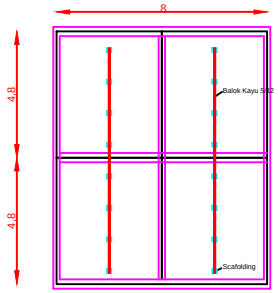
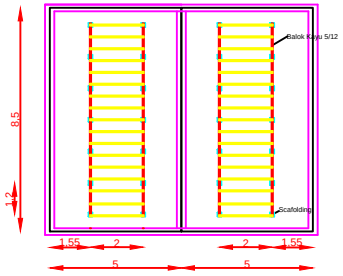
Denah Peletakkan Scafolding Pelat Bondek

Pelat Lantai Tipikal 1



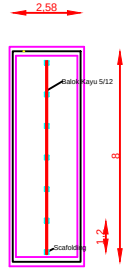
Kebutuhan :	Keterangan Garis :
Balok Kayu Horizontal 5/12 : Tidak menggunakan Balok kayu	Balok Kayu 5/12
Balok Kayu Vertikal 5/12 : 2 btng dengan panjang 9,6m	Balok Kayu 5/12
Scafolding : 16 Buah	Scafolding

Pelat Lantai Tipikal 2



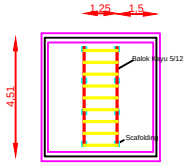
Kebutuhan :	Keterangan Garis :
Balok Kayu Horizontal 5/12 : 34 btng dengan panjang 2m	Balok Kayu 5/12
Balok Kayu Vertikal 5/12 : 4 btng dengan panjang 8,5m	Balok Kayu 5/12
Scafolding : 28 Buah	Scafolding

Pelat Lantai Tipikal 3



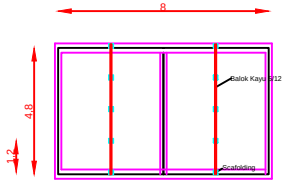
Kebutuhan :	Keterangan Garis :
Balok Kayu Horizontal 5/12 : Tidak menggunakan Balok kayu	Balok Kayu Vertikal 5/12
Balok Kayu Vertikal 5/12 : 1 btng dengan panjang 8m	Balok Kayu Horizontal 5/12
Scafolding : 7 Buah	Scafolding

Pelat Lantai Tipikal 4



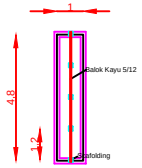
Kebutuhan :	Keterangan Garis :
Balok Kayu Horizontal 5/12 : 9 btng dengan panjang 1,25m	Balok Kayu Vertikal 5/12
Balok Kayu Vertikal 5/12 : 2 btng dengan panjang 4,51m	Balok Kayu Horizontal 5/12
Scafolding : 8 Buah	Scafolding

Pelat Lantai Tipikal 5



Kebutuhan :	Keterangan Garis :
Balok Kayu Horizontal 5/12 : 26 btng dengan panjang 1,2m	Balok Kayu Vertikal 5/12
Balok Kayu Vertikal 5/12 : 2 btng dengan panjang 4,8m	Balok Kayu Horizontal 5/12
Scafolding : 10 Buah	Scafolding

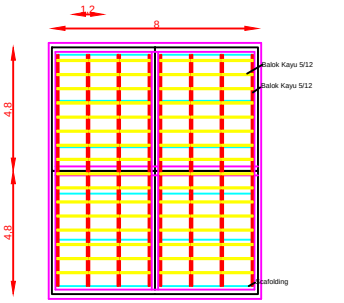
Pelat Lantai Luifel



Kebutuhan :	Keterangan Garis :
Balok Kayu Horizontal 5/12 :9 btng dengan panjang 1,2m	Balok Kayu Vertikal 5/12
Balok Kayu Vertikal 5/12 : 1 btng dengan panjang 4,8m	Balok Kayu Horizontal 5/12
Scafolding : 5 Buah	Scafolding

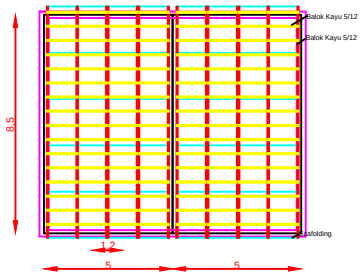
Denah Peletakkan Scafolding Pelat Konvensional

Pelat Lantai Tipikal 1



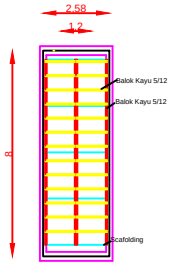
Kebutuhan :	Keterangan Garis :
Balok Kayu Horizontal 5/12 :96 btng dengan panjang 1,2m	Balok Kayu 5/12
Balok Kayu Vertikal 5/12 : 12 btng dengan panjang 9,6m	Balok Kayu 5/12
Scafolding : 36 Buah	Scafolding

Pelat Lantai Tipikal 2



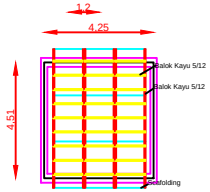
Kebutuhan :	Keterangan Garis :
Balok Kayu Horizontal 5/12 :128 btng dengan panjang 1,2m	Balok Kayu 5/12
Balok Kayu Vertikal 5/12 : 16 btng dengan panjang 8,5m	Balok Kayu 5/12
Scafolding : 48 Buah	Scafolding

Pelat Lantai Tipikal 3



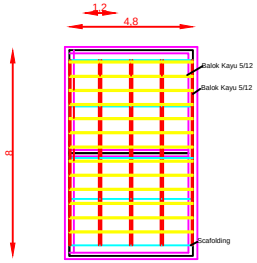
Kebutuhan :	Keterangan Garis :
Balok Kayu Horizontal 5/12 : 26 btng dengan panjang 1,2m	Balok Kayu Vertikal 5/12
Balok Kayu Vertikal 5/12 : 4 btng dengan panjang 8m	Balok Kayu Horizontal 5/12
Scafolding : 10 Buah	Scafolding

Pelat Lantai Tipikal 4



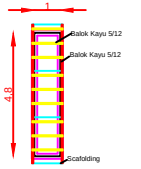
Kebutuhan :	Keterangan Garis :
Balok Kayu Horizontal 5/12 :27 btng dengan panjang 1,2m	Balok Kayu Vertikal 5/12
Balok Kayu Vertikal 5/12 : 6 btng dengan panjang 4,51m	Balok Kayu Horizontal 5/12
Scafolding : 12 Buah	Scafolding

Pelat Lantai Tipikal 5



Kebutuhan :	Keterangan Garis :
Balok Kayu Horizontal 5/12 : 52 btng dengan panjang 1,2m	Balok Kayu Vertikal 5/12
Balok Kayu Vertikal 5/12 : 8 btng dengan panjang 8m	Balok Kayu Horizontal 5/12
Scafolding : 20 Buah	Scafolding

Pelat Lantai Luifel



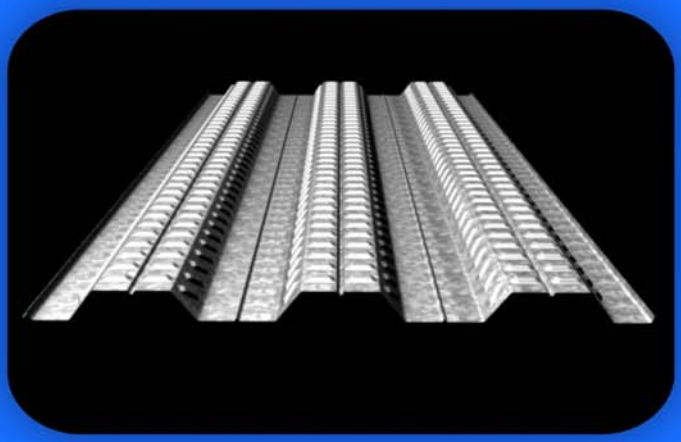
Kebutuhan :	Keterangan Garis :
Balok Kayu Horizontal 5/12 :9 btng dengan panjang 1,2m	Balok Kayu Vertikal 5/12
Balok Kayu Vertikal 5/12 : 2 btng dengan panjang 4,8m	Balok Kayu Horizontal 5/12
Scafolding : 8 Buah	Scafolding

LYSAGHT

The 1st HIGH TENSILE G550 W-Deck Profile in Indonesia

SMARTDEK™

The Real Structural Deck



DESIGN FLEXIBILITY

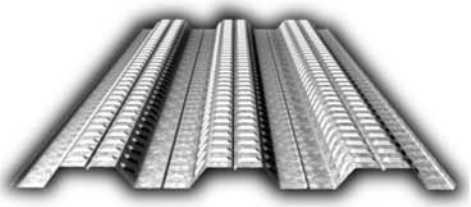
DURABILITY/ SECURITY

HI-TECH PRODUCTION

An enhanced look of SMARTDEK™

About SMARTDEK™

SMARTDEK™ is a new innovative steel decking profiled that brings greater economy and design freedom to building with composite concrete slabs. It is a unique and proudly to say that our design engineers scoured around the globe to find the best "W" - profiles in the world. After several careful examinations, our engineers incorporated the best aspects of each profile into new SMARTDEK™. The profile has been specifically developed for Australian high tensile steels - which makes SMARTDEK™ one of the best performing 'W' profiles in the world. This profile is designed to meet your requirement availability for diverse building needs.

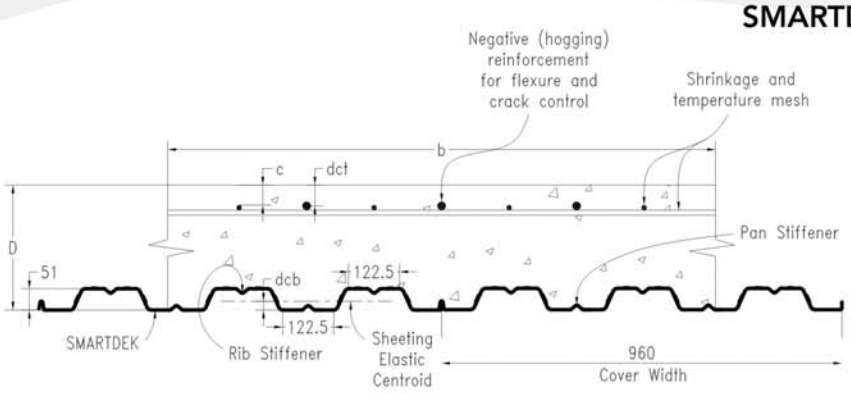


This resulted in a new innovative and optimized shape for SMARTDEK™, having flange stiffeners and deep embossments, which act as web stiffeners, to increase the load carrying capacity. Due to the large depth of the profile, an increase of the flexural rigidity reduces deflections.

SMARTDEK™ steel sheets are permanent formwork for a suspended composite concrete slab. In its assembled state, it can be used as a working platform and formwork to support wet concrete, construction materials and trades.

