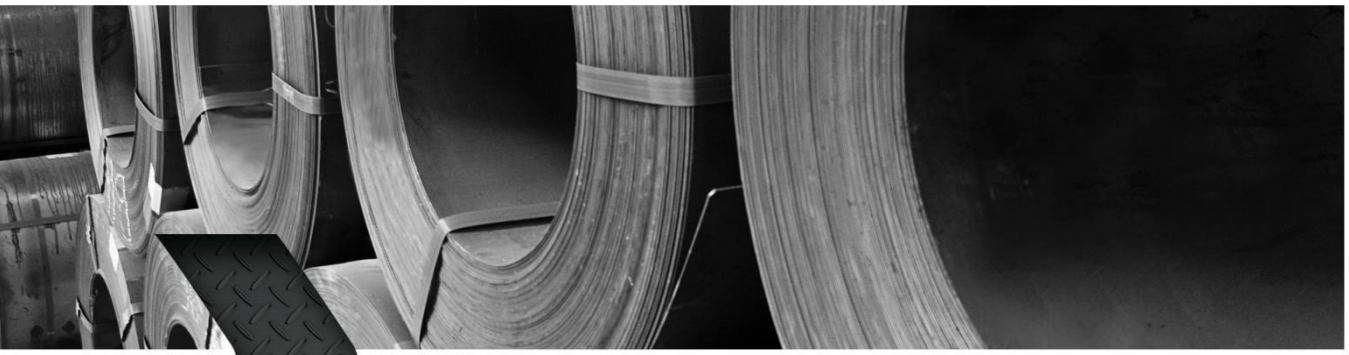
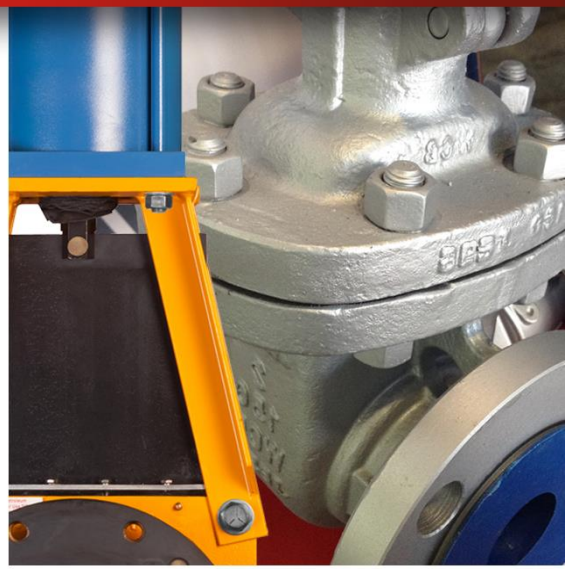
PREFABRICADOS MULTICONS

TÜVRheinland CERTIFICADO

Sistema de Gestión ISO 9001:2015

www.tuv.com ID 9108637565





MultiAceros

FUERTE EN SERVICIO

SOLUCION AUTOMATIZADA PARA LA CONSTRUCCION EN ACERO GALVANIZADO LIVIANO…

MULTICONS, Primera innovación importante después del lanzamiento de perfiles galvanizados livianos hace 20 años.

MULTICONS, se inspira en los siguientes objetivos:

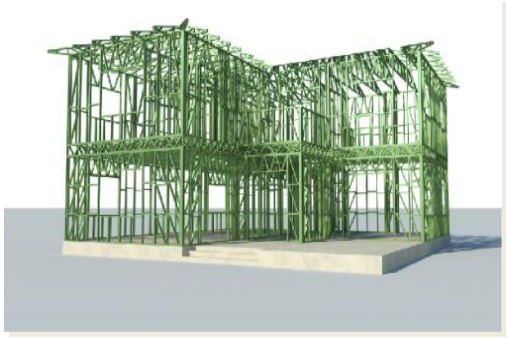
- **Industrialización**; Sistema Constructivo (SC) que automatiza la panelización de los muros interiores y exteriores, pisos, entrepisos, techos, cerchas, escaleras y fachadas.

- **Productividad**; Conseguir que la instalación de las estructuras (Paneles) sea mucho más rápida, precisa y confiable, lo que no sucede hoy con la construcción en Metalcon, ya que es un proceso manual (Artesanal).

- **Calidad**; Los componentes (perfiles) se fabrican milimétricamente y de manera automatizada, obteniendo Paneles/Cerchas/Pisos **perfectos**, que permiten un ensamblaje de las partes de manera inmediata, sin tener que hacer ajustes de ningún tipo… además, conservando su integridad superficial (ya que los tornillos quedan bajo relieve) y logra que todos los perfiles tengan aislación térmica en su interior, para mejorar el performance de las obras en medioambientes exigentes y evitar patologías de las viviendas.

PREFABRICADOS MultiCons

Diseño y planificación



Software

Fabricación En Planta

Armado en Planta

Despacho a Obra

Montaje en Obra

Propiedades y ventajas del software utilizado.

- Framecad Structure, posee integración del dibujo de la arquitectura y diseño estructural.

1. Software cálculo integrado:

a.- Solicitaciones y combinaciones de carga automáticas según el código IBC (International Building Code).

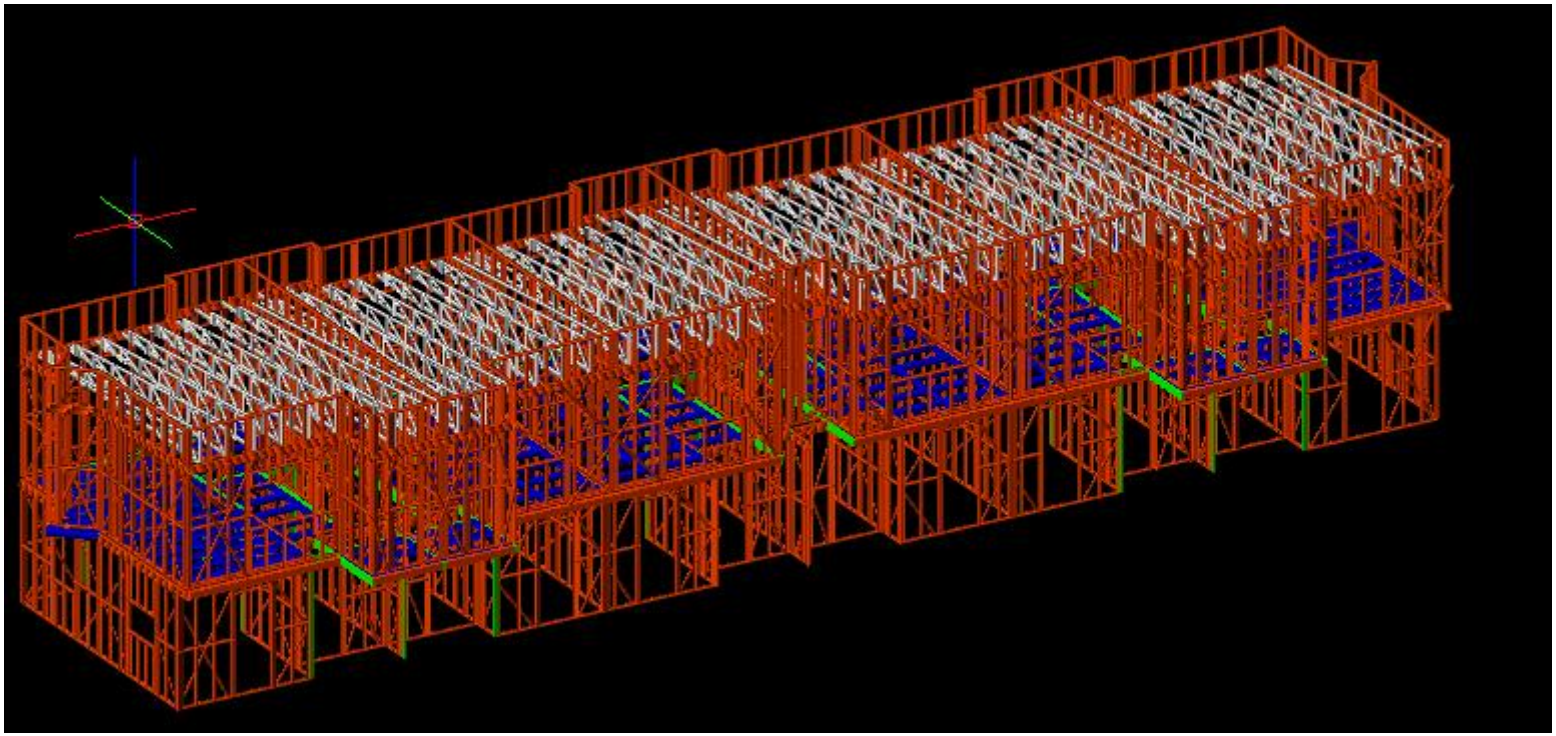
- La normativa Chilena esta basada en este código.
- NCh431:2010 Diseño estructural - Cargas de nieve.
- NCh432:2010 Diseño estructural - Cargas de viento.
- NCh433:1996 Mod 2009 DS61 Diseño sísmico de edificios,
- NCh1537:2009 Diseño estructural - Cargas permanentes y cargas de uso.
- NCh3171:2010 Diseño estructural - Disposiciones generales y combinaciones de cargas.

b.- Cálculo Resistencia Estructural Sistema AISI.

