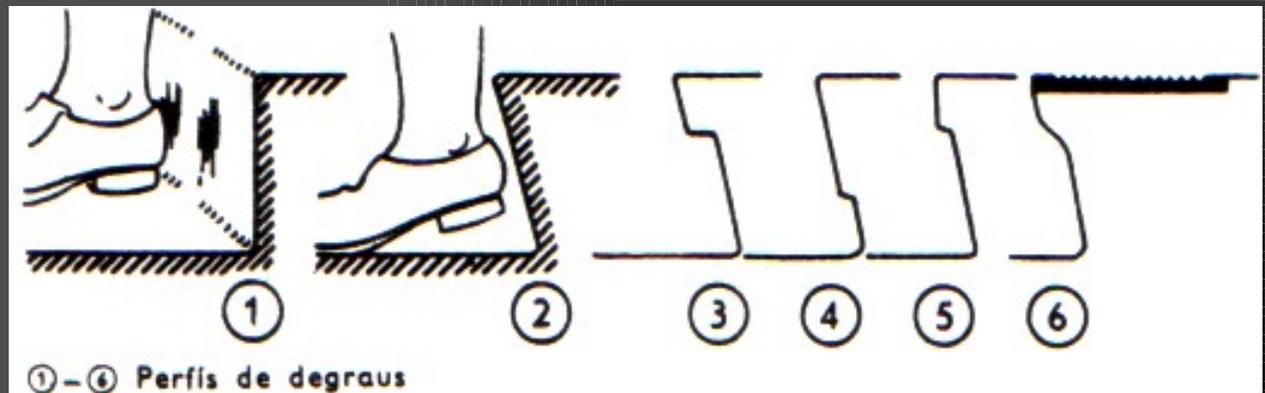
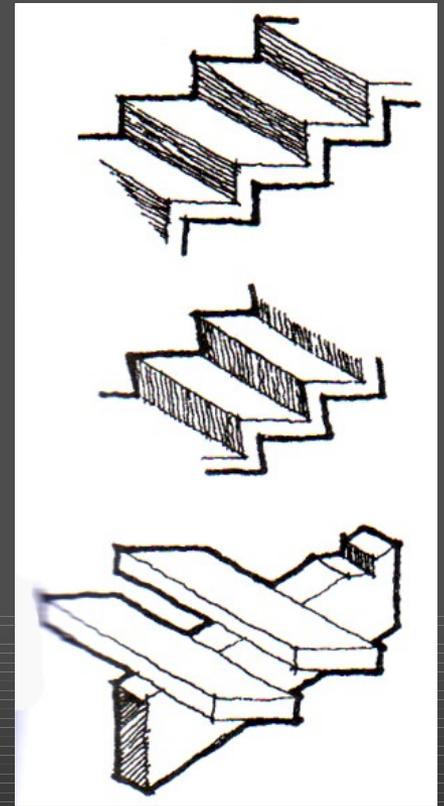
Corte – segunda opção

- Completar a escada



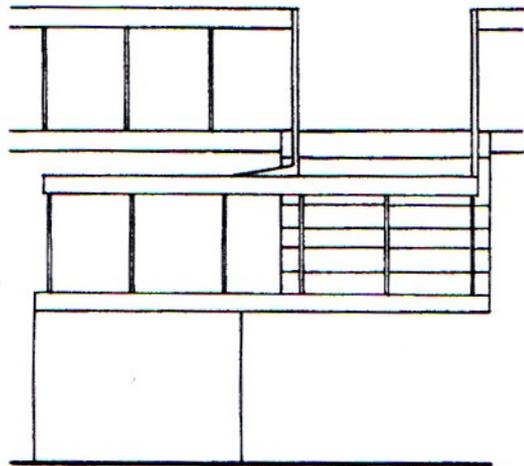
Corte

- Não esquecer dos detalhes do degrau, de acordo com a escala do desenho

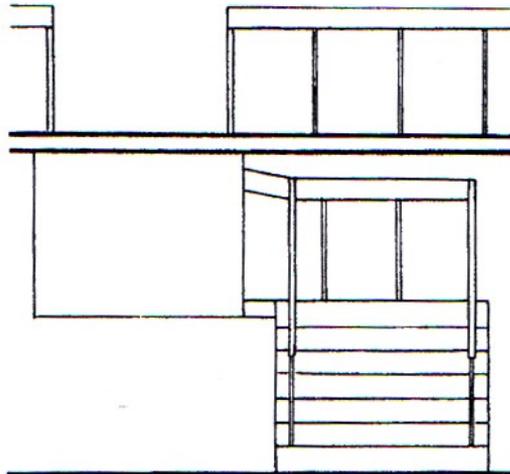


①-⑥ Perfis de degraus

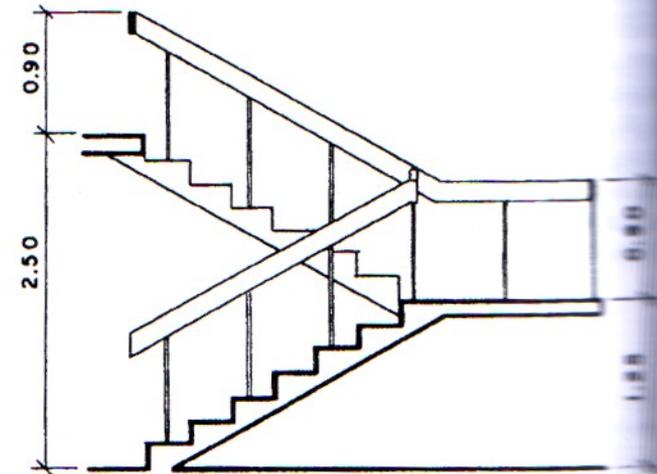
Vistas



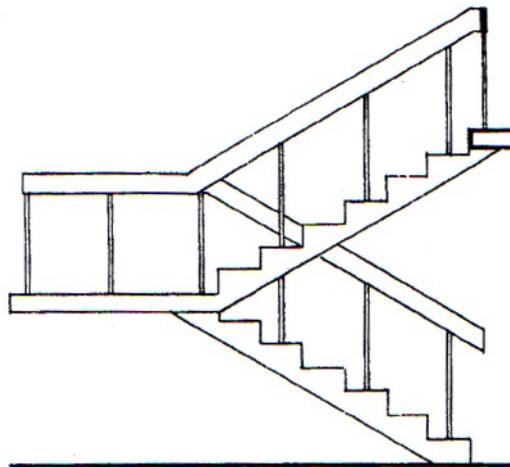
VISTA DE B



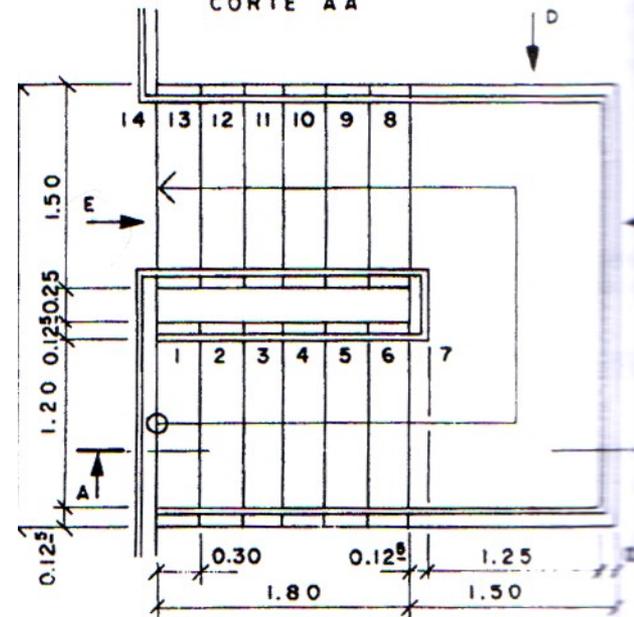
VISTA DE E



CORTE AA

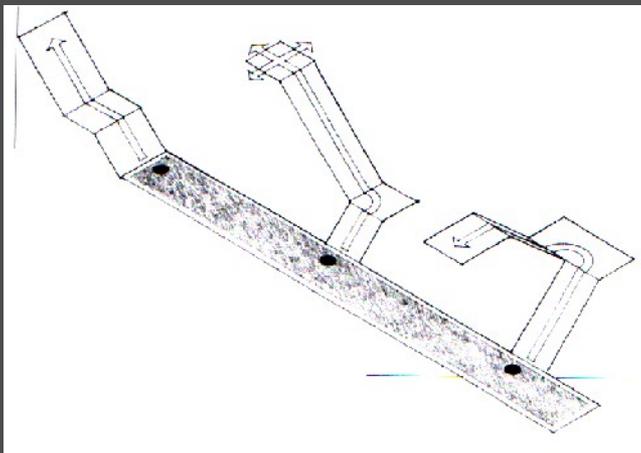
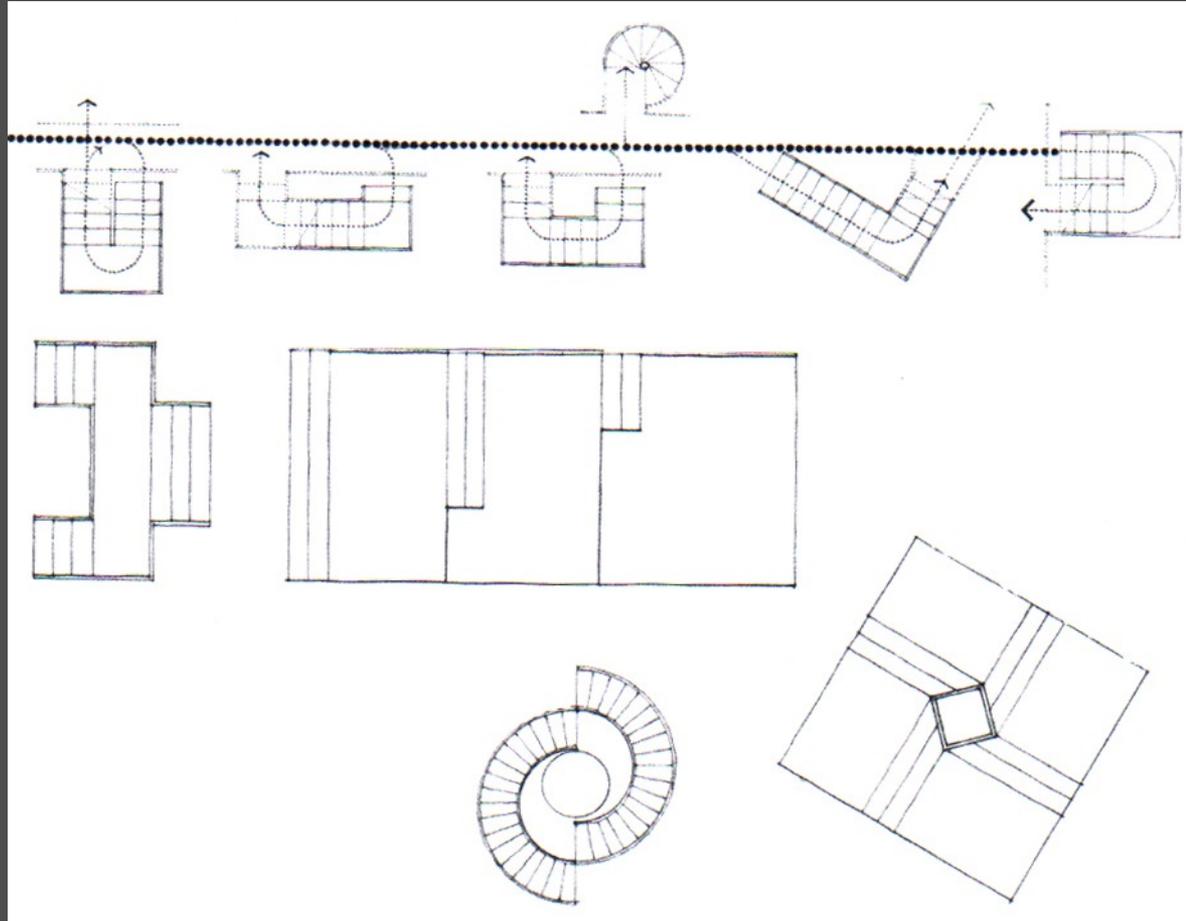
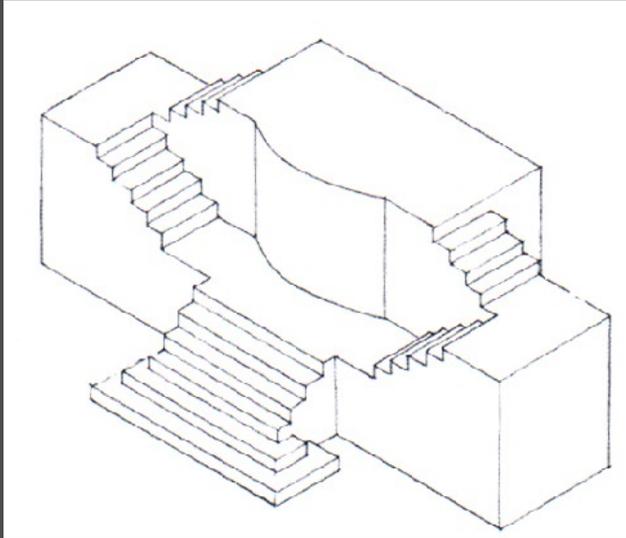


