

# SPIDetail™ at a Glance

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**SPIDTECH** Structural  
Software

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## I. What is SPIDetail?

SPIDetail is a software package for structural detailing. It imports structures, modeled in CSI software, ETABS®, SAP® and SAFE® to AutoCAD® and details them based on engineering requirements of ACI and other international codes.



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## II. More about SPIDetail

SPIDetail details multistory concrete structures consisting beams, columns, shear walls, foundations, slabs, joists, stairs, and much more. SPIDetail also checks code ductility in addition to splice and hook requirements, prepares list of materials as well as cut orders to minimize rebar waste, manages detailing elements in sheets and much more.

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## III. SPIDetail Capabilities

### SPIDetail FUNCTIONS

Beams

Columns

Shear Walls

Foundations

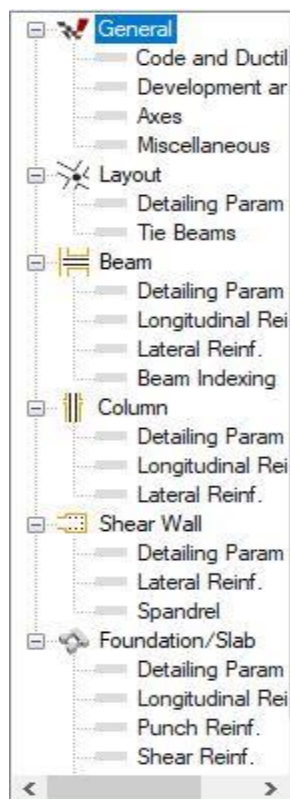
Stairs

Joists

Slabs

General Capabilities

You can customize SPIDetail through widely developed **Settings**.



## IV. Beams

All beams in the model are detailed automatically. Beams are detailed in

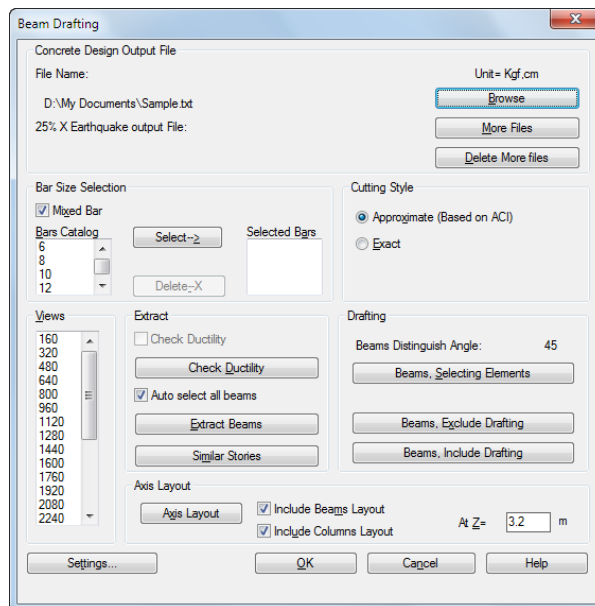
- longitudinal sections
- cross sections
- layouts

Beams can also be detailed in different styles including

- one for each beam
- one beam for same geometrical beams in different stories

The detailing can be customized in settings.

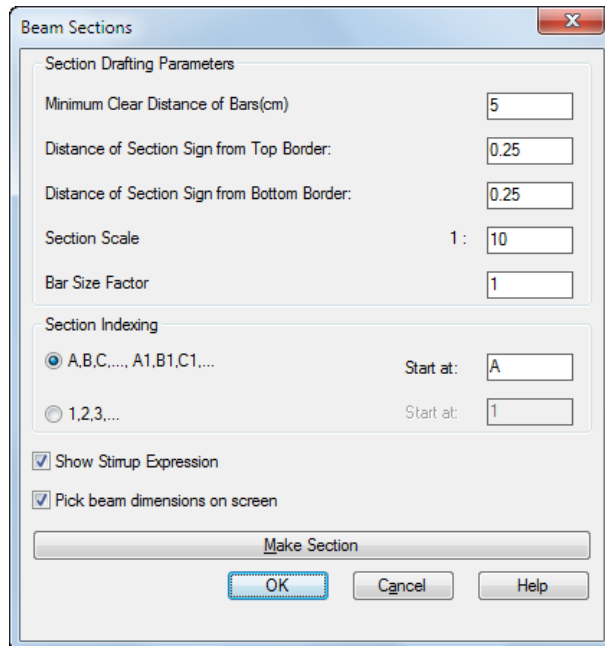
### ● Beams Detailing





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- Beams Detailing (cont.)



The 'Beam Sections' dialog box is used for configuring section drafting parameters and indexing. It contains two main sections: 'Section Drafting Parameters' and 'Section Indexing'.

**Section Drafting Parameters:**

- Minimum Clear Distance of Bars(cm): 5
- Distance of Section Sign from Top Border: 0.25
- Distance of Section Sign from Bottom Border: 0.25
- Section Scale 1 : 10
- Bar Size Factor: 1

**Section Indexing:**

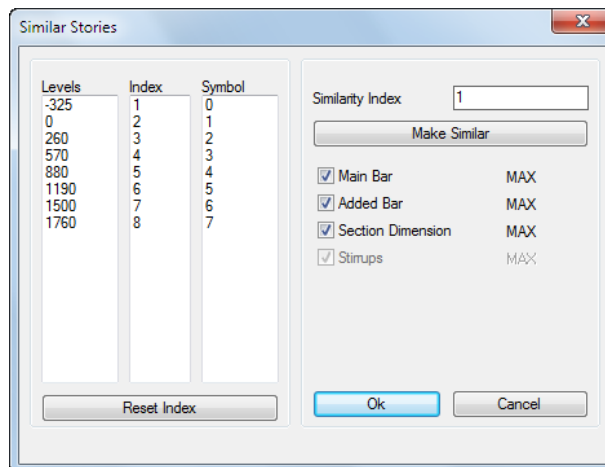
- ☒ A,B,C,..., A1,B1,C1,... Start at: A
- ☐ 1,2,3,... Start at: 1

☒ Show Stirup Expression

☒ Pick beam dimensions on screen

Make Section

OK Cancel Help



The 'Similar Stories' dialog box is used for configuring similarity index settings. It includes a table for levels, indices, and symbols, and a section for similarity index settings.

Levels	Index	Symbol
-325	1	0
0	2	1
260	3	2
570	4	3
880	5	4
1190	6	5
1500	7	6
1760	8	7

Similarity Index: 1

Make Similar

☒ Main Bar MAX

☒ Added Bar MAX

☒ Section Dimension MAX

☒ Stirups MAX

Reset Index

Ok Cancel

## ● Beams Settings

**Settings**

**General**

- Layout
- Beam
  - Detailing Param
  - Longitudinal Reinf.
  - Lateral Reinf.
  - Beam Indexing
- Column
- Shear Wall
- Foundation/Slab

**Scale**

Horizontal scale 1: 50

Vertical scale 1: 20

**Miscellaneous**

☒ Include key plan

**Longitudinal Rebar**

Main rebars visual cover; Vertical 0.15

Added rebars visual offset 0.1

Visual hook length 0.35

**Dimension**

Gap of dimensions 0.3

☒ Draw column dimensions

☐ Draw splice point dimensions

**Longitudinal Rebar Leader**

Main rebars leader height 1

Main rebars leader position Span Length / 1.5

Added rebars leader height 1.5

Middle top and bottom added rebars leader position Rebar length / 3

**Axes**

Minimum length of axes line 6.2

Show maximum 2 axes crossing one point

☒ Concatenate axes names by separator (None)

☐ Put multiple axes names above

OK Cancel Help

**Reinforcement**

☐ Main bar size (Top) 18

☐ Main bar size (Bottom) 18

Number of main bars (Top) 3

Number of main bars (Bottom) 3

Web bar size 16

Extra bar size for engaging cross tie (applied in high ductility) 10

☐ Add longitudinal torsional reinforcement

Positive moment additional rebar area coefficient 1.1

Negative moment additional rebar area coefficient 1

**Miscellaneous**

Minimum clear distance of bars (cm) 5

**Anchorage Length**

☒ Show anchorage length warning

Anchorage length error (cm) 3

**Overlap**

☒ Automatically overlap main bars

Top bars overlap position span / 2

Bottom bars overlap position span / 3

**Cover**

☒ Use source program definitions

☐ Custom

Top clear cover (cm) 4

Bottom clear cover (cm) 4

## • Beams Settings (Cont.)

Reinforcement

☒ Automatically

☒ Calculate torsion

☒ By Distance   Up   Down  
☒ By Size

☒ By Distance   Up   Down  
☒ By Adding Crossti  
☒ By Size

Rebar Size

☐ 6  
☒ 8  
☒ 10  
☐ 12  
☐ 14  
☐ 15  
☐ 16  
☐ 18  
☐ 20  
☐ 22  
☐ 24  
☐ 25

☒ Activate stirrups zone coefficient (%)   75

Minimum bars distance (cm)   5

Bars distance round off (cm)   2.5

Maximum number of crosstie   5

☐ Custom

Rebar   8   @   L&R dist.   7.5   cm   Middle dist.   15   cm

Miscellaneous

Stirrup line position (% Beam height)   0

Text Format

☒ ø8@10 n=5  
☐ 5ø8@10

Beam Indexing

☒ Index similar beams the same  
☐ Index each beam separately

Prefix:   B

Start at:   1

Beams distinguish angle( $\alpha$ )   45

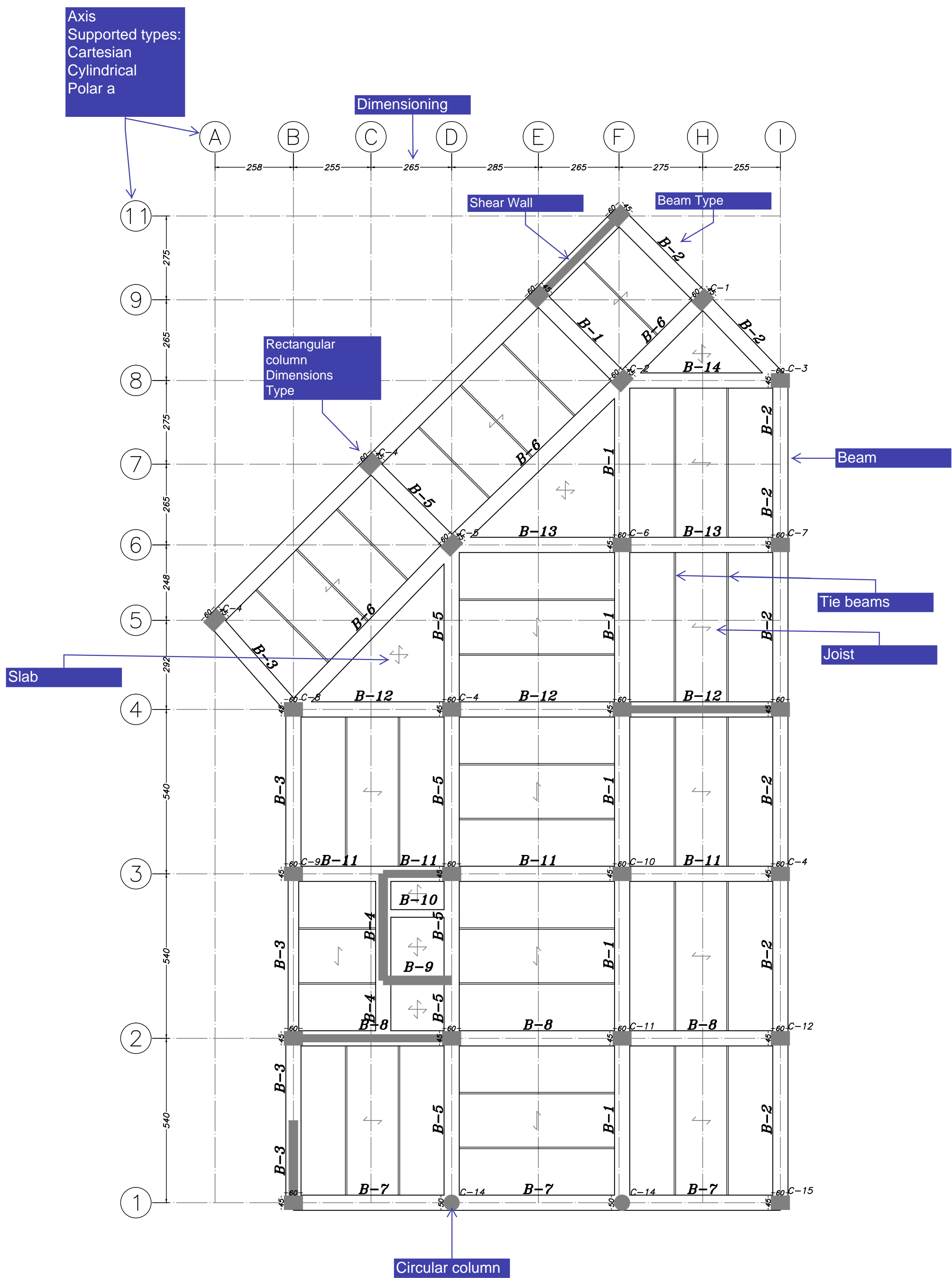
The diagram illustrates beam indexing on a grid. A horizontal line represents a beam, with points labeled B48, B23, and B24. A dashed line segment connects B23 and B24, forming an angle  $\alpha$  with the horizontal. The label B-1 is placed below the horizontal line, and another B-1 is placed near the angle  $\alpha$ .

---

## V. Beams Detailing Samples

Please see detailing sheets in next four pages:

- Columns, Beams and Shear Wall Layout
- Beams Longitudinal Section
- Similar Stories
- Cross Section of Beams



Columns, Beams and Shear Wall Layout

Hooks based on code requirements

Leader for main and added rebar

Added rebar

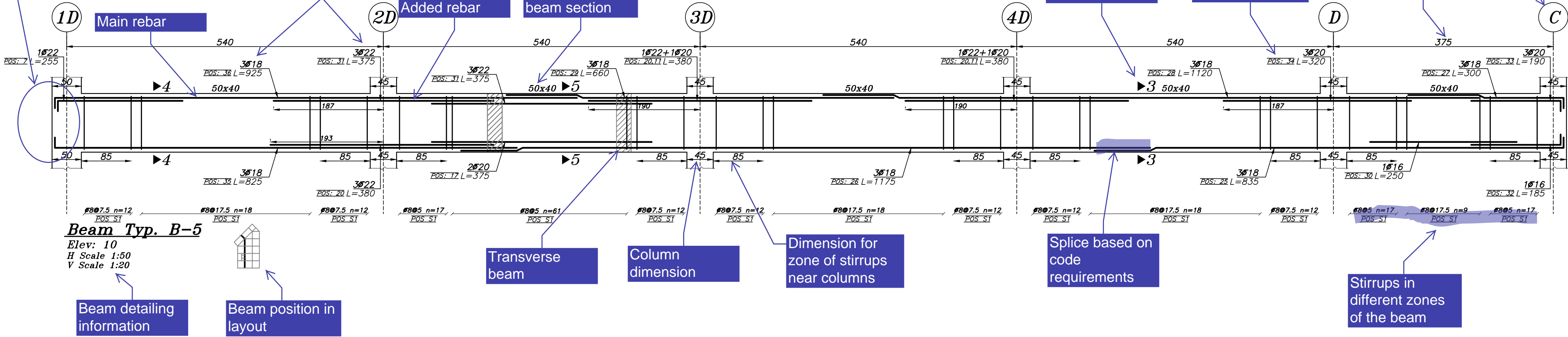
Dimensions for beam section

Section ID

Rebar ID in list of materials

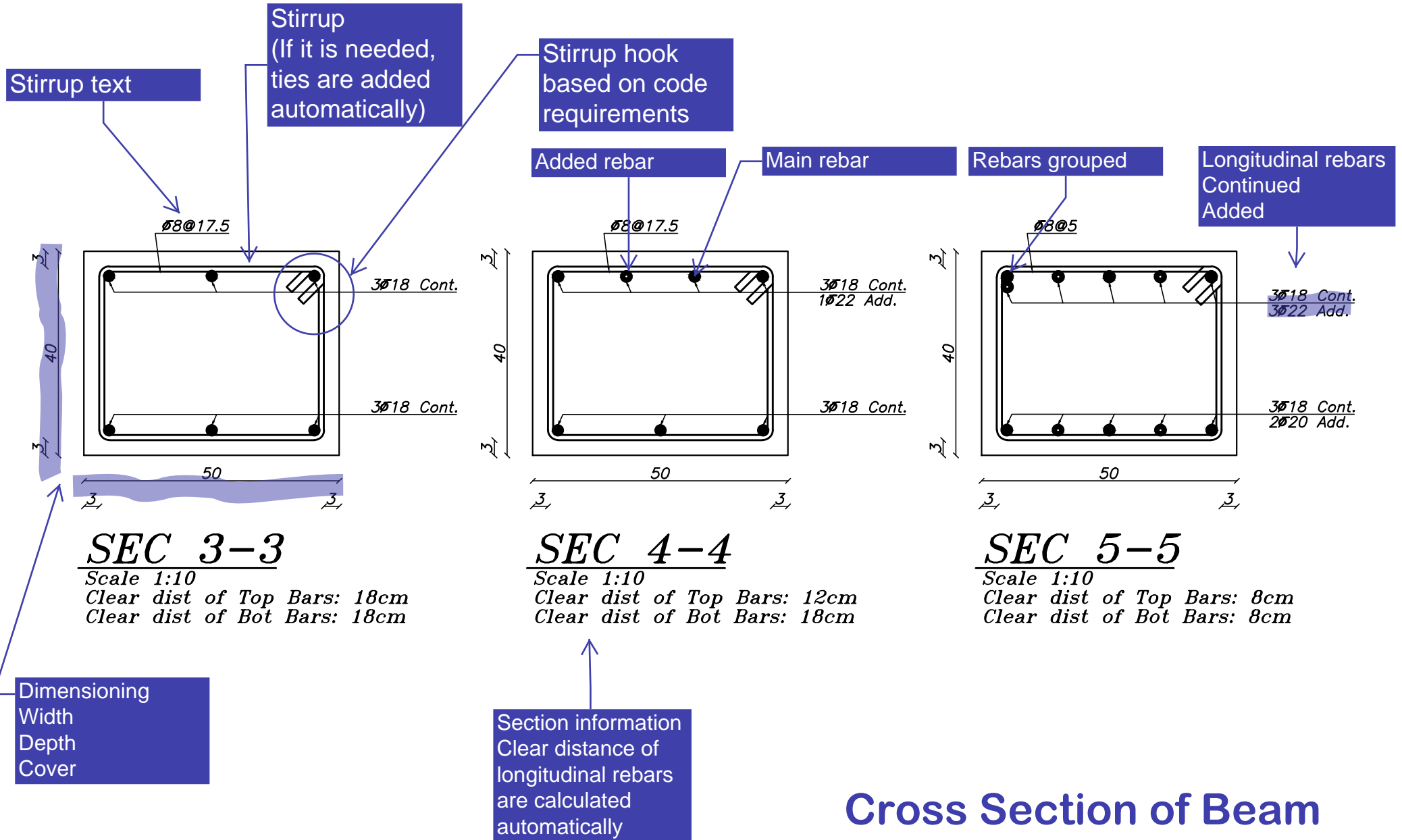
Dimensioning

Axis names



## Beam Longitudinal Section





## Cross Section of Beam



## VI. Columns

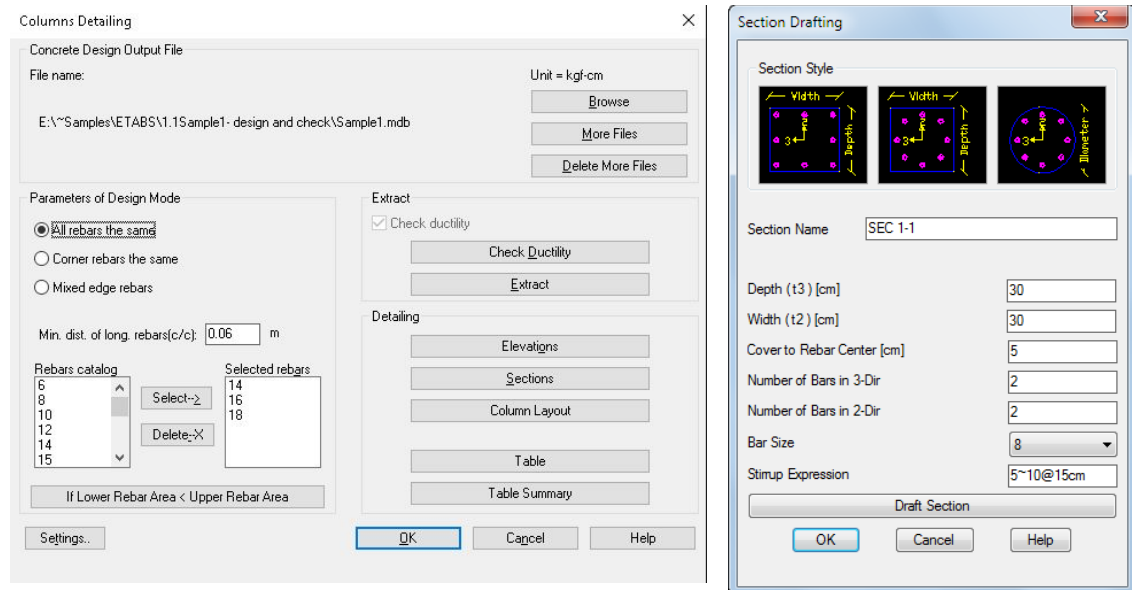
All Columns in the model are categorized and detailed automatically.