When the concrete hardens,SMARTDEK™ acts as the bottom reinforcement of the concrete slab. SMARTDEK™ is a complete structural steel decking system for concrete, masonry or steel frame construction.

SMARTDEK™ Profile and Dimension



TYPICAL SMARTDEK™ COMPOSITE SLAB SECTION

The nominal dimensions of SMARTDEK™ profiled steel sheeting are shown in the figure below.

The effective cover width is 960mm. In the assembled state, the profile comprises two intermediate male and female ribs for every interlocking side-lap joint.

Properties and Quality of SMARTDEK™

SMARTDEK™ Section Properties Table

	Unit	Symbol	Base Metal Thickness – BMT (mm)		
			0.70	1.0	1.20
Area	mm^2/m	A	889.69	1143.75	1523.96
Inertia Moment	mm^4/m	I_x	409687.50	526562.50	701979.17
Section Modulus	mm^3/m	Z_x	15156.25	19479.17	25958.33
Mass	$Kg./m^2$		7.35	9.34	12 .33

SMARTDEK™ Material Specification

SMARTDEK™ profiled steel sheeting is roll-formed from hot dipped , zinc coated, chromate - passivated, and high strength grade steel strip

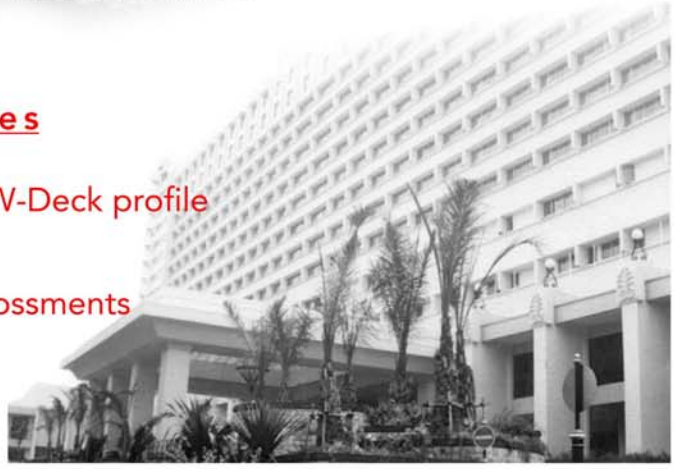
Thickness (BMT)	Coating Mass (Total of both sides)	Yield Strength	Australian Standard
0.70 mm	275g/m²	550 Mpa	AS 1397 G500
1.00 mm			
1.20 mm			

Distinctive Advantages of SMARTDEK™

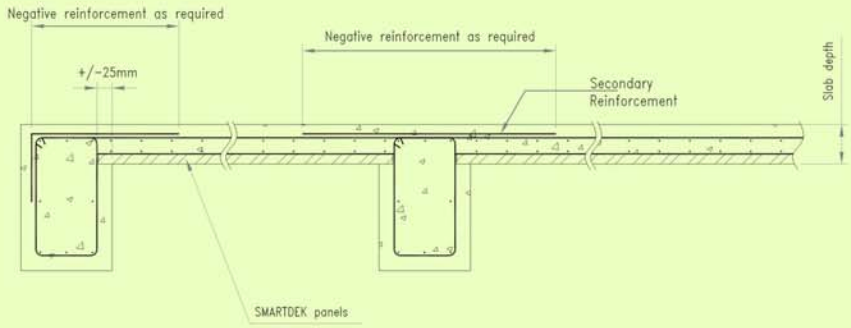
- Suitable to the most grids of diverse building modules to minimize
- Lesser propping required and unpropped span of up to 3.4 meters
- Concrete displacement up to 25% savings - lesser concrete is requi
- Standard embossments (3mm depth) improve composite action an
- Windows base MegaFloor software for composite slab design
- Ease of mind with real test data, strong technical and R&D support

SMARTDEK Profile Features

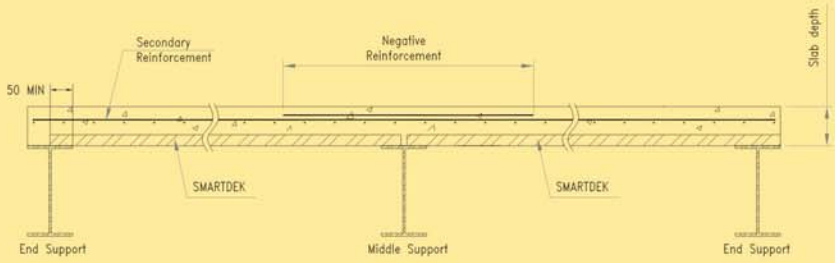
» 3 pans with 51mm rib height of W-Deck profile
» Pan and Rib Stiffener
» Top rib and close type web embossments
» High tensile Steel



Installation on Concrete Frame Construction



Installation on Steel Frame Construction



SMARTDEK™ Span Table (FORMWORK STAGE)

	Span Type	Single			Continuous End			Continuous Interior		
	BMT (mm)	0.7	1.0	1.2	0.7	1.0	1.2	0.7	1.0	1.2
Slab Thickness (mm)	100	2.121	2.521	2.733	2.336	2.965	3.266	2.415	3.064	3.376
	110	2.070	2.445	2.651	2.290	2.906	3.201	2.367	3.003	3.274
	120	2.021	2.377	2.578	2.246	2.850	3.140	2.322	2.936	3.184
	130	1.976	2.316	2.512	2.205	2.798	3.082	2.279	2.861	3.103
	140	1.934	2.261	2.452	2.166	2.748	3.027	2.238	2.793	3.029
	150	1.891	2.211	2.398	2.129	2.701	2.975	2.200	2.731	2.962
	160	1.852	2.166	2.348	2.093	2.656	2.926	2.164	2.675	2.901
	170	1.815	2.123	2.303	2.060	2.613	2.879	2.129	2.622	2.844
	180	1.782	2.084	2.260	2.028	2.573	2.834	2.096	2.574	2.791
	190	1.751	2.048	2.221	1.997	2.534	2.792	2.064	2.529	2.743
	200	1.722	2.014	2.184	1.968	2.497	2.751	2.034	2.487	2.697

* BMT (Base Metal Thickness)
Steel sheet thickness excluding the coating layer


Step 1
Open SMARTDEK™ sheet bundles


Step 2
Place temporary support if required


Step 3
Trim SMARTDEK sheets if required


Step 4
Place on steel or concrete beam


Step 5
Punch male and female lip


Step 6
Fix SMARTDEK™ to steel or concrete beam if required


Step 7
Fix steel edge form


Step 8
Place reinforcement


Step 9
Place concrete

SMARTDEK™ Installation

Why SMARTDEK™ Profile ??

1. Research & Development Support

BlueScope Lysaght places great emphasis on product research and testing. All of our LYSAGHT® structural products are subjected to rigorous tests such as slip block test, formwork tests including shear and bearing, full scale slab test, composite slab cyclic test, fire rating test, formwork - air pressure test, formwork - four point load test and concentrated load test. These tests are carried out in the labs of the Lysaght Technology Center in Chester Hill, Sydney, Australia, to ensure maximum performance and quality of our decking profiles.

2. Product Recommendation & Design to Suit your Specifications

Working from your project specifications, our engineers will follow-up on your requirements and work out a set of calculations and a project proposal. A user-friendly Excel-based software for the design of composite slabs with LYSAGHT SMARTDEK™ profile will be available to assist a competent engineer in deriving an optimal solution. This software should be used in conjunction with the SMARTDEK™ Design and Construction Guide.

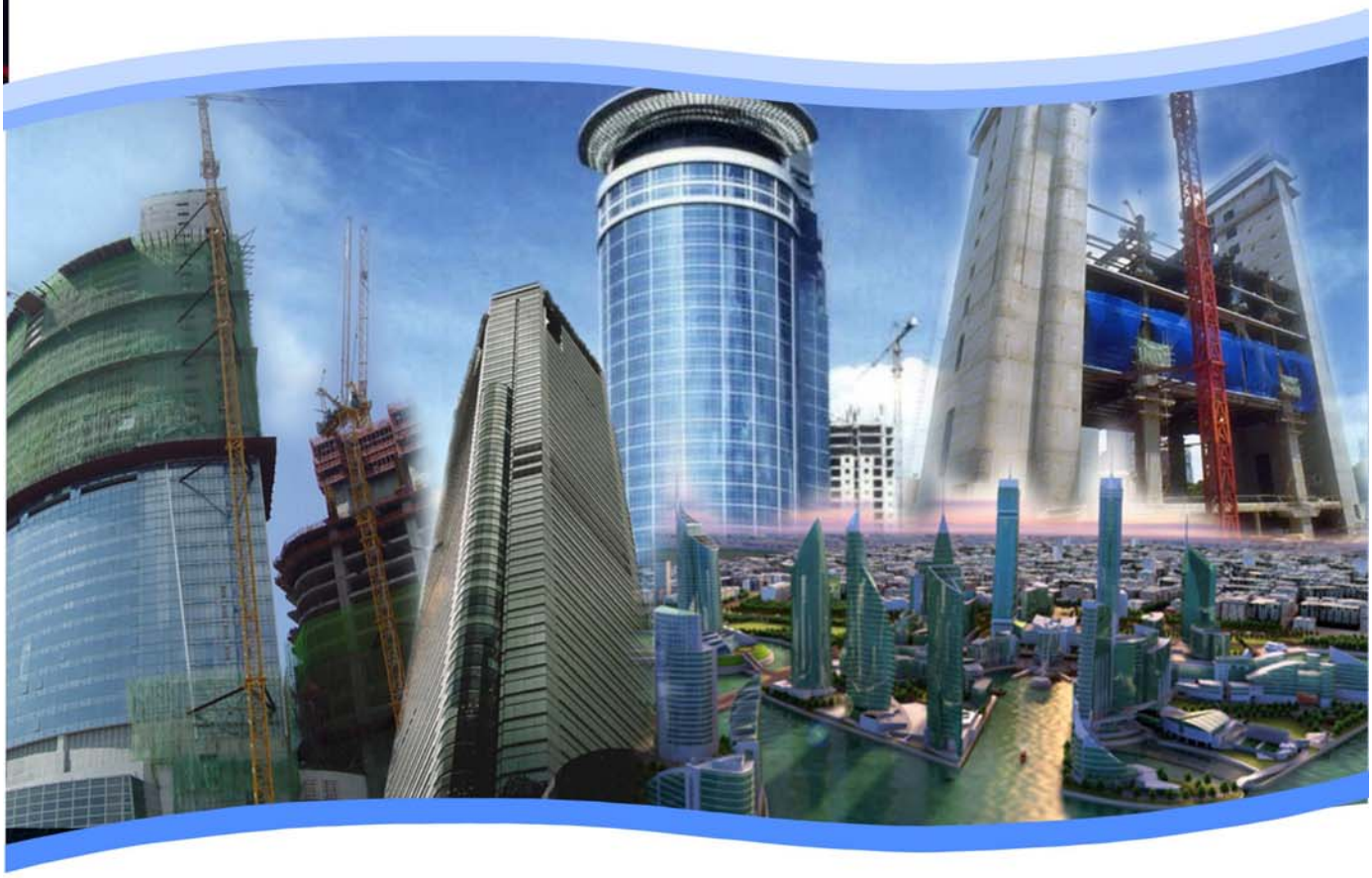
3. Quality Assurance - Material & Manufacturing Process

The LYSAGHT® brand name is synonymous with quality and performance. As with all other LYSAGHT® products, SMARTDEK™ " profiled steel sheets comply with major design standards adopted across Asia.