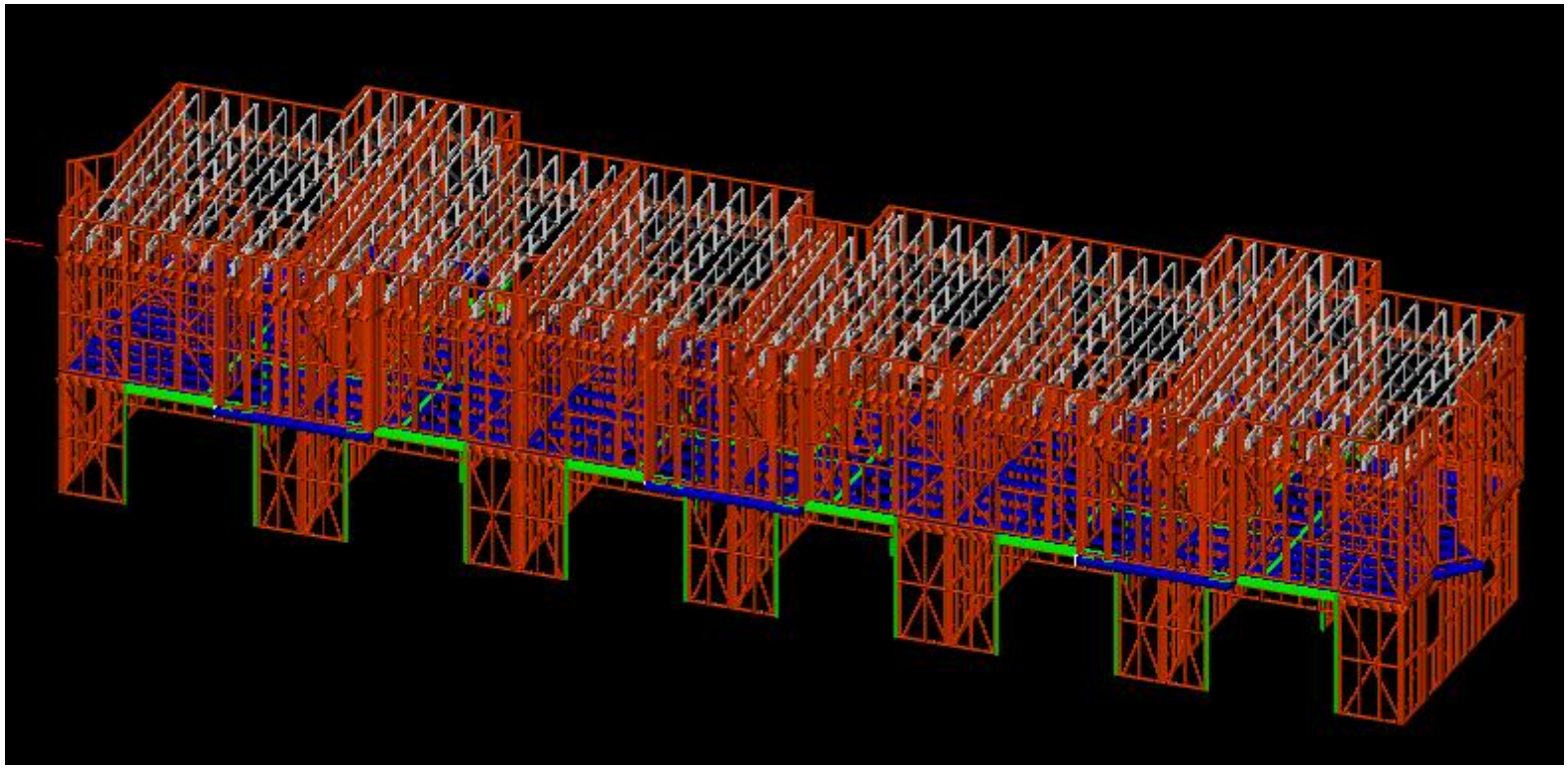
- Diseño de elementos mediante la Especificación Norteamericana para el diseño de miembros de acero estructural conformado en frio, AISI (American Iron and Steel Institute) S100.
- Exportación de modelos en 3D, en formato Revit, Tekla, etc.

MultiCons

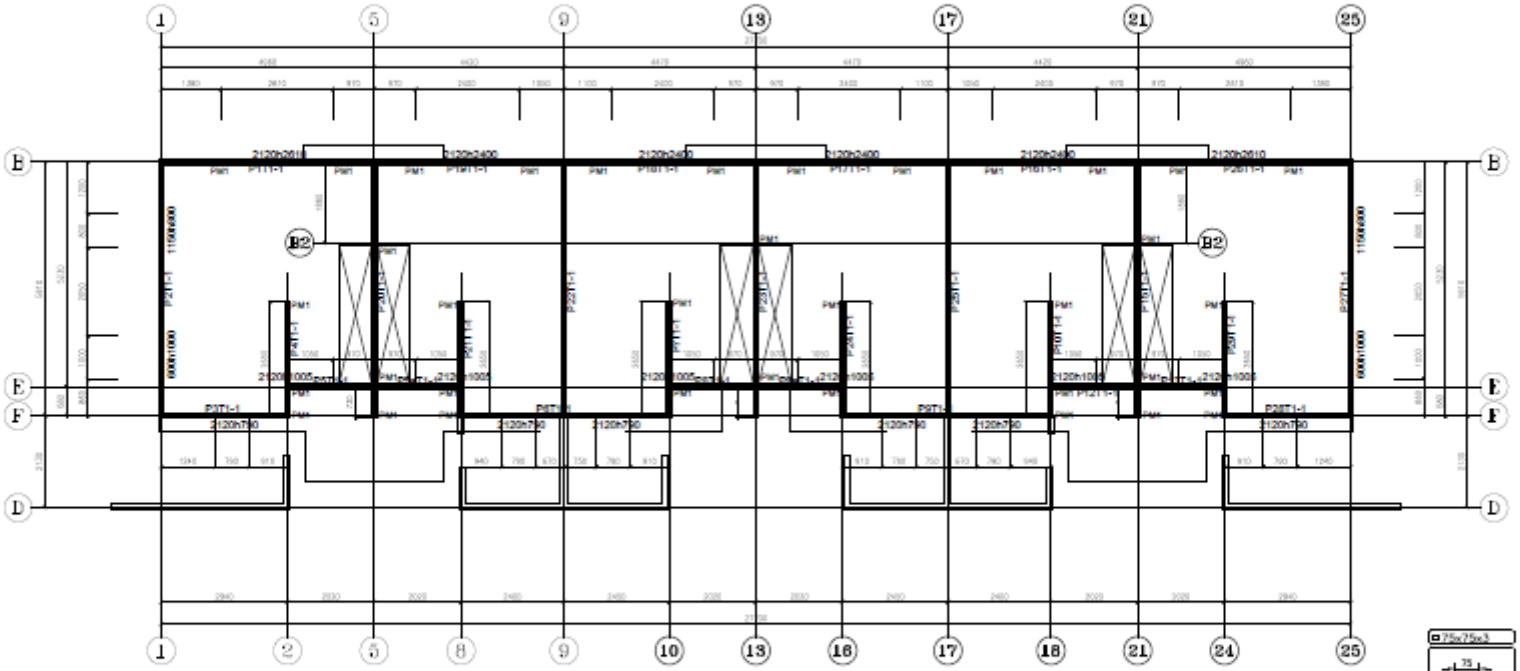
- Proyecto Tren Vivienda
- 2 Pisos
- Paneles, Vigas y Cerchas Prefabricadas
- Acero Galvanizado Liviano
- ASTM A653 G60 GR40
- Espesores: 0,85 – 1,0 – 1,6
- Límite De Fluencia Mínimo 344,60 Mpa
- Resistencia a la tracción Mínima 447,96 Mpa
- Tolerancia en Dimensiones +- 0,5mm



Proyecto Lo Cruzat II



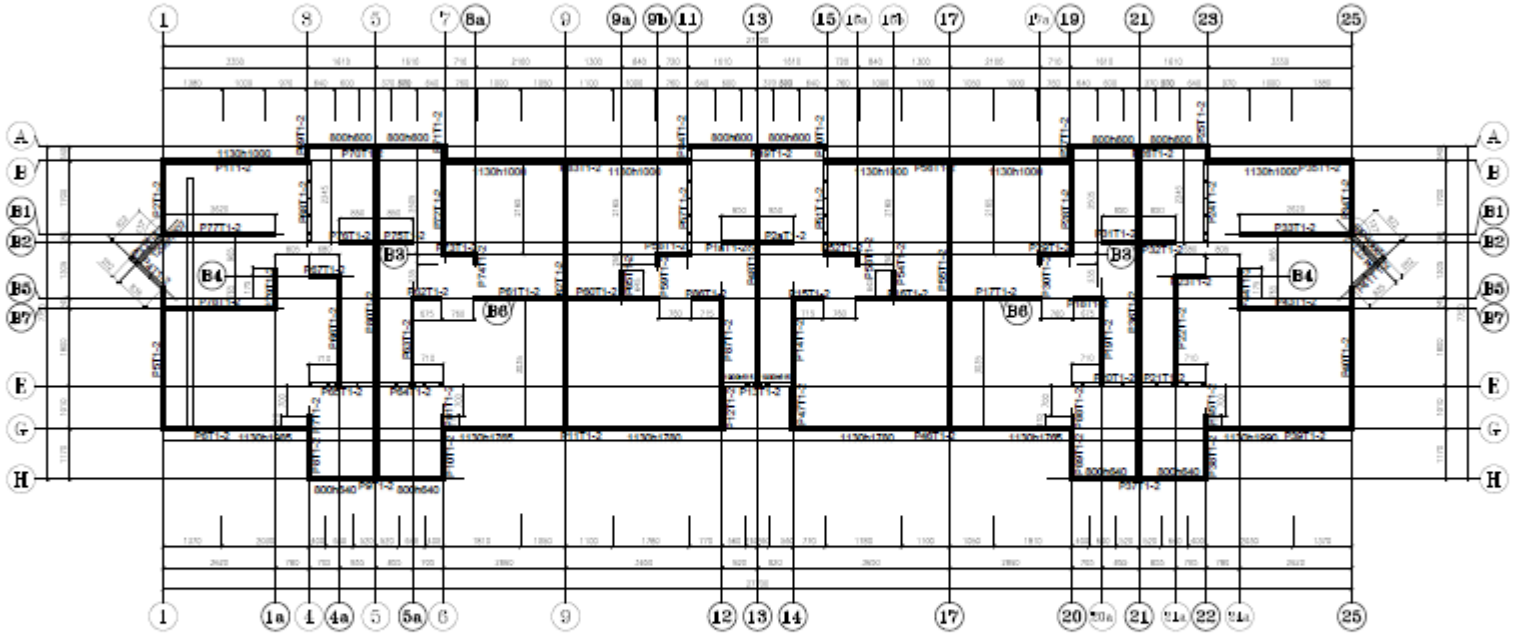
Design Summary	
Floor Type	Concrete
Roof Load	SinTET
System	PC_MultiAceros
Wind Load	V50



