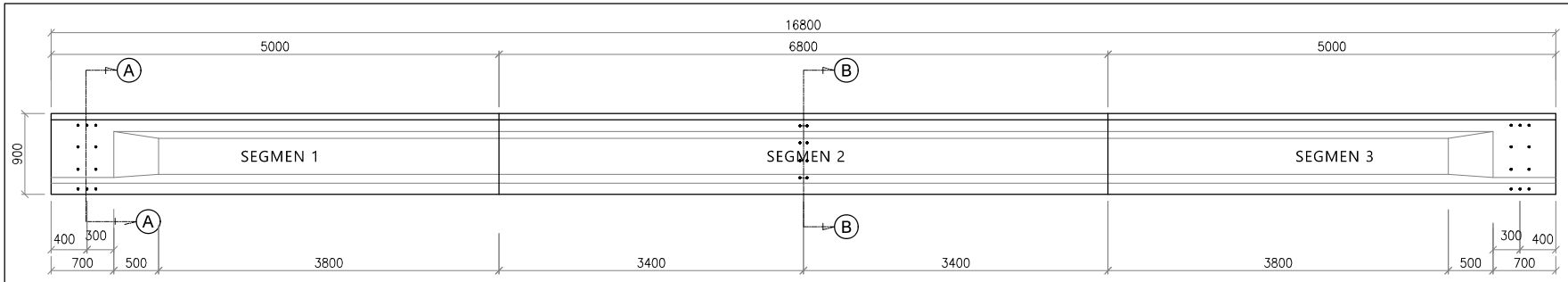
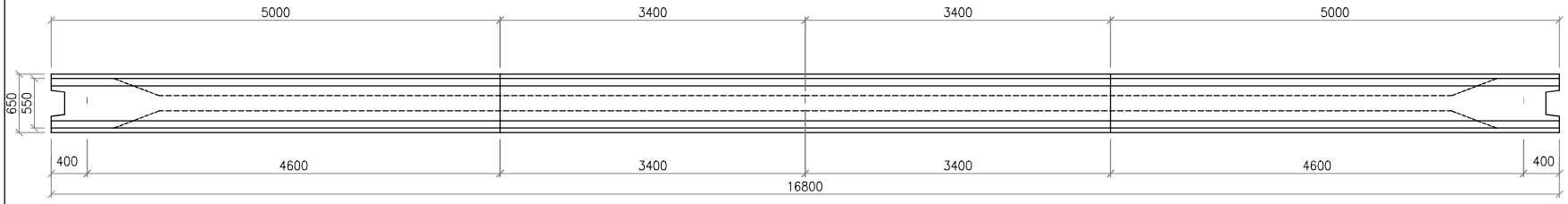


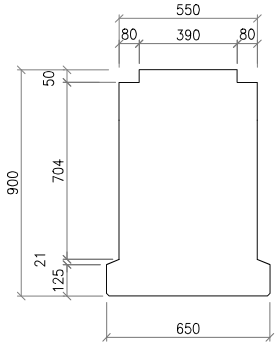
TAMPAK SAMPING

SKALA 1:50



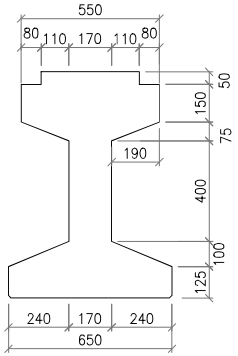
TAMPAK ATAS

SKALA 1:50



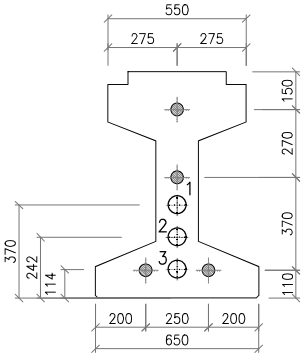
POTONGAN A-A

SKALA 1:20



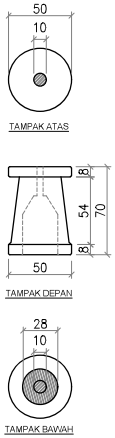
POTONGAN B-B

SKALA 1:20



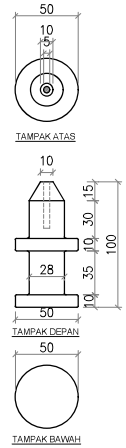
POTONGAN 1-1

SKALA 1:20



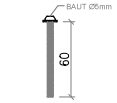
FAMALE PIN CONNECTOR

SKALA 1:5



MALE PIN CONNECTOR

SKALA 1:5



BAUT PIN CONNECTOR

CATATAN

1. SEMUA UKURAN DALAM MILIMETER
   KECUALI DISEBUTKAN LAIN.
2. MUTU BETON K600 (fc' = 52.8 MPa)
3. MUTU BETON STRESSING fci = 44.8 MPa (85%)
4. MUTU BAJA TULANGAN = BTjS 420B, fy min =400Mpa
5. TEBAL SELIMUT BETON t = 30 MM (UMUM)
   t = 50 MM (KHUSUS PADA BAGIAN BAWAH GIRDER)
6. PIN CONNECTOR : S45C; C45
7. STRAND :
   - KELAS B, RELAKSASI RENDAH KBjP-P7 RB (SNI 1154-2016) SETARA 7-WIRE-STRAND, GRADE 270 (ASTM-A416)
   - TEGANGAN PUTUS (UTS) : 1860 MPa
   - DIAMETER STRAND ø 12.7 MM, A= 98.7 MM^2 ± 2% TOLERANCE
   - JUMLAH STRAND :
     KABEL 1 = STRAND 11 ø12.7 MM
     KABEL 2 = STRAND 11 ø12.7 MM
     KABEL 3 = STRAND 11 ø12.7 MM
   - GAYA STRESSING SAAT TRANSFER = 137.69 KN/STRAND
   - EFFECTIVE PRESTRESS FORCE 121 KN/STRAND