VISTA DE D



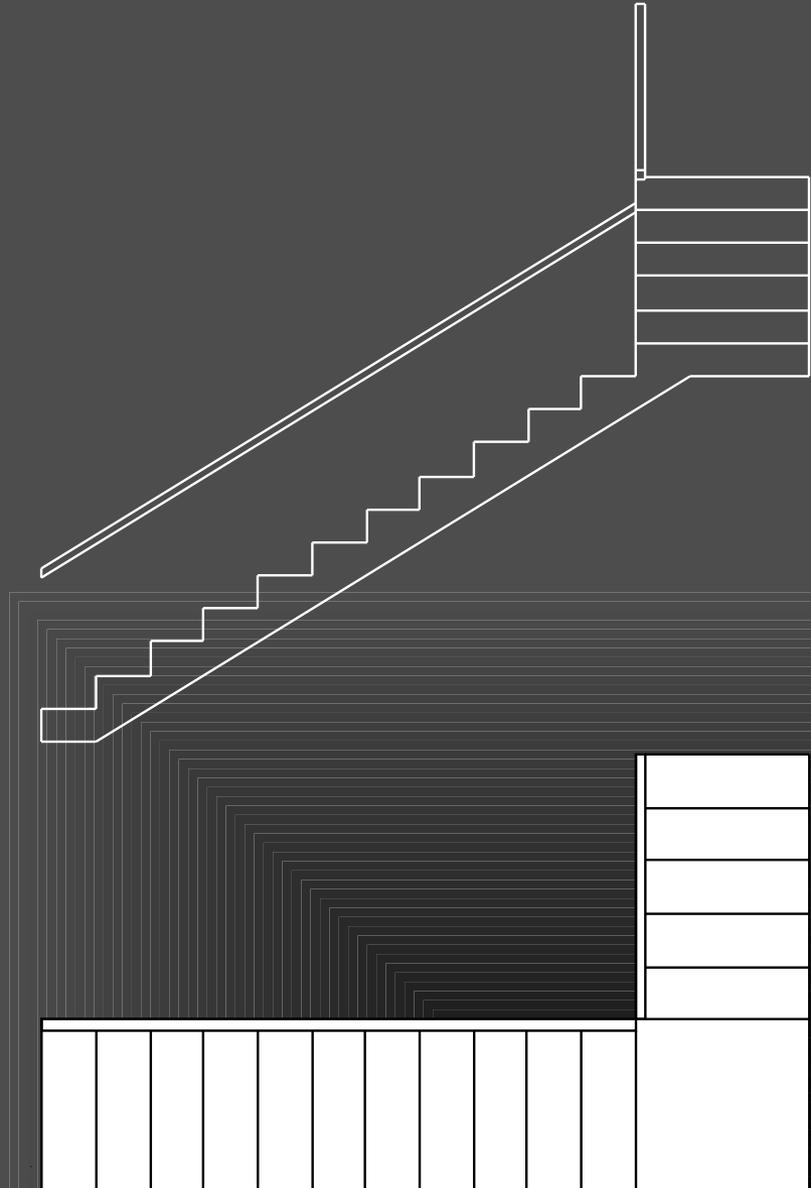
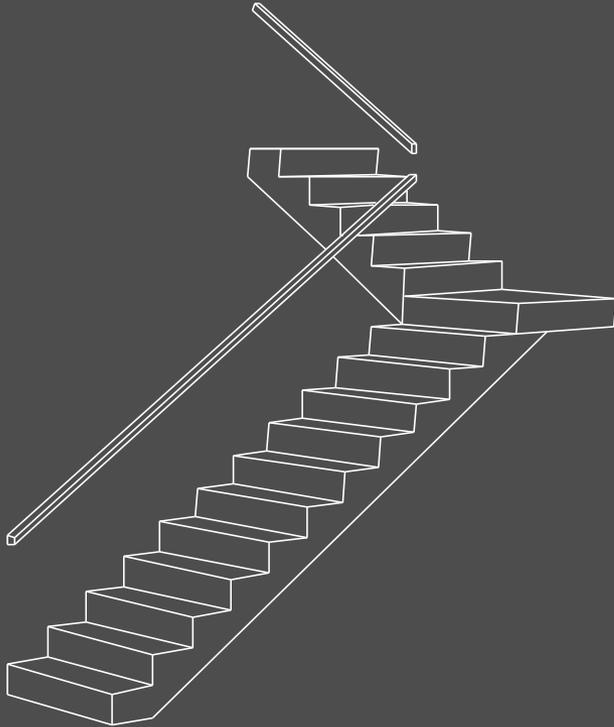
PLANTA PAVIMENTO SUPERIOR
ESCALA 1:50

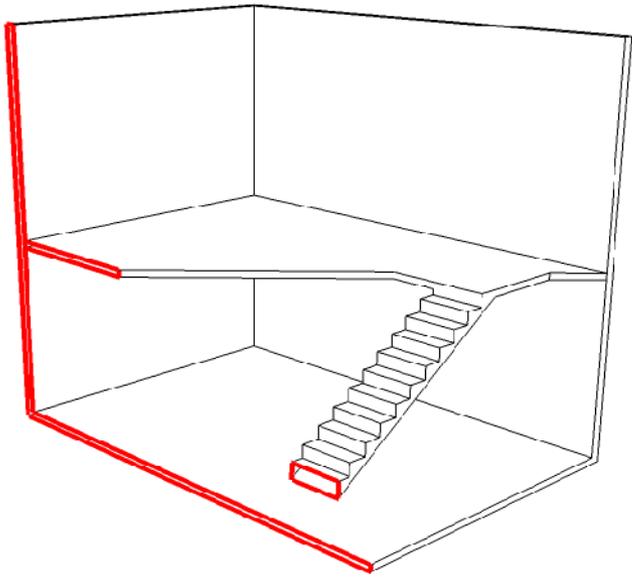
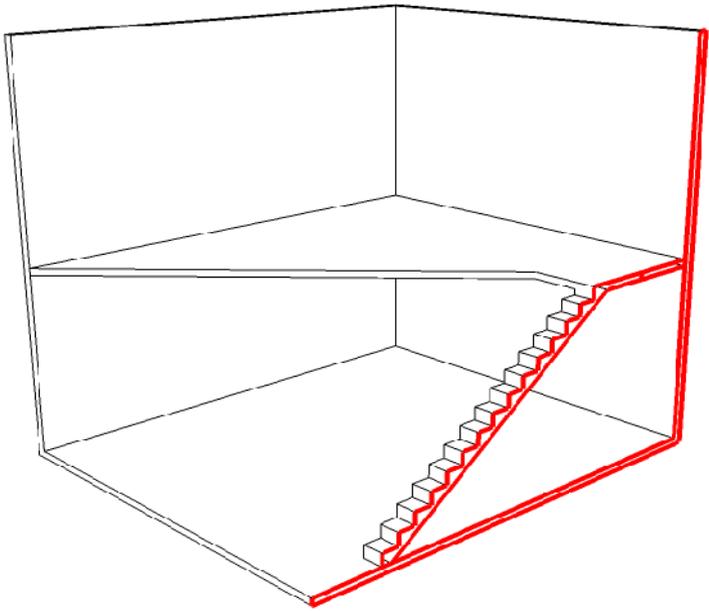
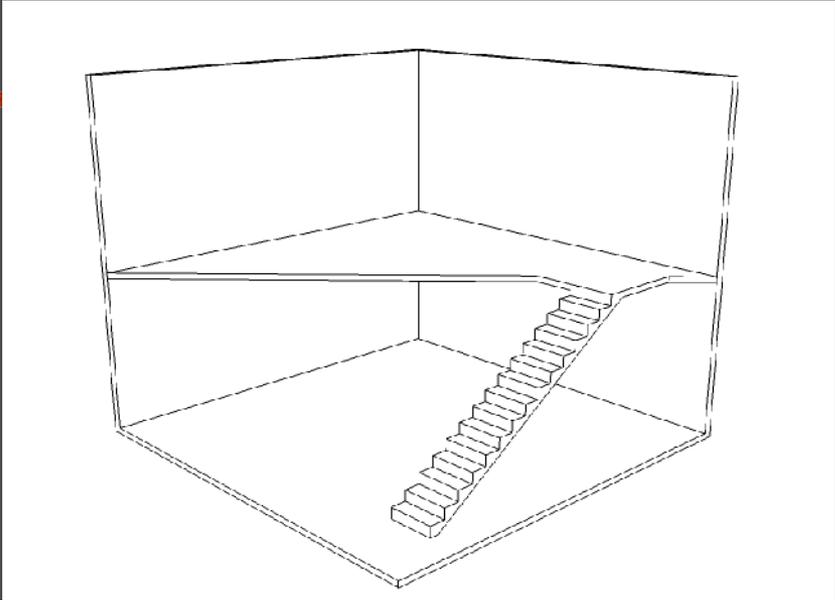
Patamares e mudanças de direção