Columns detailing is provided in

- Layouts
- Elevations
- Sections

Elevations are presented in three formats of detailings, sections in tables and texts in tables.

### ● Columns Detailing



- Columns Settings

**Settings**

☒ General  
☒ Layout  
☒ Beam  
☒ Column  
☒ Detailing Param.  
☐ Longitudinal Reinf.  
☐ Lateral Reinf.  
☒ Shear Wall  
☒ Foundation/Slab

**Length**  
 Beam height (cm)   
 Column width (cm)

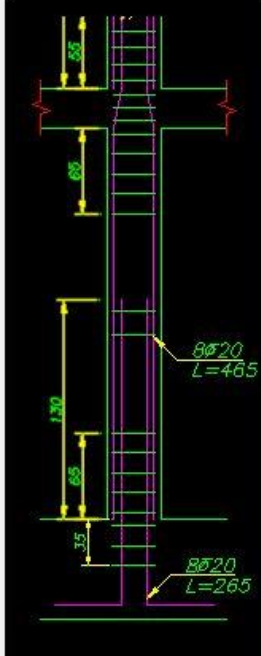
**Scale**  
 Horizontal scale 1:   
 Vertical scale 1:   
 Section scale 1:

**Longitudinal Rebar Line**  
 Visual cover   
 Visual hook length

**Dimensions**  
☒ Draw overlap dimension  
☒ Draw L<sub>s</sub> zone dimension

**Miscellaneous**  
☒ Draw column section rebar guideline

OK Cancel Help



The diagram shows a vertical column section with rebar. Dimensions include 65, 65, 130, 65, and 35. Labels include 8Ø20, L=465, and 8Ø20, L=265.

**Reinforcement**

☐ Merge first column bar with foundation dowel bar

**Overlap**  
 Overlap position (%)   
 Overlap leg angle 1 /   
 Overlap lag height (cm)

**Cover**  
☒ Use source program definition  
☐ Custom  
 Clear cover (cm)

## ● Columns Settings (cont.)

**Reinforcement**

☒ Automatically

Stirrups increasing priority ☒ By bar distance ☐ By bar size

Minimum bar distance (cm)

Distance round off

☐ Custom

Rebar  @ Distance  cm Middle distance  cm

Minimum L<sub>s</sub> (cm)

☐ Apply d/4 for maximum distance

**Miscellaneous**

☐ Show stirrups completely

First stirrup distance (cm)

**Text Format**

☒ ø8@10 n=5

☐ 5ø8@10

**Rebar size**

6  
8  
☒ 10  
☒ 12  
14  
15  
16

Stirrups Setting

**Stirrups Style**

☐ Engage All Longitudinal Bars in Stirrups

**Style**

☐ Apply to All

Number of Bars	Stirrups Style
3	Crosstie
4	Crosstie
5	Crosstie
6	Crosstie
7	Crosstie
8	Crosstie
9	Crosstie
10	Crosstie
11	Crosstie
12	Crosstie
13	Crosstie
14	Crosstie
15	Crosstie

**Lozenge (If Applicable)**

☐ 3 x 3

☐ 3 x 4 or 4 x 3

☐ 3 x 5 or 5 x 3

☐ 4 x 4

☐ 4 x 5 or 5 x 4

☐ 5 x 5

OK  
Cancel  
Help

---

## VII. Columns Detailing Samples

Please see detailing sheets in next four pages:

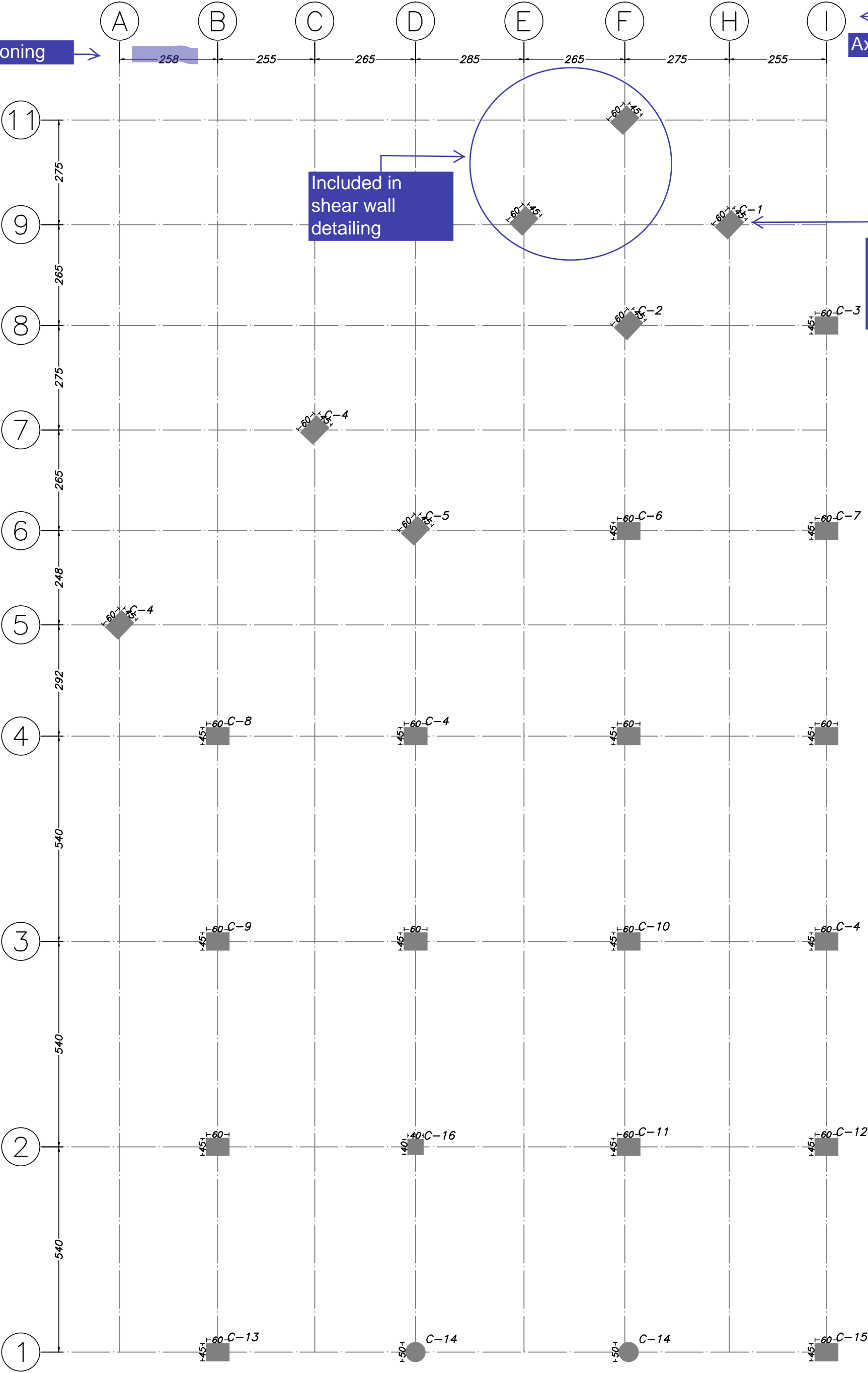
- Column Layouts
- Column Detailing in Elevation
- Alternative Column Detailing Methods
- Column Cross Sections

Dimensioning

Axis

Included in  
shear wall  
detailing

Column,  
Shape,  
Dimensions  
Type



Columns Layout

Column Detailing in Elevation

Errors or warnings may appear next to detailing regarding code requirements

Stirrups in middle of column

Rebar bending limitation

Splice

L<sub>0</sub> Zone dimension

Stirrups in L<sub>0</sub> Zone

Splice dimension

Floor elevation

Rebar Size, Number

Rebar ID in list of materials

Stirrups, continued within beams

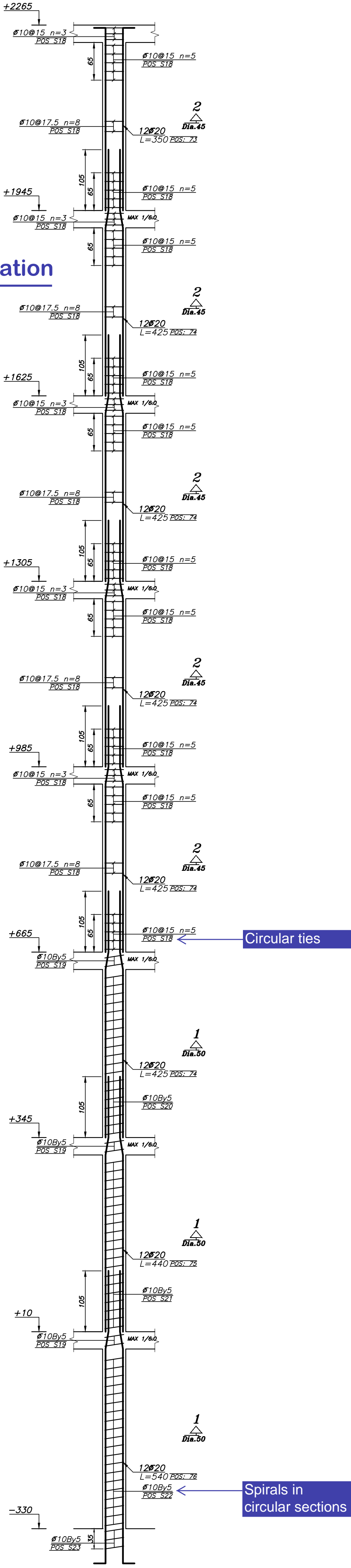
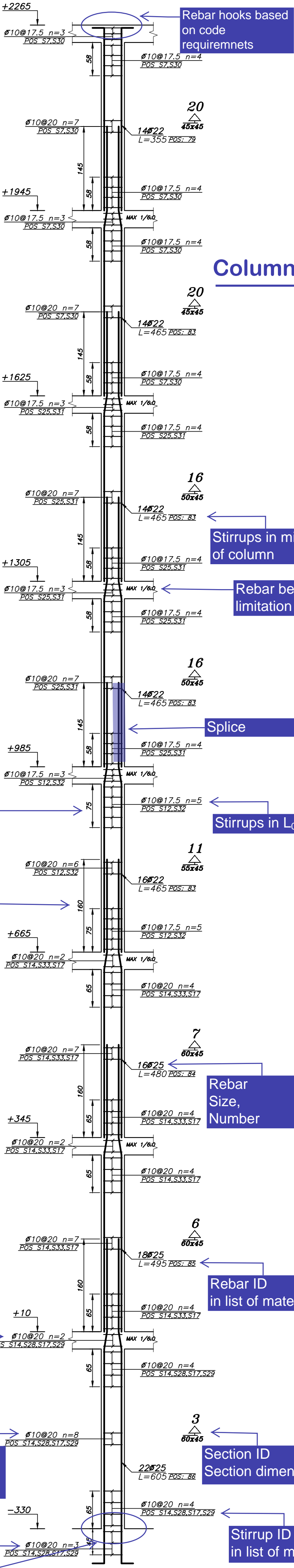
Stirrups, continued in foundation

Omitting the splice can be managed

Column Information

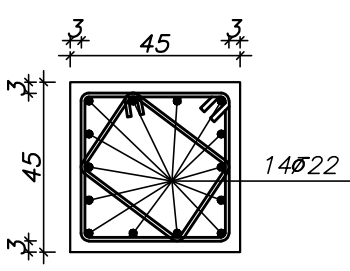
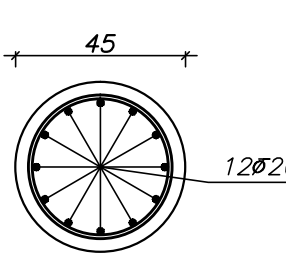
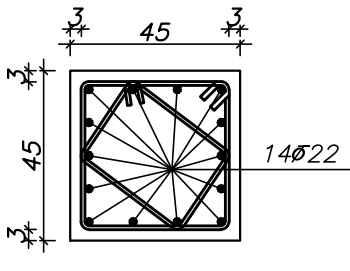
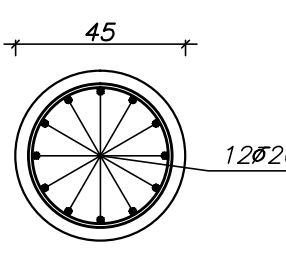
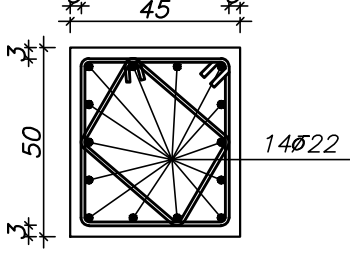
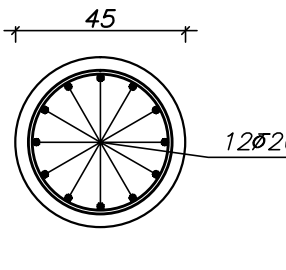
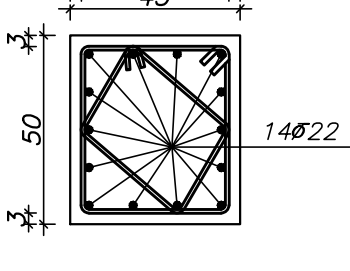
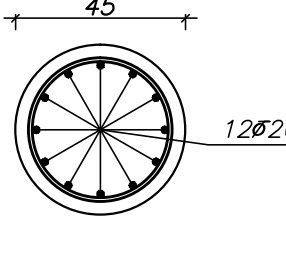
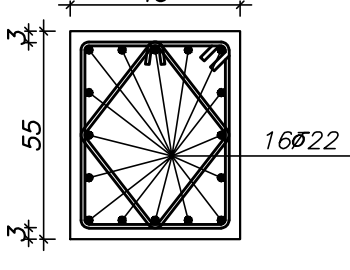
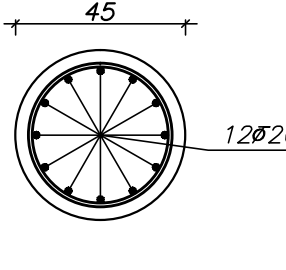
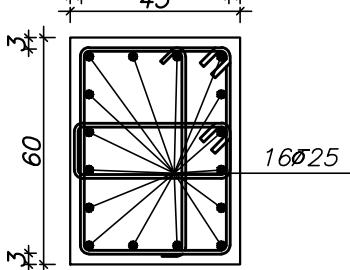
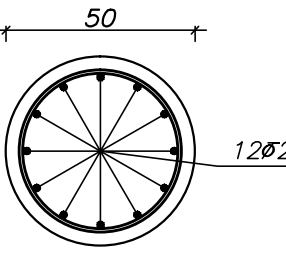
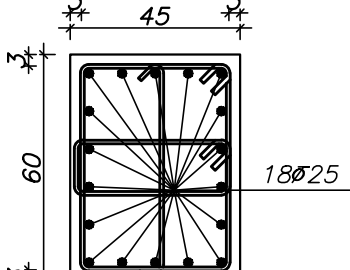
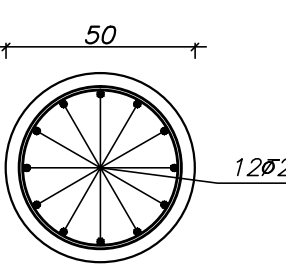
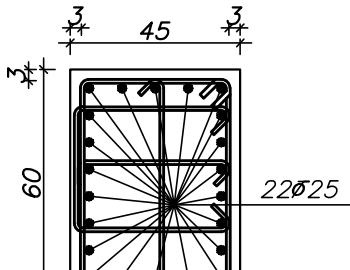
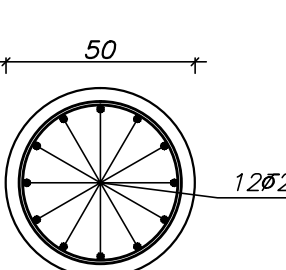
Circular ties

Spirals in circular sections



Column section

Elevation  
for above section

 <i>Elv:19.45 to 22.65</i>	 <i>Elv:19.45 to 22.65</i>
 <i>Elv:16.25 to 19.45</i>	 <i>Elv:16.25 to 19.45</i>
 <i>Elv:13.05 to 16.25</i>	 <i>Elv:13.05 to 16.25</i>
 <i>Elv:9.85 to 13.05</i>	 <i>Elv:9.85 to 13.05</i>
 <i>Elv:6.65 to 9.85</i>	 <i>Elv:6.65 to 9.85</i>
 <i>Elv:3.45 to 6.65</i>	 <i>Elv:3.45 to 6.65</i>
 <i>Elv:0.1 to 3.45</i>	 <i>Elv:0.1 to 3.45</i>
 <i>Elv:-3.3 to 0.1</i>	 <i>Elv:-3.3 to 0.1</i>
<b>C-3</b> <i>No.=1</i>	<b>C-14</b> <i>No.=2</i>

Column  
information

Sections in Tables

<u>0.45X0.45</u> 14Ø22 <sup>0.45 : 5</sup> <sub>0.45 : 4</sub>	<u>D0.45</u> 12Ø20
<i>Elv:19.45 to 22.65</i>	<i>Elv:19.45 to 22.65</i>
<u>0.45X0.45</u> 14Ø22 <sup>0.45 : 5</sup> <sub>0.45 : 4</sub>	<u>D0.45</u> 12Ø20
<i>Elv:16.25 to 19.45</i>	<i>Elv:16.25 to 19.45</i>
<u>0.5X0.45</u> 14Ø22 <sup>0.5 : 5</sup> <sub>0.45 : 4</sub>	<u>D0.45</u> 12Ø20
<i>Elv:13.05 to 16.25</i>	<i>Elv:13.05 to 16.25</i>
<u>0.5X0.45</u> 14Ø22 <sup>0.5 : 5</sup> <sub>0.45 : 4</sub>	<u>D0.45</u> 12Ø20
<i>Elv:9.85 to 13.05</i>	<i>Elv:9.85 to 13.05</i>
<u>0.55X0.45</u> 16Ø22 <sup>0.55 : 5</sup> <sub>0.45 : 5</sub>	<u>D0.45</u> 12Ø20
<i>Elv:6.65 to 9.85</i>	<i>Elv:6.65 to 9.85</i>
<u>0.6X0.45</u> 16Ø25 <sup>0.6 : 6</sup> <sub>0.45 : 4</sub>	<u>D0.5</u> 12Ø20
<i>Elv:3.45 to 6.65</i>	
<u>0.6X0.45</u> 18Ø25 <sup>0.6 : 6</sup> <sub>0.45 : 5</sub>	<u>D0.5</u> 12Ø20
<i>Elv:0.1 to 3.45</i>	<i>Elv:0.1 to 3.45</i>
<u>0.6X0.45</u> 22Ø25 <sup>0.6 : 8</sup> <sub>0.45 : 5</sub>	<u>D0.5</u> 12Ø20
<i>Elv:-3.3 to 0.1</i>	<i>Elv:-3.3 to 0.1</i>
<b>C-3</b> <i>No.=1</i>	<b>C-14</b> <i>No.=2</i>

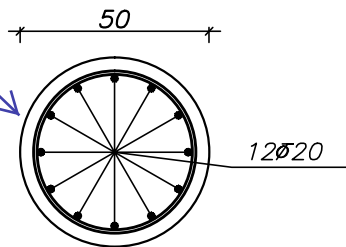
Elevation  
for above  
sections

Section details  
by text

Texts in Tables

Additional Methods for Detailing Columns

Circular section



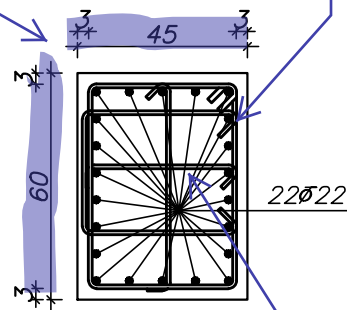
***SEC 1-1***  
Scale 1:20

Dimensions,  
Cover

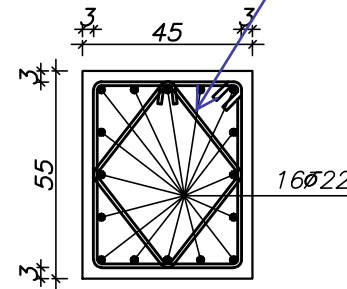
Open stirrup

Lozenge stirrup

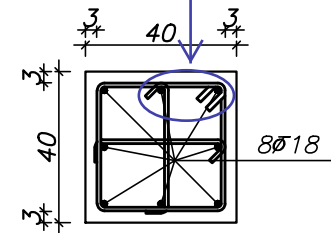
Hooks  
based on code  
requirements



***SEC 4-4***  
Scale 1:20



***SEC 11-11***  
Scale 1:20



***SEC 25-25***  
Scale 1:20

Cross tie

Adding label  
for lateral  
reinforcement  
is optional in  
software

Section  
Name,  
Scale

## Column Cross Sections



---

## VIII. Shear Walls

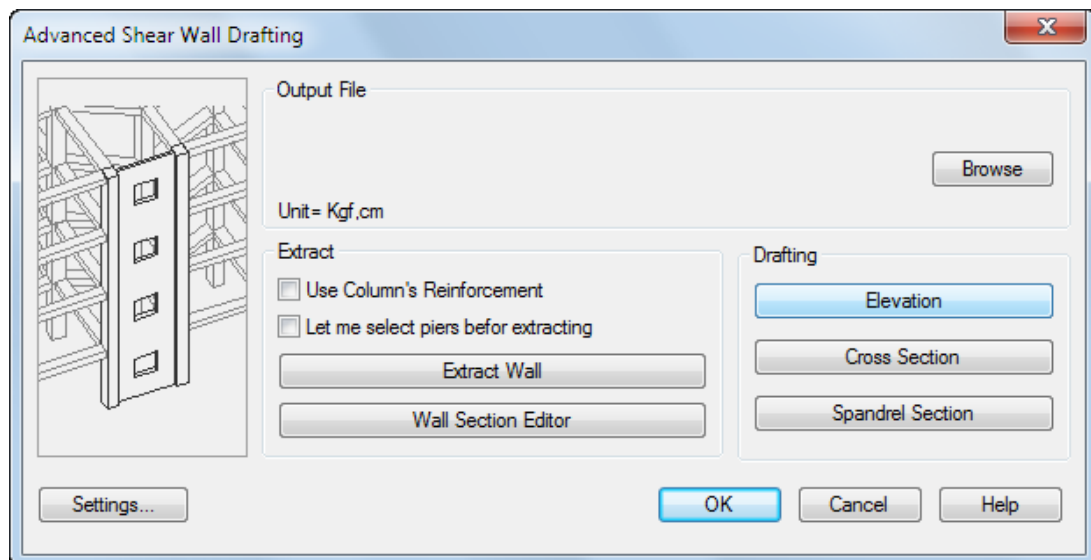
All shear walls in the model are detailed automatically, consisting of

- layouts
- elevations
- cross sections

All horizontal and vertical rebars of main body as well as border elements, spandrel beams, and their diagonal reinforcement are detailed.