PLANTA CIELO PISO 1°

FRAMECAD	JOB DETAILS Condominio Lo Cruzat II Avellaneda Tipología 1	DRAWN Jilberona	DATE DRAWN 14-12-2023	SCALE 1 : 100	JOB REFERENCE 10713	REVISION
		DWG FILE 10713 CLCII Tipología 1	VIEW NAME 1 of 5	ON A3-Sheet		

Design Summary	
Floor Type	Concrete
Roof Load	SHEET
System	FC_MultiAceros
Wind Load	W35

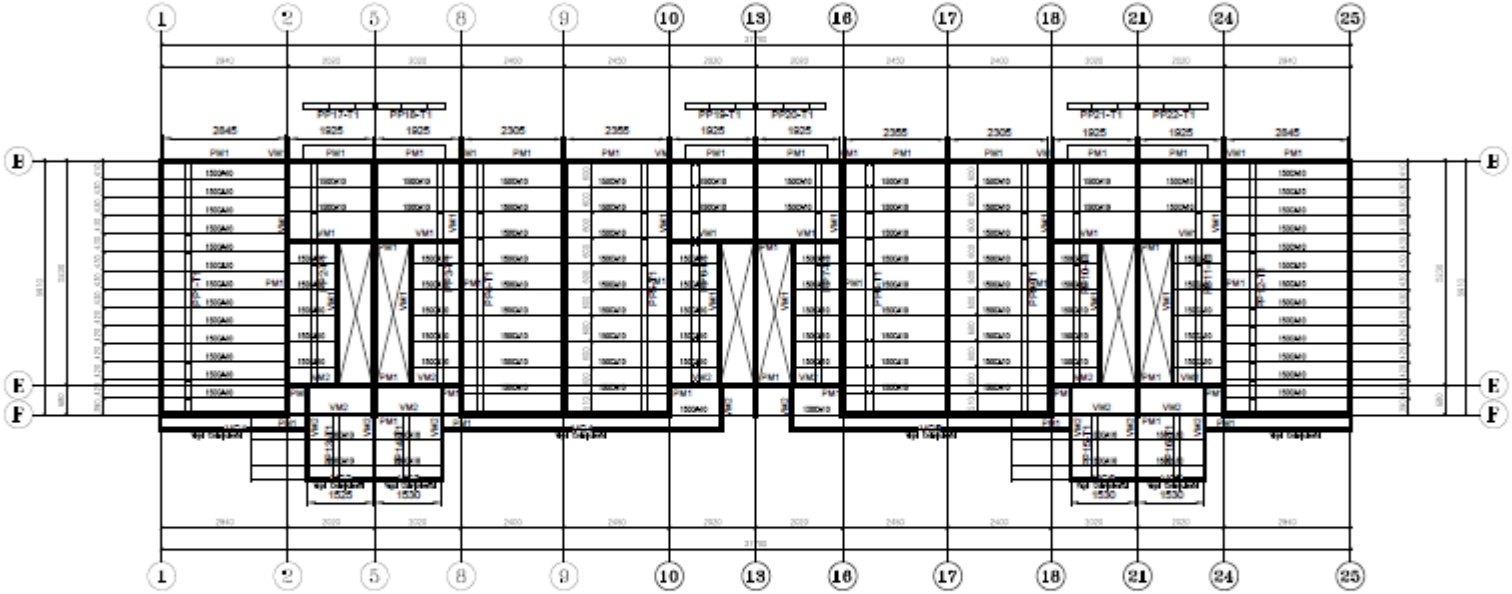


PLANTA CIELO PISO 2°

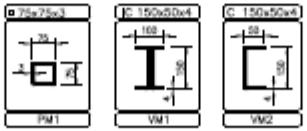
FRAMECAD	JOB DETAILS: Condominio Lo Cruzat II Avellaneda Tipología 1	DRAWN: Jilberona	DATE DRAWN: 14-12-2023	SCALE: 1 : 100	JOB REFERENCE: 10713	REVISION
		DWG FILE: 10713 CLCII Tipología 1	VIEW NAME: 2 of 5	ON: A3-Sheet		

x 210 mm

Design Summary	
Floor Type	Concrete
Roof Load	Auto
Roof Load	SHEET
System	FC_MultiAceros
Wind Load	W30



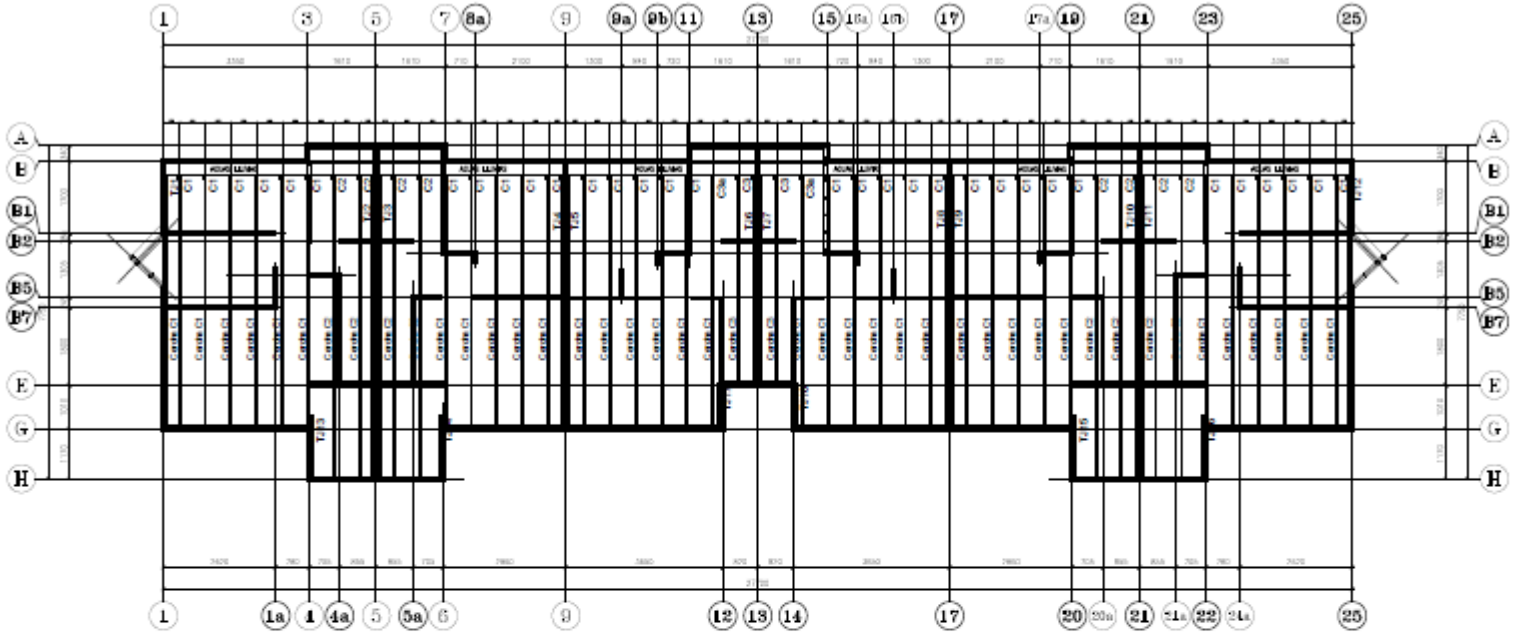
PLANTA DE ENVIGADO DE PISO



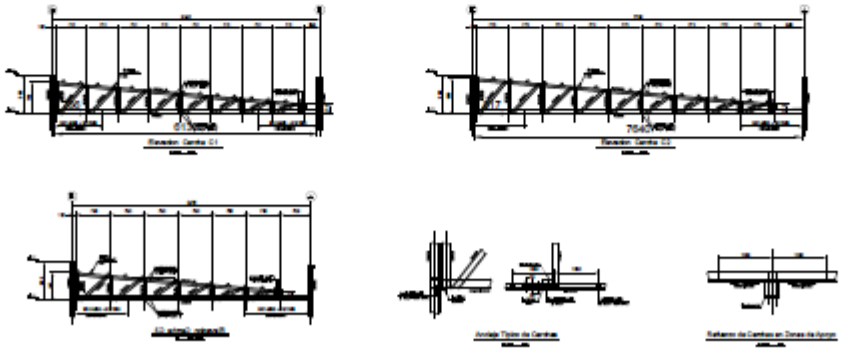
FRAMECAD	JOB DETAILS Condominio Lo Cruzat II Avellaneda Tipología 1	DRAWN Jilberona	DATE DRAWN 14-12-2023	SCALE 1 : 100	JOB REFERENCE 10713	REVISION
		DWG FILE 10713 CLCII Tipología 1	VIEW NAME 3 of 5	ON A3-Sheet		