3. World Wide Project Experience

Proven track of succesfull world wide project reference from previous profile (BONDEK, 2W-DEK, 3W-DEK,Etc) on medium to high rise buildings give us strong knowledge for implementary SMARTDEK on every construction.

Series Of Distinctive Test and Off Site Trials of SMARTDEK™



For further information, brochures
and your local distributors call :

phone : (021) 8998-2965

facs : (021) 8998-2966

Jl. Desa Danau Indah - Blok DD2/2
Kawasan Industri MM-2100
Cibitung - BEKASI 17520
INDONESIA

www.lysaghtdeckingasia.com
www.bluescopesteel.co.id

PT BlueScope Lysaght Indonesia

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(62-21) 8998-2965

Surabaya:
(62-31) 897-1279

Medan:
(62-61) 685-1555

BLUESCOPE
LYSAGHT

UNIVERSITAS ISLAM INDONESIA
FAKULTAS TEKNIK SIPIL DAN PERENCANAAN
JURUSAN: TEKNIK SIPIL, ARSITEKTUR, TEKNIK LINGKUNGAN

KAMPUS: Jl. Kaliurang Km. 14,5 Telp. (0274) 898471, 898472, 896440, 898583, 898585; Fax: 895330
Email: dekanat.ftsp@uii.ac.id, Yogyakarta Kode Pos 55584

Nomor : 464 / Prodi . TS . 20/TA/03/2017

Yogyakarta, 07 March 2017

Lampiran :

Hal : **Permohonan Izin Penelitian TA & Pengambilan Data untuk TA.**

Kepada Yth:
Bpk/Ibu Bidang Pengelola Fasilitas Kampus

di Tempat

Assalamu'alaikum Wr.Wb.

Dalam rangka mempersiapkan mahasiswa untuk menempuh ujidn Tugas akhir/Skripsi maka setiap mahasiswa diwajibkan untuk menyusun Tugas Akhir/skripsi. Sehubungan dengan hal tersebut diatas maka diperlukan data-data, baik dari instansi Pemerintah BUMN, ataupun dari perusahaan swasta/Proyek.
Berdasarkan alasan-alasan tersebut diatas, maka dengan ini kami mohon bantuannya untuk dapat memberikan izin Penelitian & Pengambilan Data untuk keperluan penyusunan Tugas Akhir bagi mahasiswa Fakultas Teknik Sipil dan Perencanaan Universitas Islam Indonesia Yogyakarta. Adapun nama mahasiswa tersebut adalah :

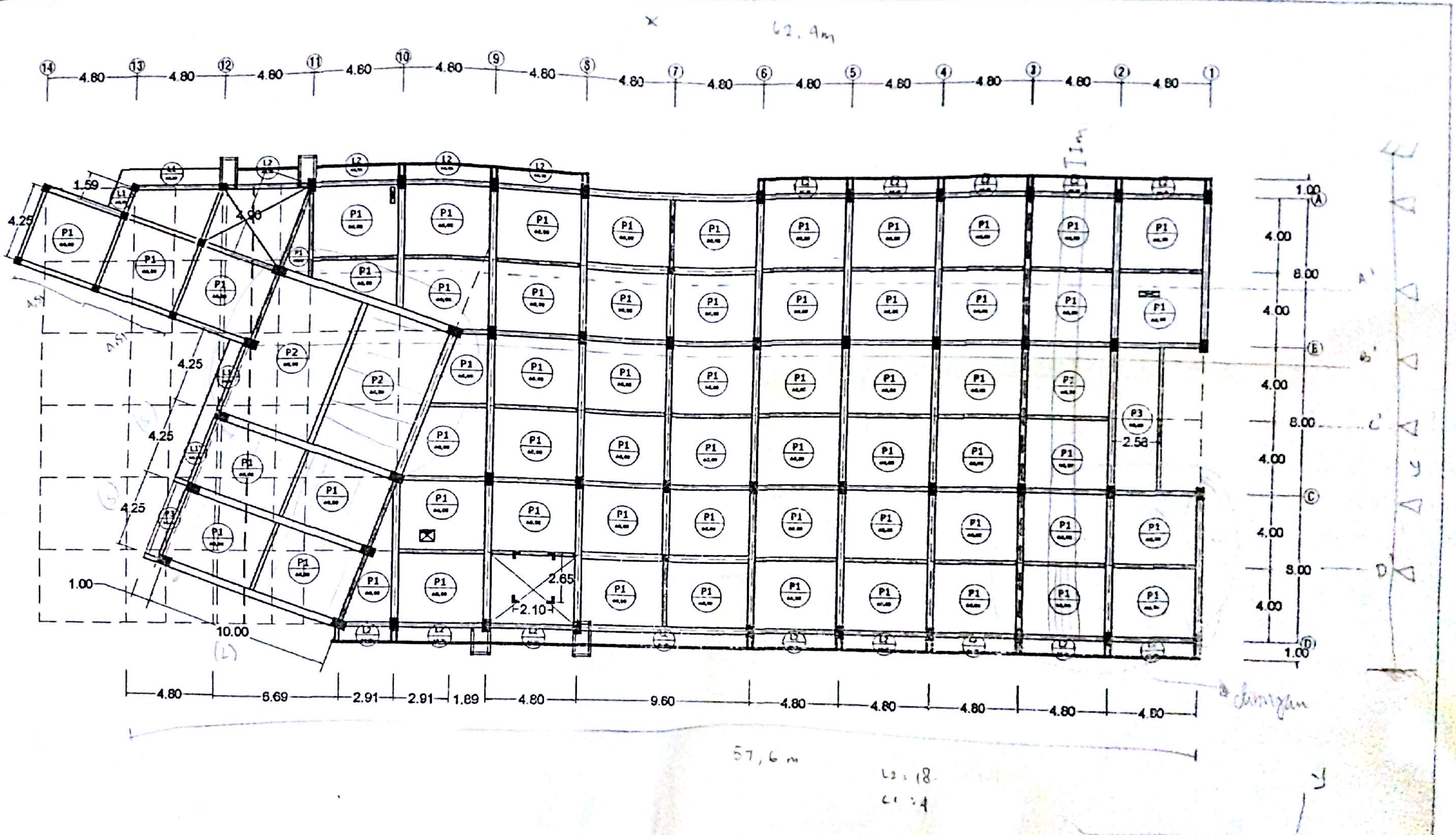
Nama	: DIAH AYU PUTRI
No. Mhs	: 13511256
Prodi	: Teknik Sipil

Demikian Permohonan ini kami sampaikan, atas bantuannya dan kerjasamanya kami Ucapkan banyak terima kasih.

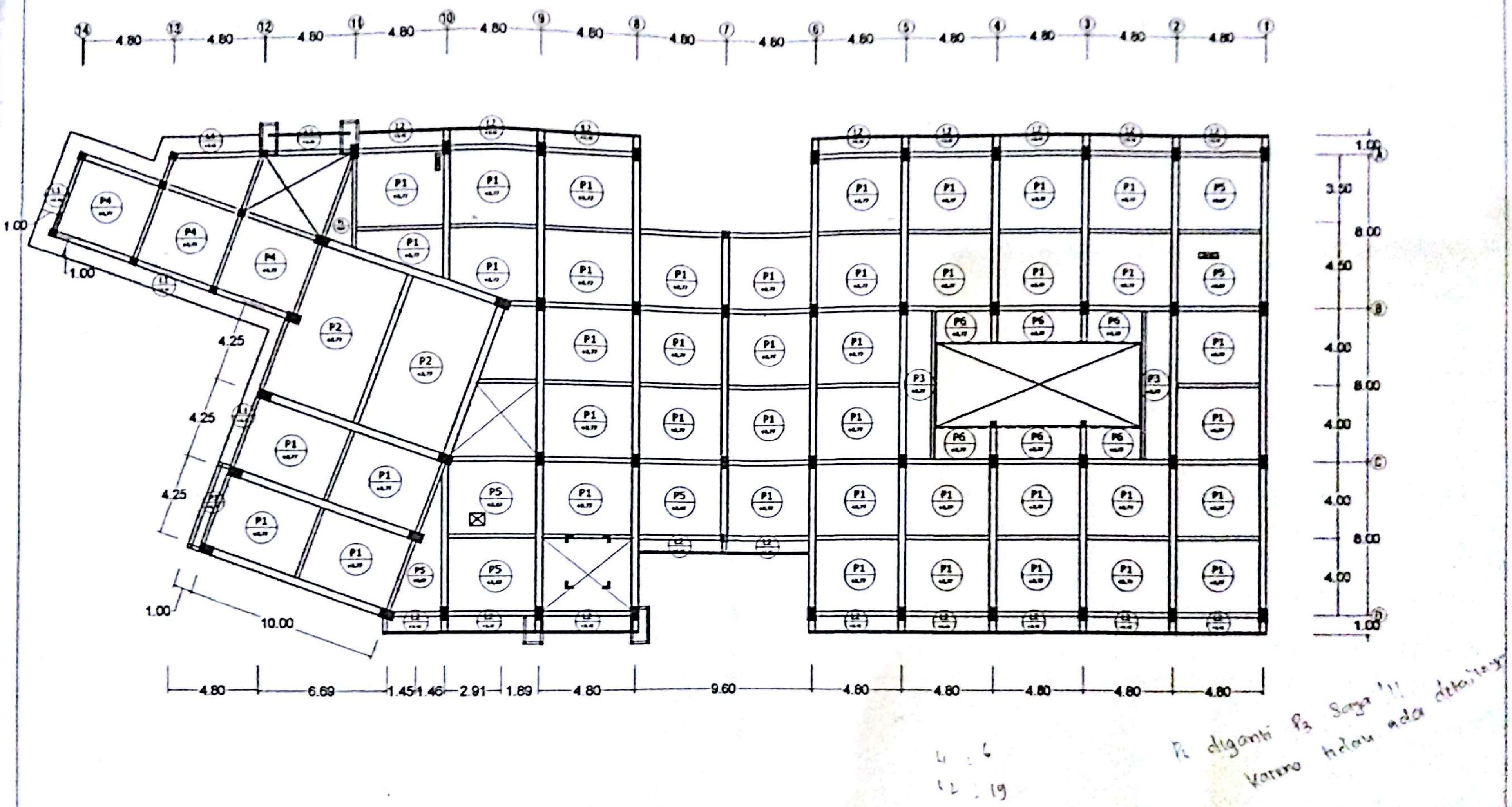
Wassalamu'alaikum wr. wb.