Shear wall detailings may simply be modified using Wall Section Editor.

### • Shear Walls Detailing



## ● Shear Walls Settings

**Settings**

**Scales**

Elevation scale 1: 100

Section scale 1: 25

Spandrel scale 1: 50

**Longitudinal Rebar Line**

Visual hook length 0.4

**B-Zone Hatch Pattern**

☐ ANS131

☒ SOLID

**Miscellaneous**

☒ Draw 3D view

OK Cancel Help

**Reinforcement**

☒ Automatically

Increasing priority: ☒ By bar distance ☐ By bar size

Minimum bar distance (cm) 10

Distance round off (cm) 2.5

☐ Custom

Stirrups 10 @ 10 cm

Horizontal 10 @ 10 cm

**Layout**

☒ Show horizontal bar expression on elevation

☒ Draw crossties out of B-Zone

**Text Format**

☒ ø8@10 n=5

☐ 5ø8@10

- Shear Walls Settings (cont.)

**Reinforcement**

Flexure	Diagonal	Vertical
<input type="checkbox"/> 6	<input type="checkbox"/> 6	<input type="checkbox"/> 6
<input type="checkbox"/> 8	<input type="checkbox"/> 8	<input type="checkbox"/> 8
<input type="checkbox"/> 10	<input type="checkbox"/> 10	<input type="checkbox"/> 10
<input checked="" type="checkbox"/> 12	<input checked="" type="checkbox"/> 12	<input checked="" type="checkbox"/> 12
<input checked="" type="checkbox"/> 14	<input checked="" type="checkbox"/> 14	<input checked="" type="checkbox"/> 14
<input type="checkbox"/> 15	<input type="checkbox"/> 15	<input type="checkbox"/> 15
<input checked="" type="checkbox"/> 16	<input checked="" type="checkbox"/> 16	<input checked="" type="checkbox"/> 16
<input checked="" type="checkbox"/> 18	<input checked="" type="checkbox"/> 18	<input checked="" type="checkbox"/> 18
<input type="checkbox"/> 20	<input type="checkbox"/> 20	<input type="checkbox"/> 20
<input checked="" type="checkbox"/> 22	<input checked="" type="checkbox"/> 22	<input type="checkbox"/> 22
<input type="checkbox"/> 24	<input type="checkbox"/> 24	<input type="checkbox"/> 24
<input type="checkbox"/> 25	<input type="checkbox"/> 25	<input type="checkbox"/> 25
<input type="checkbox"/> 26	<input type="checkbox"/> 26	<input type="checkbox"/> 26
<input type="checkbox"/> 28	<input type="checkbox"/> 28	<input type="checkbox"/> 28
<input type="checkbox"/> 30	<input type="checkbox"/> 30	<input type="checkbox"/> 30
<input type="checkbox"/> 32	<input type="checkbox"/> 32	<input type="checkbox"/> 32

Stirrups bar size:

**Attention:**  
Horizontal bars of spandrels will be set same as horizontal bars of piers.

**Wall Section Editor**

Wall :

Pier :

Story :

Elevation :

Shape Variations

☐ Apply align to all

Rebar Variations

Bar Size :

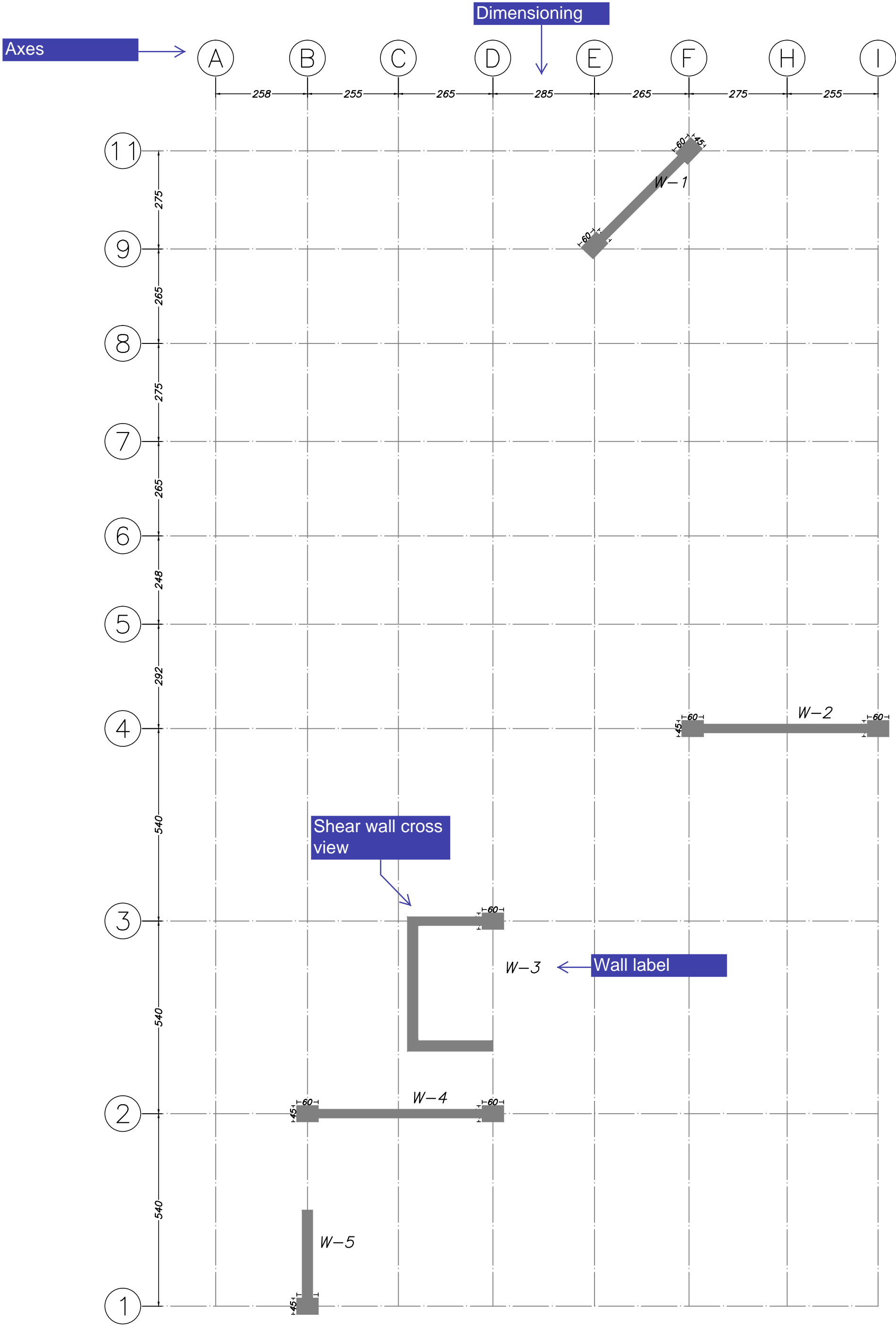
Bar Space :

---

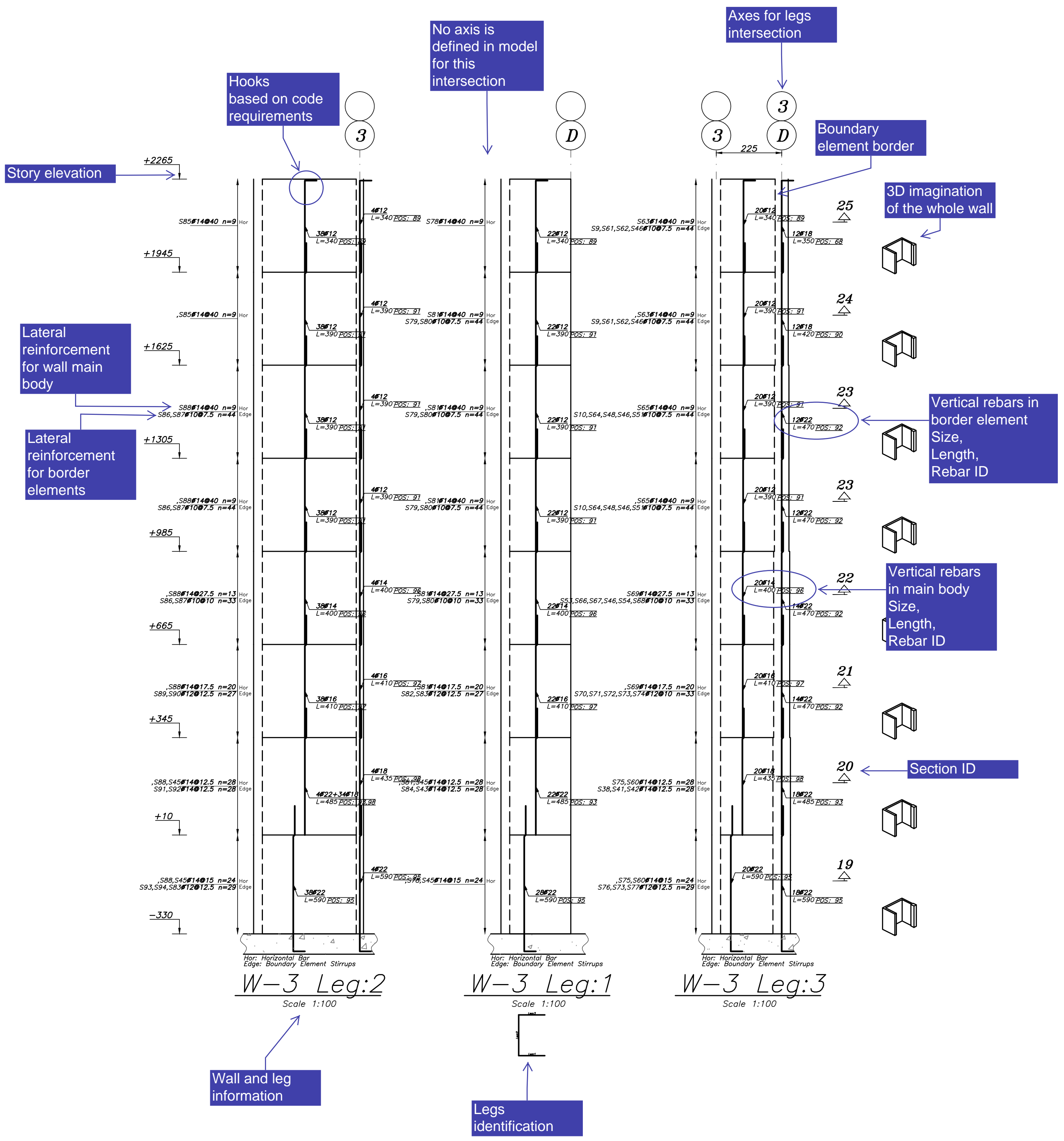
## IX. Shear Wall Detailing Samples

Please see detailing sheets in the next six pages:

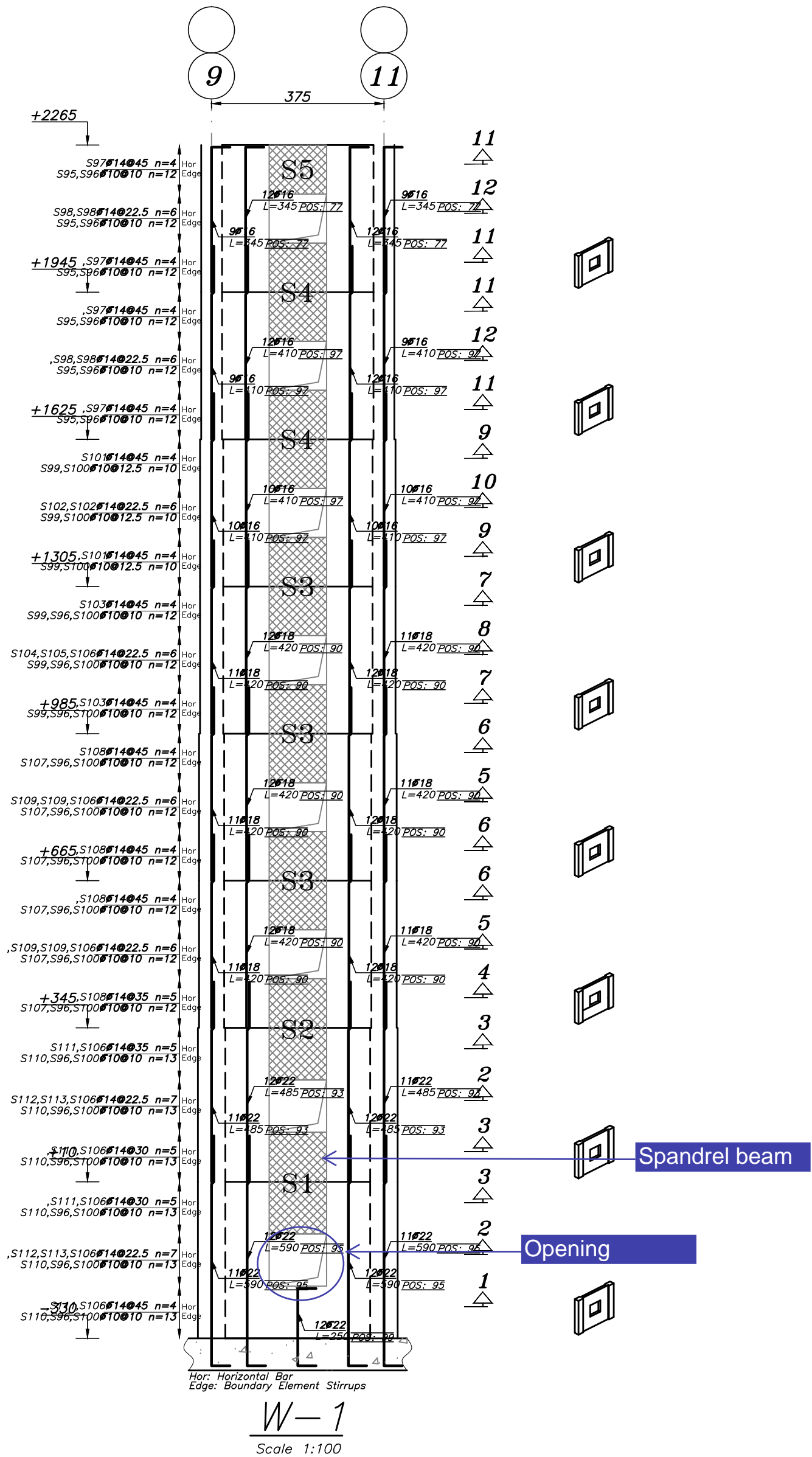
- Shear Wall Layouts
- Shear Wall Legs in Elevation
- Shear Walls with Openings in Elevation
- 3-Leg Shear Wall Cross Sections
- Shear Wall Cross Sections with Openings
- Spandrel Beams