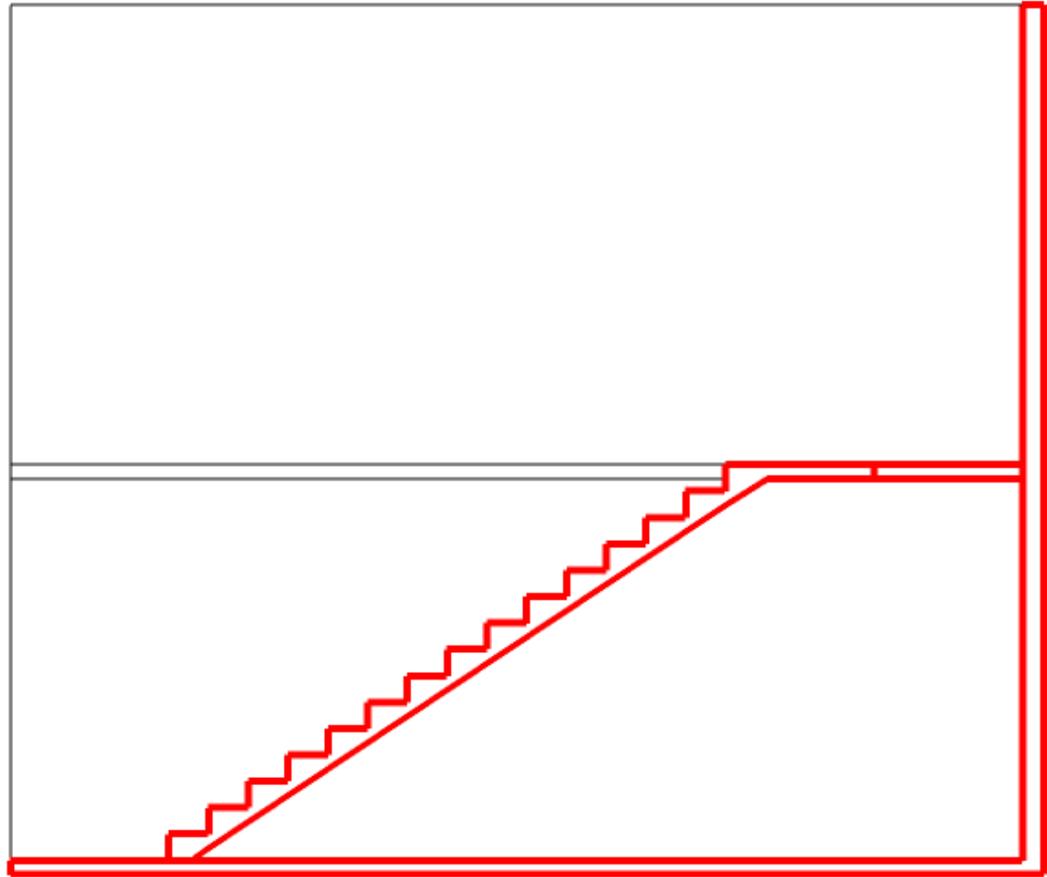
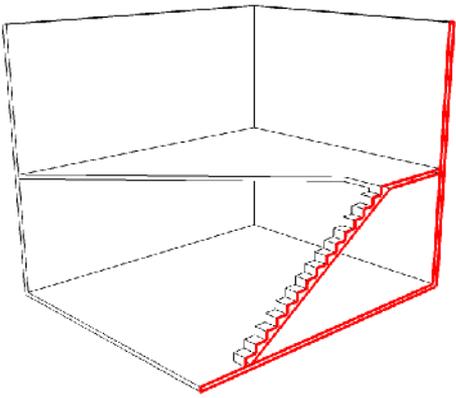


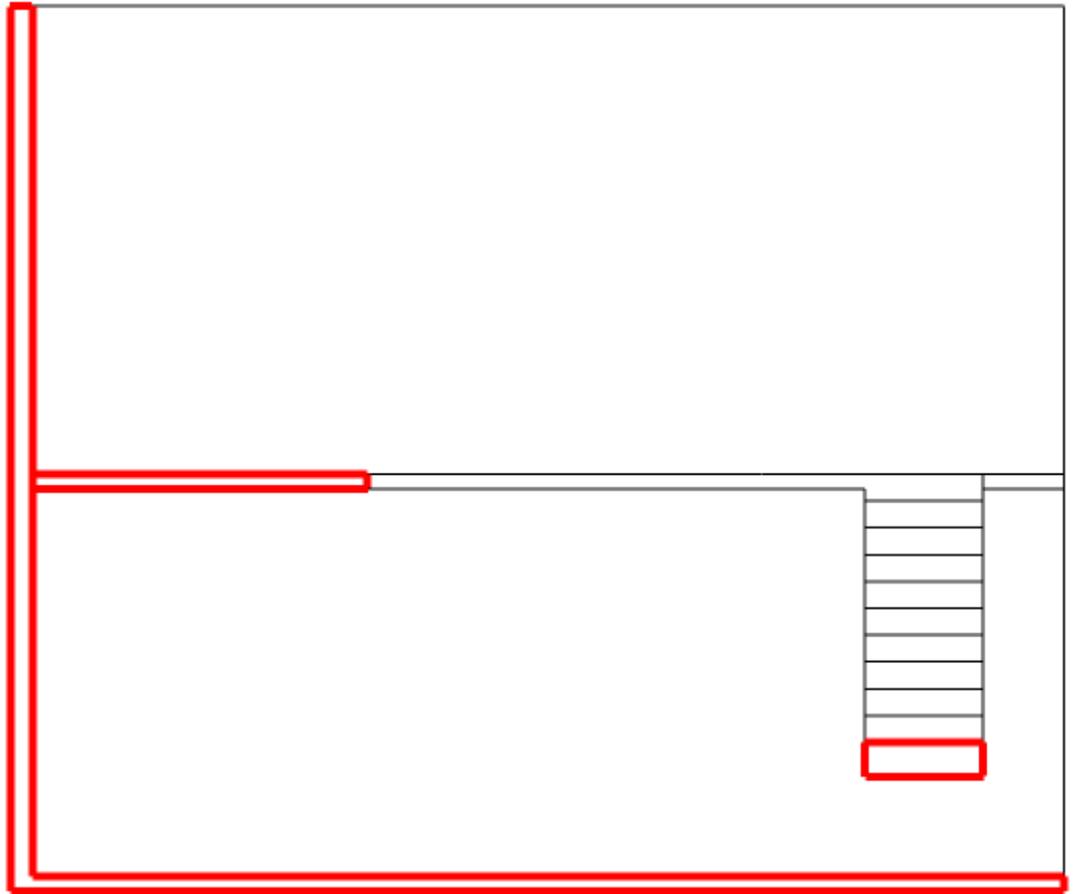
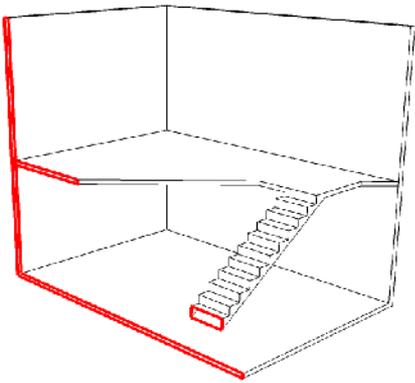
Patamares e mudanças de direção

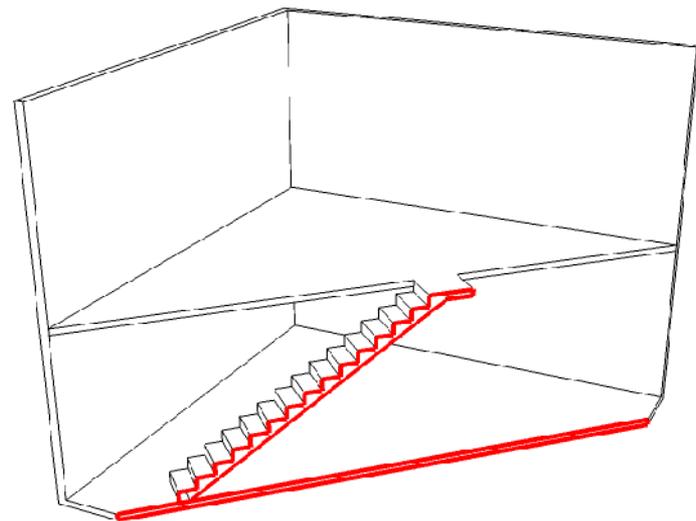
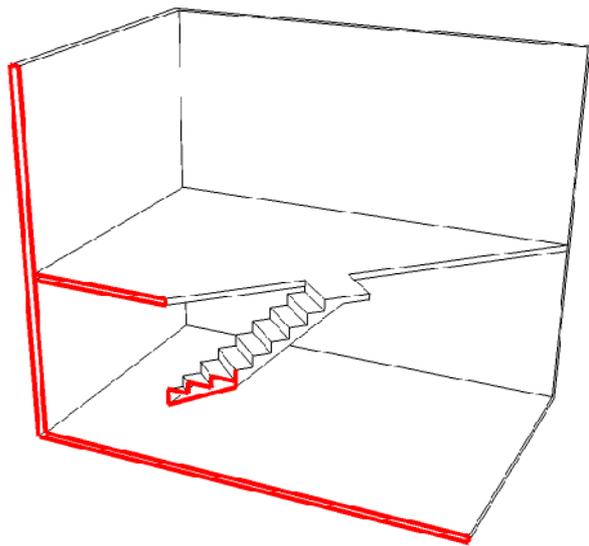
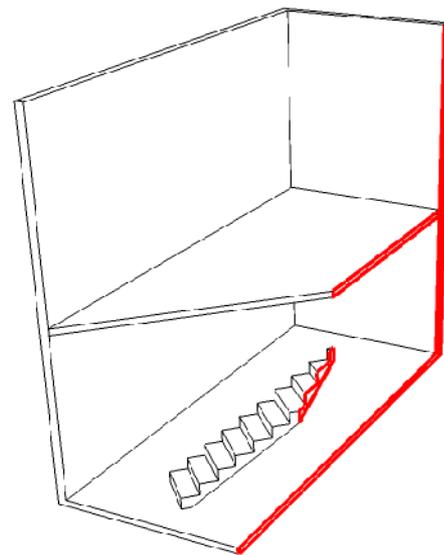
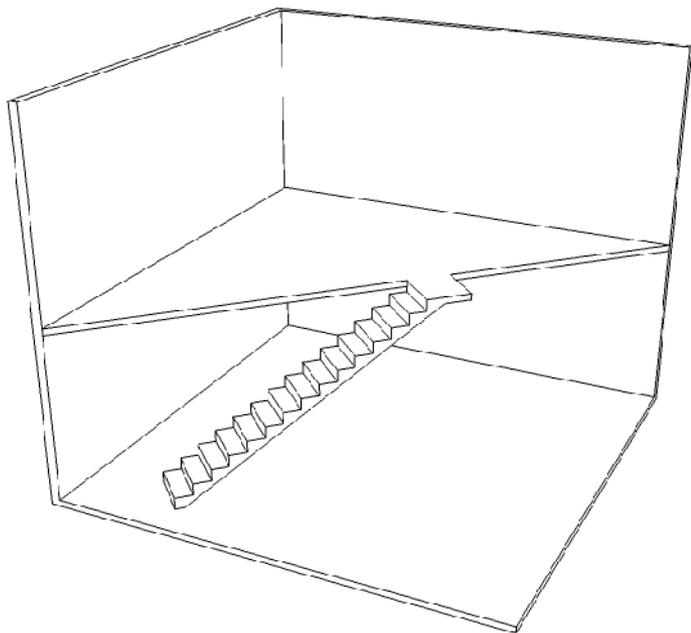
- Observar partes em vista e em corte