Yogyakarta, 07 March 2017
Ketua Prodi Teknik Sipil

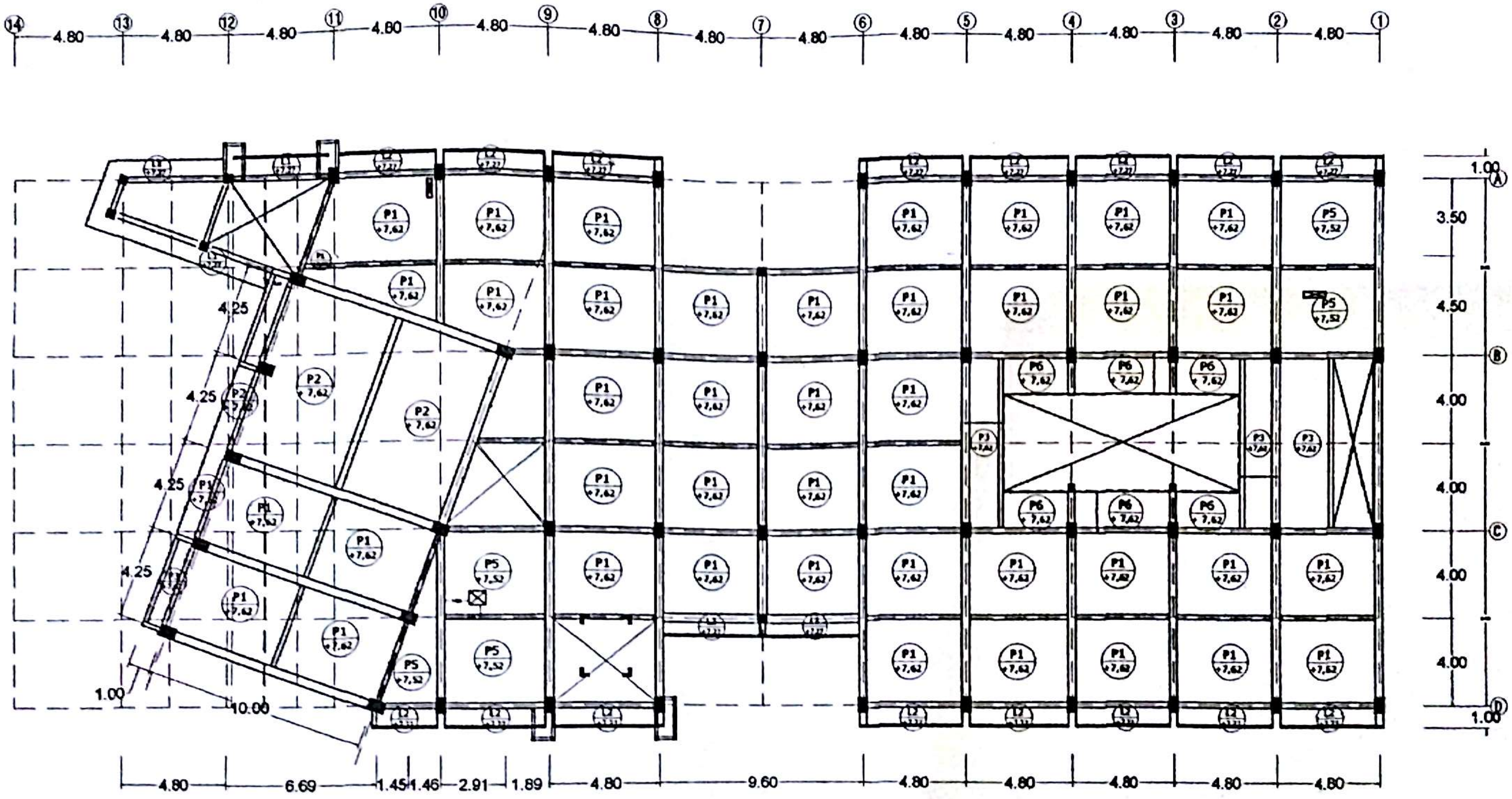
Miftahul Fauziah, S.T., M.T., Ph.D.



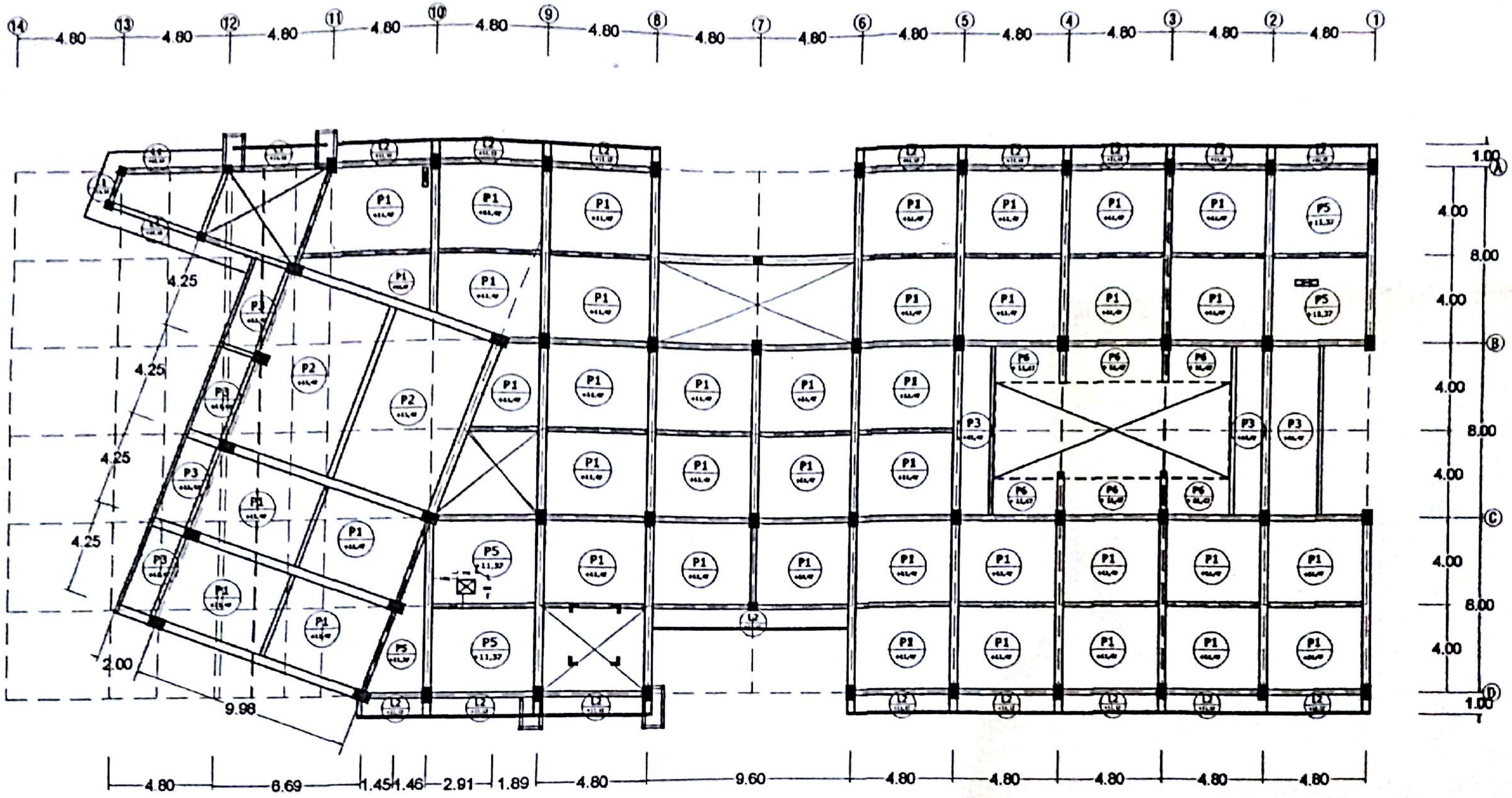
PROYEK PEMBANGUNAN GEDUNG KULIAH FAKULTAS MIPA	Penanggung Jawab	Perencana				Pelaksana			JUDUL GAMBAR	Skala	Kode	Lembar Ke
	Ketua Umum BW-UII	Koord. Perencana	Arsitek	Konstruktor	MEE	Project Manager	Site Manager	Drafter	DENAH TIPIKAL PELAT LANTAI (LANTAI 1)	1:200	STR	48



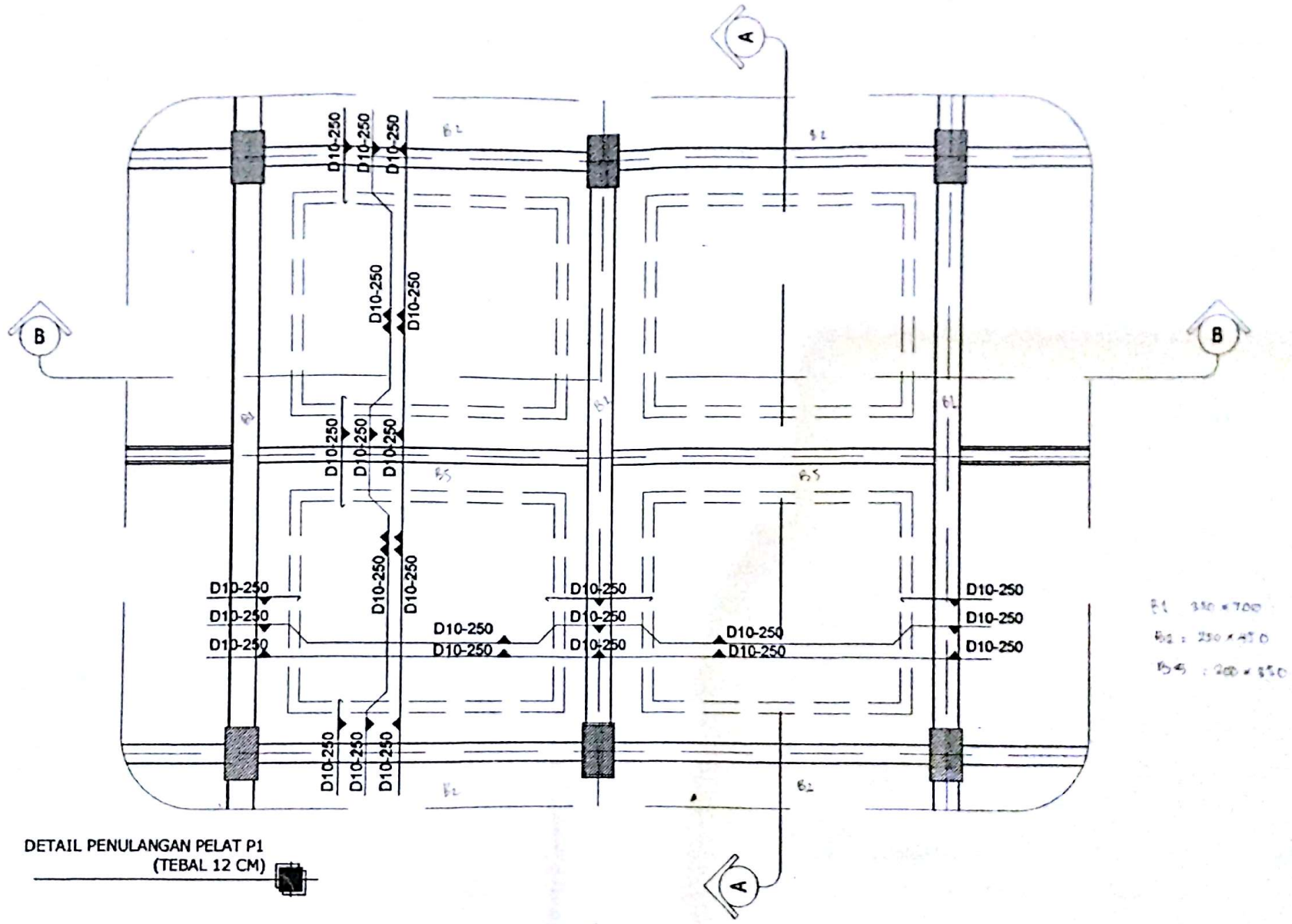
PROYEK PEMBANGUNAN GEDUNG KULIAH FAKULTAS MIPA	Penanggung Jawab: Ketua Umum BW-UII	Perencana: Koord. Perencana, Analisk, Konstruksi, MEE
Pelaksana: Project Manager, Site Manager, Drafter	JUDUL GAMBAR: DENAH TIPIKAL PELAT LANTAI (LANTAI 2)	Skala: 1:200 · Kode: STR · Lembar ke: 49