Shear Walls Layout



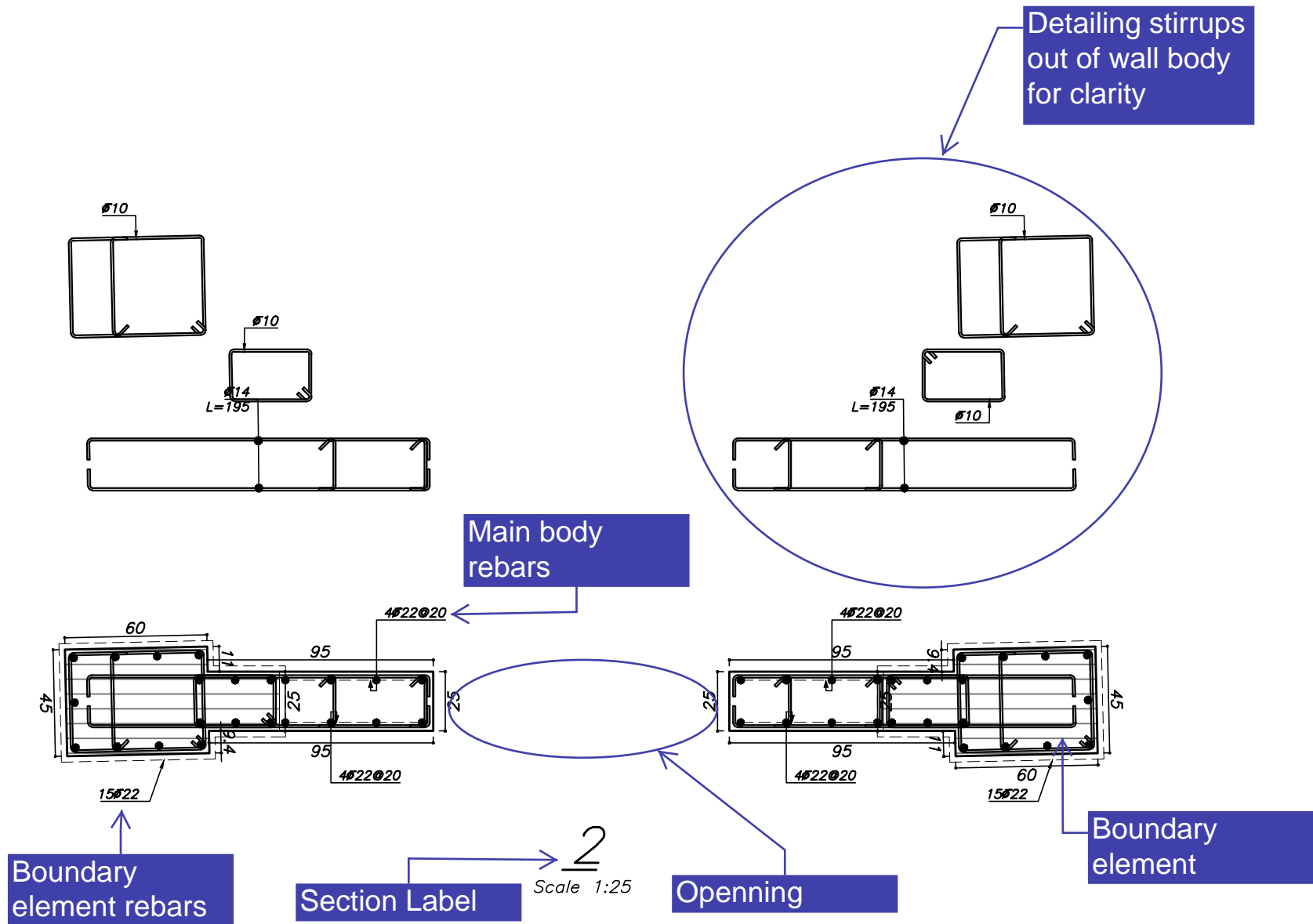
Shear Wall Legs in Elevation



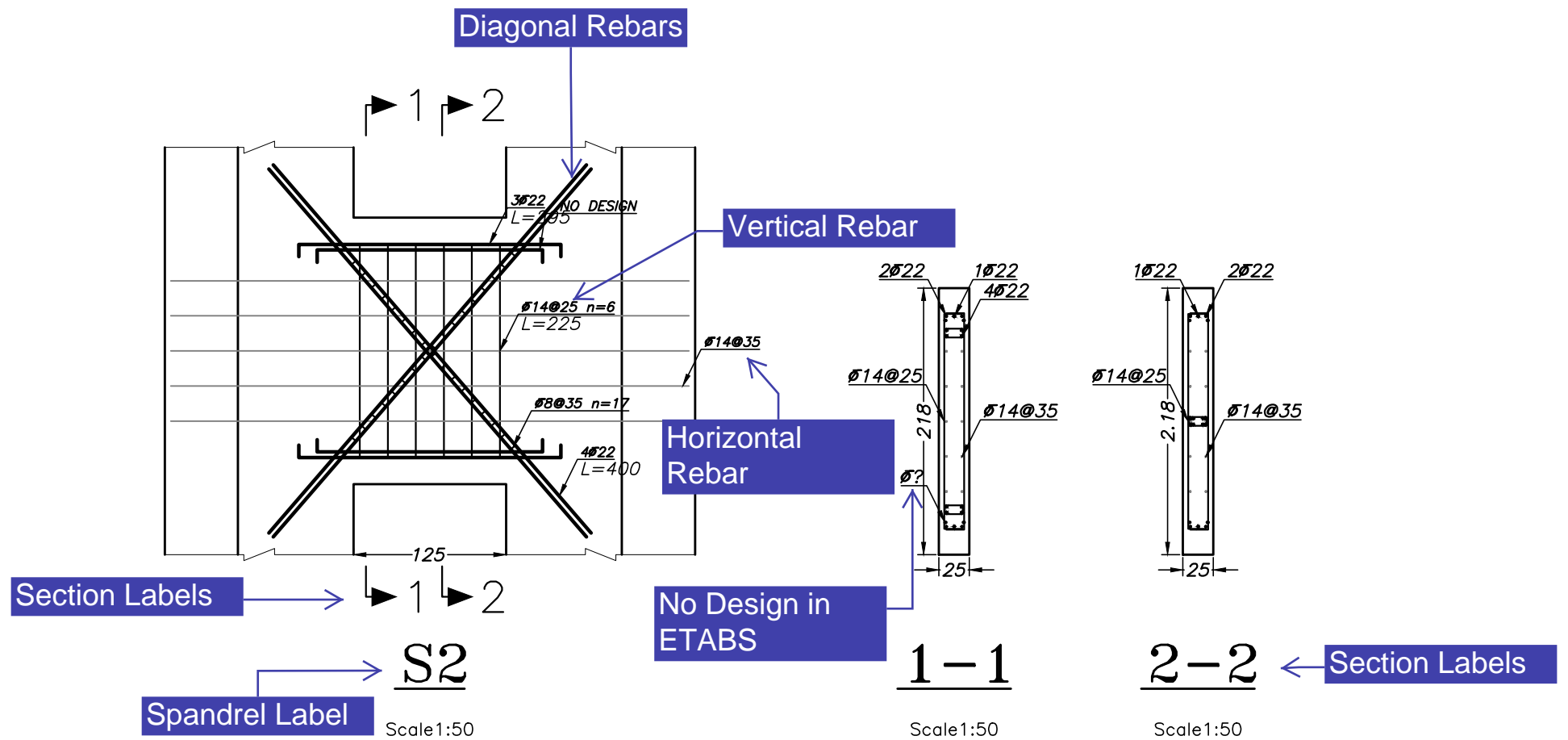
**Shear Wall With Opening in Elevation**







Shear Wall Cross Section with Opening

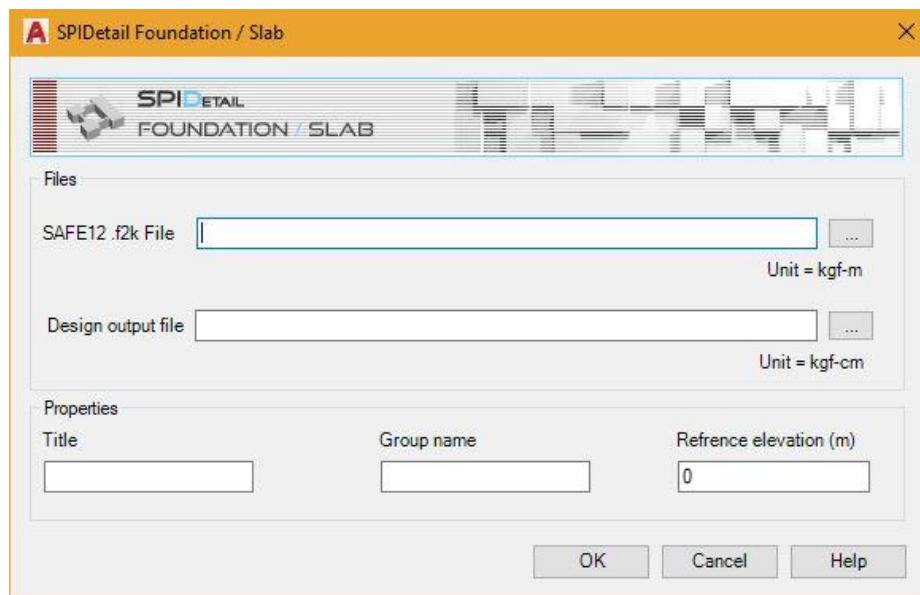


## Spandrel Beam

## X. Foundations/Slabs

Foundations and slabs are detailed thoroughly. Foundation and slabs detailing sheets consists layouts for top and bottom main rebars, top and bottom added rebars, one way and punching shear, cross sections, lift well, isometric view and concrete volume. In addition to the above mentioned, slabs are detailed for caps and drops.

- **Foundation Detailing**



The screenshot shows the 'SPIDETAIL Foundation / Slab' software window. The title bar is orange with a close button (X). The window has a header bar with the SPIDETAIL logo and the text 'FOUNDATION / SLAB'. Below the header, there are two main sections: 'Files' and 'Properties'. The 'Files' section contains two input fields: 'SAFE12 .f2k File' and 'Design output file', each with a browse button (three dots). The 'Properties' section contains three input fields: 'Title', 'Group name', and 'Reference elevation (m)'. The 'Reference elevation (m)' field has the value '0' entered. At the bottom of the window, there are three buttons: 'OK', 'Cancel', and 'Help'.

**Files**

SAFE12 .f2k File  ... Unit = kgf-m

Design output file  ... Unit = kgf-cm

**Properties**

Title  Group name  Reference elevation (m)

OK Cancel Help

- Foundation Detailing (Cont.)

**Auto** Lift well properties

Properties

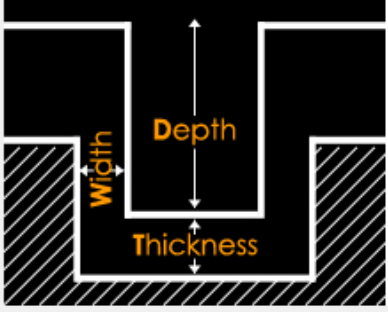
Depth (cm)

Thickness (cm)

Width (cm)

Cover (cm)

Assign



OK Cancel Help

**Auto** Reinforcement

Foundation / Slab

Foundation

Foundation Reinforcement

☒ Typical Uniform Reinforcement

Longitudinal

	Main Bar	Distance (cm)	Added Bar
Top	16	25	18
Bottom	16	25	18

Crossing Bar

☐ Use crossing bar

Bar Size

Distance(cm)

☐ Custom Reinforcement

Strips Reinforcement Panel

Extract

Settings

Apply OK Cancel Help

Lift Well Reinforcement

Bar Size

Distance (cm)

Connection Walls Reinforcement

Bar Size

Distance (cm)

Connecting Beams Reinforcement

Number of Main Bars

Main Bar Size

Added Bar Size

Max. Joining gap of Beams (cm)

- Foundation Detailing (Cont.)

**Strips Reinforcement Panel**

Current Fond/Slab: fond Title: Foundation

Group by: Layer ▲

Strip			Top Reinf.			Bottom Reinf.			Crossing Bar		
ID	Layer	Type	Main	Dist.	Added	Main	Dist.	Added	Use	Size	Dist.
+ Layer: A											
- Layer: B											
CSB5	B	COLUMN									
49	B	COLUMN									
48	B	COLUMN									
47	B	COLUMN									
45	B	COLUMN									

Edit Table

5 row(s) Selected

Apply OK Cancel Help

**Edit strips reinforcement**

Longitudinal

	Main Bar	Distance(cm)	Added Bar
Top	16	25	18
Bottom	16	25	18

Crossing bar

☐ Use crossing bar

Bar Size: 14

Distance(cm): 30

OK Cancel Help

**Plan Drafting**

Foundation / Slab

Foundation

Foundation

Layout

Rebar Location

☒ Top Bars

☐ Bottom Bars

Strip Direction

☒ Layer A

☒ Layer B

☒ Other

Rebar Type

☐ Main Bar

☒ Added Bar

Scale: 100

Connecting beams' reinforcement layer: A

Drafting

Flexural Reinforcement

Shear Reinforcement

Punching Reinforcement

3D View

Viewing angle from

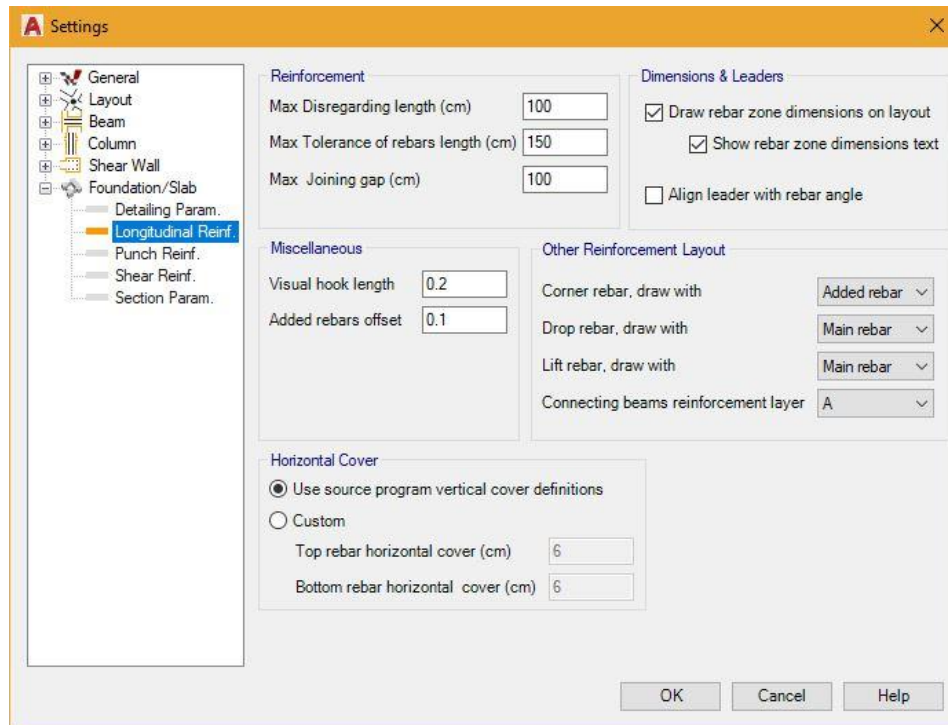
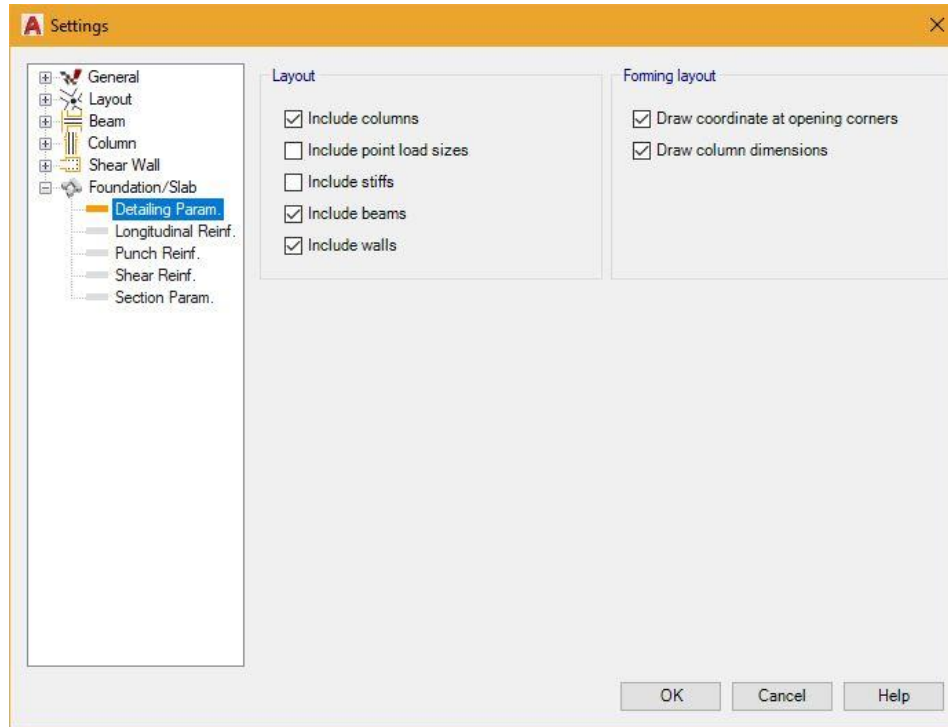
X Axis: 300

XY Plan: 30

3D View

Settings OK Cancel Help

- **Foundation Settings**



- Foundation Settings (Cont.)

**Settings**

**Punch Reinforcement**

Priority to increase reinforcement

☒ By Distance ☒ By Legs ☒ By Size

Up Down

Min. distance (cm) 5

Distance round off (cm) 2.5

fys (kg/cm<sup>2</sup>) 3000

Reinforcement type STIRRUP

Rebar size(s)

☐ 6 ☐ 8 ☐ 10 ☒ 12 ☐ 14 ☐ 15 ☐ 16 ☐ 18 ☐ 20

Scale

Punch detail scale 1: 25

OK Cancel Help

**Settings**

**Scale**

Horizontal scale 1: 25

Vertical scale 1: 25

**Detailing Parameters**

Lean concrete thickness (cm) 10

Wall thickness (cm) 50

Rebar size factor 1.5

Dimension offset 0.8

**Miscellaneous**

Min. clear distance of rebars (cm) 10

**Layout**

☒ Draw axes

☒ Draw columns

Column visual height 0.8

**Visual Hook Length**

Slabs (cm) 10

Foundations (cm) 20

Connection walls (cm) 10

Lifts (cm) 10

OK Cancel Help

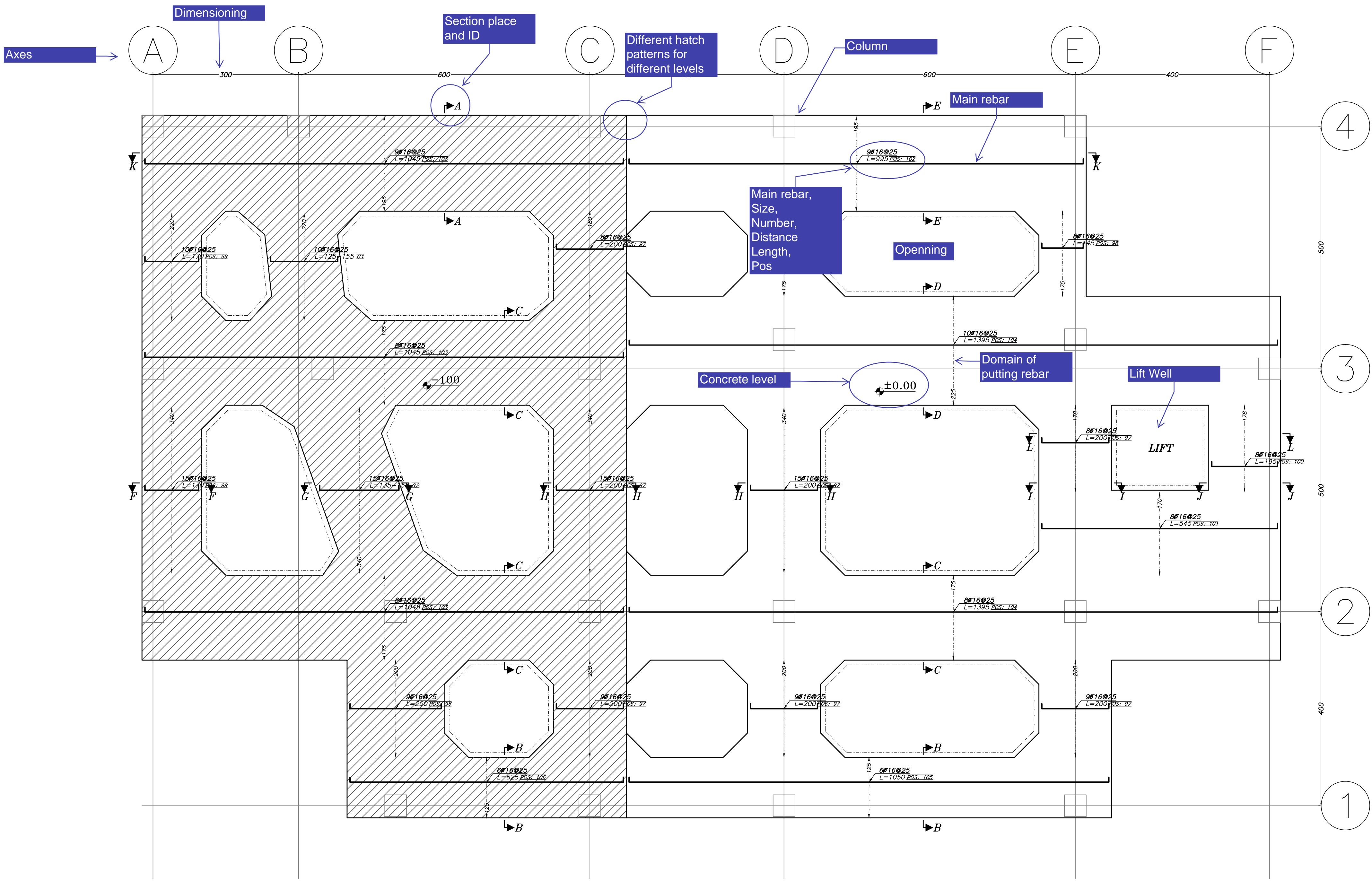
---

## XI. Foundation Detailing Samples

Please see detailing sheets on the next three pages:

- Foundation Layouts for Main and Added Rebars
- One Way and Punching Shear Reinforcement
- Other Foundation Detailings