Key Plan:

PEMBERI TUGAS

Instansi/Lembaga: **BANK INDONESIA**
Alamat: c.q. Unit Khusus Pembangunan SPU, DC dan BRS (UKPS)
Jl. M.H. Thamrin No.2 Jakarta 10350

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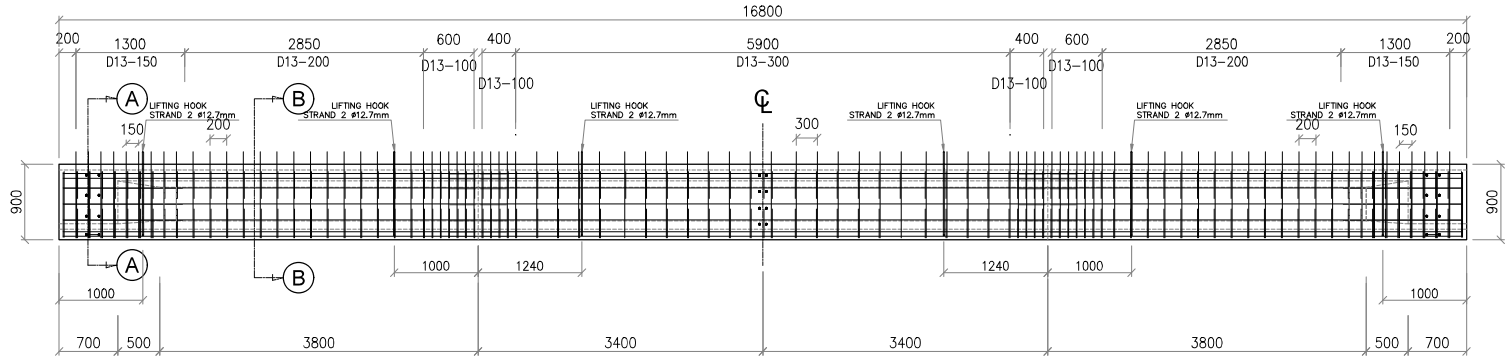
PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

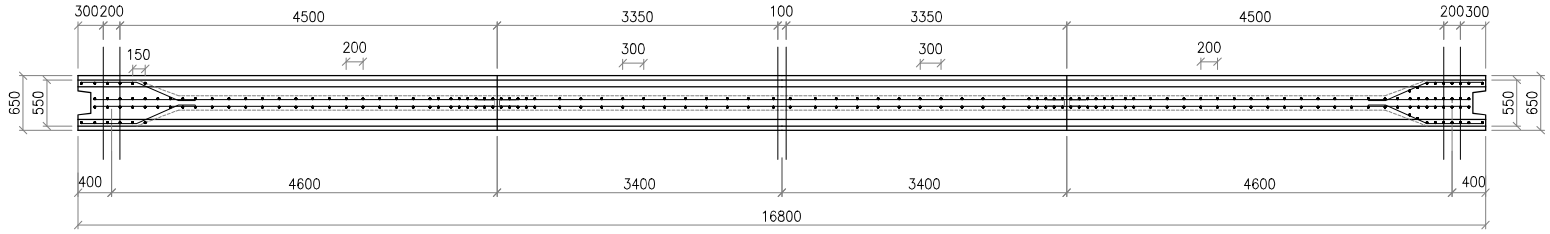
# DIMENSI DAN DETAIL PC-I GIRDER
H = 0.90 m, L = 16.80m ctc 2.10m

SBI-IKIKSO-K-E01-BR-DR-G101

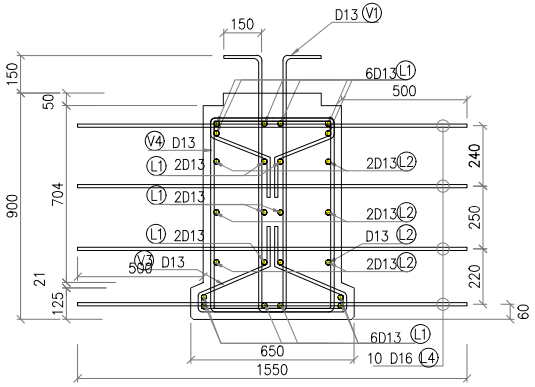
DETAIL ENGINEERING DESIGN	12 Desember 2022



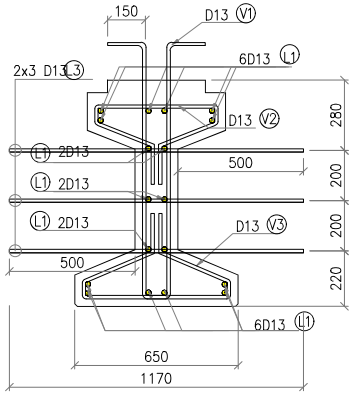
TAMPAK SAMPING
SKALA 1:60



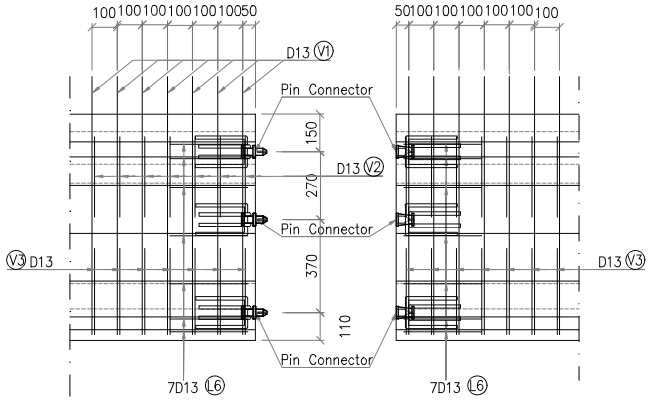
TAMPAK ATAS
SKALA 1:60



POTONGAN A-A
SKALA 1:20



POTONGAN B-B
SKALA 1:20



DETAIL PEMBESIAN SAMBUNGAN ANTAR SEGMEN GIRDER
SKALA 1 : 20

Key Plan:

PEMBERI TUGAS

Instansi/Lembaga
BANK INDONESIA
Alamat
c.q. Unit Khusus Pembangunan SPU, DC dan BRS (UKPS)
Jl. M.H. Thamrin No.2 Jakarta 10350

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TIM AHLI PERANCANG KSO
(Sumadi Purwanto, ST)

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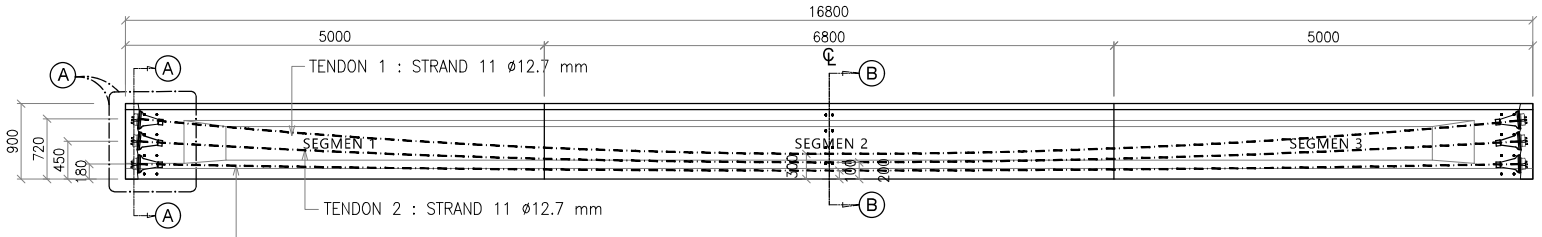
PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

PEMBESIAN PC-I GIRDER
H = 0.90 m, L = 16.80m ctc 2.1m

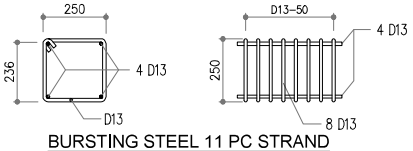
SBI-IKIKSO-K-E01-BR-DR-G102

DETAIL ENGINEERING DESIGN | 12 Desember 2022

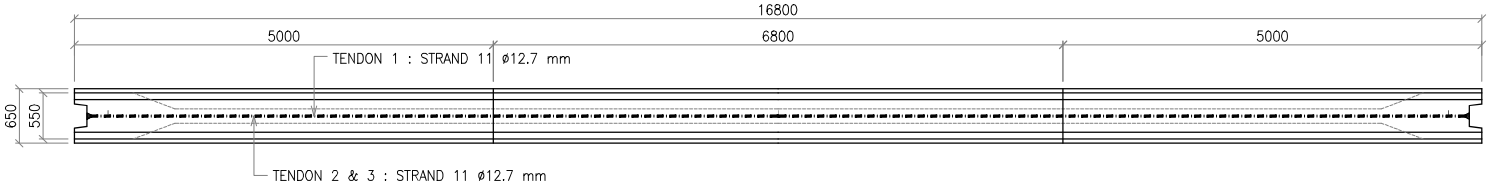


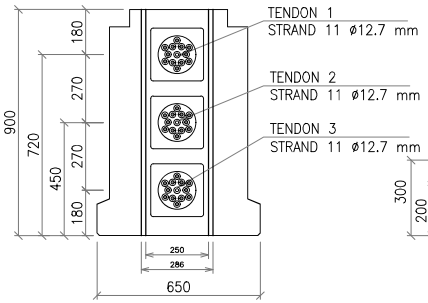
TAMPAK SAMPING
SKALA 1:60

No. Tendon	No. of PC Strand Φ 12.7 mm	Cable Coord.	Profile (mm)		Distance From Edge Beam (mm)											CL
			Edge	Mid	0	150	300	1300	2300	3300	4300	5300	6300	7300	8300	8400
1	11	X	720	300	720	705	691	600	521	455	400	357	326	307	300	300
2	11	X	450	200	450	441	432	379	332	292	260	234	216	204	200	200
3	11	X	180	100	180	177	174	157	142	129	119	111	105	101	100	100
Total	33															