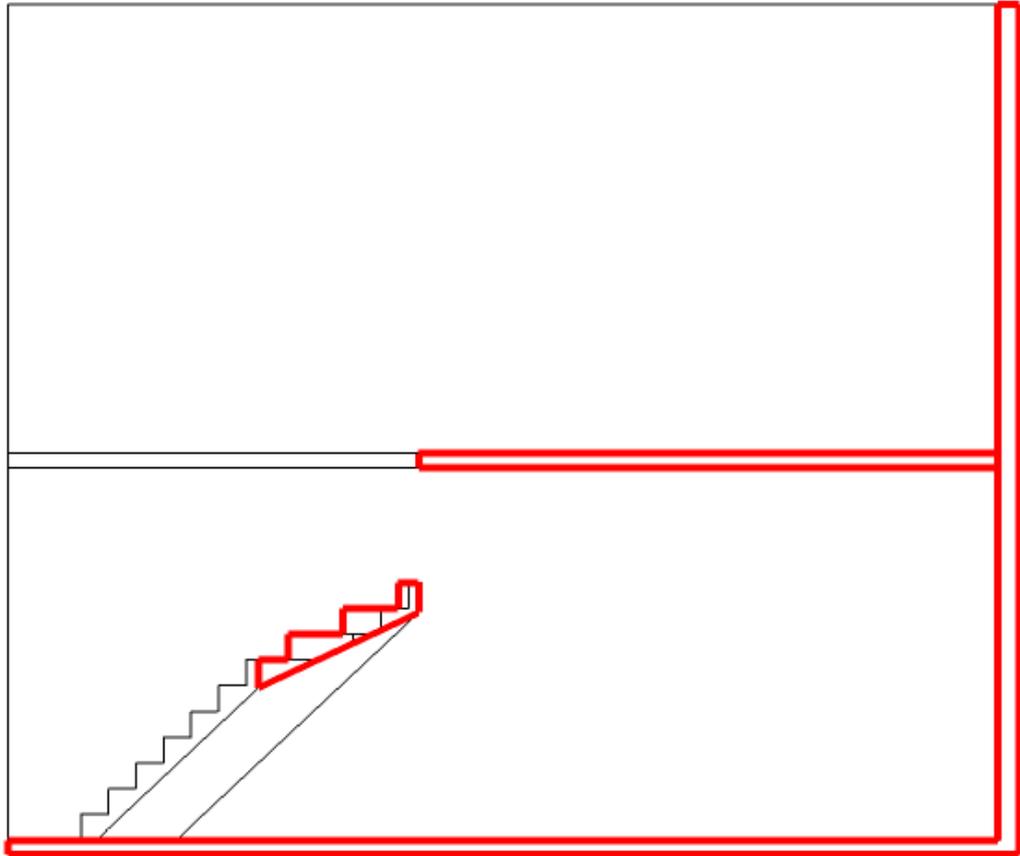
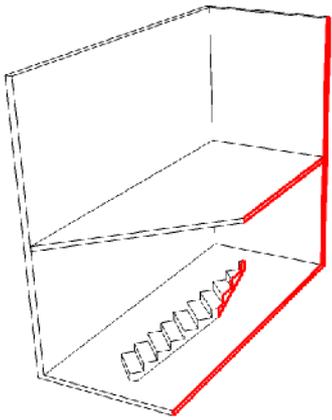


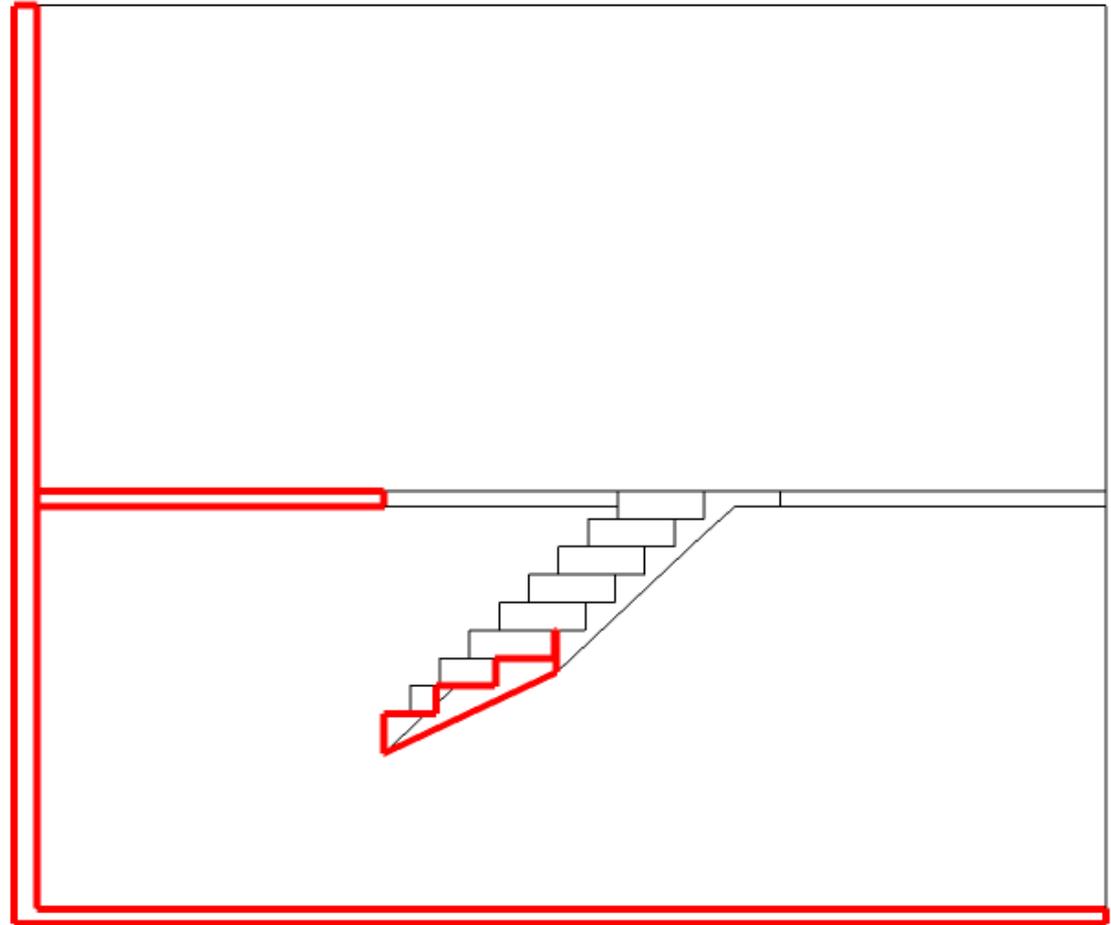
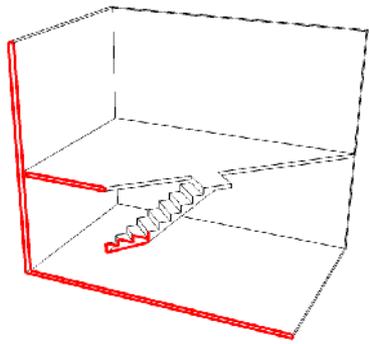


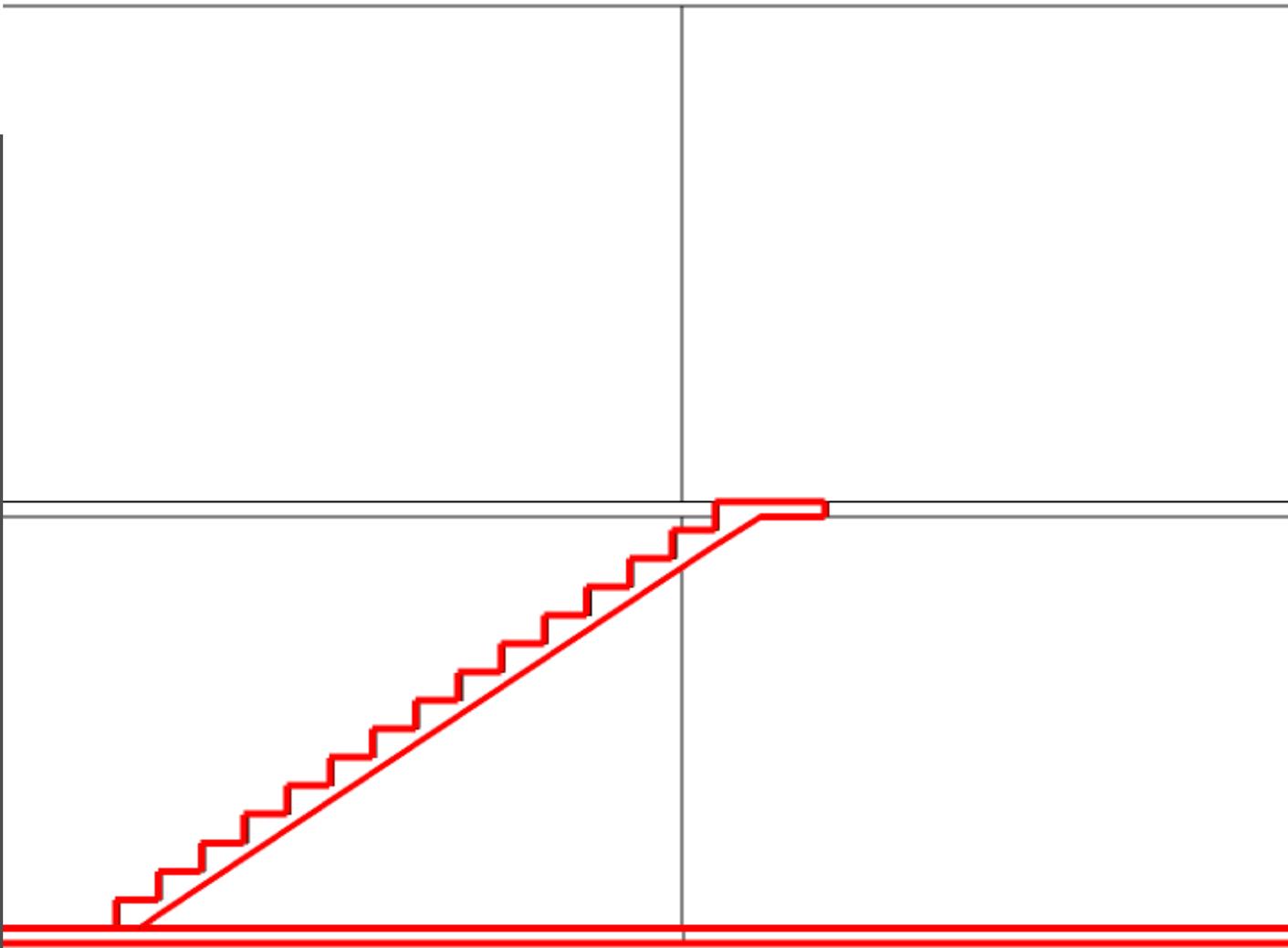
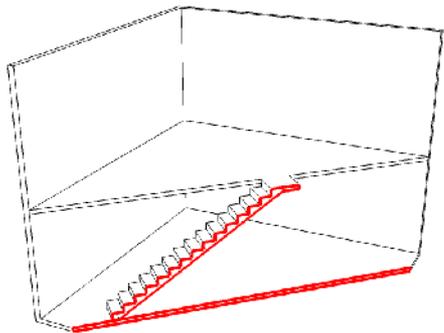