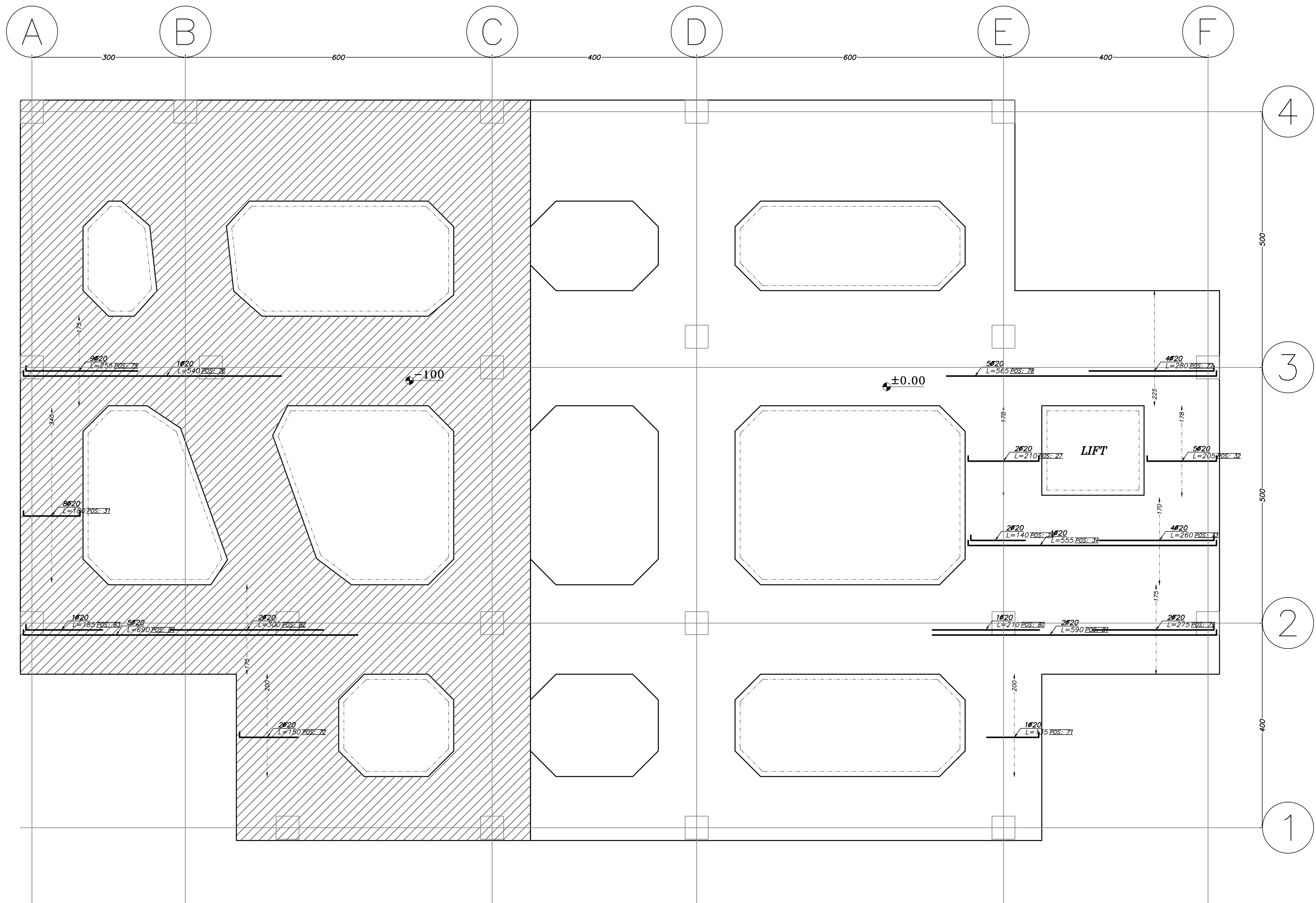




*Foundation Main Bars (Top)*

Scale 1:50

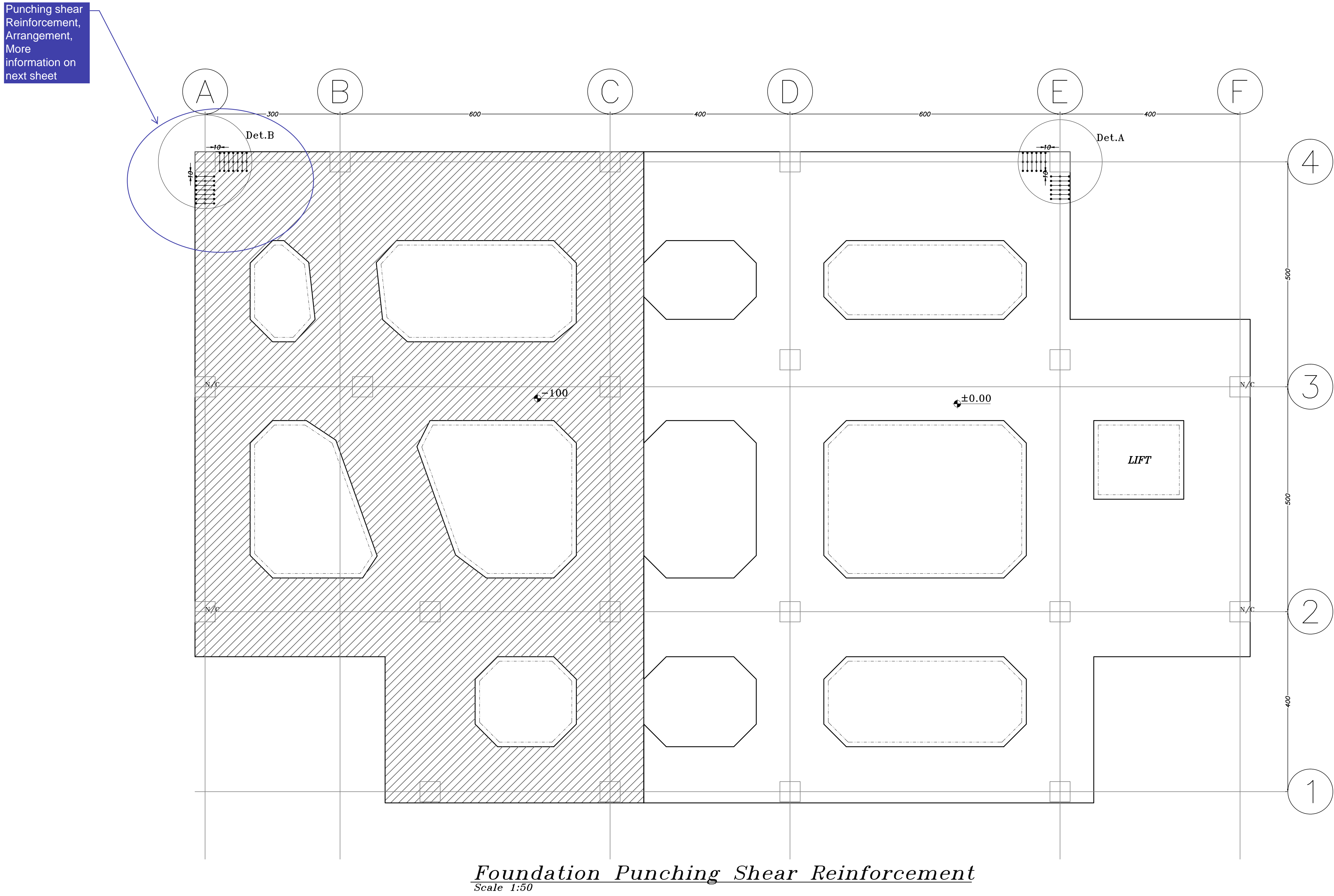
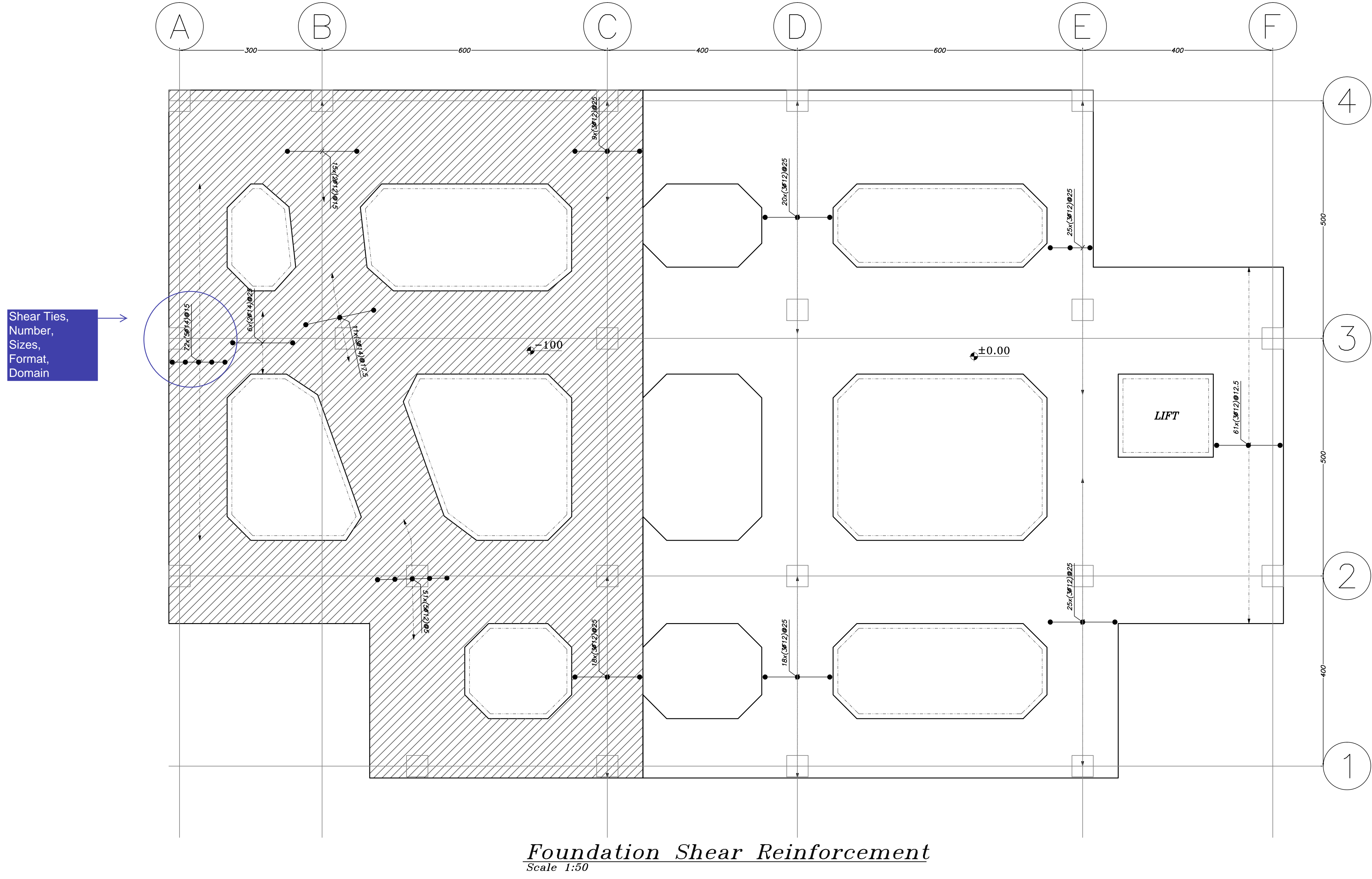
Layout information



*Foundation Added Bars (Top)*

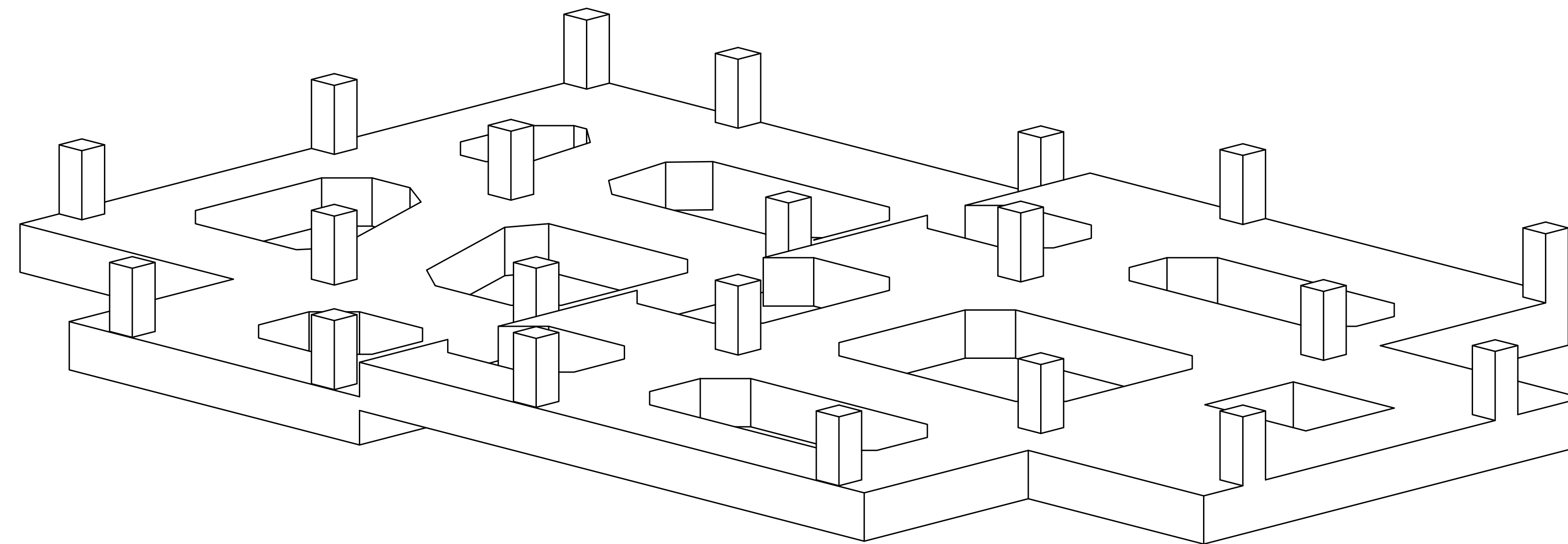
Scale 1:50

Foundation Layout for Main and Added Rebars



One Way and Punching Shear Reinforcement

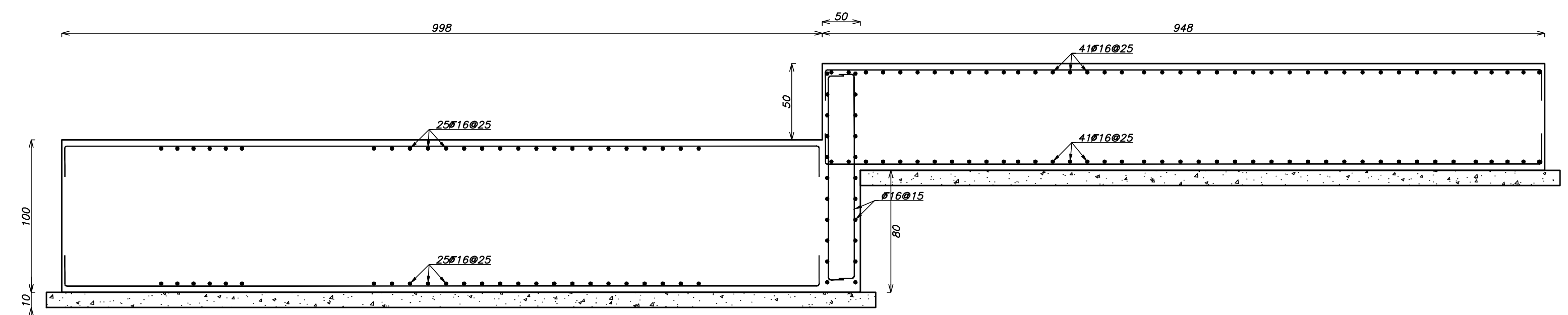




3D Isometric  
view of  
foundation

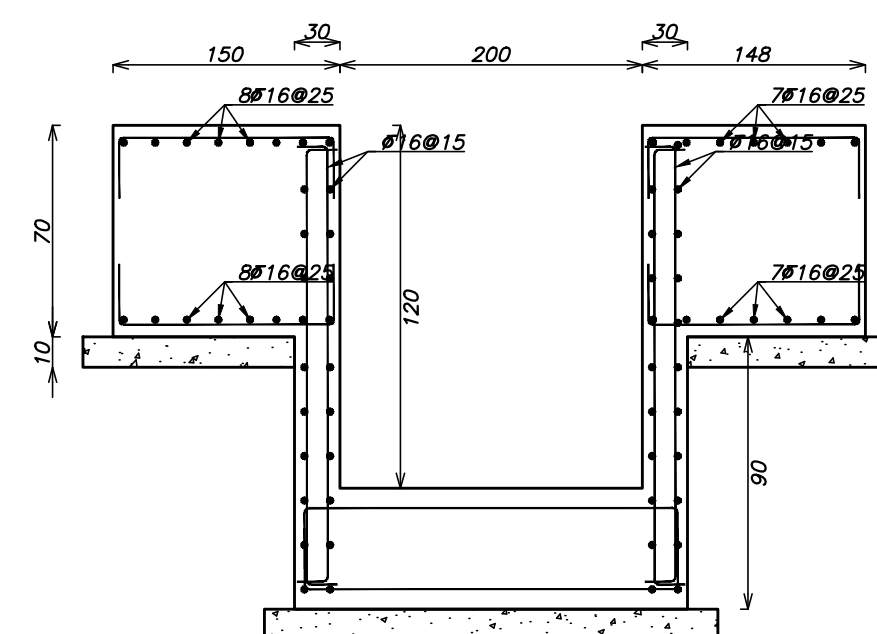
*Foundation 3D-View*  
Concrete Volume : 155.7 m3

Section of  
foundation with  
different surface  
level



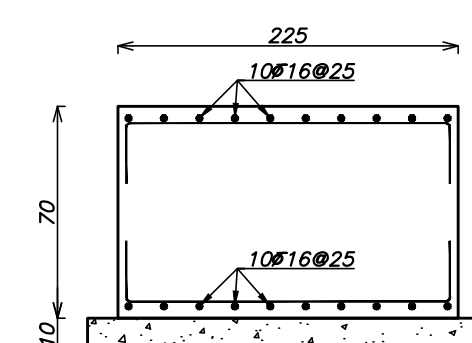
*Section K-K*  
H Scale : 1:50  
V Scale : 1:25

Lift well section



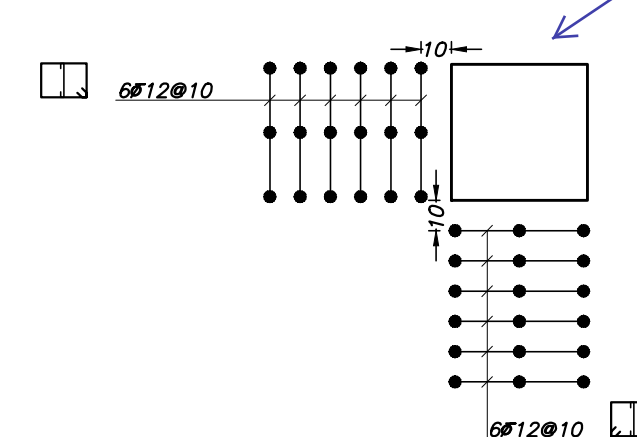
*Section L-L*  
H Scale : 1:50  
V Scale : 1:25

Generic section  
of foundation

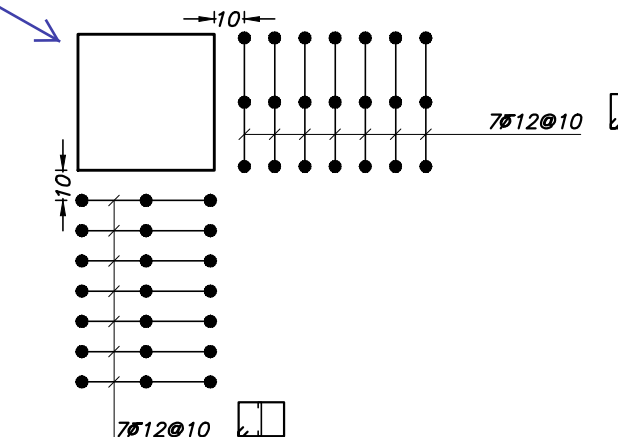


*Section D-D*  
H Scale : 1:50  
V Scale : 1:25

Detail of stirrups  
and ties for  
punching shear



*Det.A*  
Scale: 1:25



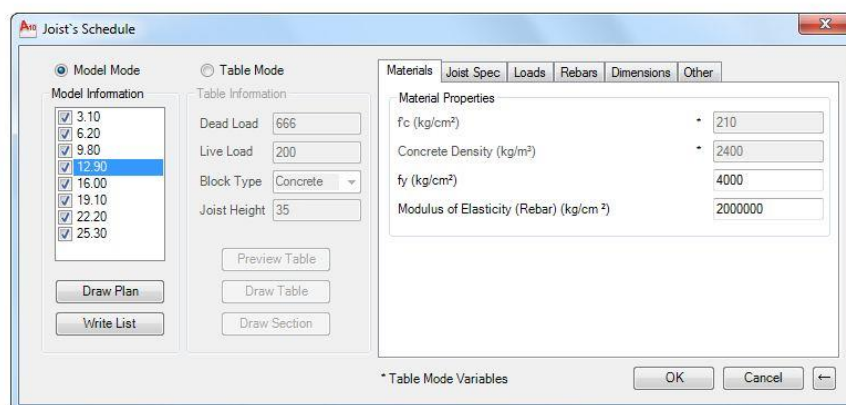
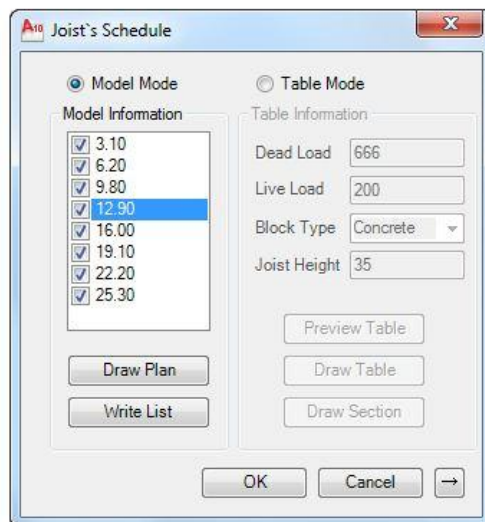
*Det.B*  
Scale: 1:25

[More Detalings for Foundation](#)

## XII. Joists

All joists in the project are designed and detailed automatically. Required parameters are set through dialog boxes. Detailings consist of a base layout representing all project joists. Each joist has an ID and is detailed in a table containing project joist information. It is also possible to make a table for joists independent of the project.