x 210 mm

MultiAceros FUERTE EN SERVICIO



PLANTA DE TECHUMBRE



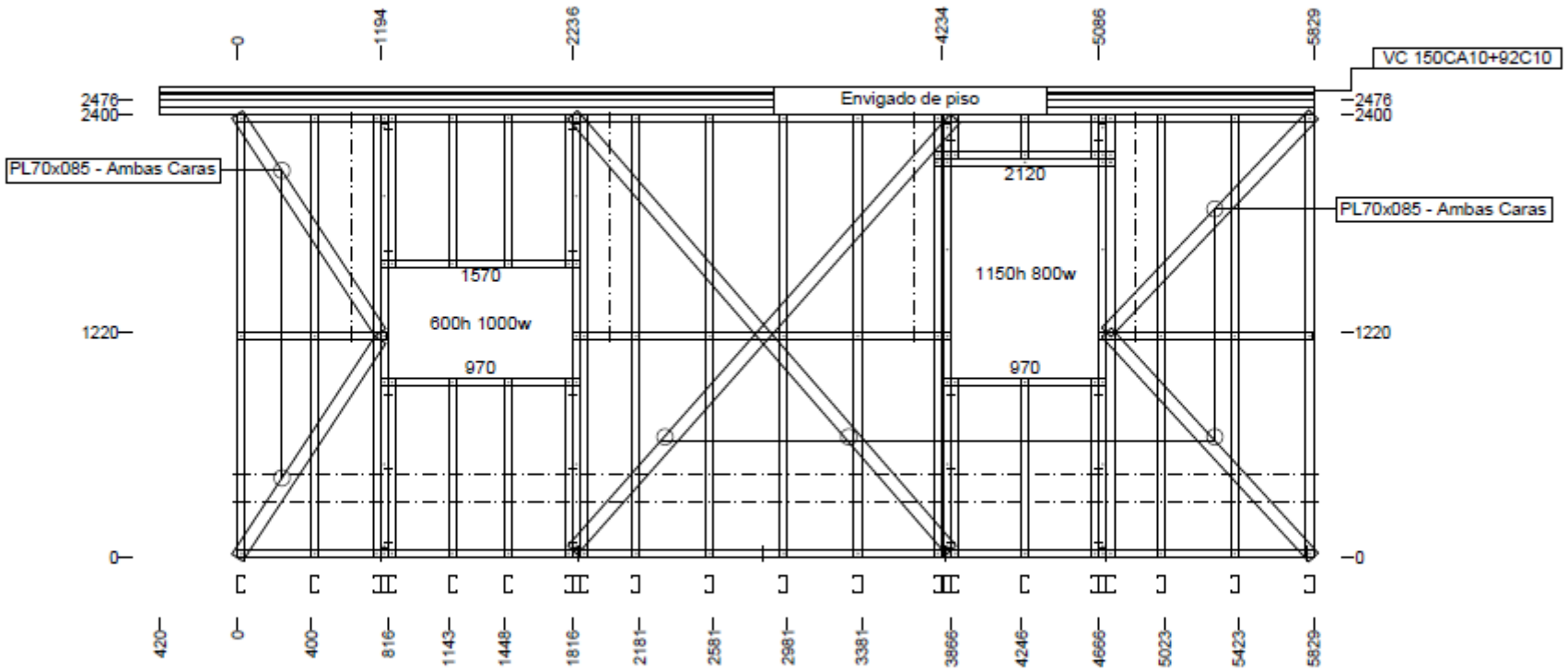
FRAMECAD	JOB DETAILS Condominio Lo Cruzat II Avellaneda Tipología 1	DRAWN Jilberona	DATE DRAWN 14-12-2023	SCALE 1 : 100	JOB REFERENCE 10713	REVISION
		DWG FILE 10713 CLCII Tipología 1	VIEW NAME 4 of 5	ON A3-Sheet		

x 210 mm

150S41-095-350	2 1440mm	150S41-095-350	2 3328mm	89S41-082-350	2 1076mm
89S41-082-350	1 1157mm	89S41-082-350	1 2044mm	89S41-082-350	4 2296mm
89S41-082-350	3 237mm	89S41-082-350	18 2396mm	89S41-082-350	2 5829mm
89S41-082-350	1 810mm	89S41-082-350	4 825mm	89S41-082-350	1 876mm
89S41-082-350	7 965mm	89S41-082-350	3 976mm	89S41-095-350	2 1440mm
89S41-095-350	2 3328mm	FRAMECAD 70x0.85 Strap 10g-X	2 1410mm	FRAMECAD 70x0.85 Strap 10g-X	2 1411mm
FRAMECAD 70x0.85 Strap 10g-X	2 1628mm	FRAMECAD 70x0.85 Strap 10g-X	2 1655mm	FRAMECAD 70x0.85 Strap 10g-X	2 3124mm
FRAMECAD 70x0.85 Strap 10g-X	2 3124mm				
Assembly Weight	152.90kg	Working Sheet: Paneles 1er Piso		FRAMECAD 10g-16mm Flathead	38
				FRAMECAD 10g-19mm XDrive	222

Powered by FRAMECAD Structure ®

Diagonal = 6750



CAUTION! 139kg

<<< Joins P3T1-1 Quantity Required = 1 Mark as P2T1-1 Header Status = Amended Stud Status = Passed Joins P1T1-1 >>>

System Name:	FC_MultiAceros	Wall Type:	Load Bearing	Wind Speed:	W38	Design Code:	AISI S100-07 ASD
Panel RL:	0	Envelope:	2552h x 6249w	Direction:	S-N	Loading Code:	IBC 2009 ASD

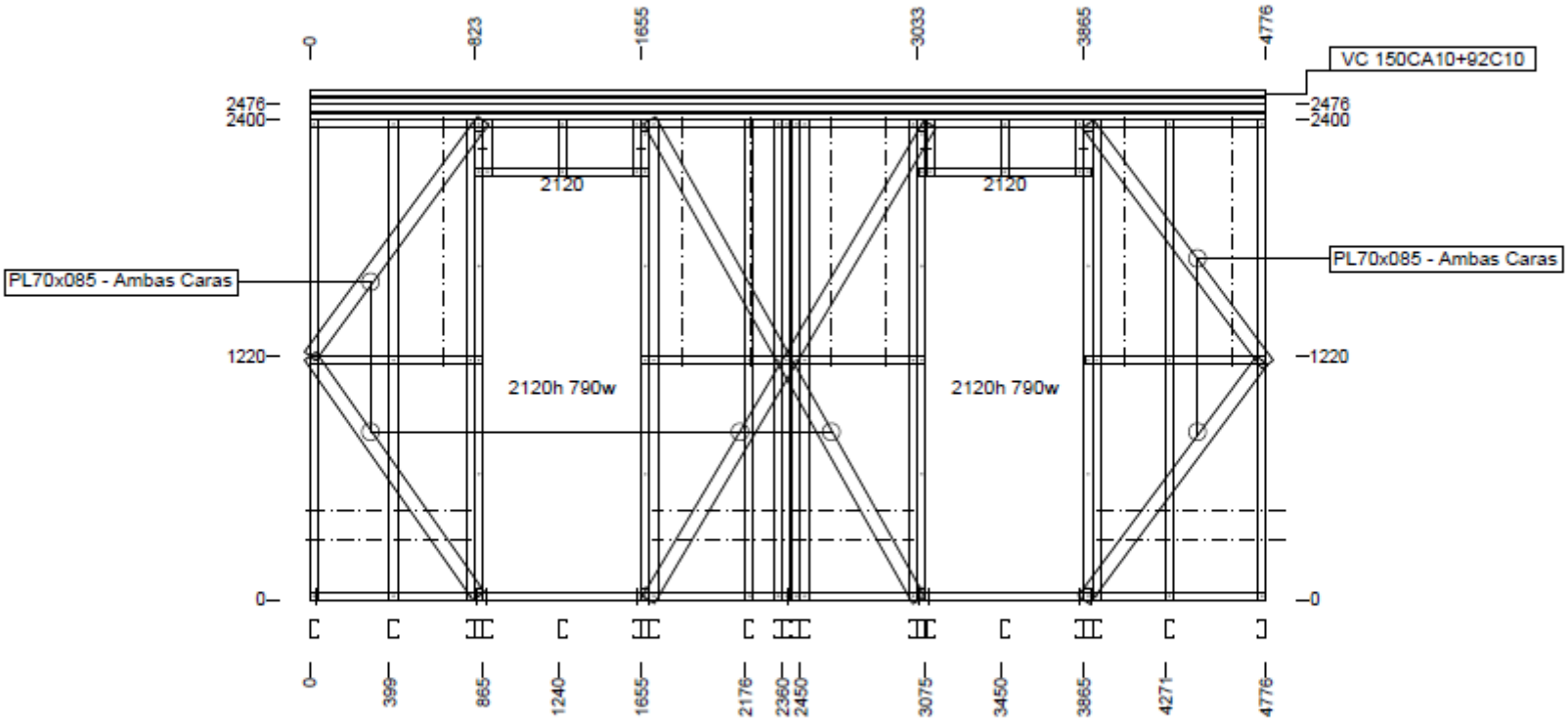
7x1210 mms

Dwg 10713 CLCII Tipología 1 View 2 of 29 Client :Condominio Lo Cruzat II J/No. 10713