UNIVERSITAS ISLAM INDONESIA	Penanggung Jawab	Perencana				Pelaksana			JUDUL GAMBAR	Skala	Kode	Lembar Ke
PROYEK PEMBANGUNAN GEDUNG KULIAH FAKULTAS MIPA	Ketua Umum BW-UII	Koord. Perencana	Arsitek	Konstruktor	MEE	Project Manager	Site Manager	Drafter	DENAH TIPIKAL PELAT LANTAI (LANTAI 3)	1:200	STR	50
	Dr. Ir. H. Luthfi Hasan, MS	Noor Cholis I., ST., M.Arch., Ph.D	[illegible]	[illegible]	[illegible]	[illegible]						



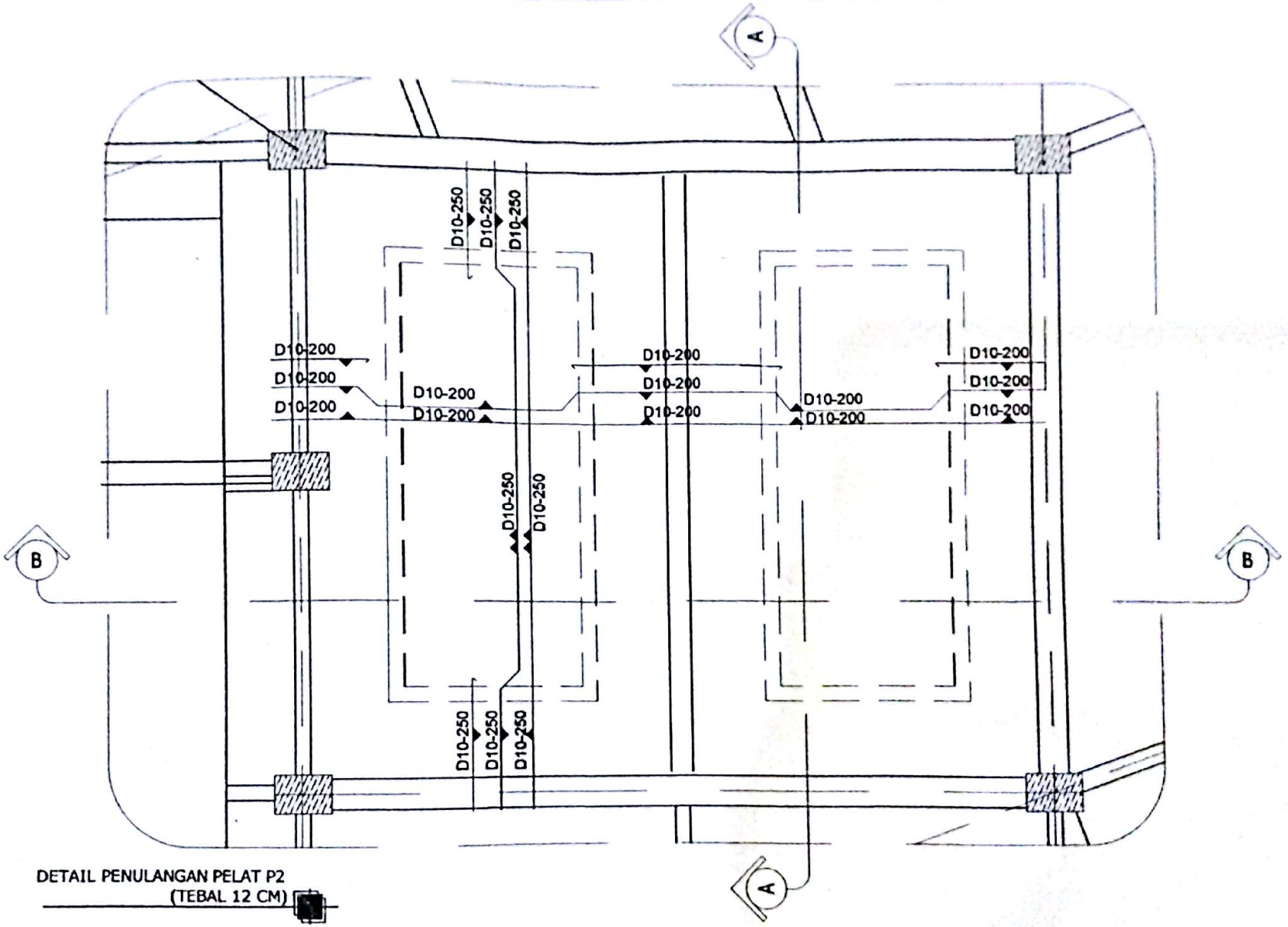
UNIVERSITAS ISLAM INDONESIA	Penanggung Jawab	Perencana				Pelaksana			JUDUL GAMBAR	Skala	Kode	Lembar Ke
PROYEK PEMBANGUNAN GEDUNG KULIAH FAKULTAS MIPA	Ketua Umum BW-UII	Koord. Perencana	Arsitek	Konstruktor	MEE	Project Manager	Site Manager	Drafter	DENAH TIPIKAL PELAT LANTAI (LANTAI 4)	1:200	STR	51
	Dr. Ir. H. Luthfi Hasan, MS	[illegible]	[illegible]	Y... M, ST, MT	Ir. Agus Jamal, MT	Ir. Heinz ... Bais, MT	[illegible]	[illegible]				



DETAIL PENULANGAN PELAT P1
(TEBAL 12 CM)

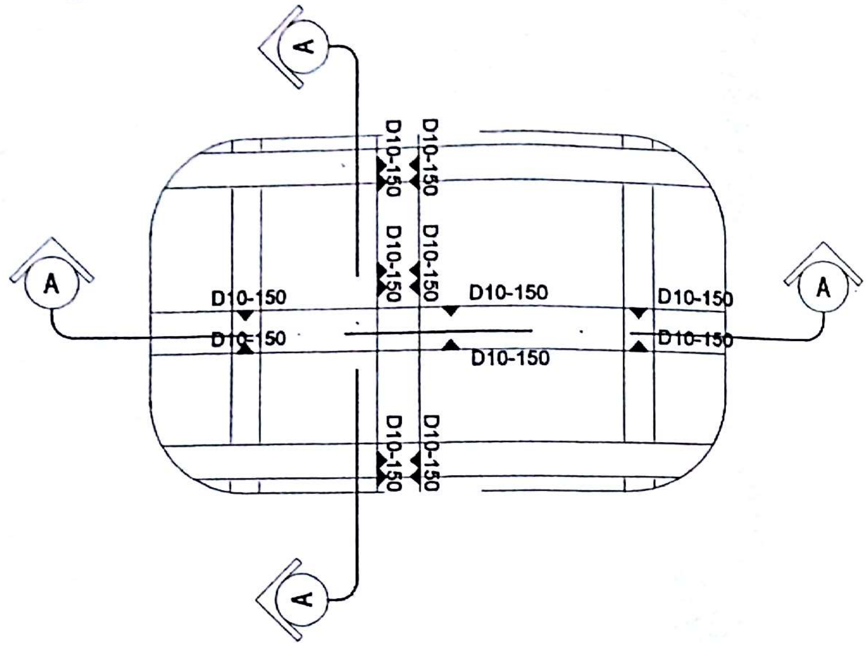
PROYEK PEMBANGUNAN GEDUNG KULIAH FAKULTAS MIPA	Penanggung Jawab	Perencana				Pelaksana			JUDUL GAMBAR	Skala	Kode	Lembar No
	Ketua Umum BW-UII	Koord. Perencana	Arsitek	Konstruktor	MEE	Project Manager	Site Manager	Drafter	DETAIL PELAT P1	1:50	STR	54

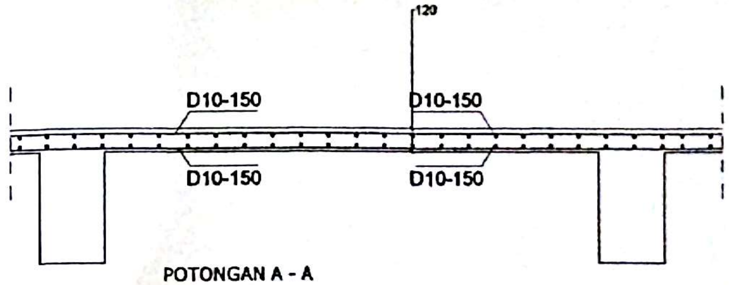
P2



DETAIL PENULANGAN PELAT P2
(TEBAL 12 CM)

UNIVERSITAS ISLAM INDONESIA	PROYEK PEMBANGUNAN GEDUNG KULIAH FAKULTAS MIPA	Penanggung Jawab: Ketua Umum BW-UII	Perencana: Koord. Perencana	Arsitek	Konstruktur	MEE	Pelaksana: Project Manager	Site Manager	Drafter	JUDUL GAMBAR: DETAIL PELAT P2	Skala: 1:50	Kode: STR	Lembar No: 57