### • Joists Settings



- Joists Settings (Cont.)

**Joist's Schedule**

☐ Model Mode ☒ Table Mode

**Model Information**

3.10  
6.20  
9.80  
12.90  
16.00  
19.10  
22.20  
25.30

Draw Plan  
Write List

**Table Information**

Dead Load 666  
Live Load 200  
Block Type Concrete  
Joist Height 35

Preview Table  
Draw Table  
Draw Section

**Materials** **Joist Spec** **Loads** **Rebars** **Dimensions** **Other**

Joist Spec (cm)  
Slab Depth (tc) 5  
Deck Depth (hr) 30  
Web Width (Bw) 12.5  
Block Type Concrete

\* Model Mode Variables

OK Cancel

**Joist's Schedule**

☐ Model Mode ☒ Table Mode

**Model Information**

3.10  
6.20  
9.80  
12.90  
16.00  
19.10  
22.20  
25.30

Draw Plan  
Write List

**Table Information**

Dead Load 666  
Live Load 200  
Block Type Concrete  
Joist Height 35

Preview Table  
Draw Table  
Draw Section

**Materials** **Joist Spec** **Loads** **Rebars** **Dimensions** **Other**

**Loads (kg/m²)**

☒ Calculate Dead Load  
☐ Custom Dead Load 550  
Live Load 200

**Calculate Dead Load**

Walls (kg/m²) 100  
Flooring (kg/m²) 140  
Others (kg/m²) 50  
Block Length (cm) 20  
Block Width (cm) 50  
Block Weight (kg) 14  
Number of Block (1/m²) 8  
Calculated Dead (kg/m²) 666

List of Live Loads (Iranian Cod)

\* Model Mode Variables

OK Cancel

**Joist's Schedule**

☒ Model Mode ☐ Table Mode

**Model Information**

3.10  
6.20  
9.80  
12.90  
16.00  
19.10  
22.20  
25.30

Draw Plan  
Write List

**Table Information**

Dead Load 666  
Live Load 200  
Block Type Concrete  
Joist Height 35

Preview Table  
Draw Table  
Draw Section

**Materials** **Joist Spec** **Loads** **Rebars** **Dimensions** **Other**

**Rebars (mm)**

☒ Main Rebar Size  
☐ Additional Rebar Size  
☐ Top Rebar Size  
☐ Negative Rebar Size  
☐ Stirrup Rebar Size  
☐ Tie Beam Rebar Size

6  
8  
10  
12  
14  
16  
18  
20  
22  
25  
28  
32

\* Table Mode Variables

OK Cancel

- Joists Settings (Cont.)

**Joist's Schedule**

☒ Model Mode ☐ Table Mode

**Model Information**

☒ 3.10  
☒ 6.20  
☒ 9.80  
☒ 12.90  
☒ 16.00  
☒ 19.10  
☒ 22.20  
☒ 25.30

**Table Information**

Dead Load: 666  
 Live Load: 200  
 Block Type: Concrete  
 Joist Height: 35

**Materials | Joist Spec | Loads | Rebars | Dimensions | Other**

**Dimensions**

Minimum Depth (Subject 9) L / 20  
 Minimum Joist Length (m) \* 1  
 Maximum Joist Length (m) \* 8  
 Joist Length Increasing Step (m) \* 0.25  
 Bottom Cover (cm) 2.5  
☐ Minimum Joist Length to Use Double Joist (m) 6  
☒ Use double joists automatically in case of insufficient depth  
☐ Never use double joists

\* Table Mode Variables

**Joist's Schedule**

☒ Model Mode ☐ Table Mode

**Model Information**

☒ 3.10  
☒ 6.20  
☒ 9.80  
☒ 12.90  
☒ 16.00  
☒ 19.10  
☒ 22.20  
☒ 25.30

**Table Information**

Dead Load: 666  
 Live Load: 200  
 Block Type: Concrete  
 Joist Height: 35

**Materials | Joist Spec | Loads | Rebars | Dimensions | Other**

**Other Parameters**

Allowable Long Term Deflection (cm) 5  
 Mainbar Extension Length 25  
 Joist (Main and Top bars) Length Round Off (cm) 10  
 Rebar (Negative and Added bars) Length Round Off (cm) 5  
 Stirrup Step Round Off (cm) 1  
☒ Calculate Long-Term Deflection

**Draw List Parameters**

Number of Pos Per Table 10

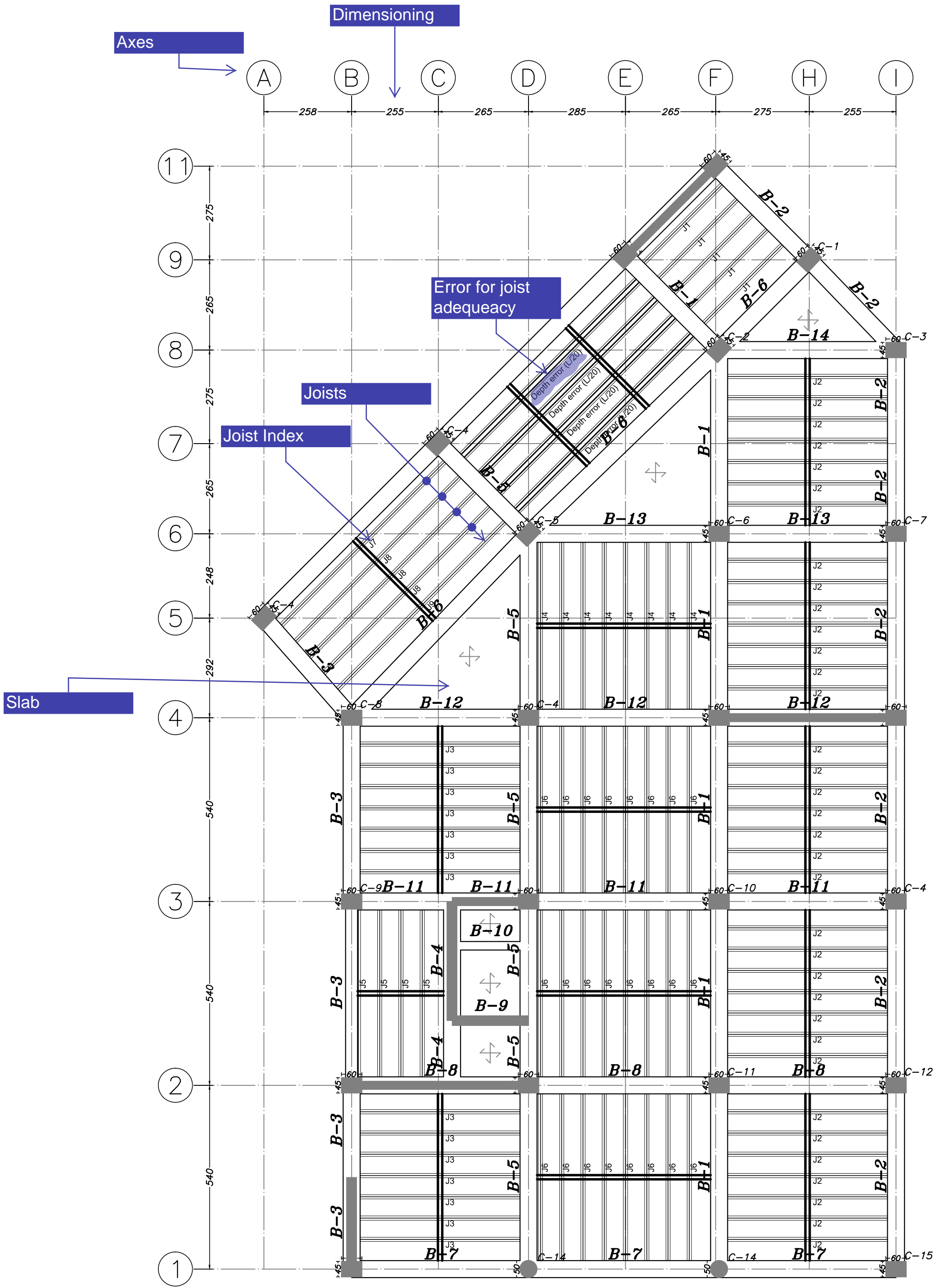
\* Table Mode Variables

---

## XIII. Joists Design and Detailing Samples

Please see detailing sheets on the next three pages:

- Joist Layouts
- Project Joist Table
- General Joist Table



Joist Layout



Joist Table *** Caution: some of joist poses have error. ***													
<div><div><div><div><div><math>f'c = 210\text{ kg/cm}^2</math></div><div><math>F_y = 4000\text{ kg/cm}^2</math></div><div><math>H_r = 30\text{ cm}</math></div><div><math>T_c = 5\text{ cm}</math></div><div><math>S_r = 62.5\text{ cm}</math></div><div><math>B_w = 16\text{ cm}</math></div><div><math>DL = 514\text{ kg/m}^2</math></div><div><math>LL = 0\text{ to }350\text{ kg/m}^2</math></div></div></div><div></div></div></div>													
Pos	No	Dead	Live	Joist	Type	Bars	Length	Ø6	Ø8	Ø10	Ø12	Ø14	Ø16
J1	5	514	0	3.3 +2 x 0.125	T.B	1Ø10	3.55			17.75			
					S.B	Ø6@16	12.42	62.12					
					M.B	2Ø14	3.55					35.50	
					A.B								
					Negative Bar	N.B	Ø14	0.95				4.75	
J2	35	514	0	4.7 +2 x 0.125	T.B	1Ø10	4.95			173.25			
					S.B	Ø6@16	17.98	629.27					
					M.B	2Ø14	4.95					346.50	
					A.B								
					Negative Bar	N.B	Ø14	1.25				43.75	
J3	14	514	0	4.8 +2 x 0.125	T.B	1Ø10	5.05			70.70			
					S.B	Ø6@16	17.98	251.71					
					M.B	2Ø14	5.05					141.40	
					A.B								
					Negative Bar	N.B	Ø14	1.25				17.50	
J4	8	514	0	4.9 +2 x 0.125	T.B	1Ø10	5.15			41.20			
					S.B	Ø6@16	18.74	149.95					
					M.B	2Ø14	5.15					82.40	
					A.B								
					Negative Bar	N.B	Ø14	1.30				10.40	
J5	4	514	350	5 +2 x 0.125	T.B	1Ø10	5.25			21.00			
					S.B	Ø6@16	18.74	74.98					
					M.B	2Ø14	5.25					42.00	
					A.B	Ø14	1.00					4.00	
					Negative Bar	N.B	Ø14	1.35				5.40	
J6	24	514	0	5 +2 x 0.125	T.B	1Ø10	5.25			126.00			
					S.B	Ø6@16	18.74	449.86					
					M.B	2Ø14	5.25					252.00	
					A.B								
					Negative Bar	N.B	Ø14	1.30				31.20	
J7	1	514	0	6.8 +2 x 0.125	T.B	1Ø12	7.05				7.05		
					S.B	Ø6@16	25.94	25.94					
					M.B	2Ø14	7.05					14.10	
					A.B	Ø14	1.00					1.00	
					Negative Bar	N.B	Ø14	1.75				1.75	
J8	3	514	0	6.9 +2 x 0.125	T.B	1Ø12	7.15				21.45		
					S.B	Ø6@16	26.39	79.18					
					M.B	2Ø14	7.15					42.90	
					A.B	Ø14	1.00					3.00	
					Negative Bar	N.B	Ø14	1.75				5.25	

Joists  
Definitions

Headings

Joist Index

This table consists  
all joists which are  
detailed

Pos	No	Dead	Live	Joist	Type	Bars	Length	Ø6	Ø8	Ø10	Ø12	Ø14	Ø16
J9	1	514	0	7 +2 x 0.125	T.B	1Ø14	7.25					7.25	
					S.B	Ø6@16	26.54	26.54					
					M.B	2Ø14	7.25				14.50		
					A.B	Ø16	1.30					1.30	
	Negative Bar				N.B	Ø14	1.75					1.75	
Total Length (m)							1,749.53	0.00	449.90	28.50	1,108.30	1.30	
Unit Weight (Kg/m)							0.222	0.395	0.617	0.888	1.208	1.578	
Total Weight Of Rebar (Kg)							388.3	0.0	277.4	25.3	1,339.3	2.1	
Total Weight (Kg)							2,032.33						

Totals

Project Joist Table

<div> <div> <math>f'c = 210 \text{ kg/cm}^2</math>  <math>Fy = 4000 \text{ kg/cm}^2</math>  <math>Hr = 30 \text{ cm}</math>  <math>Tc = 5 \text{ cm}</math>  <math>Sr = 62.5 \text{ cm}</math>  <math>Bw = 12.5 \text{ cm}</math>  <math>DL = 700 \text{ kg/m}^2</math>  <math>LL = 200 \text{ kg/m}^2</math> </div> <div> </div> </div>										
Span	M.B	M.L	A.B	A.L	T.B	S.B	N.B	N.L	Tie	Comment
1.00	2 $\phi$ 14	1.25	—	—	1 $\phi$ 10	$\phi$ 6@16	1 $\phi$ 14	0.50	—	
1.25	2 $\phi$ 14	1.50	—	—	1 $\phi$ 10	$\phi$ 6@16	1 $\phi$ 14	0.55	—	
1.50	2 $\phi$ 14	1.75	—	—	1 $\phi$ 10	$\phi$ 6@16	1 $\phi$ 14	0.60	—	
1.75	2 $\phi$ 14	2.00	—	—	1 $\phi$ 10	$\phi$ 6@16	1 $\phi$ 14	0.65	—	
2.00	2 $\phi$ 14	2.25	—	—	1 $\phi$ 10	$\phi$ 6@16	1 $\phi$ 14	0.70	—	
2.25	2 $\phi$ 14	2.50	—	—	1 $\phi$ 10	$\phi$ 6@16	1 $\phi$ 14	0.75	—	
2.50	2 $\phi$ 14	2.75	—	—	1 $\phi$ 10	$\phi$ 6@16	1 $\phi$ 14	0.80	—	
2.75	2 $\phi$ 14	3.00	—	—	1 $\phi$ 10	$\phi$ 6@16	1 $\phi$ 14	0.85	—	
3.00	2 $\phi$ 14	3.25	—	—	1 $\phi$ 10	$\phi$ 6@16	1 $\phi$ 14	0.90	—	
3.25	2 $\phi$ 14	3.50	—	—	1 $\phi$ 10	$\phi$ 6@16	1 $\phi$ 14	0.95	—	
3.50	2 $\phi$ 14	3.75	—	—	1 $\phi$ 10	$\phi$ 6@16	1 $\phi$ 14	1.00	—	
3.75	2 $\phi$ 14	4.00	—	—	1 $\phi$ 10	$\phi$ 6@16	1 $\phi$ 14	1.05	—	
4.00	2 $\phi$ 14	4.25	—	—	1 $\phi$ 10	$\phi$ 6@16	1 $\phi$ 14	1.10	1x2 $\phi$ 10	
4.25	2 $\phi$ 14	4.50	1 $\phi$ 14	1.00	1 $\phi$ 10	$\phi$ 6@16	1 $\phi$ 14	1.20	1x2 $\phi$ 12	
4.50	2 $\phi$ 14	4.75	1 $\phi$ 14	1.00	1 $\phi$ 10	$\phi$ 6@16	1 $\phi$ 14	1.25	1x2 $\phi$ 12	
4.75	2 $\phi$ 14	5.00	1 $\phi$ 14	1.00	1 $\phi$ 10	$\phi$ 6@16	1 $\phi$ 14	1.30	1x2 $\phi$ 12	
5.00	2 $\phi$ 14	5.25	1 $\phi$ 14	1.00	1 $\phi$ 10	$\phi$ 6@16	1 $\phi$ 14	1.40	1x2 $\phi$ 12	
5.25	2 $\phi$ 14	5.50	1 $\phi$ 16	1.30	1 $\phi$ 10	$\phi$ 6@16	1 $\phi$ 14	1.45	1x2 $\phi$ 14	
5.50	2 $\phi$ 14	5.75	1 $\phi$ 18	1.55	1 $\phi$ 12	$\phi$ 6@16	1 $\phi$ 14	1.50	1x2 $\phi$ 14	
5.75	2 $\phi$ 16	6.00	1 $\phi$ 16	1.30	1 $\phi$ 12	$\phi$ 6@16	1 $\phi$ 14	1.55	1x2 $\phi$ 14	
6.00	2 $\phi$ 16	6.25	1 $\phi$ 18	1.55	1 $\phi$ 12	$\phi$ 6@16	1 $\phi$ 14	1.65	1x4 $\phi$ 12	
6.25	2 $\phi$ 18	6.50	1 $\phi$ 16	1.30	1 $\phi$ 12	$\phi$ 6@16	1 $\phi$ 14	1.70	1x4 $\phi$ 12	
6.50	2 $\phi$ 18	6.75	1 $\phi$ 18	1.55	1 $\phi$ 12	$\phi$ 6@16	1 $\phi$ 14	1.75	1x4 $\phi$ 12	
6.75	2 $\phi$ 20	7.00	1 $\phi$ 16	1.30	1 $\phi$ 12	$\phi$ 6@16	1 $\phi$ 14	1.85	1x4 $\phi$ 12	
7.00	2 $\phi$ 20	7.25	1 $\phi$ 18	1.55	1 $\phi$ 14	$\phi$ 6@16	1 $\phi$ 14	1.90	2x4 $\phi$ 12	
7.25	—	—	—	—	—	—	—	—	—	Depth error (L/20)
7.50	—	—	—	—	—	—	—	—	—	Depth error (L/20)
7.75	—	—	—	—	—	—	—	—	—	Depth error (L/20)
8.00	—	—	—	—	—	—	—	—	—	Depth error (L/20)

This table can be used in any project for joist design with specified parameters

Joist Definitions

General Joist Table

---

## XIV. Stairs

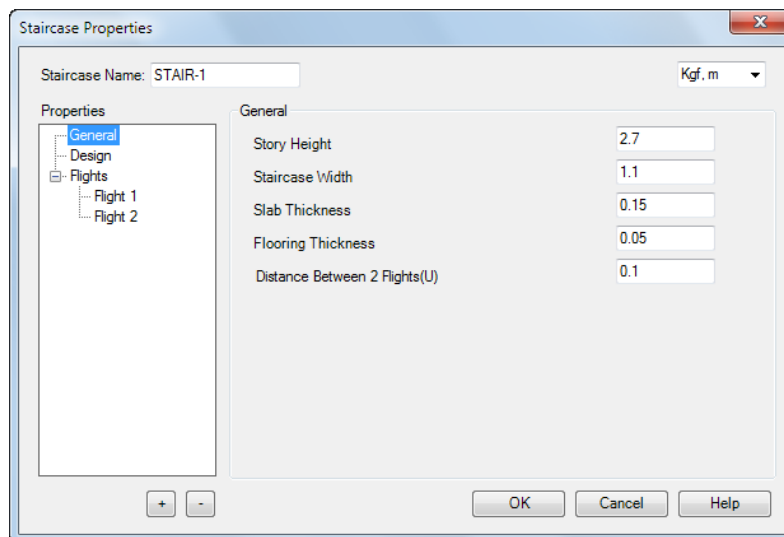
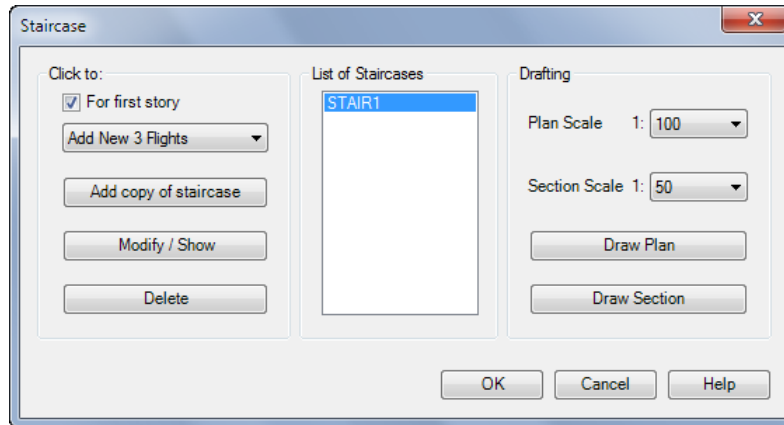
Stairs utility facilitates the design and detailing process. Rectangular staircases are detailed based on their number of flights. Each flight is designed and detailed separately.

### **Special features:**

- free forms of flights are supported
- free flight angles are supported
- any kind of support including footing, hanger, and story level beams can be considered

---

- **Stairs Design and Detailing**



- Stairs Design and Detailing (Cont.)