150S41-095-350	2 4776mm	89S41-082-350	1 1414mm	89S41-082-350	4 2296mm
89S41-082-350	17 2396mm	89S41-082-350	6 275mm	89S41-082-350	2 4776mm
89S41-082-350	1 860mm	89S41-082-350	2 866mm	89S41-082-350	1 907mm
89S41-095-350	2 4776mm	FRAMECAD 70x0.85 Strap 10g-X	2 1461mm	FRAMECAD 70x0.85 Strap 10g-X	2 1465mm
FRAMECAD 70x0.85 Strap 10g-X	2 1491mm	FRAMECAD 70x0.85 Strap 10g-X	2 1499mm	FRAMECAD 70x0.85 Strap 10g-X	2 2749mm
FRAMECAD 70x0.85 Strap 10g-X	2 2762mm				
Assembly Weight	126.50kg	Working Sheet: Paneles 1er Piso		FRAMECAD 10g-16mm Flathead FRAMECAD 10g-19mm XDrive	32 142

Powered by FRAMECAD Structure ®

Diagonal = 5415



CAUTION! 115kg

<<< Joins P7T1-1 Quantity Required = 1 Mark as P6T1-1 Header Status = Amended Stud Status = Passed Joins P21T1-1 >>>

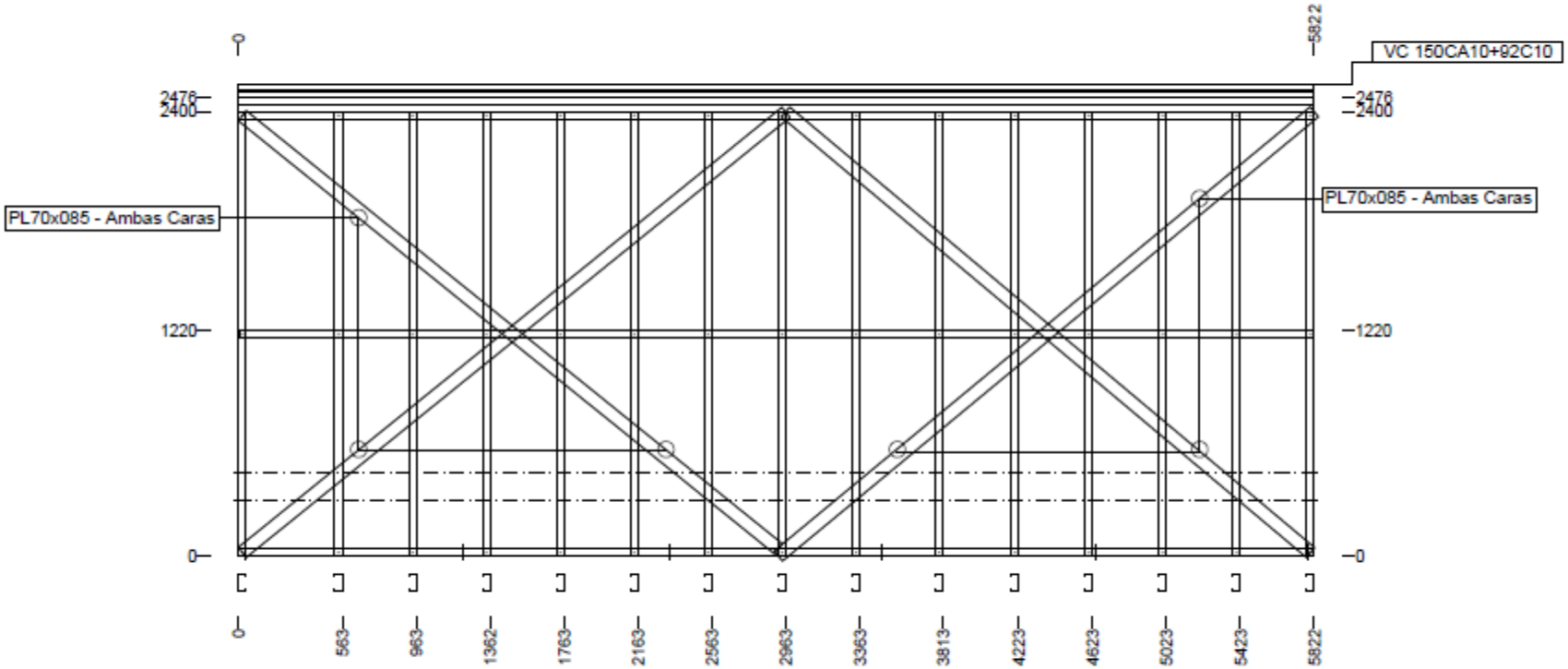
System Name:	FC_MultiAceros	Wall Type:	Load Bearing	Wind Speed:	W38	Design Code:	AISI S100-07 ASD	Loading Code:	IBC 2009 ASD
Panel RL:	0	Envelope:	2552h x 4776w	Direction:	E-W				

7 x 210 mms Dwg 10713 CLCII Tipología 1 View 6 of 29 Client :Condominio Lo Cruzat II J/No. 10713

150S41-095-350	2 5822mm	89S41-082-350	15 2396mm	89S41-082-350	1 5816mm
89S41-082-350	2 5822mm	89S41-095-350	2 5822mm	FRAMECAD 70x0.85 Strap 10g-X	2 3705mm
FRAMECAD 70x0.85 Strap 10g-X	2 3726mm	FRAMECAD 70x0.85 Strap 10g-X	2 3763mm	FRAMECAD 70x0.85 Strap 10g-X	2 3782mm
Assembly Weight	116.60kg	Working Sheet: Paneles 1er Piso		FRAMECAD 10g-19mm XDrive	90

Powered by FRAMECAD Structure ®

Diagonal = 6356



CAUTION! 106kg

<<< Joins P6T1-1

Quantity Required = 1 Mark as P22T1-1 Stud Status = Passed

Joins P18T1-1 >>>

System Name:	FC_MultiAceros	Wall Type:	Load Bearing	Wind Speed:	W38	Design Code:	AISI S100-07 ASD	Loading Code:	IBC 2009 ASD
Panel RL:	0	Envelope:	2552h x 5822w	Direction:	S-N				

Multiaceros | Dwg 10713 CLCII Tipología 1 | View 20 of 29 | Client :Condominio Lo Cruzat II | J/No. 10713

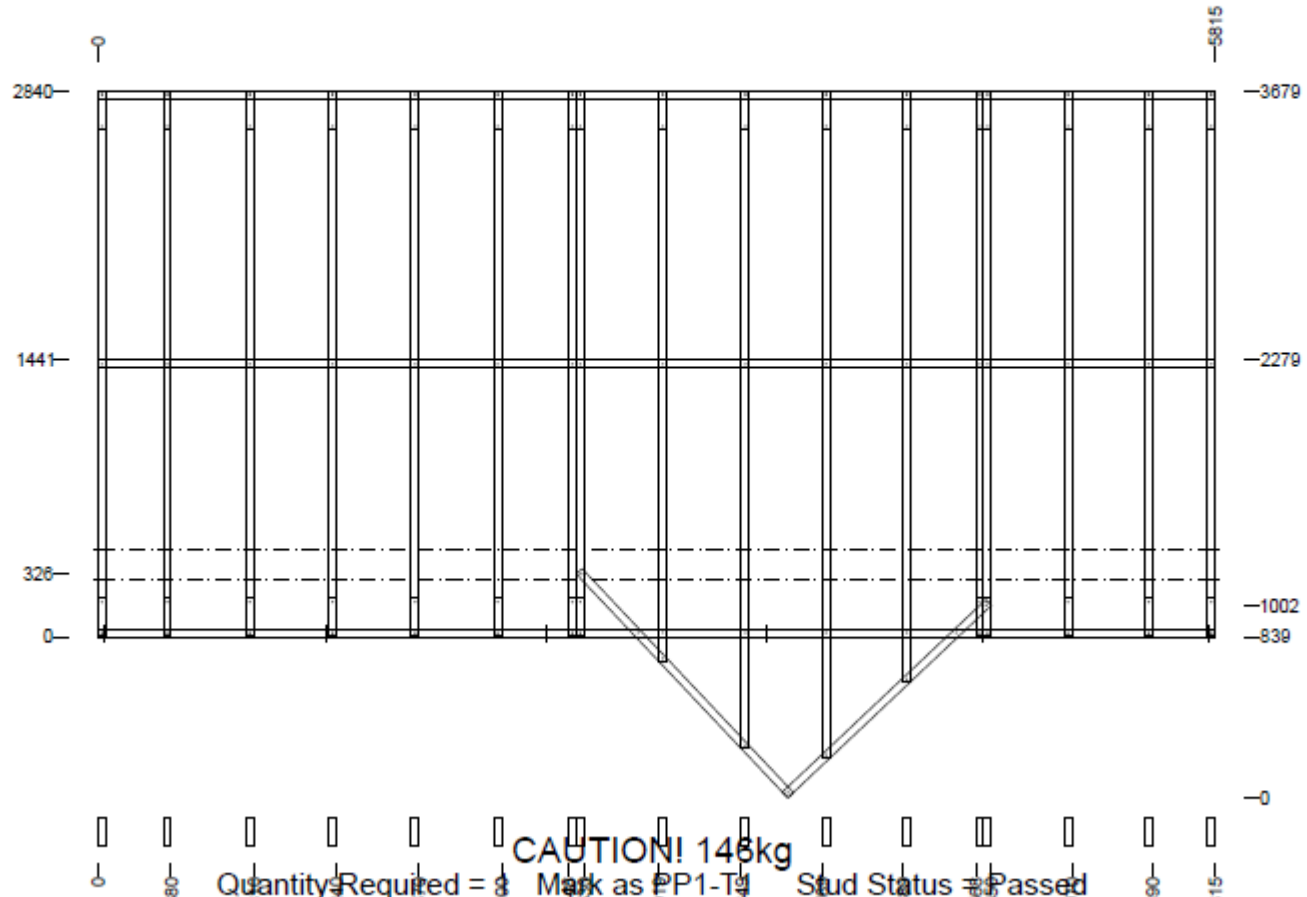
150S41-095-350	1	1459mm	150S41-095-350	1	1602mm	150S41-095-350	30	200mm	150S41-095-350	13	2836mm
150S41-095-350	1	3071mm	150S41-095-350	1	3420mm	150S41-095-350	1	3468mm	150S41-095-350	1	5809mm