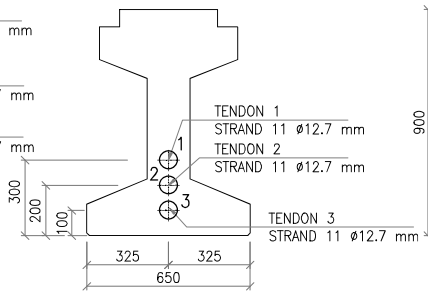


BURSTING STEEL 11 PC STRAND
SKALA 1 : 25

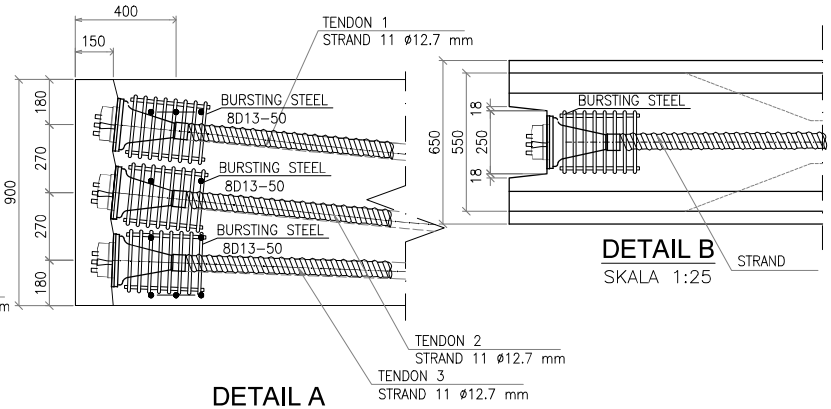




POTONGAN A-A
SKALA 1:20



POTONGAN A-A
SKALA 1:20



DETAIL A
SKALA 1:20

DETAIL B
SKALA 1:25

Key Plan:

PEMBERI TUGAS

BANK INDONESIA
c.q. Unit Khusus Pembangunan SPU, DC dan BRS (UKPS)
Jl. M.H. Thamrin No.2 Jakarta 10350

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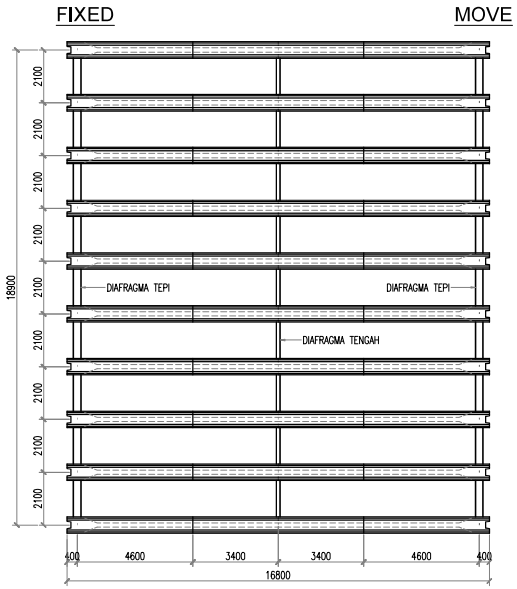
PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

LAYOUT TENDON PC-I GIRDER
H = 0.90 m, L = 16.80m ctc 2.10 m

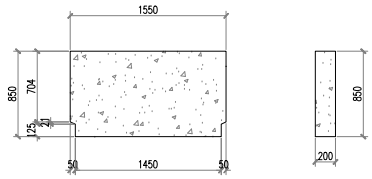
SBI-IKIKSO-K-E01-BR-DR-G103

DETAIL ENGINEERING DESIGN | 12 Desember 2022



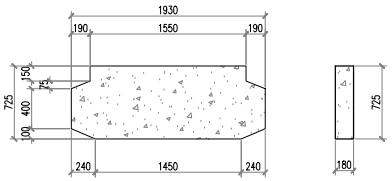
DENAH DIAFRAGMA

SKALA 1 : 200



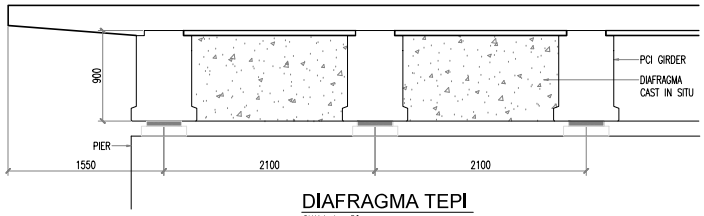
DETAIL DIAFRAGMA TEPI

SKALA 1 : 25



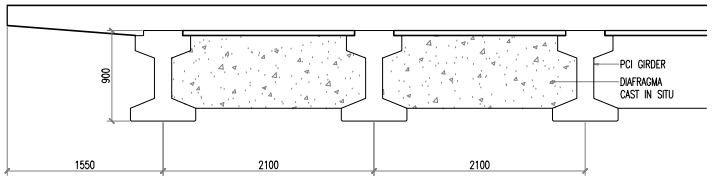
DETAIL DIAFRAGMA TENGAH

SKALA 1 : 25



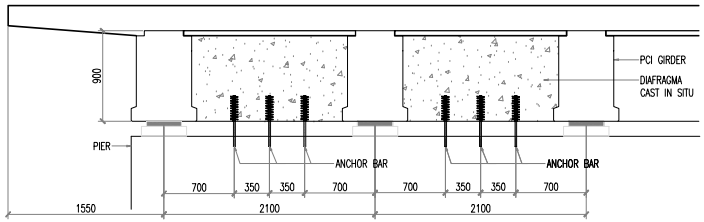
DIAFRAGMA TEPI

SKALA 1 : 50



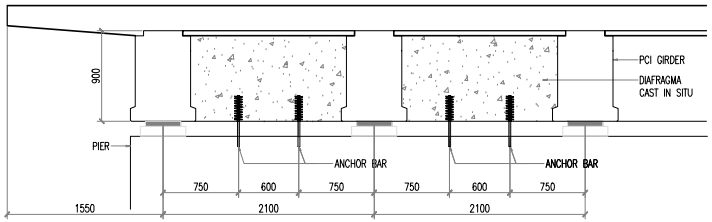
DIAFRAGMA TENGAH

SKALA 1 : 50



DETAIL ANCHOR BAR (FIXED)