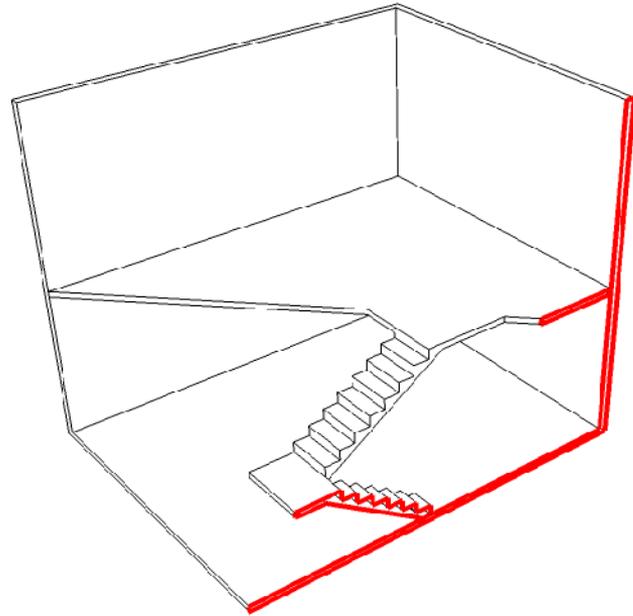
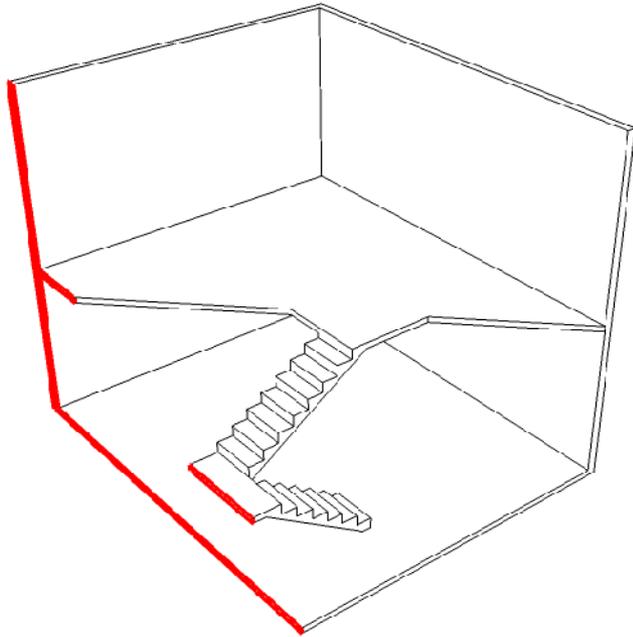
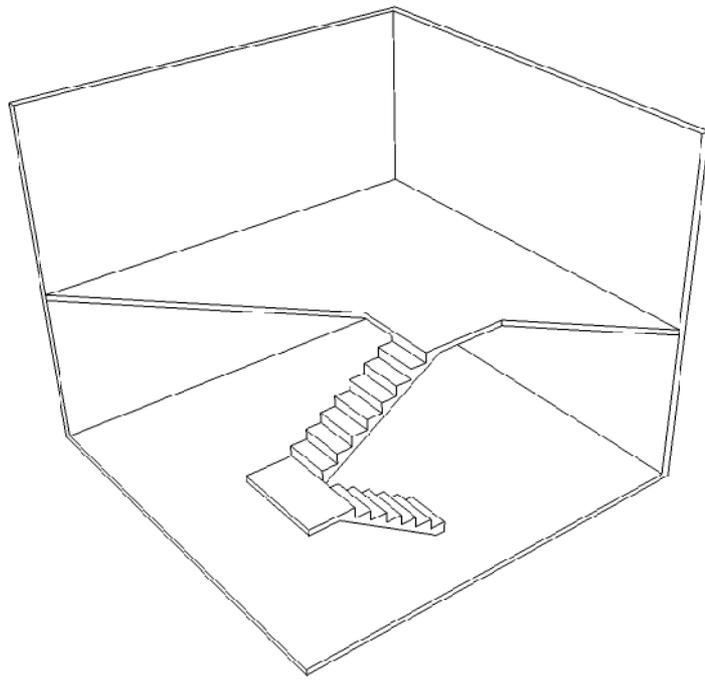


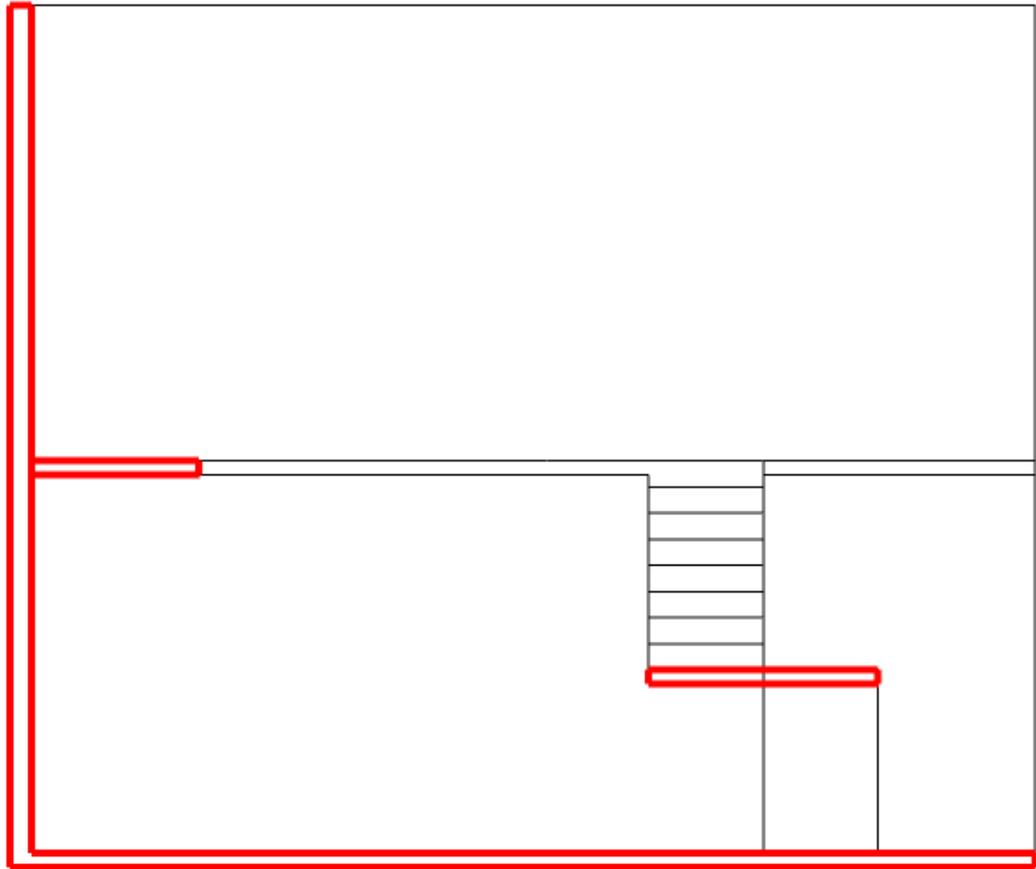
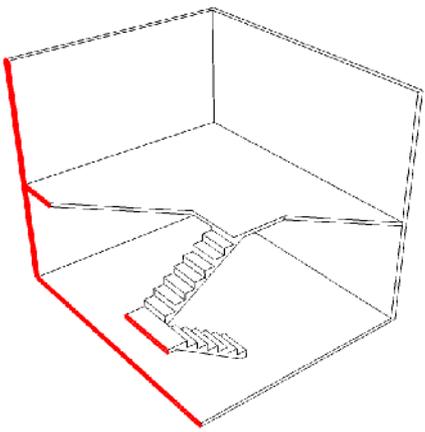