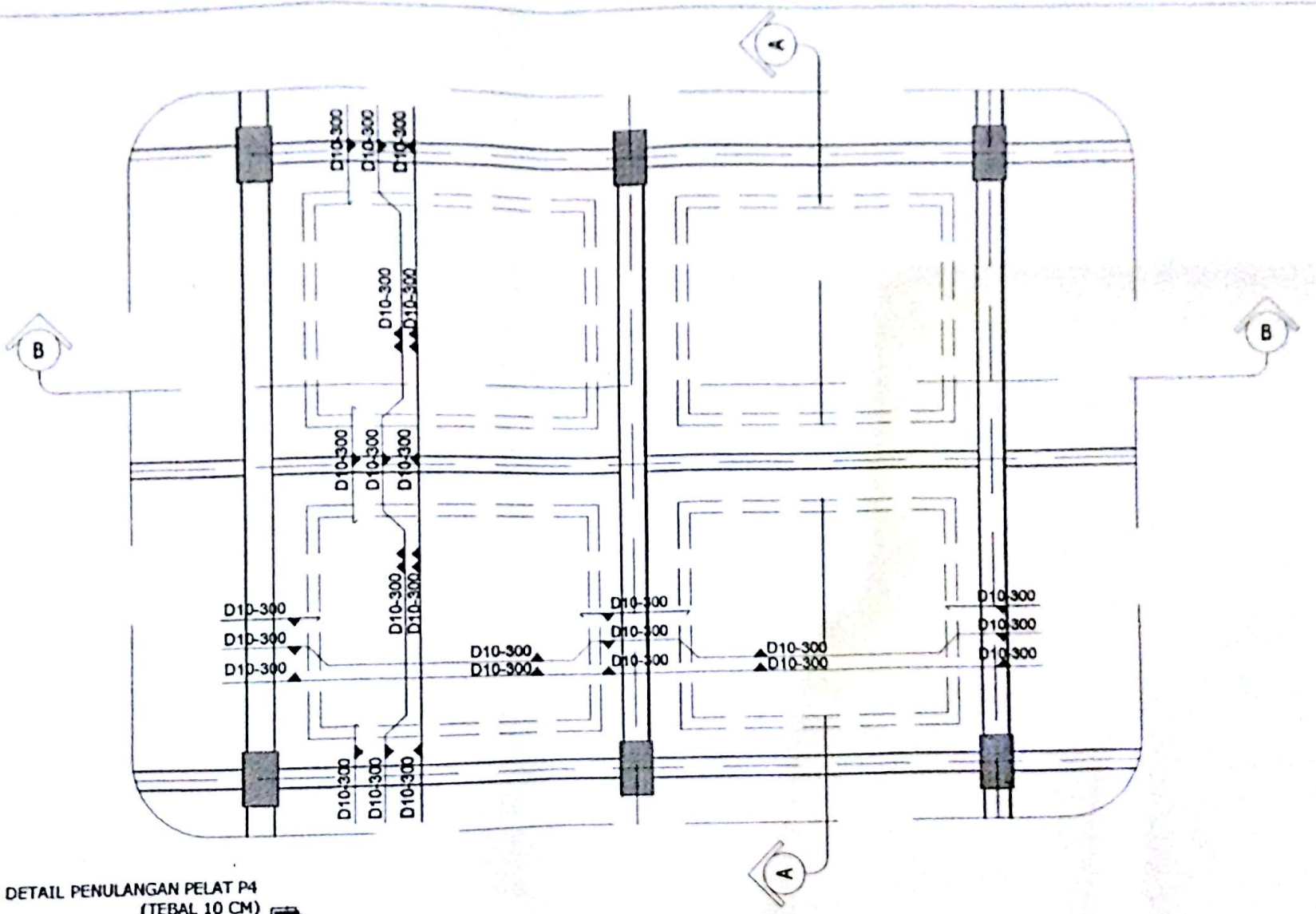
POTONGAN A - A

POTONGAN PENULANGAN
MELINTANG PELAT P3

DETAIL PENULANGAN PELAT P3
(TEBAL 12 CM)

UNIVERSITAS ISLAM INDONESIA	PROYEK PEMBANGUNAN GEDUNG KULIAH FAKULTAS MIPA	Penanggung Jawab	Perencana				Pelaksana			JUDUL GAMBAR	Skala	Kode	Lembar Ke
		Ketua Umum BW-UII	Koord. Perencana	Arsitek	Konstruktor	MEE	Project Manager	Site Manager	Drafter	DETAIL PELAT P3	1:50	STR	60
		Dr. Ir. H. Luthfi Hasan, MS	Noor Cholis I.ST,M.Arch,Ph.D	[illegible]	[illegible], ST, MT	Ir. [illegible], MT	Ir. [illegible], MT	[illegible]	[illegible], ST				

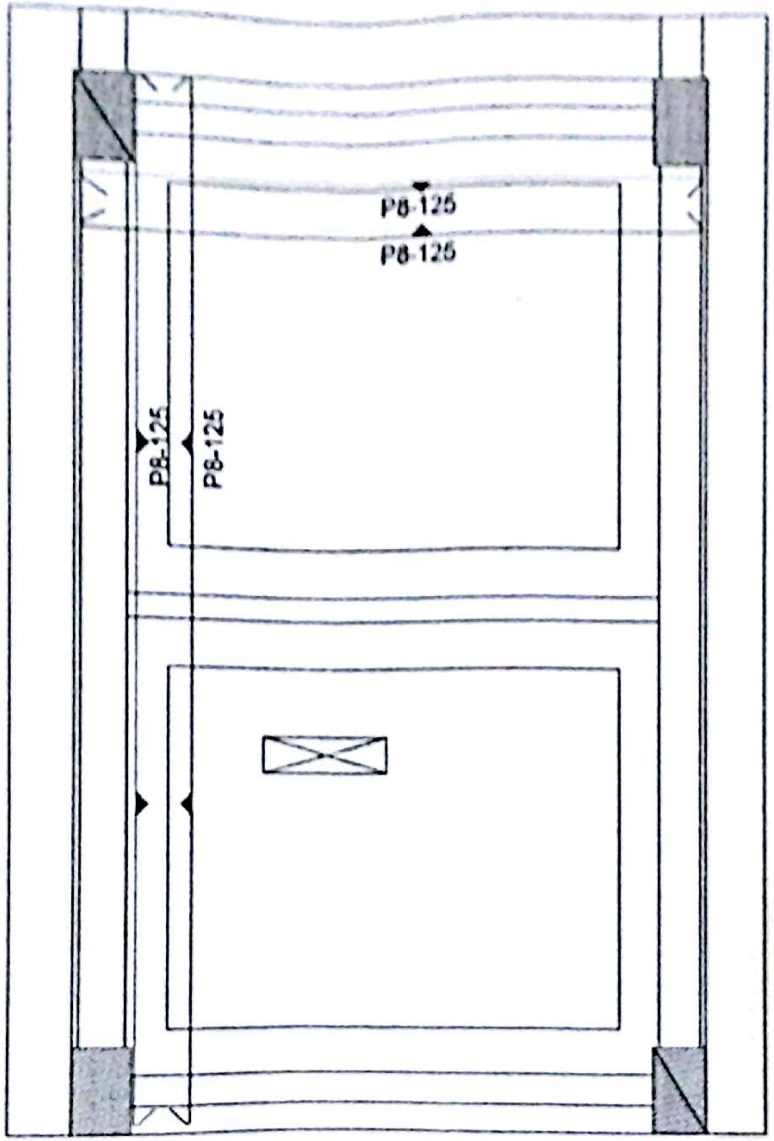
P4



DETAIL PENULANGAN PELAT P4
(TEBAL 10 CM)

PROYEK PEMBANGUNAN GEDUNG
KULIAH FAKULTAS MIPA

Penanggung Jawab	Perencana				Pemilsana			JUDUL GAMBAR	Skala	Kode	Lembar No.
Ketua Umum BW-Ltd	Koord. Perencana	Arsitek	Konstruktor	MEE	Project Manager	Site Manager	Owner	DETAIL PELAT P4	1:50	STR	62