150S41-095-350	1	2966mm									
150S41-095-350	2	5815mm									

Assembly Weight	160.60kg	Working Sheet: Envigado de piso		FRAMECAD 10g-16mm Flathead	120	FRAMECAD 10g-19mm XDrive	120

Powered by FRAMECAD Structure ®

Diagonal = 6881



CAUTION! 146kg

Quantity Required = 3 Mark as PP1-T4 Stud Status = Passed

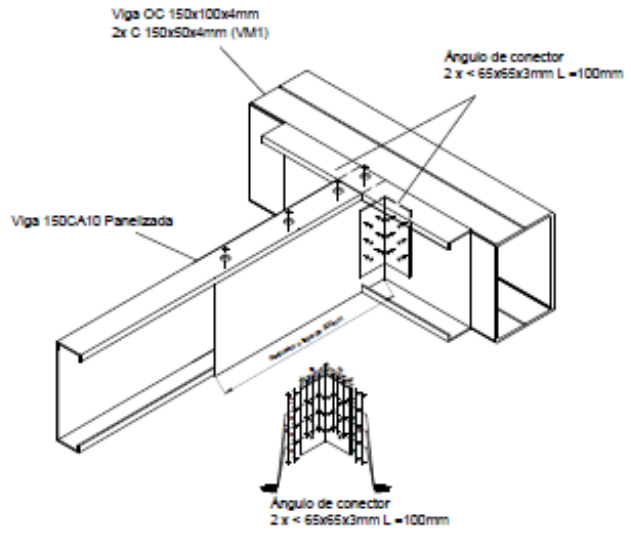
<<< Joins

Joins >>>

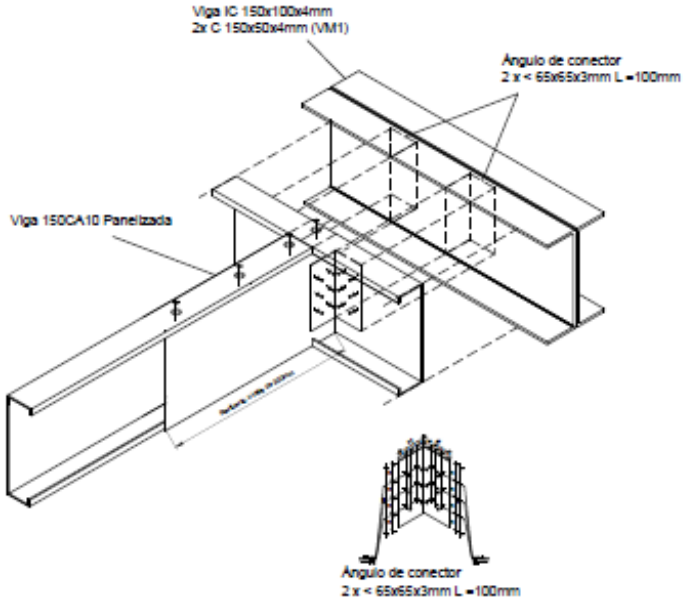
System Name:	FC_MultiAceros	Wall Type:	Load Bearing	Wind Speed:	W38	Design Code:	AISI S100-07 ASD
Panel RL:	7000	Envelope:	3679h x 5815w	Direction:	S-N		

Loading Code:	IBC 2009 ASD			
7 x 210 mms	Dwg 10713 CLCII Tipología 1	View 1 of 22	Client Condominio Lo Cruzat II	Job No. 10713

PROPUESTA A SOLUCIÓN ENVIGADO DE PISO



ENVIGADO DE PISO SEGÚN CLIENTE



PROPUESTA PARA ENVIGADO DE PISO INDUSTRIALIZADO

FRAMECAD	JOB DETAILS Condominio Lo Cruzat II Avellaneda Tipología 1	DRAWN Jlberona	DATE DRAWN 14-12-2023	SCALE 1 : 100	JOB REFERENCE 10713	REVISION
		DWG FILE 10713 CLCII Tipología 1	VIEW NAME 5 of 5	ON A3-Sheet		

x 210 mm

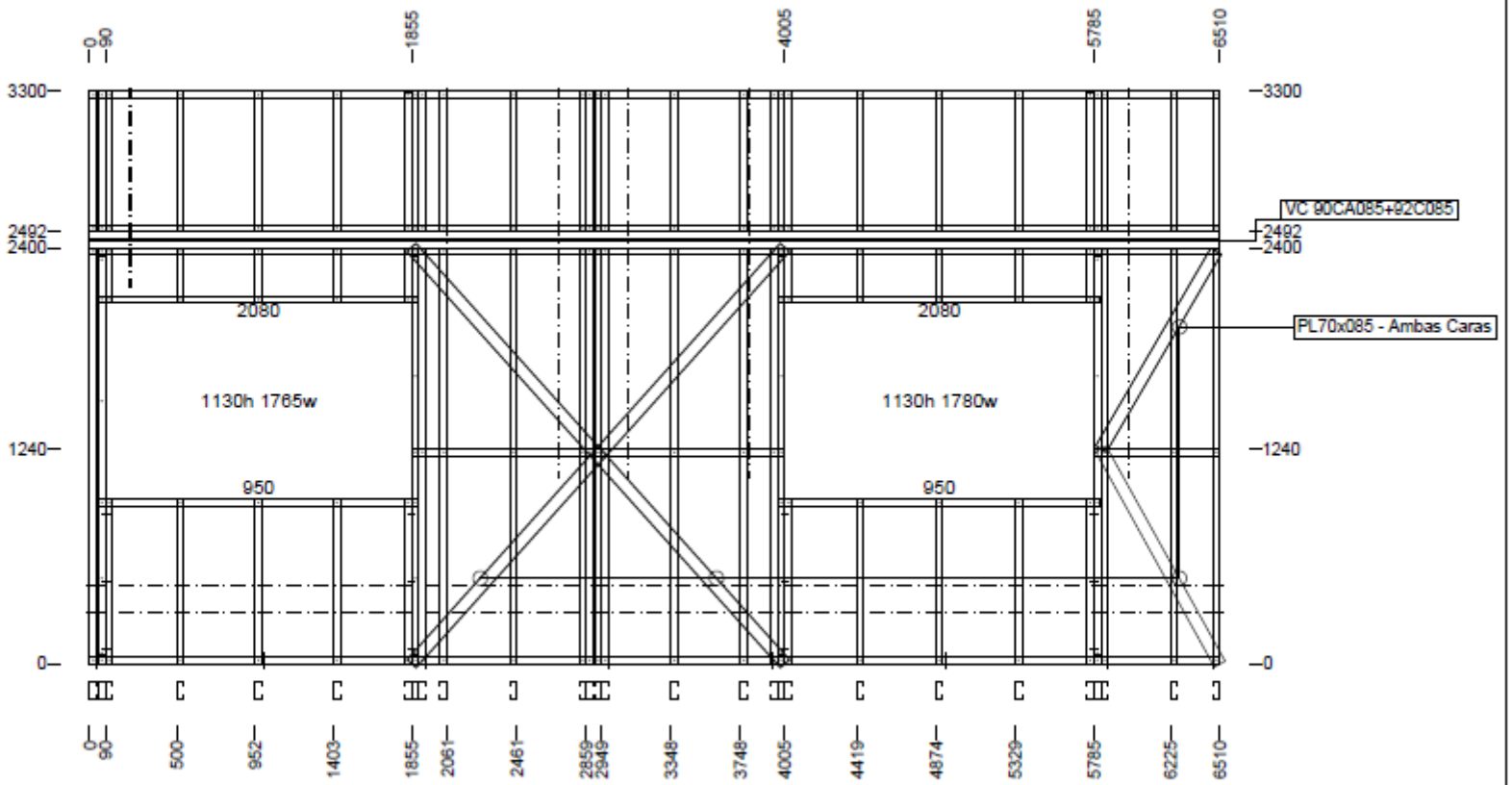
89S41-082-350	2 1841mm	89S41-082-350	2 1856mm	89S41-082-350	1 2144mm
89S41-082-350	4 2298mm	89S41-082-350	18 2398mm	89S41-082-350	10 317mm
89S41-082-350	8 6510mm	89S41-082-350	1 720mm	89S41-082-350	2 805mm
89S41-082-350	26 806mm	89S41-082-350	10 945mm	FRAMECAD 70x0.85 Strap 10g-X	2 1318mm
FRAMECAD 70x0.85 Strap 10g-X	2 1416mm	FRAMECAD 70x0.85 Strap 10g-X	2 3221mm	FRAMECAD 70x0.85 Strap 10g-X	2 3222mm

Assembly Weight	207.90kg	Working Sheet: Paneles 2do Piso	

FRAMECAD 10g-16mm Flathead	32
FRAMECAD 10g-19mm HWH Hex	24
FRAMECAD 10g-19mm XDrive	412

Powered by FRAMECAD Structure ®

Diagonal = 7299



CAUTION! 189kg

<<< Joins P81T1-2 Quantity Required = 1 Mark as P11T1-2 Header Status = Amended Stud Status = Passed Joins P12T1-2 >>>