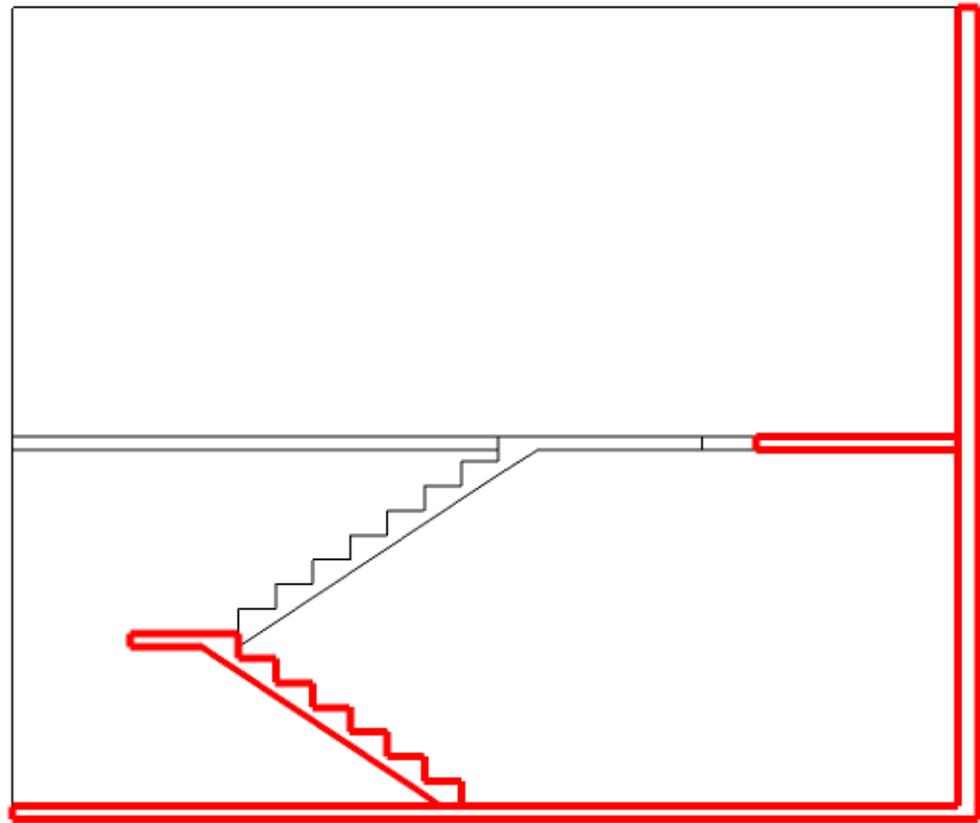
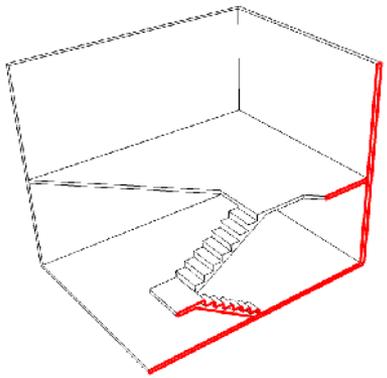


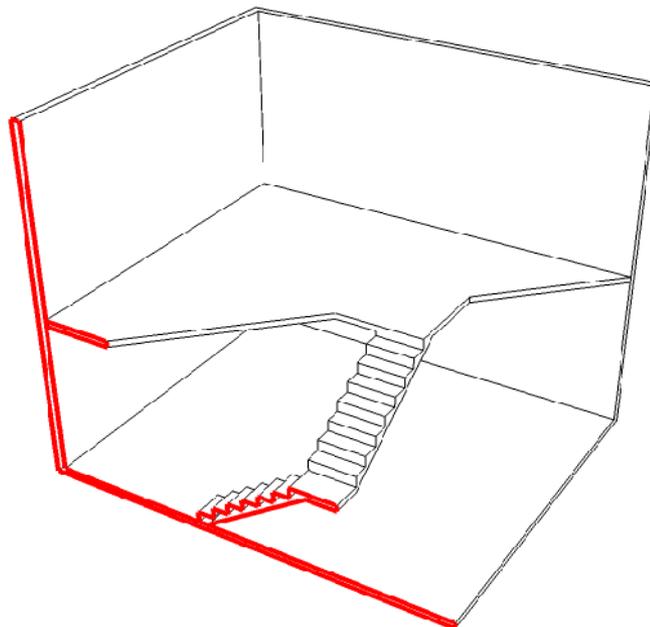
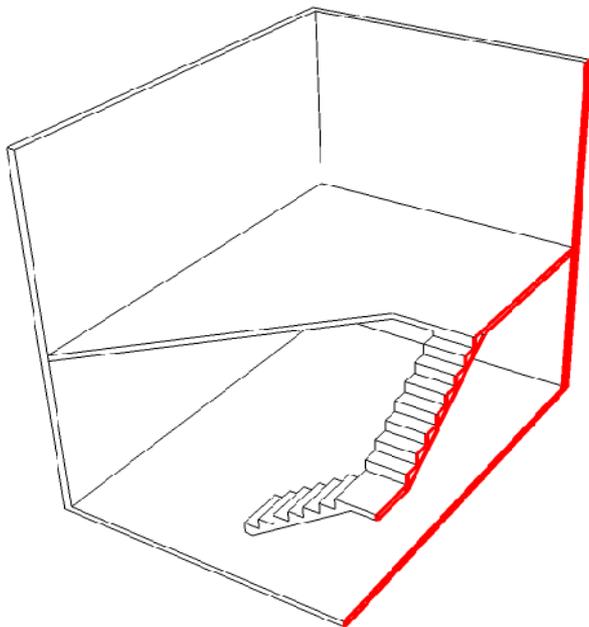
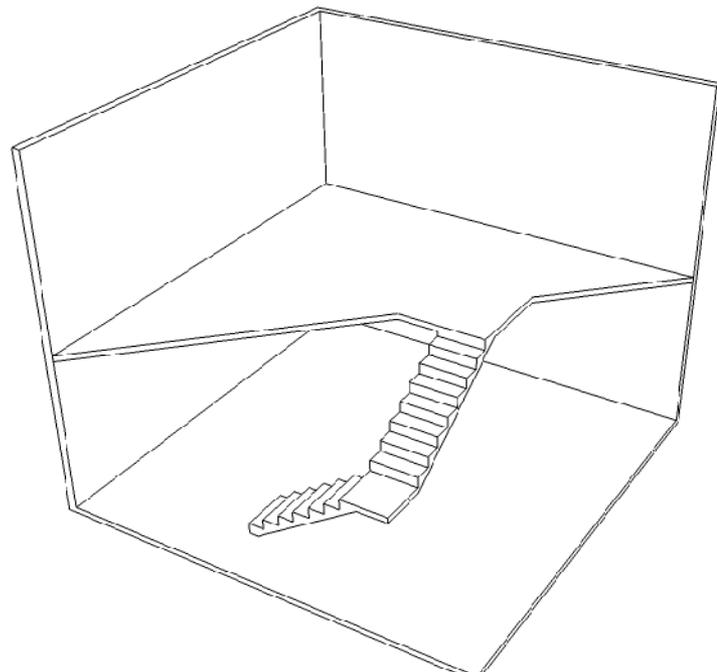


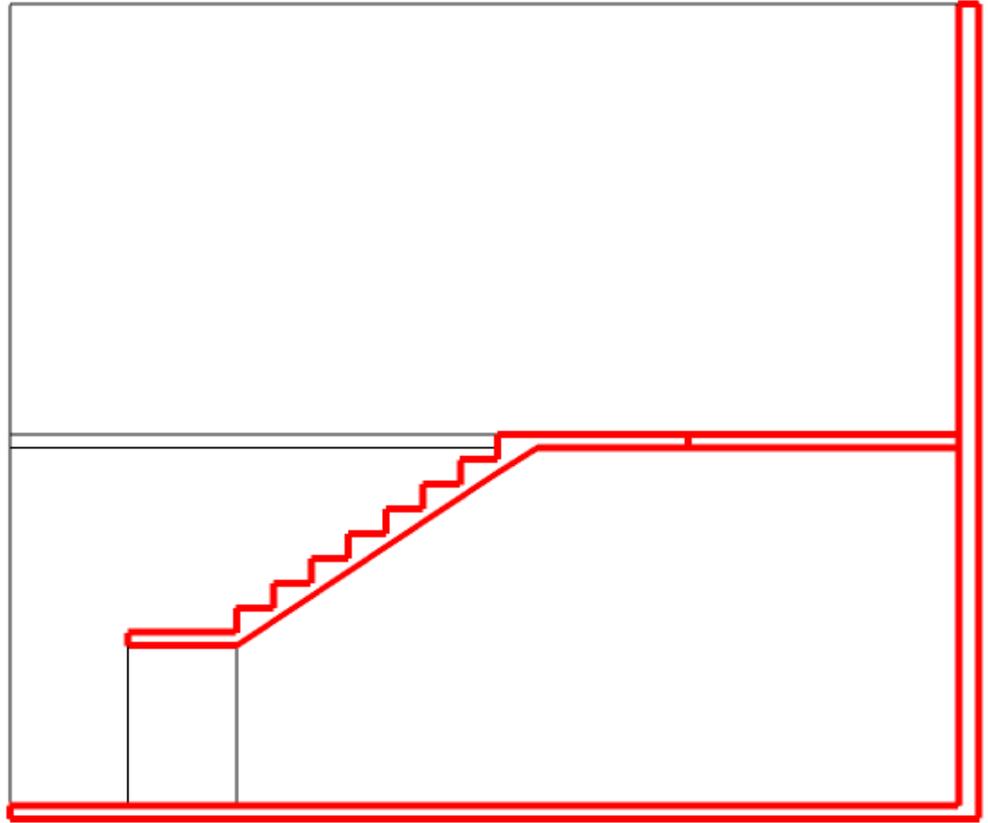
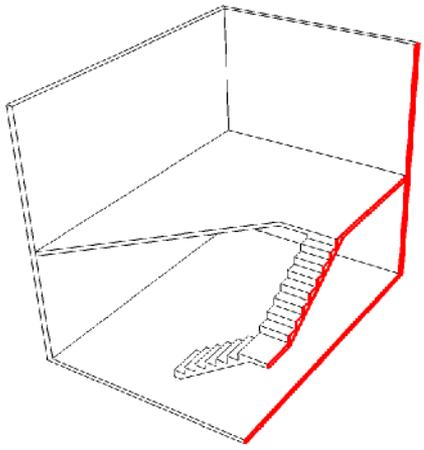