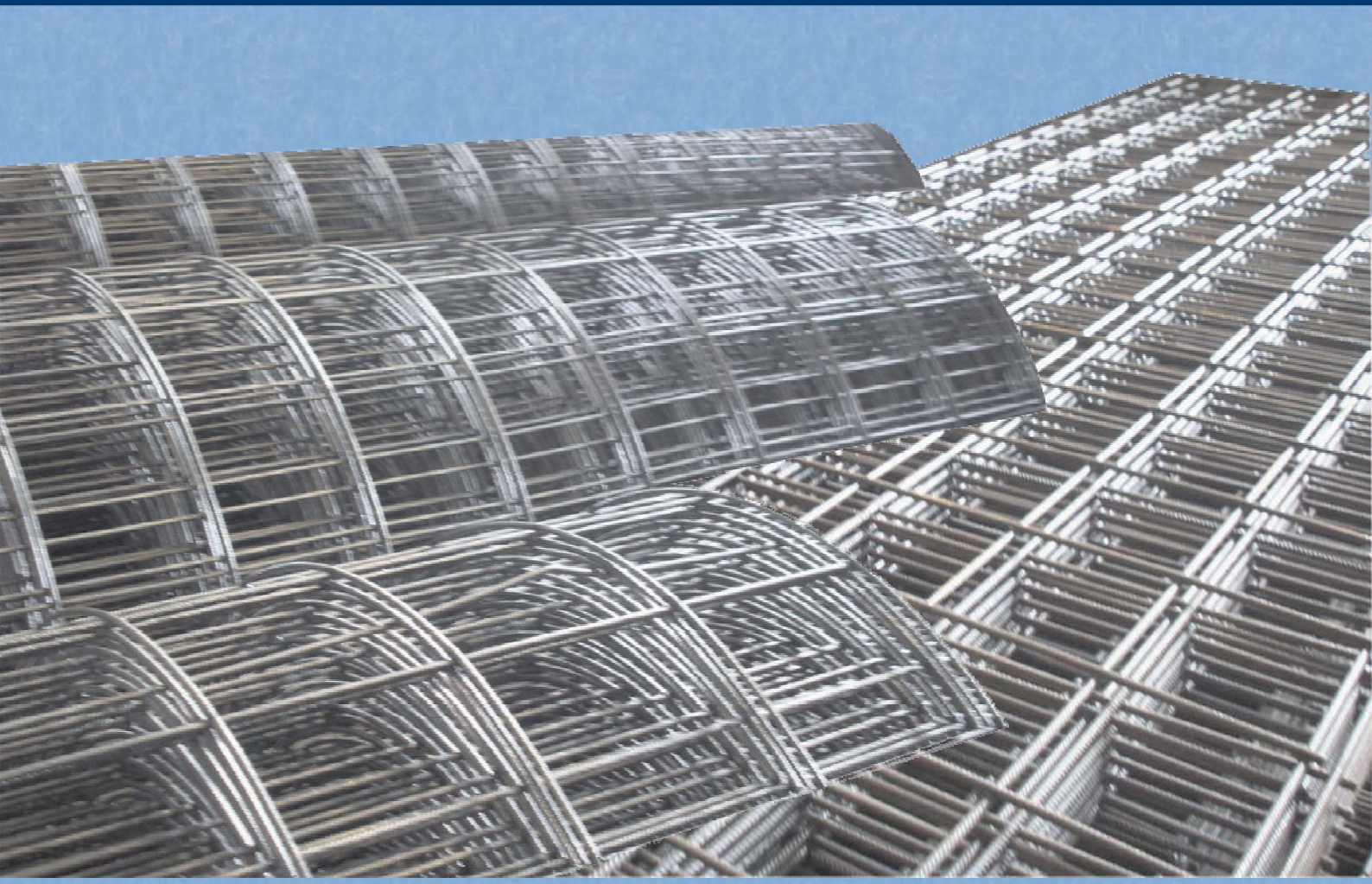
DATA BAHAN

fy Deform : 400 MPa
fy Polos : 240 MPa
f'c : 30 MPa

PROYEK PEMBANGUNAN GEDUNG KULIAH FAKULTAS MIPA

Penanggung Jawab	Perencana				Pelaksana			JUDUL GAMBAR	Skala	Kode	Lembar No.
Ketua Unsyiah BW-UE	Koord. Perencana	Arsitek	Konstruksi	MEE	Project Manager	Site Manager	Drafter	DETAIL PELAT P5	1:50	STR	64

UNION WIRE MESH®



UNION
1972

PT. UNION METAL

A UNION SAMPOERNA CO.

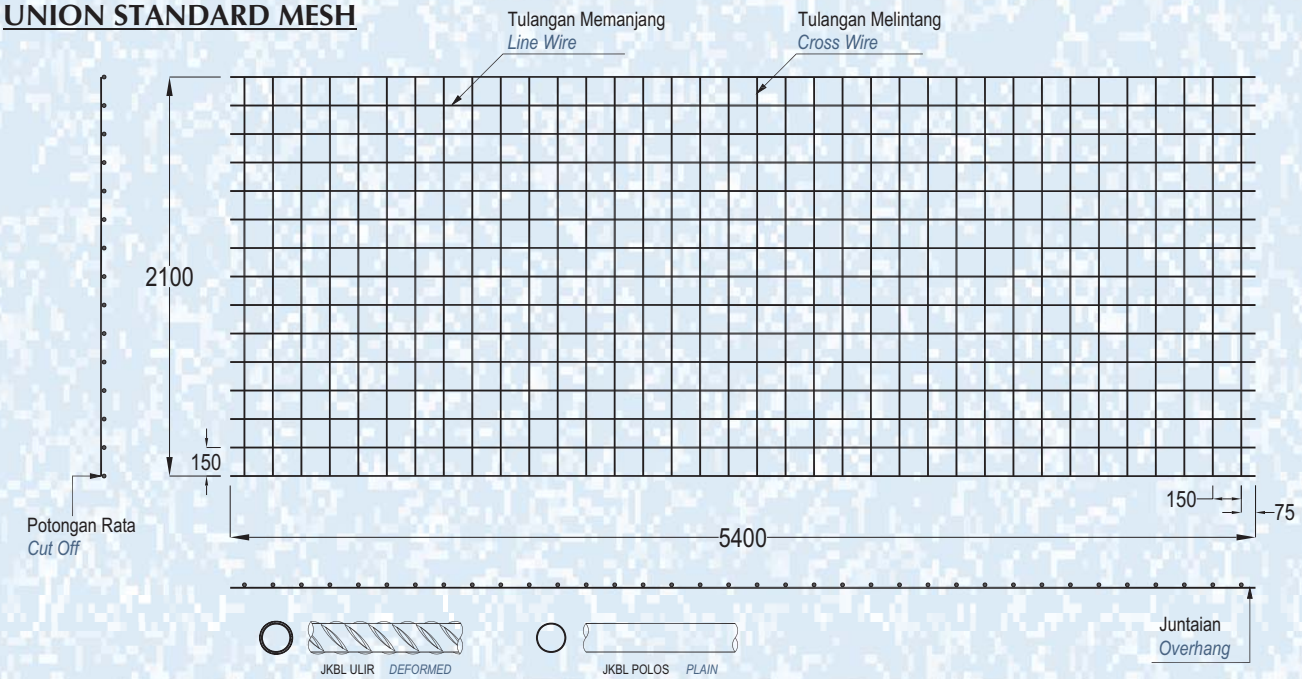
INFORMASI PRODUK

PRODUCT INFORMATION

Union Wire Mesh adalah jaring baja tulangan bermutu tinggi yang mempunyai tegangan leleh karakteristik 5.000 kg/cm² yang dirangkai sedemikian rupa menggunakan las listrik untuk mendapatkan tegangan geser berkualitas tinggi sebesar 2.500 kg/cm² di setiap titik pertemuan kawatnya.

Union Wire Mesh is made from high tensile reinforcing wire rod having characteristic yield strength of 5,000 kg/cm² and it is electrically welded to obtain high quality shearing strength of 2,500 kg/cm² in each welded point.

UNION STANDARD MESH



BERAT PER LEMBAR — ***MASS PER SHEET***

TYPE	M4	M5	M6	M7	M8	M9	M10	M12	M16
DIAMETER (mm)	4	5	6	7	8	9	10	12	16
BERAT PER LEMBAR (kg)	15,45	24,14	34,76	47,31	61,79	78,21	96,55	139,03	247,17

Spesifikasi

Diameter JKBL Union	: 4 mm sampai 16 mm
Standar Bahan	: SNI 07-0663-1995
Tegangan Leleh Karakteristik	: 5.000 kg/cm², mutu U-50
Tegangan Geser Kampuh Las	: 2.500 kg/cm²
Bentuk Permukaan Kawat	: Polos dan Ulir
Spasi Standard	: 150 mm x 150 mm (Type M) 100 mm x 200 mm (Type B)
Ukuran Standard	: Lembar : 5,4 m x 2,1 m (M4 - M16) Roll : 54 m x 2,1 m (M4 - M6)

Specification

Diameter of Union Mesh	*: 4 mm up to 16 mm*
Material Standard	*: SNI 07-0663-1995*
Characteristic Yield Strength	*: 5,000 kg/cm², grade U-50*
Welding Shear Strength	*: 2,500 kg/cm²*
Types of Bar Surfaces	*: Plain and Deformed*
Standard Spacings	*: 150 mm x 150 mm (M Type)* *100 mm x 200 mm (B Type)*
Standard Sizes	*: Sheet : 5.4 m x 2.1 m (M4 - M16)* *Roll : 54 m x 2.1 m (M4 - M6)*

Produksi Union Wire Mesh

Dengan dukungan dari mesin pembentuk JKBL kami yang modern dan menggunakan teknologi komputer, kami terbukti berkemampuan untuk memproduksi ukuran JKBL yang bervariasi dengan hasil pengelasan sempurna sampai dengan diameter 16 mm.

- Jarak spasi : 50 mm; 100 mm; 150 mm; 200 mm; 250 mm; dan 300 mm
- Juntaian kawat memanjang maksimum 1.200 mm kedua sisi nya
- Jarak spasi kawat melintang minimum 50 mm sesuai dengan diameter
- Jika tulangan ukuran spesial diperlukan, staff berpengalaman kami siap untuk membantu mendesainkan yang terbaik dan paling efisien
- Untuk M12 sampai dengan M16, harap konsultasi dengan kami

Union Wire Mesh Production

By means of our modern and computerized wire mesh welding machines, we have proven capability to produce various sizes of mesh with perfect welding result up to diameter 16 mm.

- *Spacings : 50 mm; 100 mm; 150 mm; 200 mm; 250 mm and 300 mm*
- *Line wire over hang maximum 1,200 mm both sides*
- *Cross wire spacing minimum 50 mm subject to diameters*
- *If special sizes of reinforcement are required, our experienced technical staffs are ready to assist for designing the best and most efficient ones*
- *For M12 to M16, please consult with us*

Penggunaan

1. Lantai beton : pabrik, gudang, gedung bertingkat, parkir, dll
2. Dinding beton : gedung bertingkat, perumahan, penyekat ruangan, dll
3. Jalan beton, konstruksi cakar ayam, landasan pesawat terbang
4. Saluran irigasi, saluran drainase, bronjong
5. Kerangka kolom dan balok praktis untuk perumahan
6. Dinding penahan, dinding pemikul beban di dalam gedung
7. Pagar, teralis, kandang hewan

Applications

1. *Concrete floor : factory, warehouse, high rise building, car park, etc*
2. *Concrete wall : high rise building, houses, room divider, etc*
3. *Rigid pavement, strip footing construction, landing strip*
4. *Irrigation and drainage open channels, gabion basket*
5. *Non structural column and beam reinforcement for houses*
6. *Retaining wall, structural wall inside the building*
7. *Fence, railings, cages*

PERENCANAAN & DESAIN

PLANNING & DESIGN

Perhitungan Konversi

Mengganti tulangan biasa (U-24)
dengan JKBL Union (U-50)

Rumus :

$$\text{Luas JKBL union (U-50)} = \text{Luas tulangan biasa (U-24)} \times \frac{\text{Tegangan leleh U-24}}{\text{Tegangan leleh U-50}}$$

Contoh :

Diketahui : Tulangan U-24
Diameter = 10 mm
Jarak spasi = 150 mm
Luas tulangan = 5,24 cm²/m'

$$\text{Luas JKBL union} = 5{,}24 \text{ cm}^2/\text{m}' \times \frac{2.400 \text{ kg/cm}^2}{5.000 \text{ kg/cm}^2}$$

$$= 2{,}515 \text{ cm}^2/\text{m}'$$

Dari Tabel diperoleh : JKBL Union
Diameter 7 mm dengan spasi 150 mm
Luas 2,57 cm²/m'

Conversion Calculation

Substituting union wire mesh (U-50)
for ordinary reinforcement (U-24)

Formula :

$$\textit{Union Wire Mesh area (U-50)} = \textit{Mild Steel bar area (U-24)} \times \frac{\textit{Yield stress U-24}}{\textit{Yield stress U-50}}$$

Example :

Given : Mild Steel bar U-24
Diameter = 10 mm
Spacing = 150 mm
Cross sectional area = 5.24 cm²/m'

$$\textit{Union Wire Mesh area} = 5.24 \text{ cm}^2/\text{m}' \times \frac{2{,}400 \text{ kg/cm}^2}{5{,}000 \text{ kg/cm}^2}$$

$$= 2.515 \text{ cm}^2/\text{m}'$$

From the Table is obtained : Union Wire Mesh
Diameter 7 mm with 150 mm spacing
Area 2.57 cm²/m'