SKALA 1 : 50

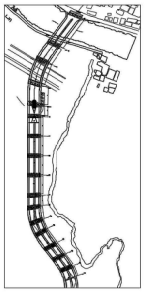


DETAIL ANCHOR BAR (MOVE)

SKALA 1 : 50

CATATAN :
- UNTUK PENULANGAN DIAFRAGMA LIHAT DI GAMBAR PENULANGAN PLAT LANTAI
- UNTUK ANGKUR DAN BEARING LIHAT DI GAMBAR TYPICAL BEARING PAD

Key Plan:



PEMBERI TUGAS

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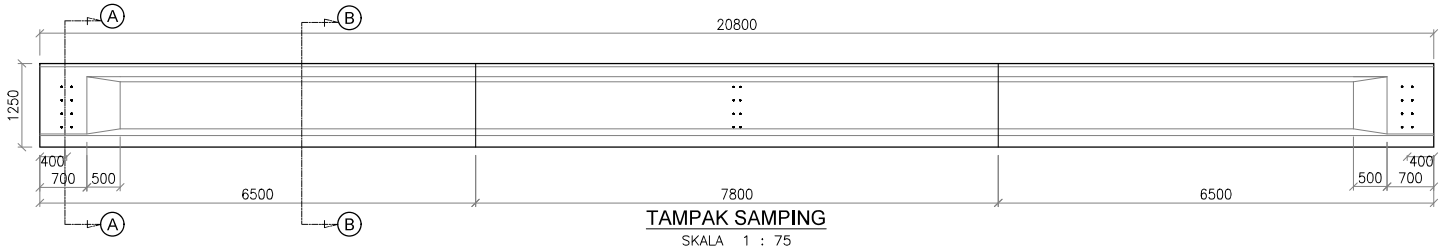
PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