Staircase Properties

Staircase Name: STAIR-1 Kgf, m

Properties

- General
- Design**
- Flights
  - Flight 1
  - Flight 2

Design

Dead Load: 600

Live Load: 350

F<sub>c</sub>: 2100000

F<sub>y</sub>: 40000000

Cover: 0.04

Main Bar Size: 16

Thermal Bar Size: 16

Hanger Bar Distance: 0.35

OK Cancel Help

Staircase Properties

Staircase Name: STAIR-1 Kgf, m

Properties

- General
- Design
- Flights**
  - Flight 1**
  - Flight 2

Geometry

Steps

N (Number of Steps): 6

Going: 0.3 Rise: 0.18

Span: 1.8 Height: 1.08

Landing

First Landing Length: 1 Elevation: 0

2nd Landing Length: 1 Elevation: 1.08

Flight Direction

☐ Specify on screen

☒ Absolute Angle: 0

☐ Relative Angle: 0

OK Cancel Help

Staircase Properties


Staircase Name:   Kgf, m

Properties

- General
- Design
- Flights**
  - Flight 1
  - Flight 2

Geometry

First Support



End Hanger


Size (BxH): 0.4 x 0.35

Hor. Position: 0

☒ Automatically Calculate

Hanger Height: 1.62

2nd Support

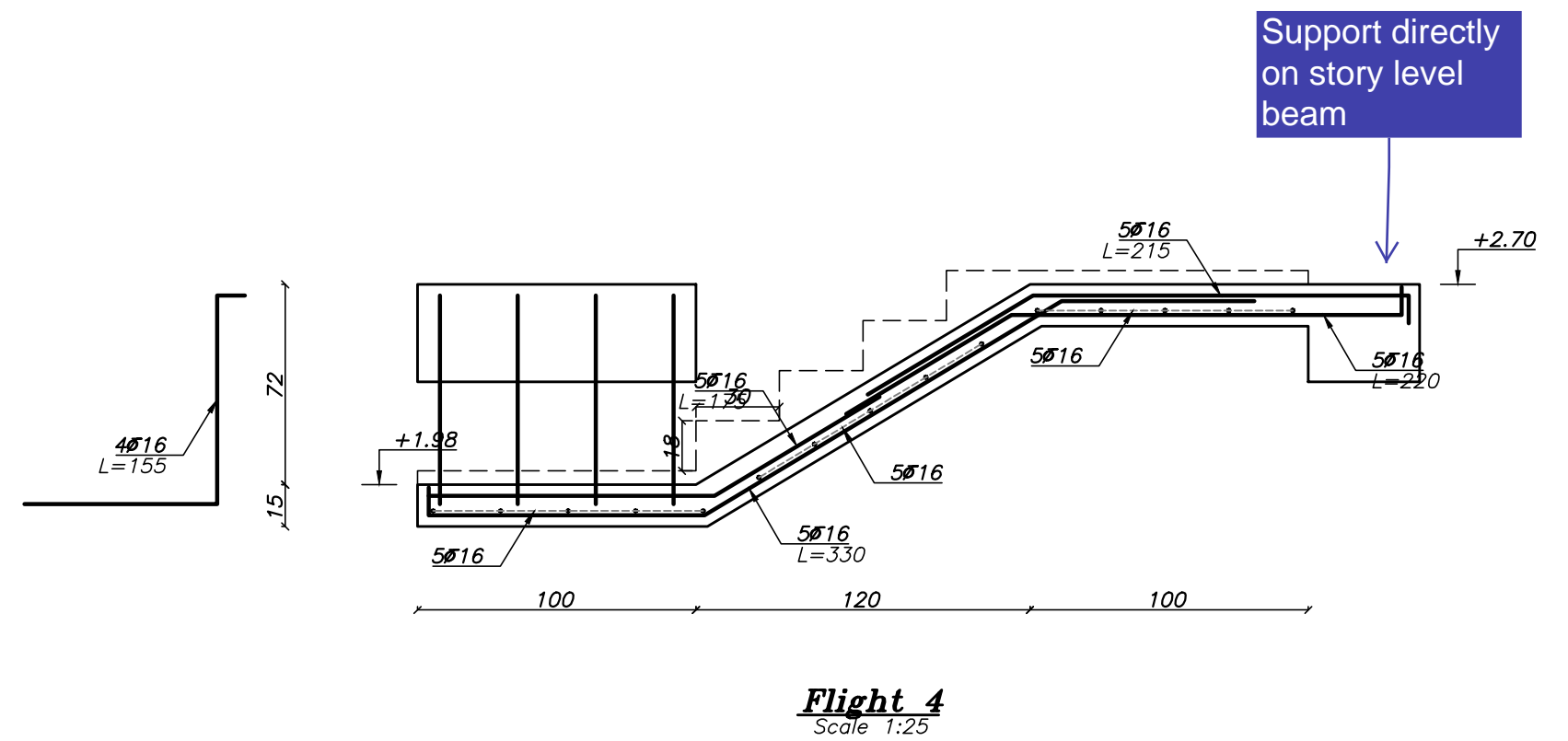
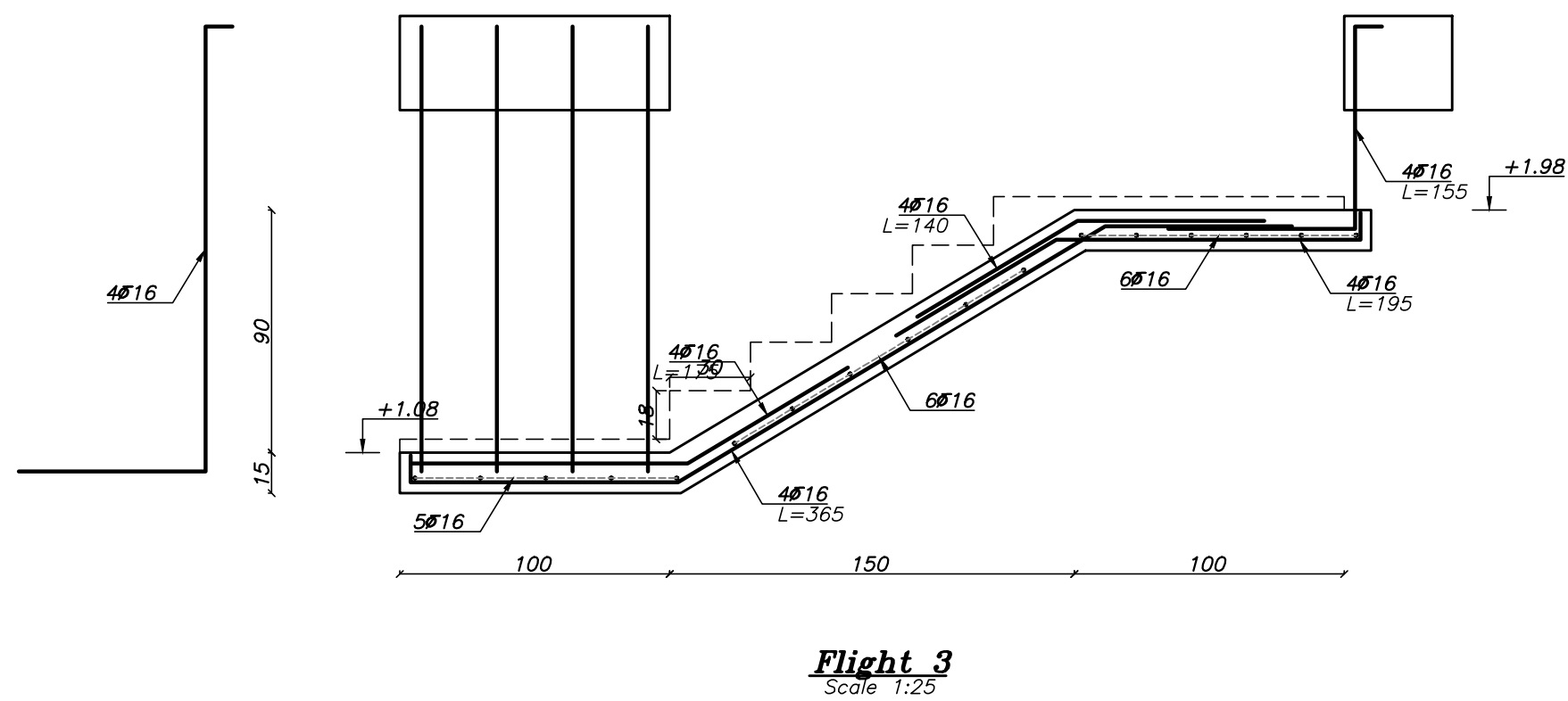
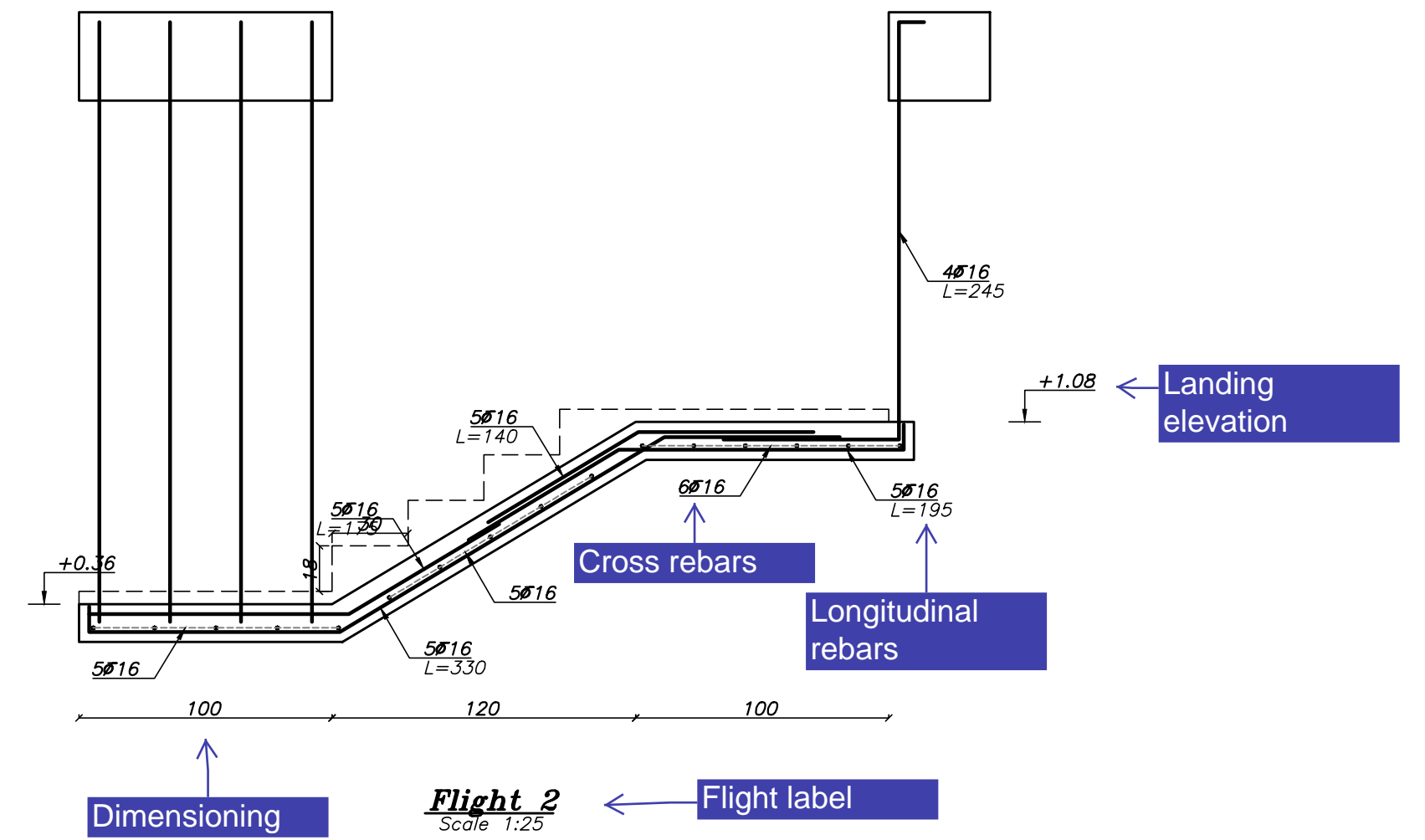
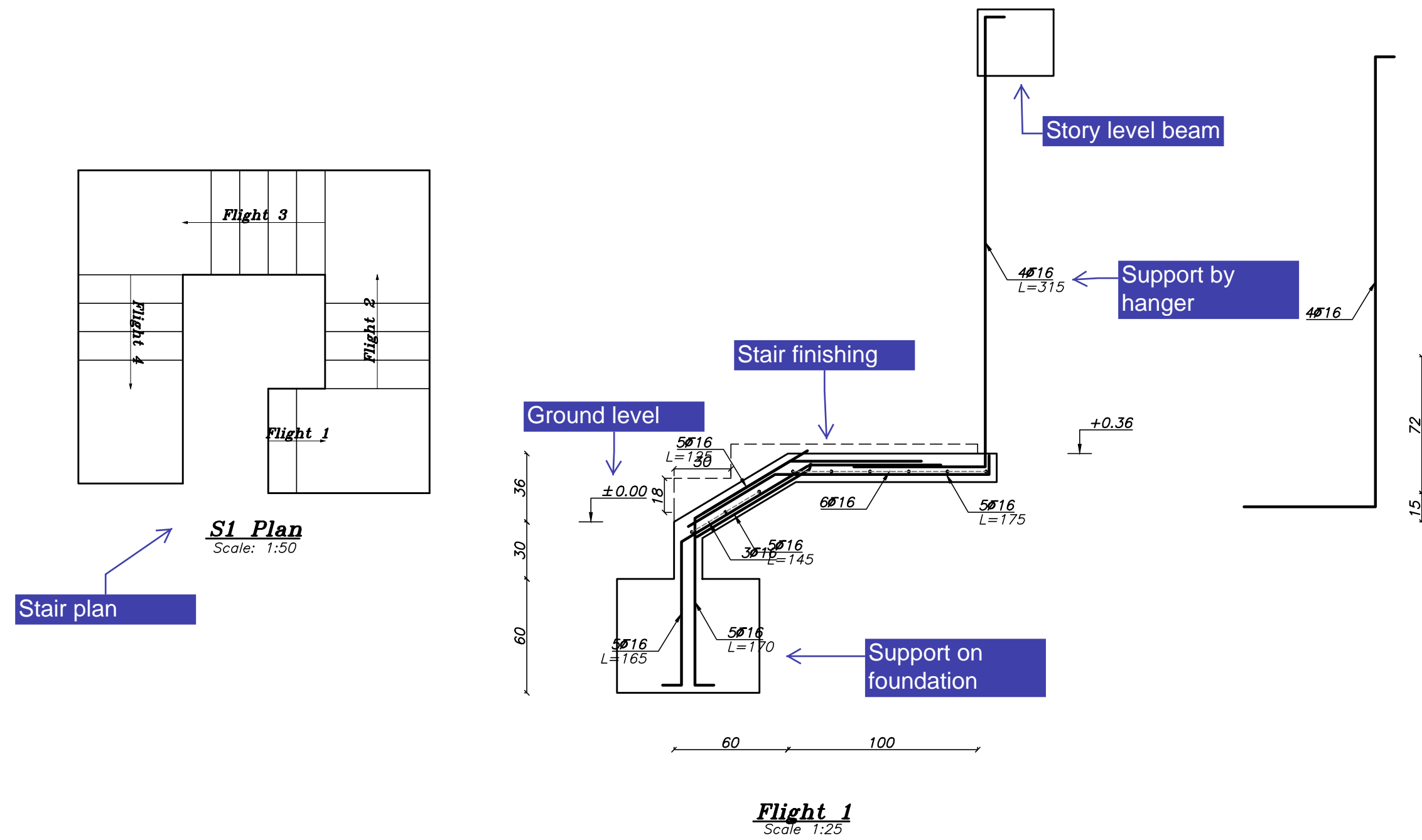


Beam

Size (BxH): 0.4 x 0.35

Hor. Position: 0

OK Cancel Help



## Stairs

---

## XVI. List of Materials

List of materials, including rebars and concrete, is produced for all parts of the structure.

Each ID in list of rebars and stirrups corresponds to a rebar or stirrup revealing its

- Total length
- Hook splice lengths
- Total weight

Other highlights include

- Total weight of each size
- Total weight of all sizes of the project
- Concrete volume and weight for different levels
- Concrete volume and weight for different element types

- List of Rebars and Stirrups

**Bars' Schedule**

**Lists**

Current List:

Make:

Rename:

Delete:

Delete All:

Unit:

**Actions**

Operating on: Default

Put In List:  Time(s) Start at:

Write List

Write Bars

Write Groups List

Cut Order

Remove From List

POS Format

☒ Underlined ☐ Circulated

Length Filter

☐ Set Length Filter During Writing

Minimum Bar Length:

Maximum Bar Length:

**Miscellaneous**

Write All Lists:

Write All Bars:

Reset POS No.:

Steel Density (ton/m<sup>3</sup>):

OK Cancel Help

**Stirrups' Schedule**

**Lists**

Current List:

Make:

Rename:

Delete:

Delete All:

**Actions**

Operating on: Default

Start at:

Put In List:  Time(s)

Unit:

Write List

Write Bars

Remove From List

Filter

☐ Set Filter During Writing

Stirrups Shape:

**Miscellaneous**

Write All Lists:

Write All Bars:

Reset POS No.:

Steel Density (ton/m<sup>3</sup>):

OK Cancel Help



---

- Concrete Weight and Volume

**Concrete Volume Calculation**

**Select Elevation**

- ☒ 0.00
- ☒ 2.60
- ☒ 5.70
- ☒ 8.80
- ☒ 11.90
- ☒ 15.00
- ☒ 17.60

**Calculation Summary**

Action:

Progress:

**Calculation Result**

Concrete Unit Weight:

Content Precision:

Sum Precision:

Total Precision:

☐ Weight Table ☒ Volume Table

---

## XVII. List of Materials Samples

Please see detailing sheets on the next two pages:

- Table of Rebars, Stirrups and Cuts
- Concrete Weight and Volume

Rebar schedule based on rebar ID in detailing

POS	SHAPE	ø (mm)	No.	L(m)	W(kg)	TOTAL W(kg)
68		18	60	3.50	6.94	416.61
77		16	42	3.45	5.41	227.13
88		22	44	4.75	14.08	619.38
89		12	184	3.40	3.00	551.60
90		18	198	4.20	8.33	1649.77
91		12	736	3.90	3.44	2530.87
92		22	260	4.70	13.93	3621.44
93		22	154	4.85	14.37	2213.46
94		16	96	4.25	6.66	639.54
95		22	322	5.90	17.48	5630.12
96		14	84	4.00	4.80	403.24
97		16	166	4.10	6.43	1066.83
98		18	58	4.35	8.63	500.53
99		22	12	2.50	7.41	88.91
Total weight						20159.40

ShearWall Bar Size Schedule

ø	W(kg)
22	12173.30
18	2566.91
12	3082.47
16	1933.50
14	403.24

Rebar schedule based on sizes

Stirrup schedule based on stirrup ID in detailing

POS	SHAPE	ø (mm)	No.	L(m)	W(kg)	TOTAL W(kg)
S1		8	1813	1.73	0.68	1229.29
S2		8	33	1.39	0.54	17.98
S3		8	42	1.43	0.56	23.54
S4		8	113	0.51	0.20	22.60
Total weight						1293.41

Beams Bar Size Schedule

ø	W(kg)
8	1293.41

Stirrup schedule based on sizes

Cutting rebars for minimum waste

For ø16				Unit: m	
Cutting Pattern	Length Pos	Scrap	No.		
		0.05	48		
		0.00	5		
		0.05	1		
		0.35	6		
		0.50	1		
		1.25	1		
		1.30	1		
		1.35	3		
		1.50	1		
		0.10	1		
		3.80	63		
		0.05	1		
		3.90	71		
Total number of required 12.00m			203		
Total Waste Rate (%)			21.74%		

Total Waste (%)  
In actual projects, normally the waste rate is under 10%.  
As only rebars for a story detailed in this project, the waste rate is high.