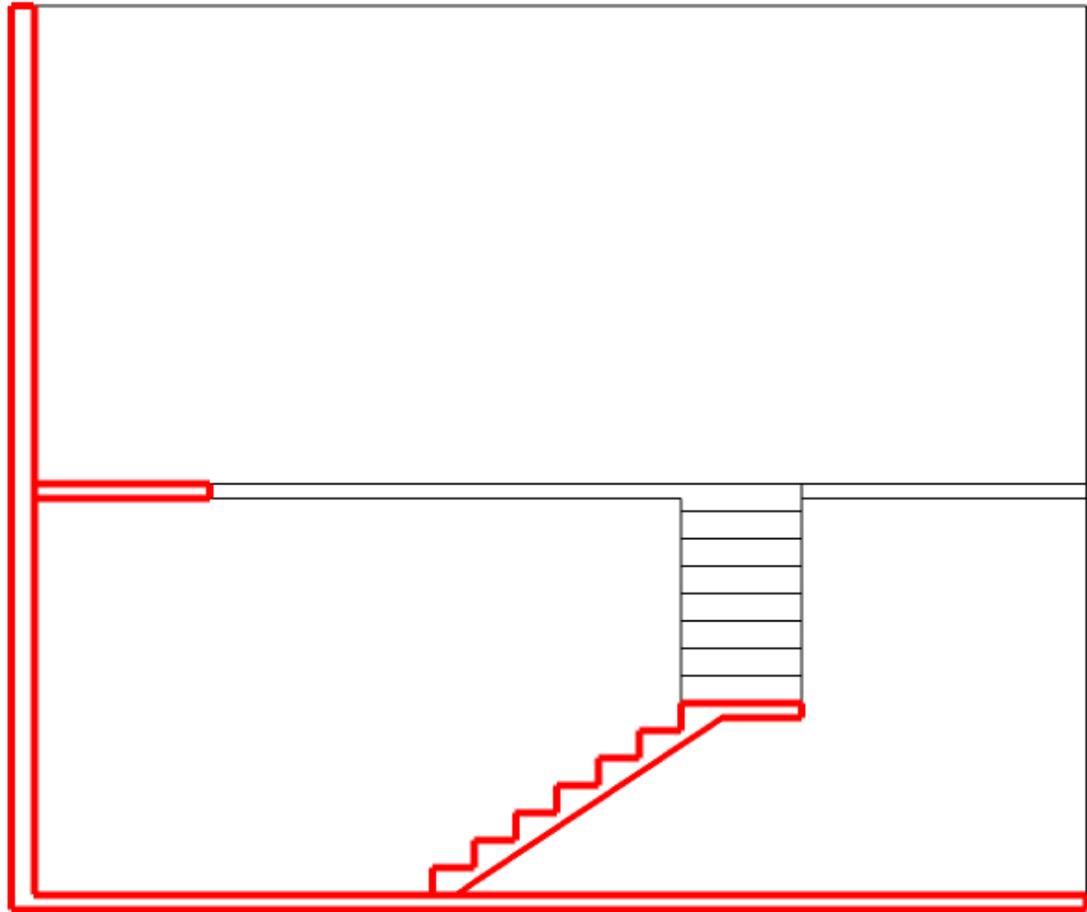
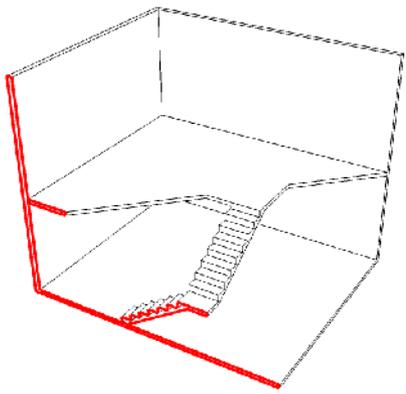