DENAH, DETAIL DAN ANGKUR
DIAFRAGMA
H = 0.90 m, L = 16.80m ctc 2.10m

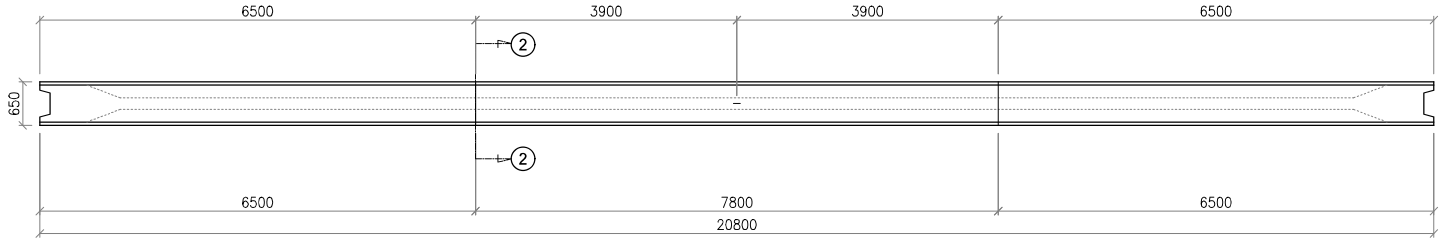
SBI-IKIKSO-K-E01-BR-DR-G104

DETAIL ENGINEERING DESIGN | 16 Desember2022



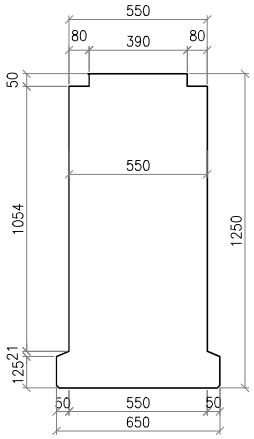
TAMPAK SAMPING

SKALA 1 : 75



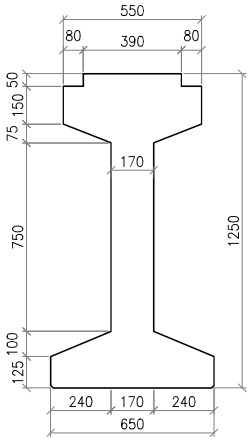
TAMPAK ATAS

SKALA 1 : 75



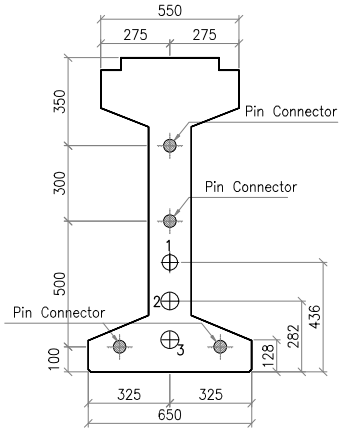
POTONGAN A-A

SKALA 1:20



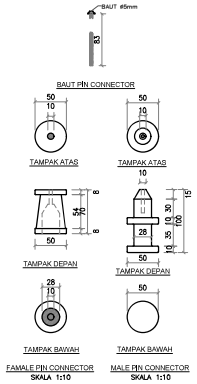
POTONGAN B-B

SKALA 1:20



POTONGAN 2-2

SKALA 1:20



CATATAN

1. SEMUA UKURAN DALAM MILIMETER KECUALI DISEBUTKAN LAIN.
2. MUTU BETON K600 (fc' = 52.8 MPa)
3. MUTU BETON STRESSING fci = 44.8 MPa (85%)
4. MUTU BAJA TULANGAN = BTjS 420B, fy min =400Mpa
5. TEBAL SELIMUT BETON T = 30 MM (UMUM)
   T = 50 MM (KHUSUS PADA BAGIAN BAWAH GIRDER)
6. PIN CONNECTOR : S45C; C45
7. STRAND :
   - KELAS B, RELAKSASI RENDAH KBjP-P7 RB (SNI 1154-2016) SETARA 7-WIRE-STRAND, GRADE 270 (ASTM-A416)
   - TEGANGAN PUTUS (UTS) : 1860 MPa
   - DIAMETER STRAND ø 12.7 MM, A= 98.7 MM^2 ± 2% TOLERANCE
   - JUMLAH STRAND :
     KABEL 1 = STRAND 9 ø12.7 MM
     KABEL 2 = STRAND 12 ø12.7 MM
     KABEL 3 = STRAND 12 ø12.7 MM
   - GAYA STRESSING SAAT TRANSFER = 137.69 KN/STRAND
   - EFFECTIVE PRESTRESS FORCE 121 KN/STRAND

Key Plan :

PEMBERI TUGAS

Instansi/Lembaga
BANK INDONESIA
Alamat
c.q. Unit Khusus Pembangunan SPU, DC dan BRS (UKPS)
Jl. M.H. Thamrin No.2 Jakarta 10350

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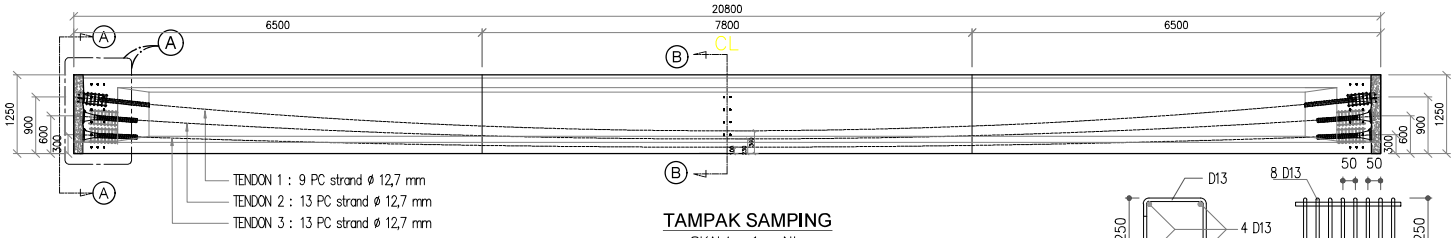
PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

DETAIL PC-I GIRDER
H = 1.25 m, L = 20.80m ctc 2.10m

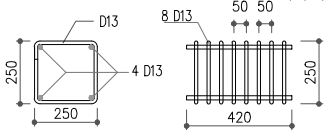
SBI-IKIKSO-K-E01-BR-DR-G201

DETAIL ENGINEERING DESIGN | 16 Desember 2022

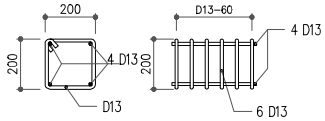


TAMPAK SAMPING
SKALA 1 : Nts

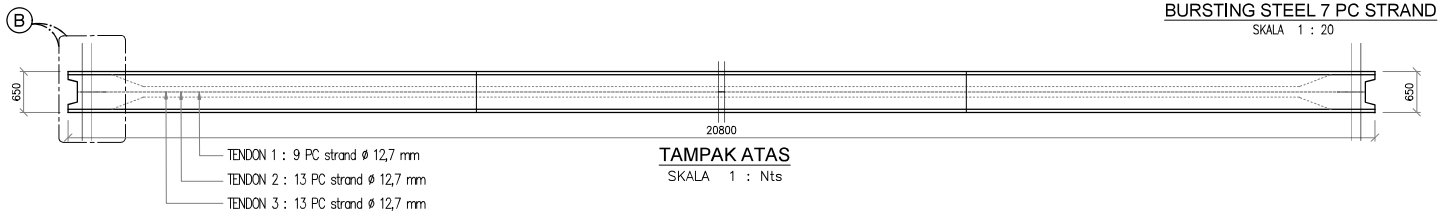
No. Tendon	No. of PC Strand Φ 12.7 mm	Cable Coord.	Profile (mm) Edge	Profile (mm) Mid	Distance From Edge Beam (mm) 0	150	300	1300	2300	3300	4300	5300	6300	7300	8300	9300	CL 10400
1	9	X	900	360	900	885	869	773	688	612	546	490	444	408	382	366	360
2	13	X	600	230	600	589	579	513	454	402	357	319	288	263	245	234	230
3	13	X	300	100	300	294	289	253	221	193	169	148	131	118	108	102	100
Total	35																



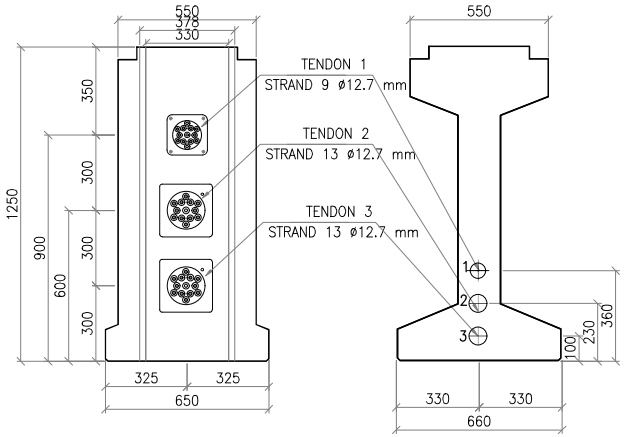
BURSTING STEEL 12 PC STRAND
SKALA 1 : 20