Table of Rebars, Stirrups and Cuts

Concrete Weight Summary (Ton)				
Elevation	Roof	Column	Wall	Sum
+25.65	16.24	4.15	0.00	20.4
+22.65	231.02	35.87	35.47	302.4
+19.45	269.62	36.03	35.47	341.1
+16.25	269.62	39.06	35.17	343.9
+13.05	269.62	39.21	35.17	344.0
+9.85	269.62	42.85	34.88	347.4
+6.65	269.62	43.64	34.88	348.1
+3.45	269.62	49.50	36.43	355.5
+0.10	228.94	50.80	42.40	322.1
Sum	2,093.9	341.1	289.9	2,725

Concrete Volume Summary (m3)				
Elevation	Roof	Column	Wall	Sum
+25.65	6.77	1.73	0.00	8.5
+22.65	96.26	14.95	14.78	126.0
+19.45	112.34	15.01	14.78	142.1
+16.25	112.34	16.28	14.65	143.3
+13.05	112.34	16.34	14.65	143.3
+9.85	112.34	17.86	14.53	144.7
+6.65	112.34	18.18	14.53	145.1
+3.45	112.34	20.62	15.18	148.1
+0.10	95.39	21.17	17.67	134.2
Sum	872.5	142.1	120.8	1,135

## Concrete Weight and Volume

---

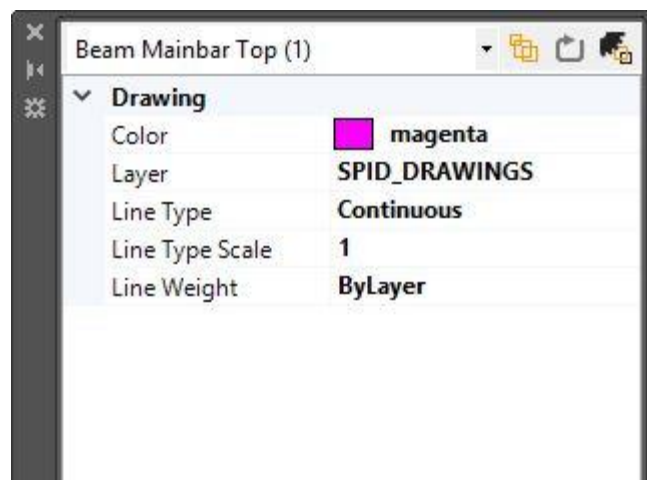
## XVIII. Miscellaneous

These functions are employed to facilitate the detailing process for the user. They include:

- SED to edit previous detailing
- Sheet Manager to prepare detailing sheets
- Overlap Editor to manage rebar overlap
- Make Modular to modularize rebar lengths
- Settings to save and restore software settings
- Report to find out about the procedure which leads to specific part of detailing
- and much more

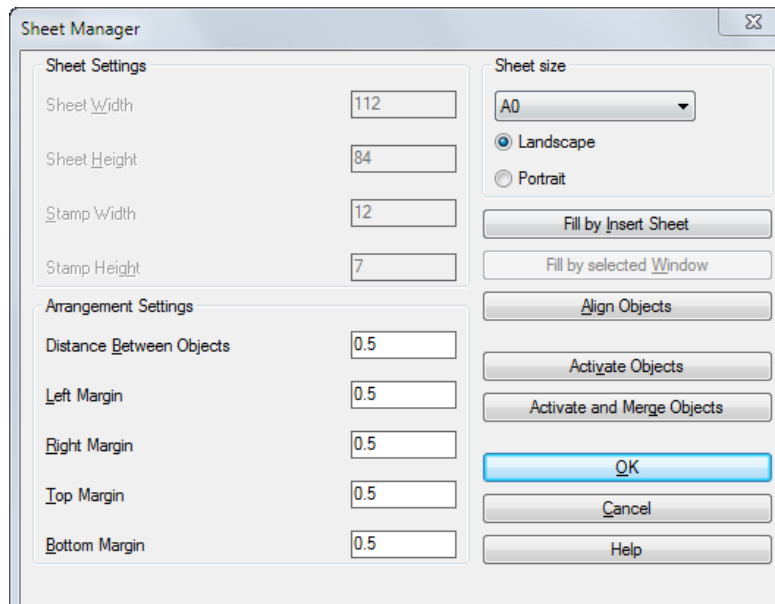
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- SED



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- **Sheet Manager**



The **Sheet Manager** dialog box is used to configure sheet settings. It is divided into two main sections: **Sheet Settings** and **Arrangement Settings**.

**Sheet Settings:**

- Sheet Width:** 112
- Sheet Height:** 84
- Stamp Width:** 12
- Stamp Height:** 7

**Arrangement Settings:**

- Distance Between Objects:** 0.5
- Left Margin:** 0.5
- Right Margin:** 0.5
- Top Margin:** 0.5
- Bottom Margin:** 0.5

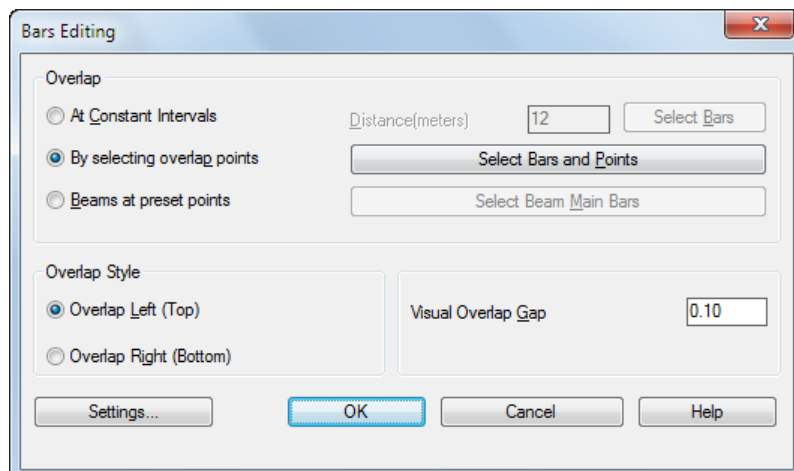
**Sheet size:**

- Sheet size:** A0 (dropdown menu)
- Landscape:** ☒ (selected)
- Portrait:** ☐

**Buttons:**

- Fill by Insert Sheet**
- Fill by selected Window**
- Align Objects**
- Activate Objects**
- Activate and Merge Objects**
- OK** (highlighted in blue)
- Cancel**
- Help**

- **Overlap Editor**



The **Bars Editing** dialog box is used to configure overlap settings. It is divided into two main sections: **Overlap** and **Overlap Style**.

**Overlap:**

- At Constant Intervals:** ☐ (Distance(meters) 12, Select Bars button)
- By selecting overlap points:** ☒ (Select Bars and Points button)
- Beams at preset points:** ☐ (Select Beam Main Bars button)

**Overlap Style:**

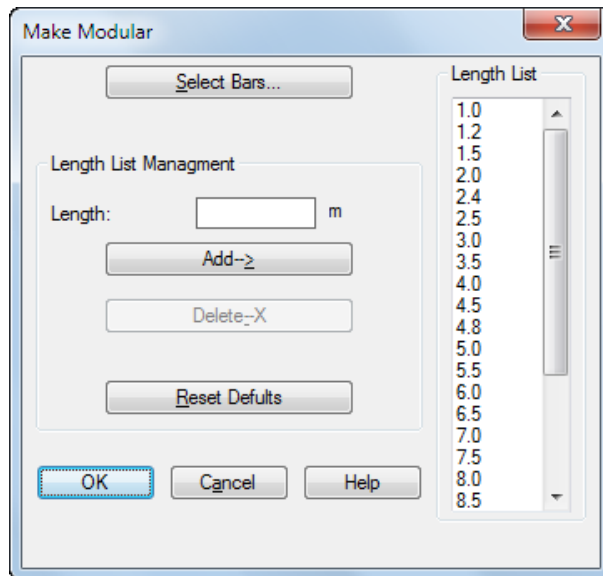
- Overlap Left (Top):** ☒ (Visual Overlap Gap 0.10)
- Overlap Right (Bottom):** ☐

**Buttons:**

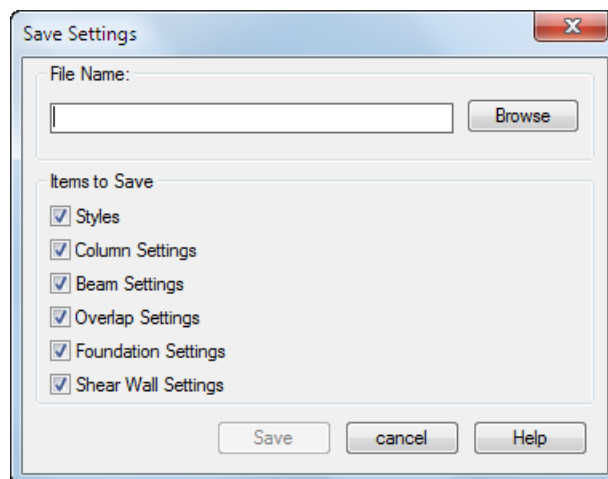
- Settings...**
- OK** (highlighted in blue)
- Cancel**
- Help**

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- **Make Modular**



- **Save Settings and Load Settings**





## ● Beam Stirrup Report

### Stirrups Calculation Process for:

Beam: **B-14** Story: **STORY1** ID: **B25** Position: **Middle** Unit: **kgf-cm**

#### Section Properties

b(Beam Width)	50 cm	Reading from Source program
h(Beam Height)	40 cm	Reading from Source program
Cover	5 cm	Reading From Source Program
d	35 cm	h-Cover
Main Bar	2Ø16+1Ø18	User Defined
F <sub>ys</sub>	3000 kg/cm <sup>2</sup>	Reading from Source program
F' <sub>c</sub>	240 kg/cm <sup>2</sup>	Reading from Source program

#### User Settings

Stirrups calculation mode	Calculated with SPIDetail
Code	ACI
Ductility	Intermediate
S <sub>min</sub>	5.0 cm
Distance Round Off	2.5
Selected Ø	8,10
Max. Num. of Crossties(if need)	5
Priority of Shear calculation	By Distance,By Adding Crossties,By Size
Apply Torsion	Yes
Priority of Torsion calculation	By Distance,By Size

#### Torsion Stirrups Calculation

Current				Rquired		
Ø	S	Leg	A <sub>t</sub> /S (a)	3.5b/F <sub>y</sub> (b)	Output (c)	Result
8	17.5	2	0.057	0.058	0 * 2	OK

Where:

$$if \begin{cases} a > b \\ a > c \end{cases} \Rightarrow Ok$$

#### Shear Stirrups Calculation

Current				Rquired		
Ø	S	Leg	A <sub>v</sub> /S (a')	3.5b/F <sub>y</sub> (b')	Output (c')	Result
8	17.5	2	0.057	0.058	0.06668	N.G
8	15	2	0.067	0.058	0.06668	OK

Where:

$$if \begin{cases} a' - c > b' \\ a' - c > c' \end{cases} \Rightarrow Ok$$

#### Result:

Stirrup Zone length=200 cm

Use: Ø8

S= 15

n=200 / 15 + 1 = 14

=> **Ø8@15cm n=14**

## ● Column Stirrup Report

### Section Properties

Dimension	45x45	Reading from Source program
$\phi_L$	$\phi 18$	Longitudinal Bar Size
X bar	4	Reading from Source program
Y bar	4	Reading from Source program
Cover	5 cm	Reading From Source Program
Stirrups Shape	TIES	Reading from Source program
$F'_c$	240 kg/cm <sup>2</sup>	Reading from Source program
$F_{ys}$	3000 kg/cm <sup>2</sup>	Reading from Source program

### User Settings

Stirrups Calculation Mode	Calculated with SPIDetail
Code	ACI
Ductility	Intermediate
$S_{min}$	5.0 cm
Distance Round Off	2.5
Selected $\phi$	10,12
Priority of Shear calculation	Distance,Size
Minimum $L_0$	45 cm

### Code And Ductility Provisions

$S_{max}$	20-4-2-2-4	$\min \left\{ \frac{a}{2} \text{ or } \frac{b}{2}, 8\phi_L, 24\phi_s, 25cm \right\}$
	12-6-4-1	d/2
	2800	15 cm

### Shear Output

Frame ID	Shear 2-2	Shear 3-3
C21	0	0.053
C17	0	0.053
C14	0.053	0.053
C11	0.053	0.053
C12	0.053	0

### Shear2-2 Calculation Process

Current				Rquired		Result
$\phi$	S	Leg	$A_v/S$ (a)	$3.5b/F_y$ (b)	Output (c)	
10	12.5	3	0.188	0.053	0.053	OK

### Shear3-3 Calculation Process

Current				Rquired		Result
$\phi$	S	Leg	$A_v/S$ (a)	$3.5b/F_y$ (b)	Output (c)	
10	12.5	3	0.188	0.053	0.053	OK

Where:

if  $a > b, c \Rightarrow OK$

### Result:

Stirrup Zone length=50 cm

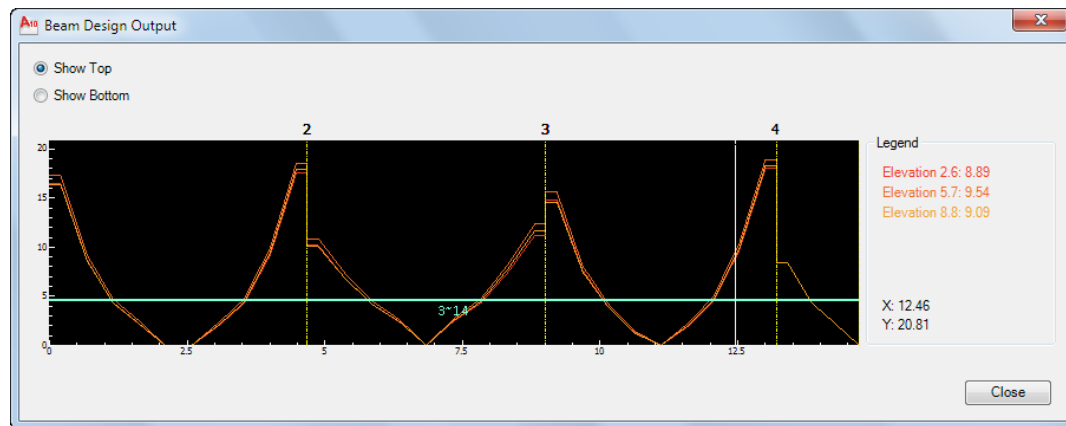
Use:  $\phi 10$

$S=12.5$

$n=50 / 12.5 + 1 = 5$

$\Rightarrow \phi 10 @ 12.5cm \ n=5$

- Longitudinal Rebar Envelope



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## XIX. Support Services

We have Support, Upgrade, and Maintenance (SUM) services explained in License and Services Agreement. During 30 day trial version, you have access to these services. When you buy the software, you may enjoy SUM services for one year for free. After that, you need to buy the services.

Also, in case you run into a problem while using SPIDetail, there are three ways for you to solve the problem.

- Ticketing
- Online chat
- Email [support@spidtech.com](mailto:support@spidtech.com)

Our recommendation is ticketing, but you may choose each of the ways that best suits your needs. In special cases when necessary, we will also schedule a phone call.

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## XX. How to Buy

We suggest enjoying the 30 day trial version before buying SPIDetail. During this period, you have access to all software features and in addition you can experience our support services for free. Meanwhile, if you have any suggestion that we can add to software to cover your engineering needs, our team is ready at your service. Please contact us in this regard.

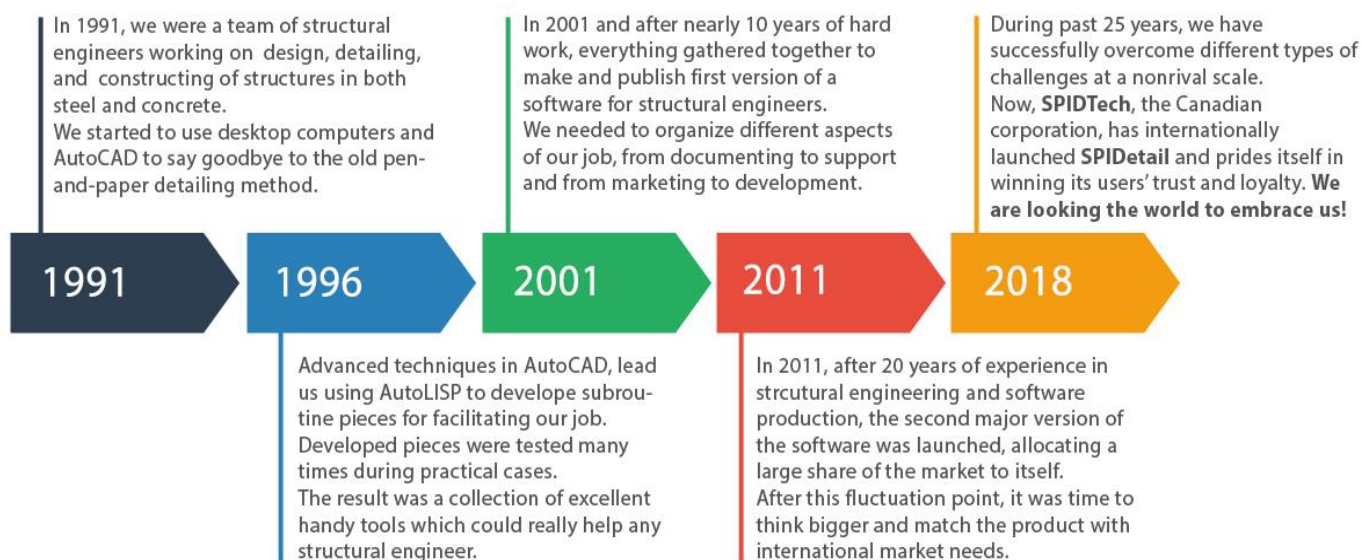
After expiring the trial period, you can decide to buy the life-time version of the software, for which you just pay ONCE, no subscription, no hidden fees, and very reasonable price compared with similar products.

[Test the 30 day free trial \(full version\)](#)

[Buy SPIDetail](#)

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## XXI. Company



Years of continuous research and development culminating at a structural engineering software package, which presents you with what you are looking for at a single click. SPIDetail, now property of SPIDtech Structural Software Inc. [spidtech.com](http://spidtech.com), is the result of more than 200,000 man-hour work. It has thousands of happy users and has been in the market for more than 15 years. Every aspect of this software is checked, tried and tested many times and is now ready for you to enjoy.

But ...

This has not been a simple over-night success for us! Please listen to our story.

### The First Idea (1991-1996)

In 1991, we were a team of structural engineers working on design, detailing, and constructing structures in both steel and concrete. Business was thriving and we had many projects all the year round; the problem, though, was that it took us too much time to detail structural layouts manually, and we needed to consider

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hundreds of different criteria, which was a true nightmare and still we could not imagine that there would even be way to deal with that big problem.

On the other hand, back in 1980s, we started to “enjoy” desktop computers and AutoCAD, the powerful software in engineering, which was the starting point to say goodbye to the old pen-and-paper detailing method. This was a marked improvement for any structural engineer to detail engineering layouts on a computer since it could do the job much faster, more accurately and also neater.

Still better than that, while detailing on AutoCAD, we became familiar with AutoLISP and realized how this unique programming language could exploit AutoCAD for desirable engineering routines. It was then when the idea of using AutoLISP power to simplify structural engineering procedures came to us. This encouraged us to start studying capabilities of AutoLISP at the service of the structural detailer. This was the first time we saw in ourselves that we could produce subroutine pieces to detail a project automatically.

### **Software in Embryo (1996-2001)**

All of our experience as structural engineers used in developing software subroutines. Frankly, our first expectation of the software was something that could just detail structural layouts automatically, and we were super-happy as that dream came true. Our labor time had reduced by more than 80% compared with the manual system.

### **First Version (2001-2011)**

Finally, in 2001 and after nearly 10 years of hard work, we released the first version of the software and could luckily attract many engineers in the field. The more the users, the more the need for developing the software in different areas; therefore, we set out to implement new functionalities and capabilities and better the software both in terms of its functions and its speed.

Following the successful introduction to the market, an explosion in the amount of work came in order to develop the software, support clients and widen the

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market. This effort required employing new experts in different areas and develop based on clients' feedback.

### **SPIDetail to Make the Global Leap (2011-2018)**

In 2011, second major version of the software was released, which allocated a large share of the market to itself.

Luckily, the team has always committed itself to excellence in what it offers its users. Since the successful introduction of this version, we have continued our effort to study code provisions in other parts of the world in order to include them in the software. This would ensure that people in different countries around the globe could also come and use our services.

Preparing the software for the international market required substantial effort because hundreds of areas needed modification to comply with the international standards of structures all around the world. Fortunately, from the first stages of preparation, the software was prepared based on ACI, the most widely used code around the world. This meant the software could be in harmony with most structural engineering codes internationally.

Besides the engineering technical issues, we also needed to prepare our support and maintenance team, which was proficient in both using the software in international and supporting for our valuable clients from all over the world.

In order to enter the global market, there has also been lots of work to take care of in our IT department, website preparation team, legal document preparing team, and content team to prepare all the software media, user manual, tutorial demos, and client contracts. The result of this huge work is now branded as SPIDetail.

### **SPIDetail, a Wise Choice**

SPIDTech, the Canadian corporation, prides itself in winning its users' trust and loyalty internationally. Strong customer protection rules of Canada coupled with total commitment on the part of the company staff have contributed to the



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reliability of this software package. This Leaf from the Land of Maple will definitely live up to your expectations in detailing multi-story concrete structures and taking the burden off your shoulders. Come and join other SPIDetail users in every continent. Start with [enjoying the free 30 day trial.](#)