TABEL LUAS PENAMPANG KAWAT

WIRE AREA TABLE

Diameter Kawat Ø *Wire Diameter* (mm)	Luas Kawat Ø *Wire Area* (cm^2)	Jumlah Luas Penampang Kawat (cm^2/m') Menurut Spasinya Setiap Arah *Total Wire Area (cm^2/m') According to Spacing Each Direction* — Spasi / *Spacing* (mm)											
		50	75	100	125	150	175	200	225	250	275	300	325
4.0	0.126	2.51	1.68	1.26	1.01	0.84	0.72	0.63	0.56	0.50	0.46	0.42	0.39
4.5	0.159	3.18	2.12	1.59	1.27	1.06	0.91	0.80	0.71	0.64	0.58	0.53	0.49
5.0	0.196	3.93	2.62	1.96	1.57	1.31	1.12	0.98	0.87	0.79	0.71	0.65	0.60
5.5	0.238	4.75	3.17	2.38	1.90	1.58	1.36	1.19	1.06	0.95	0.86	0.79	0.73
6.0	0.283	5.65	3.77	2.83	2.26	1.88	1.62	1.41	1.26	1.13	1.03	0.94	0.87
6.5	0.332	6.64	4.42	3.32	2.65	2.21	1.90	1.66	1.47	1.33	1.21	1.11	1.02
7.0	0.385	7.70	5.13	3.85	3.08	2.57	2.20	1.92	1.71	1.54	1.40	1.28	1.18
7.5	0.442	8.84	5.89	4.42	3.53	2.95	2.52	2.21	1.96	1.77	1.61	1.47	1.36
8.0	0.503	10.05	6.70	5.03	4.02	3.35	2.87	2.51	2.23	2.01	1.83	1.68	1.55
8.5	0.567	11.35	7.57	5.67	4.54	3.78	3.24	2.84	2.52	2.27	2.06	1.89	1.75
9.0	0.636	12.72	8.48	6.36	5.09	4.24	3.64	3.18	2.83	2.54	2.31	2.12	1.96
9.5	0.709	14.18	9.45	7.09	5.67	4.73	4.05	3.54	3.15	2.84	2.58	2.36	2.18
10.0	0.785	15.71	10.47	7.85	6.28	5.24	4.49	3.93	3.49	3.14	2.86	2.62	2.42
12.0	1.131	22.62	15.08	11.31	9.05	7.54	6.46	5.65	5.03	4.52	4.11	3.77	3.48
16.0	2.011	40.21	26.81	20.11	16.08	13.40	11.49	10.05	8.94	8.04	7.31	6.70	6.19

PEMASANGAN & KONSTRUKSI

INSTALLATION & CONSTRUCTION

Pemasangan dan penyambungan JKBL Union tidaklah susah, tetapi perlu diperhatikan beberapa hal, sehingga didapati hasil yang optimal dan benar.

Installation and joint of Union Wire Mesh is easy, just need to pay attention to the following matters in order to get an optimum and good result.

A. Sambungan JKBL Union

1. Sambungan Sekuat Tegangan Leleh

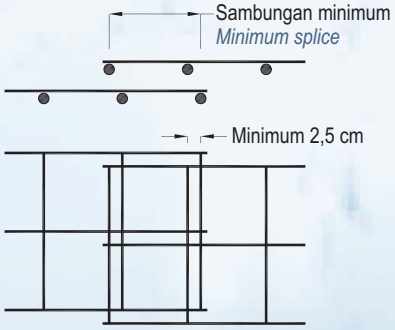
Suatu sambungan akan setara tegangan leleh penuh kalau lembaran itu berhimpitan sejauh satu kotak spasi (dua kampuh las), ditambah minimal 2,5 cm.

2. Sambungan Separuh Tegangan Leleh

Suatu sambungan akan setara dengan separuh tegangan leleh, kalau lembaran itu berhimpitan sejauh satu kampuh las ditambah minimal 2,5 cm.

*** Sambungan dengan Tegangan Leleh Penuh**

Full Yield Strength Lap Splice



Catatan :

Tambahan sebesar 2,5 cm adalah jarak minimal agregat beton yang diijinkan oleh Peraturan Beton Indonesia (PBI 8.16.1), membantu agar beton tersebut dapat padat di sekitar kawat tersebut.

Persyaratan sambungan separuh tegangan leleh kadang-kadang diijinkan untuk sambungan di tepi plat satu arah (one way slab), tetapi sebaiknya sambungan tersebut ditentukan oleh insinyur bangunan.

Sebaiknya sambungan digunakan sekuat tegangan leleh dan ditempatkan di titik-titik yang bertegangan tarik tidak maksimum.

A. Union Wire Mesh Overlap

1. Full Yield Strength Lap Splice

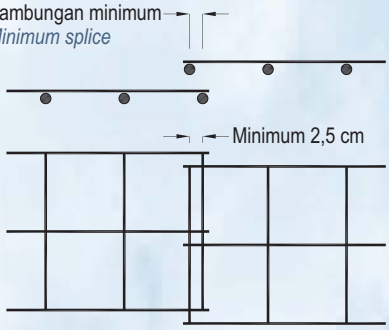
A lap will have a full strength of yield stress when the mesh is placed overlap by one spacing (two welds) plus a minimum of 2.5 cm.

2. Half Yield Strength Lap Splice

A lap will be equal to a half strength of yield stress when the mesh is placed overlap by one weld plus a minimum of 2.5 cm.

*** Sambungan dengan Setengah Tegangan Leleh**

Half Yield Strength Lap Splice



Note :

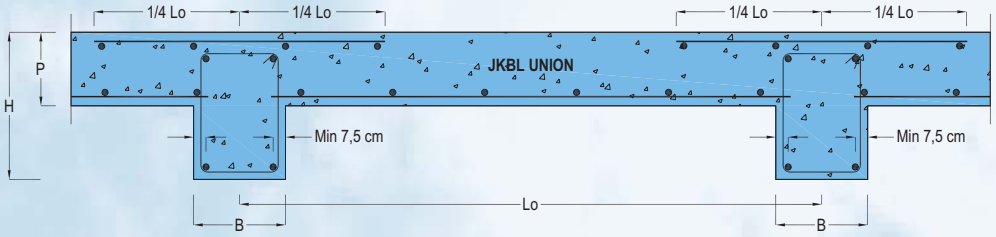
The addition of 2.5 cm referred to above is the minimum allowable spacing for concrete aggregate, which is required by the Indonesian Concrete Regulation (PBI 8.16.1), so as to make the concrete becomes dense around the bar.

In some cases, one weld overlap be allowed for the side laps of one way slab, the decision on this practice should be made by the structural engineer.

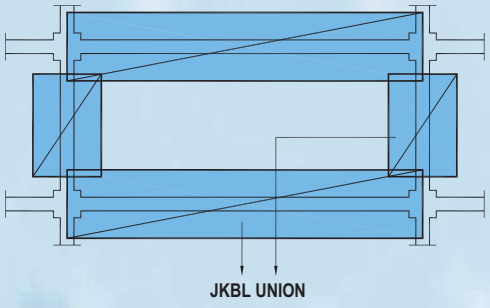
It is strongly recommended to apply the full yield strength lap splice and the laps should be in such places where the tension stress is not maximum.

B. Perletakan JKBL Union *Union Wire Mesh Position*

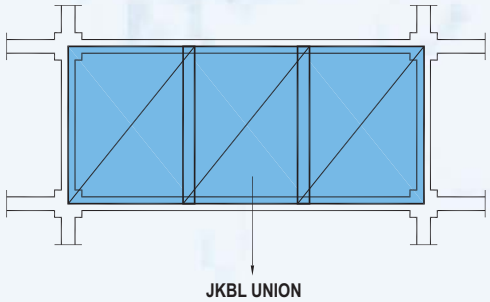
Plat Lantai Bangunan Bertingkat ***Suspended Slab***



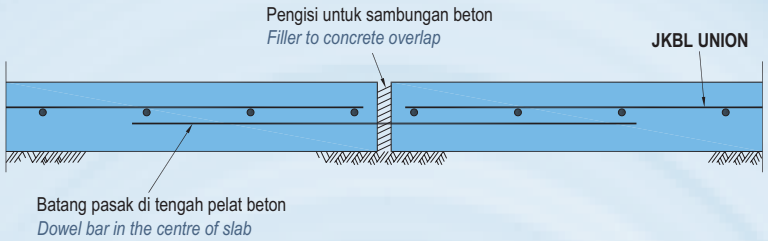
Lapis Atas ***Top Layer***



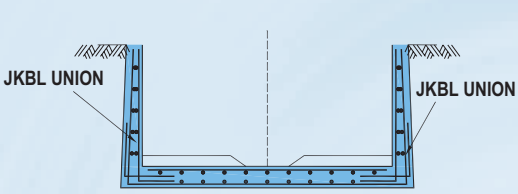
Lapis Bawah ***Bottom Layer***

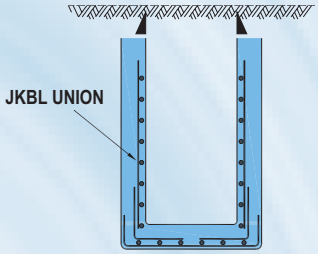


Lantai Beton di Atas Tanah *Concrete Floor on Top Soil*

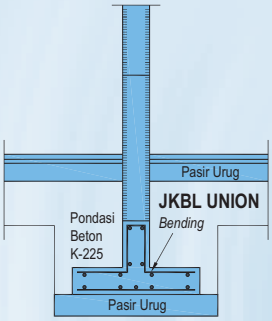


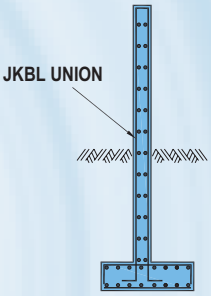
Saluran Drainase *Drainage Open Channels*





Dinding Penahan & Pondasi *Retaining Wall & Foundation*





KEUNTUNGAN MENGGUNAKAN UNION WIRE MESH

THE ADVANTAGES OF USING UNION WIRE MESH

1. Menghemat waktu konstruksi bangunan
2. Dapat diproduksi atas dasar desain konsultan (Engineering Mesh)
3. Mereduksi berat besi tulangan dalam beton

1. Save time for building constructions
2. Can be produced based on consultant's designs (Engineering Mesh)
3. Reducing weight of steel wire in concrete

CAPITAL RESIDENCE, Jakarta

GRAND INDONESIA, Jakarta

CITY TOWER, Jakarta

PT. UNION METAL

Quality Steel Building Material

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Factory II :
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Mojokerto - Jawa Timur

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E-mail : unionbdg@unionmetal.co.id

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04/2015