BURSTING STEEL 7 PC STRAND
SKALA 1 : 20

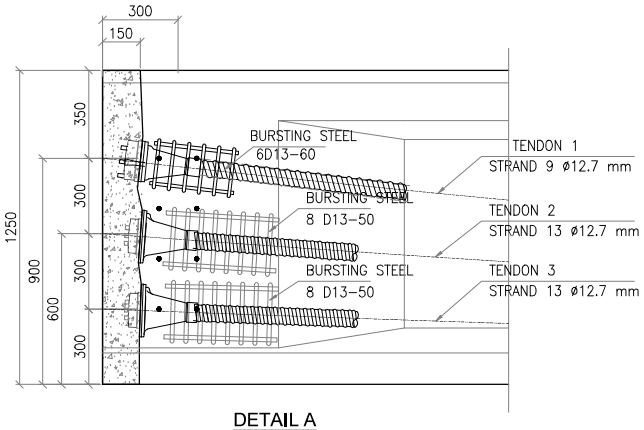


TAMPAK ATAS
SKALA 1 : Nts

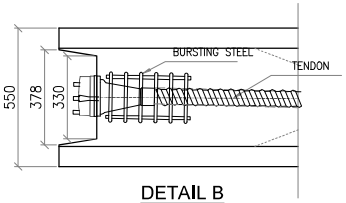


TAMPAK A-A
SKALA 1:20

POTONGAN B-B
SKALA 1:20



DETAIL A
SKALA 1:20



DETAIL B
SKALA 1:20

Key Plan :

PEMBERI TUGAS

BANK INDONESIA
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Jl. M.H. Thamrin No.2 Jakarta 10350

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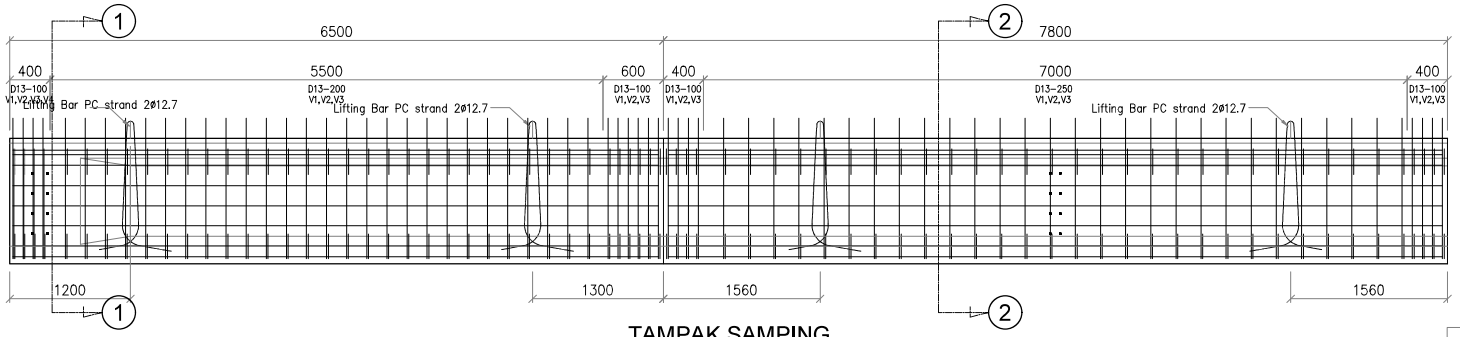
PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

LAYOUT TENDON PCI GIRDER
H = 1.25 m, L = 20.80m ctc 2.10m

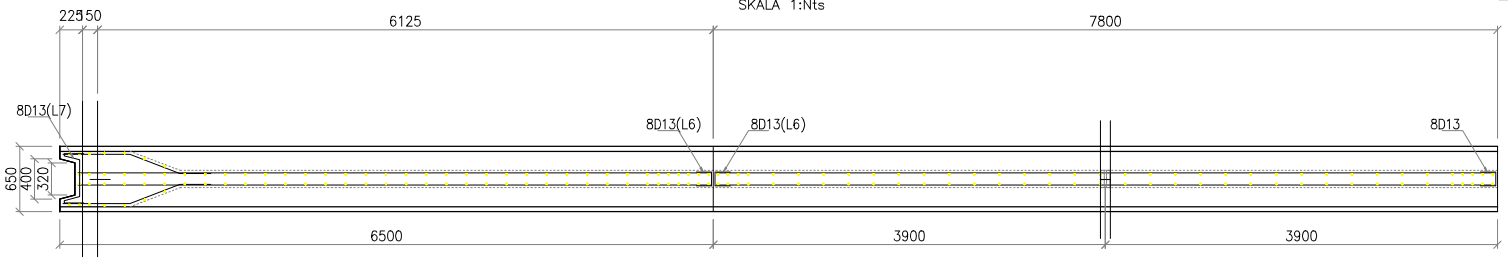
SBI-IKIKSO-K-E01-BR-DR-G202

DETAIL ENGINEERING DESIGN | 16 Desember 2022



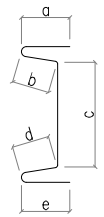
TAMPAK SAMPING

SKALA 1:Nts



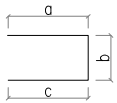
TAMPAK ATAS

SKALA 1:Nts



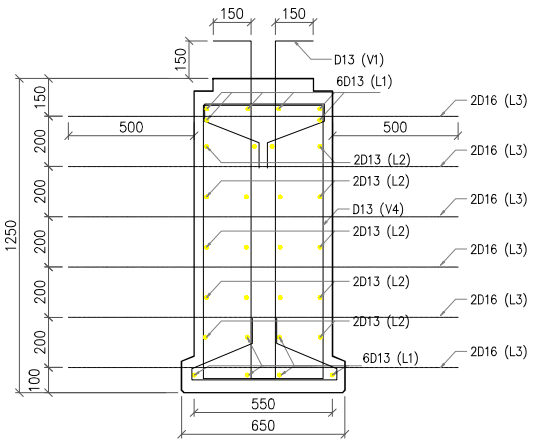
POSISI	DIMENSI (cm) A	B	C	D	E	JUMLAH (bh)
TEPI (L7)	30	15	VAR	15	30	8x2