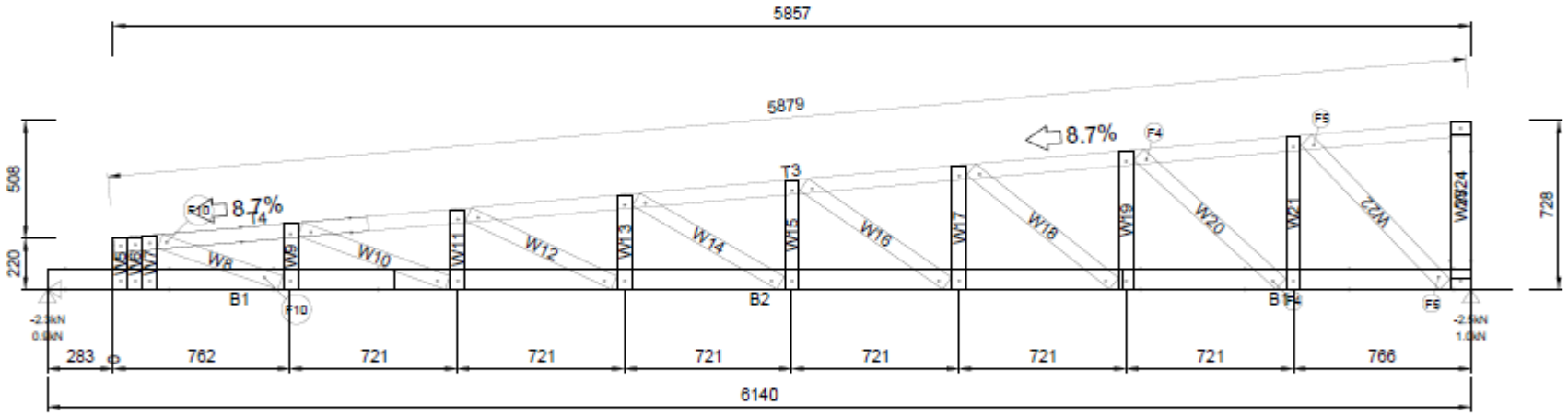
System Name:	FC_MultiAceros	Wall Type:	Load Bearing	Wind Speed:	W38	Design Code:	AISI S100-07 ASD	Loading Code:	IBC 2009 ASD
Panel RL:	2620	Envelope:	3300h x 6510w	Direction:	W-E				

Multiaceros	Dwg 10713 CLCII Tipología 1	View 11 of 91	Client :Condominio Lo Cruzat II	J/No. 10713

B1	89S41-082-350	64	1500	B2	89S41-082-350	32	6140	T3	63S41-082-350	32	5873	T4	63S41-082-350	32	1100
W5	63S41-082-350	32	220	W6	63S41-082-350	32	225	W7	63S41-082-350	32	231	W8	63S41-082-350	32	549
W9	63S41-082-350	32	284	W10	63S41-082-350	32	675	W11	63S41-082-350	32	346	W12	63S41-082-350	32	694
W13	63S41-082-350	32	409	W14	63S41-082-350	32	720	W15	63S41-082-350	32	471	W16	63S41-082-350	32	750
W17	63S41-082-350	32	534	W18	63S41-082-350	32	789	W19	63S41-082-350	32	597	W20	63S41-082-350	32	829
W21	63S41-082-350	32	659	W22	63S41-082-350	32	863	W23	89S41-082-350	32	721	W24	89S41-082-350	32	621
	FRAMECAD 10g-16mm Flathead	3072			FRAMECAD 10g-19mm XDrive	2074		Working Sheet: Cerchas T1				Assembly Weight			33.22kg

Powered by FRAMECAD Structure ®

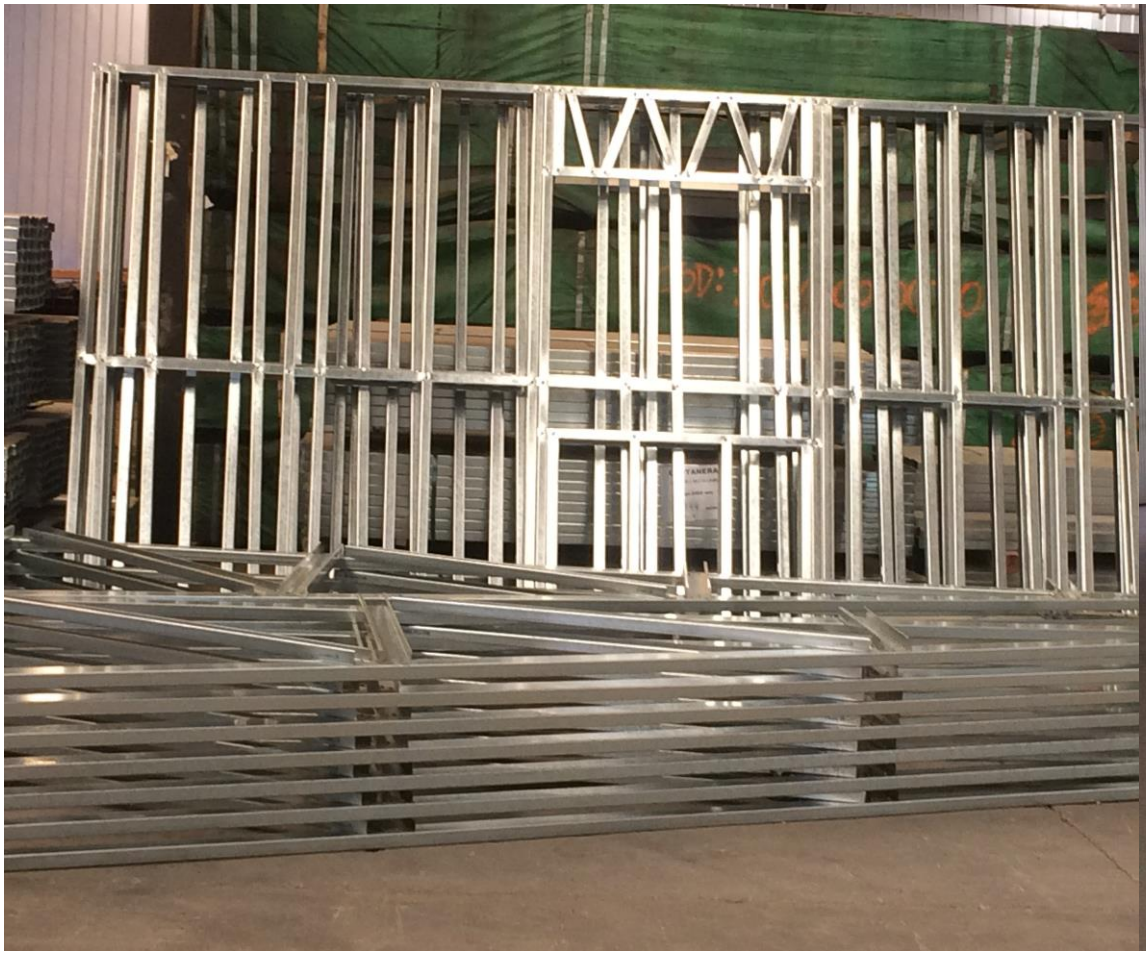
Minimum number of fasteners required is 3 per joint



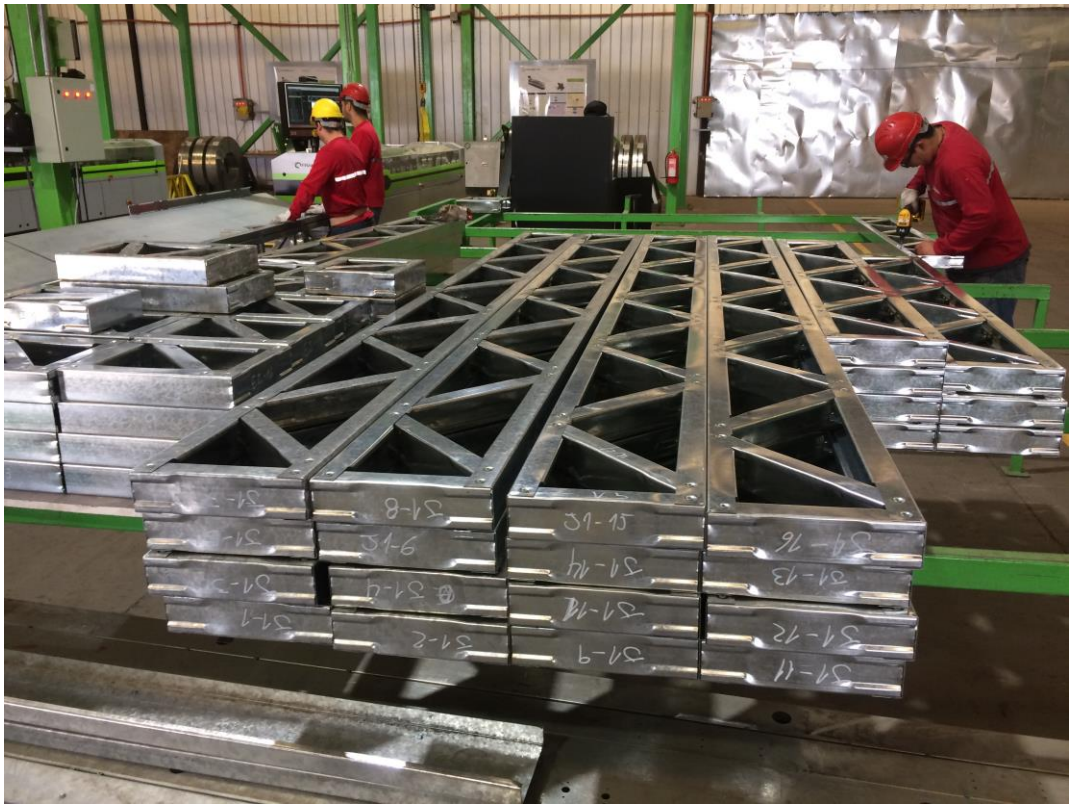
Quantity Required = 32 Mark as C1 Engineering Status = 95%