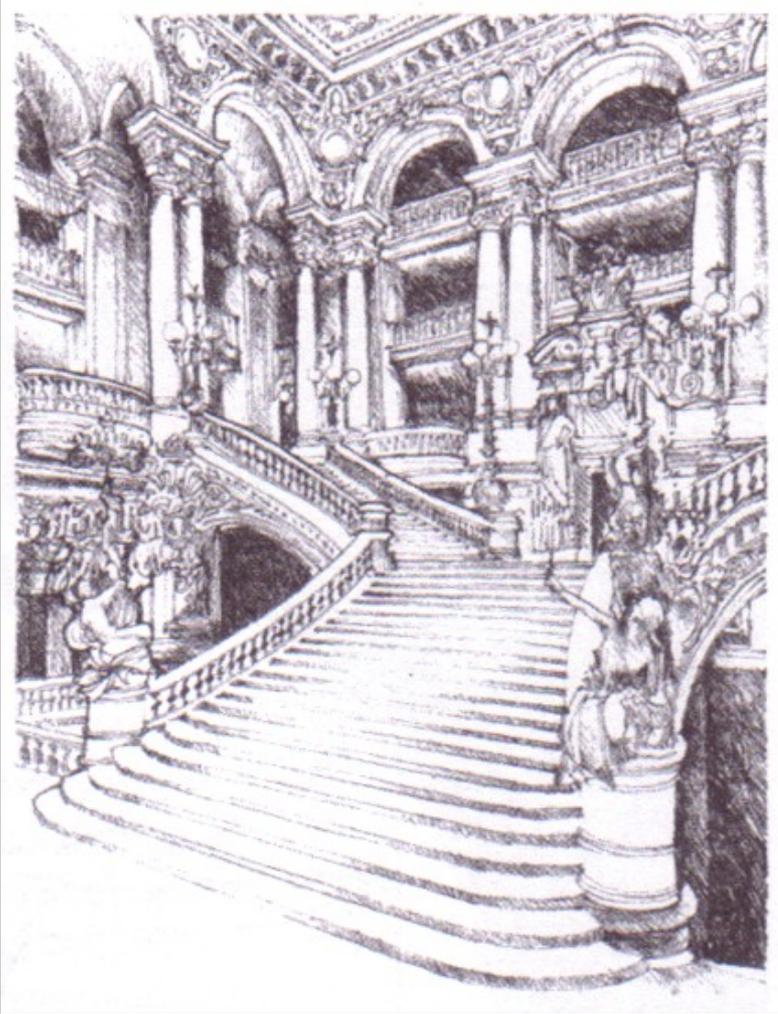




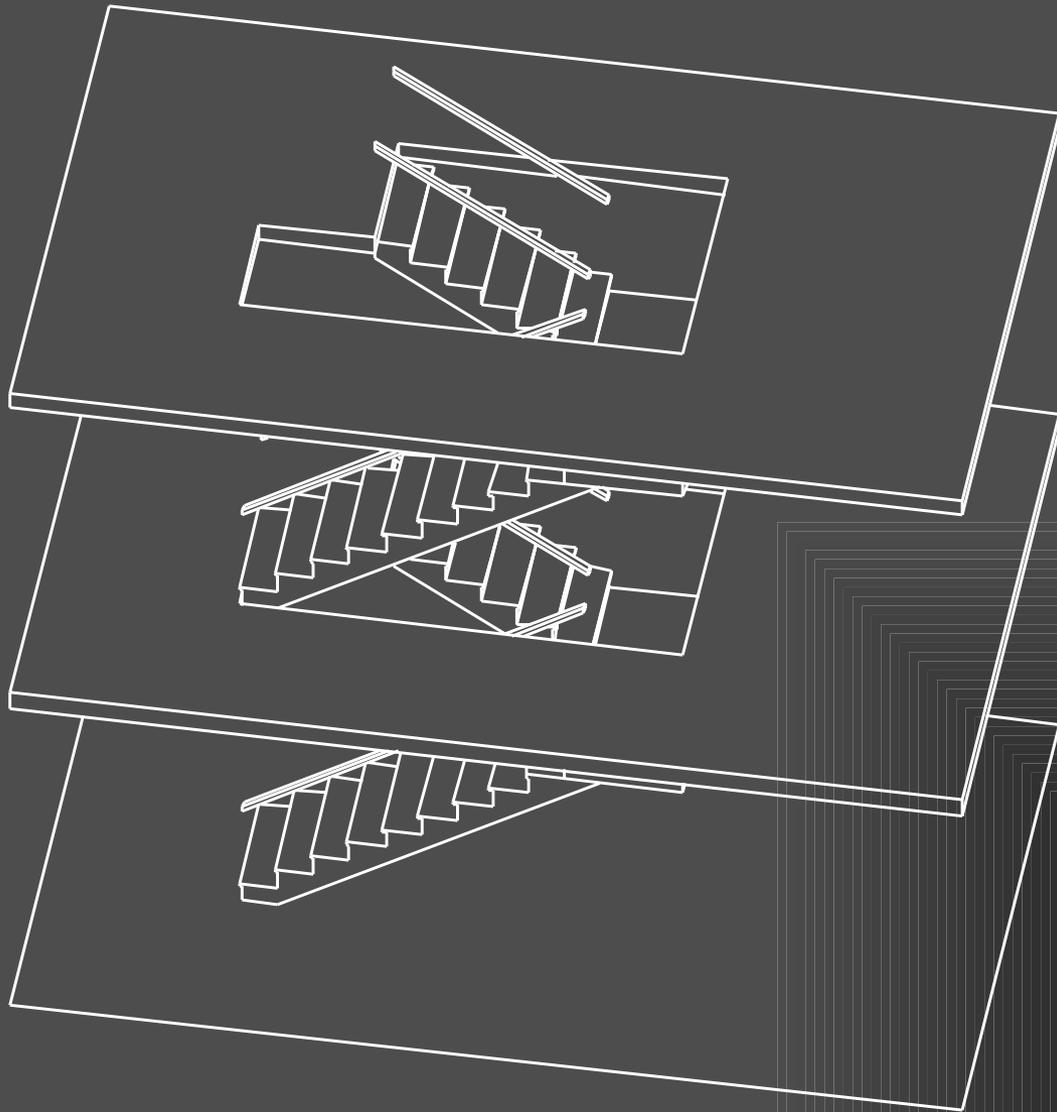




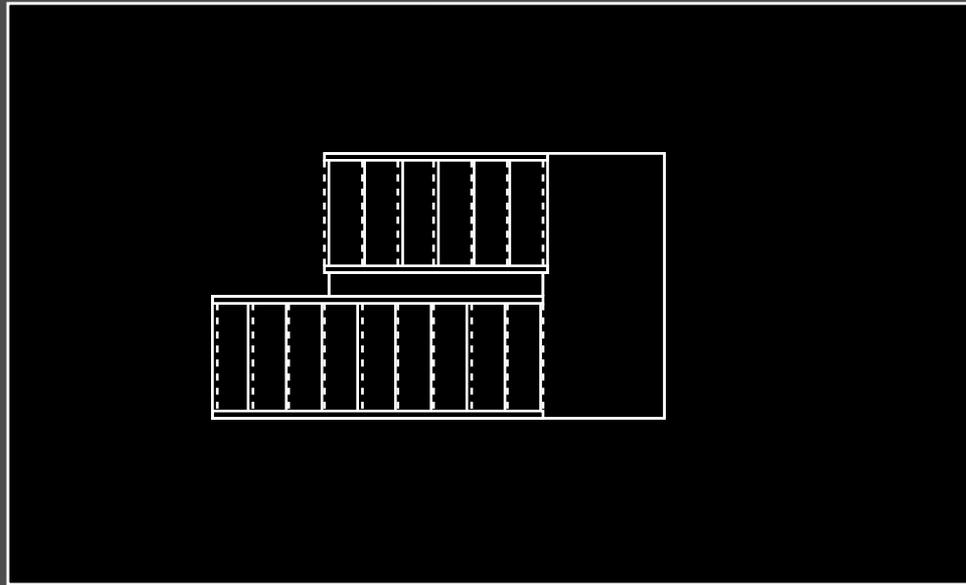




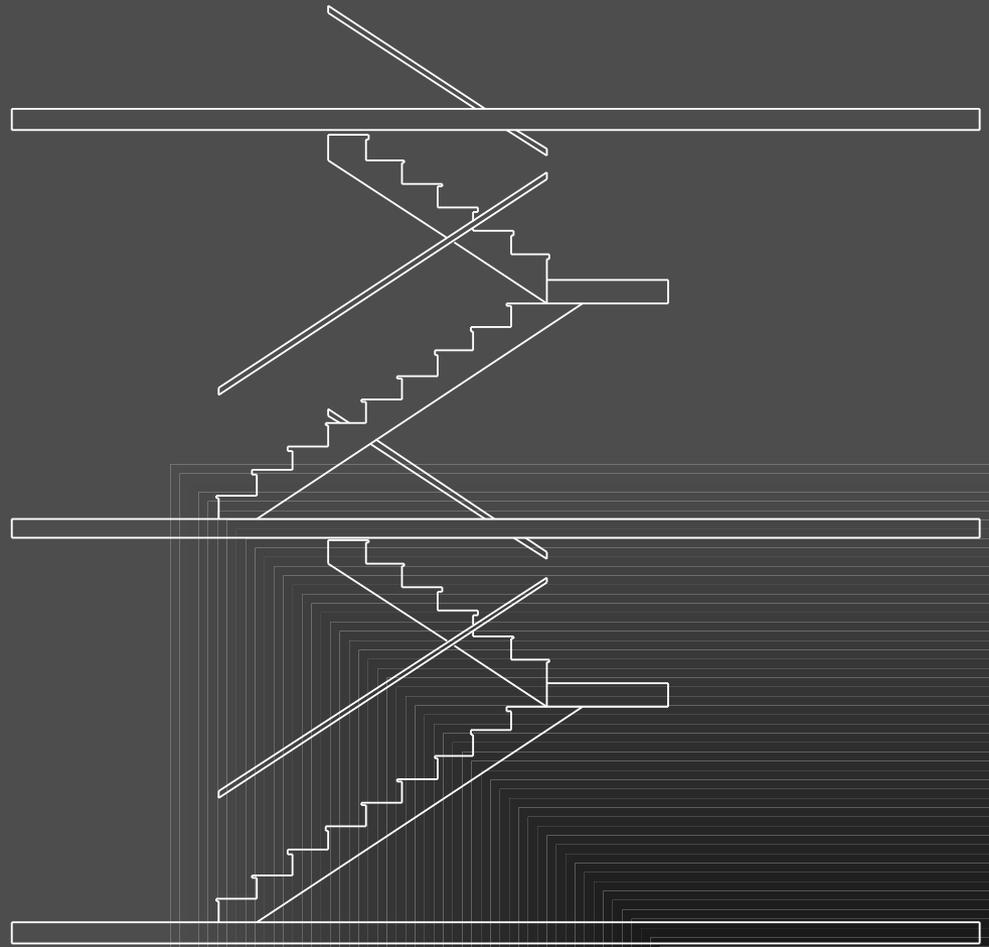
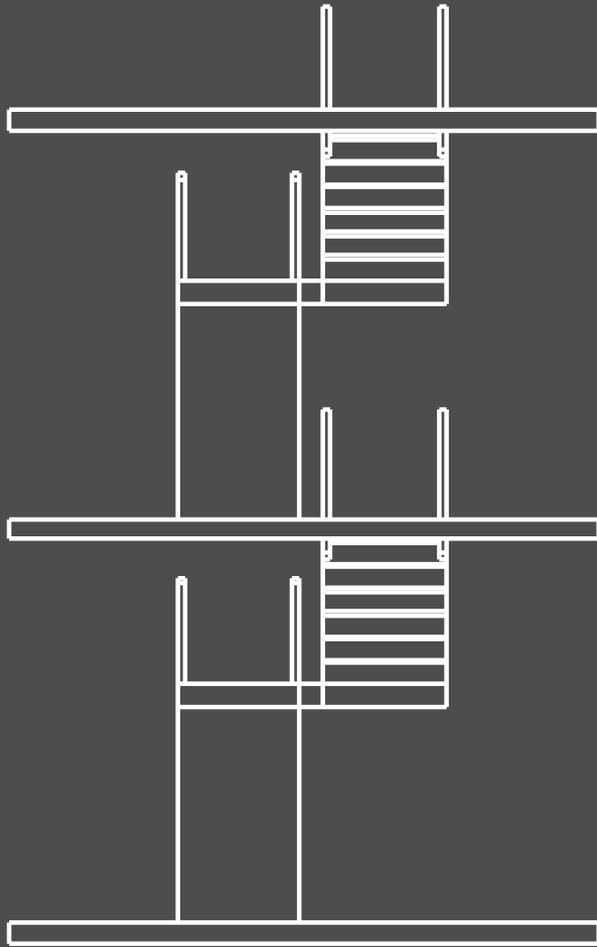
fim



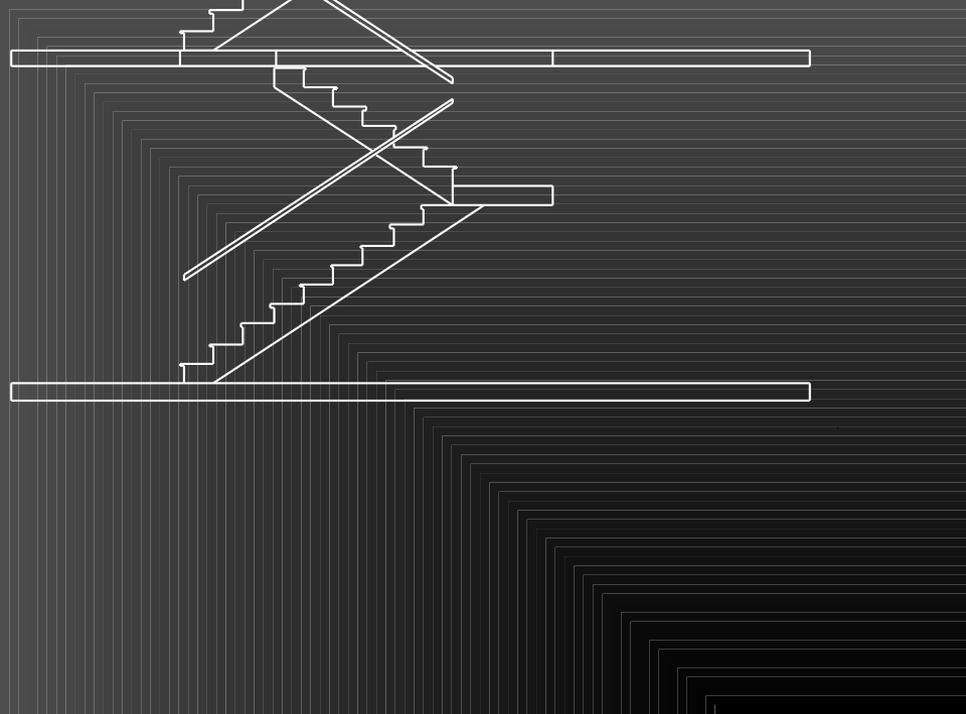
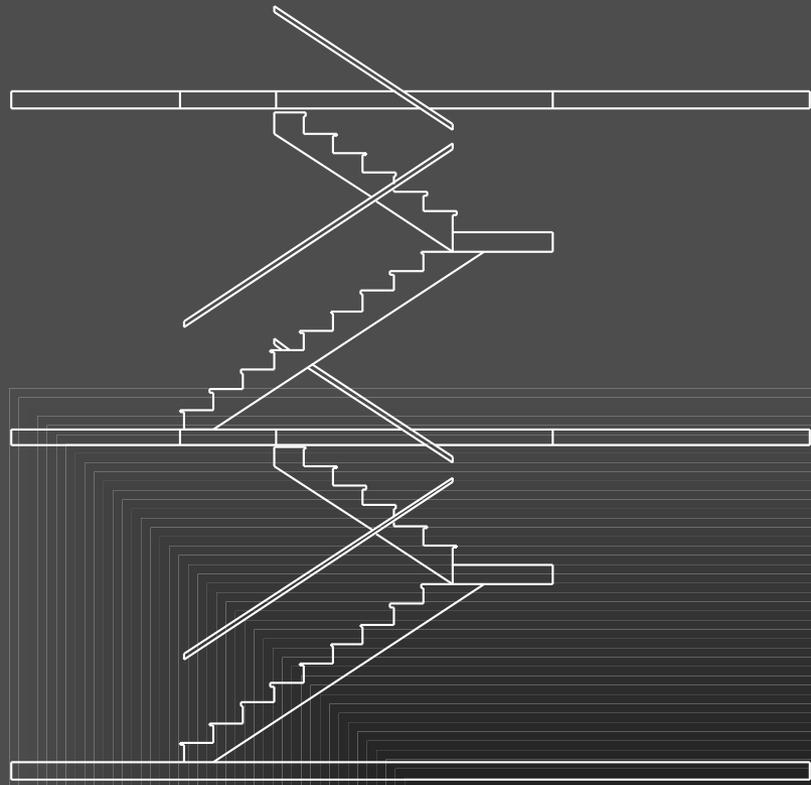
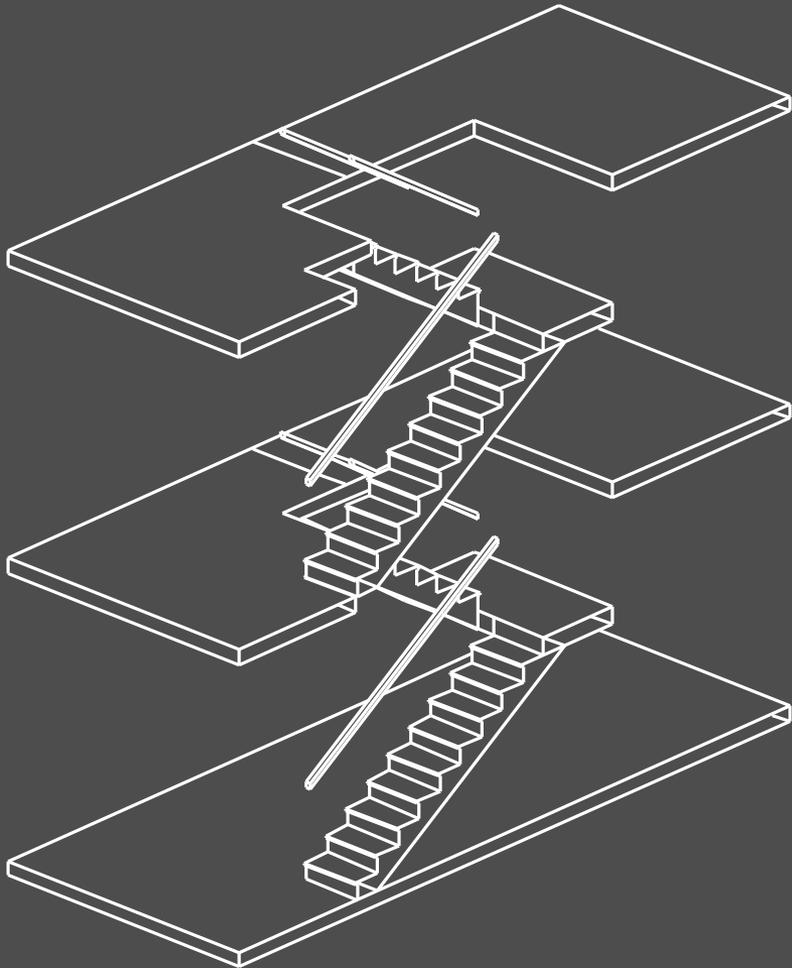
Planta do terceiro pavimento



vistas



Corte



Para casa