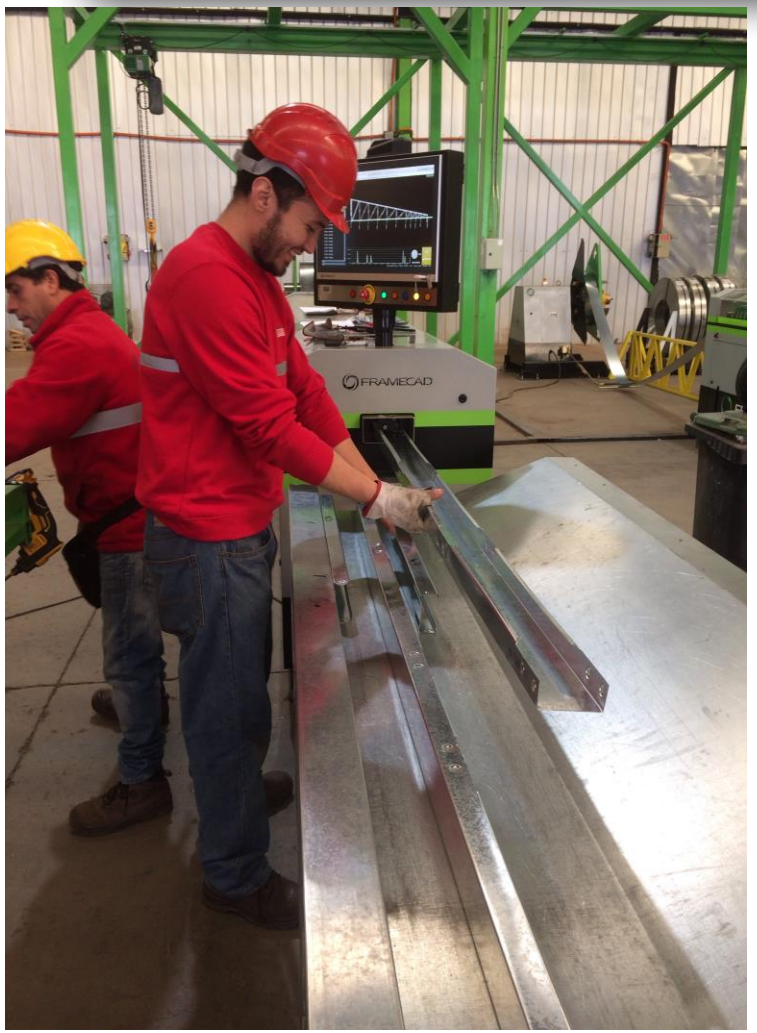
System Name:	FC_MultiAceros	Roof Type:	SHEET	Wind Speed:	W38	Truss Pitch:	4.9608
Truss Spacing:	600	Design Code:	AISI S100-07 ASD	Loading Code:	IBC 2009 ASD	Top Chord Live Load (kPa):	0.90
Top Chord Dead Load (kPa):	0.30	Bottom Chord Dead Load (kPa):	0.10	Envelope:	728h x 6140w		

Prefabricación En Planta



Prefabricación En Planta





				Total Neto	10.285,100	$18.608.023

Costaneras @ 60cm	35OMA085	35 x 38 x 15 x 8 x 0,85	6,00	92	$6.762	$622.104
Anclaje I Piso	AN1-60	230 x 90 x 40 x 5,0	0,00	49	$2.950	$144.550
Hilo Anclaje I Piso	H 1/2 CTG	1/2 x 220	0,00	49	$1.100	$53.900
Anclaje Viga Piso	Ang Ancl	65 x 65 x 3,0 L140 10T/10T	0,00	336	$1.100	$369.600
Anclaje II Piso	AN1-60	230 x 90 x 40 x 5,0	0,00	37	$2.950	$109.150
Hilo Anclaje II Piso	H 1/2 CGT	1/2 x 360	0,00	37	$2.300	$85.100
Anclaje II Piso	Twist Fix	22 x 22 x 1,5	0,00	31	$980	$30.380
Angulo Anclaje	70/70 Galv	70 x 70 x 1,6 L70	0,00	176	$500	$88.000
Angulo Tensor	40 x 3,0 L70	40 x 40 x 3,0 L70 CPTG	0,00	640	$495	$316.800
					$ Total Neto	**$1.819.584**

FRAMECAD® Stud Design for Panel P33T1-2

Company:	Multiaceros	Tab Name:	Paneles 2do Piso
Project:	Condominio Lo Cruzat II Avellaneda Tipologia 1	Dwg Name:	10713 CLCII Tipologia 1
		Detailer:	Jilberona
		Print Date:	04-04-2024
Job Number:	10713	Page No:	1

Panel Label: P33T1-2

DESIGN LOADING:

Steel Design Code	AISI S100-07 ASD	
Loading Code:	IBC 2009 ASD	
Wind Speed (m/s)	W38	
Terrain Factor Kz	1	
Importance Factor I	1	
Topography Factor Kzt	1	
Wall Location	Internal	
Usage Type	Load Bearing	
Dead Load (G)	1.26	kN/m
Live Load (Q1 = max(Q2,Q3))	0.69	kN/m
Roof Live Load (Q2)	0.69	kN/m
Floor Live Load (Q3)	0.00	kN/m
Live Load (Q4 = Q2+Q3)	0.69	kN/m
Wind Up Load (Wu)	1.98	kN/m
Wind Down Load (Wd)	0.00	kN/m
Wind Horizontal Load (Wh)	0.14	kPa
Wind Horizontal C&C (WhCC)	0.27	kPa
Panel Self Weight	0.95	kN/m
Applied Point Load (P)	1.1	kN
Impact Load (P2)	0.7	kN

LOAD CASE RESULTS:

(single stud):	Max Stud Spacing	
1.0G + 1.0Q3	4025.4	mm
1.0G + 0.75Q2(or S) + 0.75Q3	2853.4	mm
1.0G + 1.0Q2(or S)	2601.0	mm
1.0G + 1.0P1	3152.4	mm
1.0G+0.75Q2(or S)+0.75Q3+0.75Wh	1900.0	mm
1.0G+ 1.0Wh	2087.5	mm
1.0WhCC	2109.9	mm
0.7WhCC	2288.1	mm
P2	1640.5	mm

DESIGN RESULTS:

Stud Material	63S41-082-350	
Stud Spacing Type	Single Absolute	
Nominal Wall Height	2360	mm
Nominal Noggin Spacing	1220	mm
Max Nominal Stud Spacing	1625	mm
Actual Nominal Stud Spacing	600	mm
Stud Engineering Compliance	32	%
Manually Altered	No	

SECTION DIMENSIONS (SINGLE STUD):

Section Shape	LC	
Section Height	63.0	mm
Section Width	41.0	mm
Lip Length	11.5	mm
Inside Radius	2.00	mm
Material Thickness	0.82	mm
Service Hole Width	34.0	mm
Yield Strength	350	MPa
Tensile Strength	420	MPa

SECTION PROPERTIES (SINGLE STUD):

Gross Area	131.68	mm²
Section Mass	1.060	kg/m
Centroid Left	15.1	mm
Centroid Top	31.1	mm
Second Moment of Inertia Ix	88818	mm⁴
Second Moment of Inertia Iy	32066	mm⁴
Radius of Gyration rx	26.0	mm
Radius of Gyration ry	15.6	mm
Shear Centre x	36.4	mm
Shear Centre y	0.00	mm
Polar Gyration ro	47.5	mm
Torsion Constant J	30	mm⁴
Warping Constant Cw	32.48	mm⁶

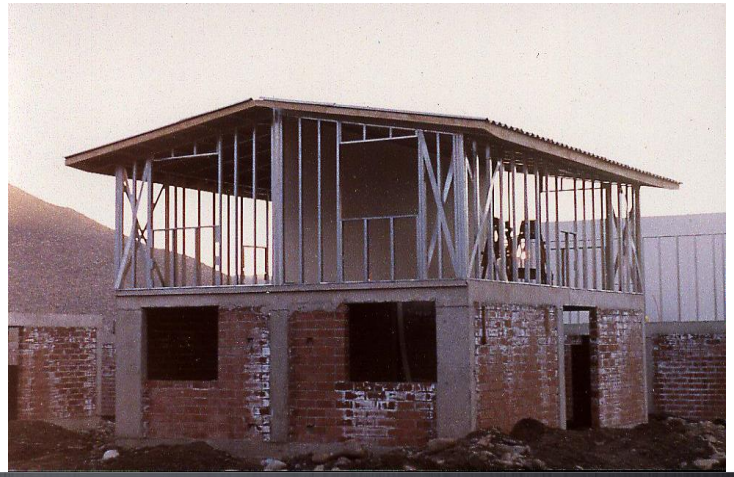
SECTION CAPACITIES (SINGLE STUD):

Shear Capacity Vn/Ωv	1.83	kN
Tension Capacity Tn/Ωt	25.43	kN
Compression Capacity Pno/Ωc	14.62	kN
Compression Capacity Pn/Ωc	5.07	kN
Bending Capacity Mnxo-/Ωb	430	Nm
Bending Capacity Mnx-/Ωb	397	Nm
Bending Capacity Mnxo/Ωb	430	Nm
Bending Capacity Mnx/Ωb	397	Nm

QUE PODEMOS FABRICAR?

Edificios : Comerciales, Educación, Vivienda, Campamentos.

QUE PODEMOS FABRICAR?
Loteos de Vivienda Social

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