BENTUK TULANGAN
CLOSE REBAR UJUNG



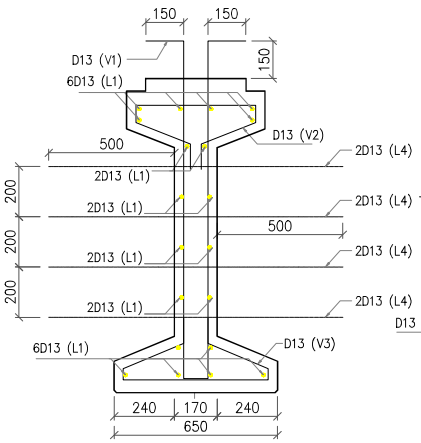
POSISI	DIMENSI (cm) A	B	C	JUMLAH (bh)
BADAN D13 (L6)	30	13,3	30	5x2
ATAS D13 (L6')	30	51,3	30	2x2
BAWAH D13 (L6")	30	61,3	30	1x2

BENTUK TULANGAN
CLOSE REBAR SEGMEN



POTONGAN 1 - 1

SKALA 1 : 20



POTONGAN 2 - 2

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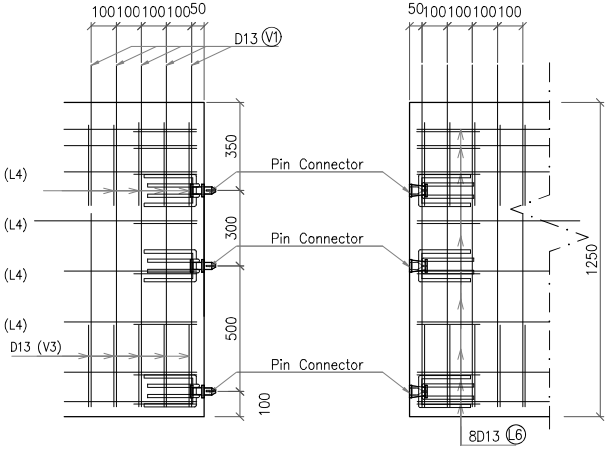
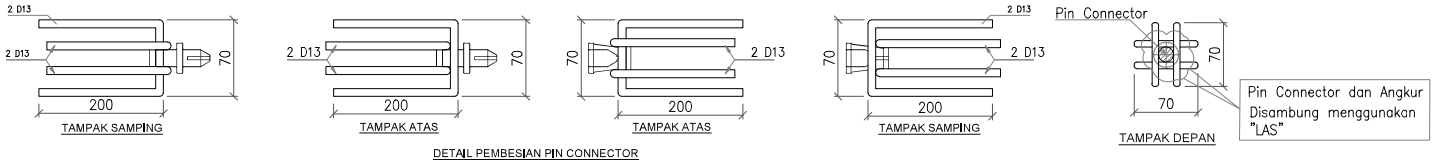


DETAIL SAMBUNGAN ANTAR SEGMEN GIRDER

SKALA 1 : 20



DETAIL PEMBESIAN PIN CONNECTOR

Key Plan :

PEMBERI TUGAS

BANK INDONESIA

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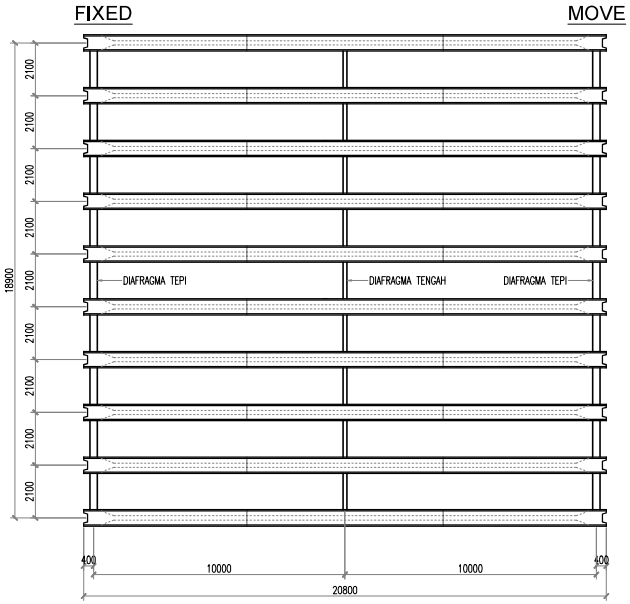
PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

PEMBESIAN PC-I GIRDER
H = 1.25 m, L = 20.80m ctc 2.10m

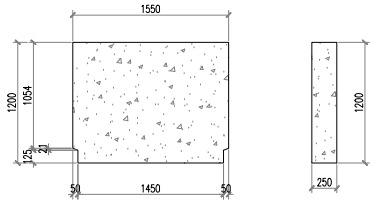
SBI-IKIKSO-K-E01-BR-DR-G203

DETAIL ENGINEERING DESIGN | 16 Desember 2022



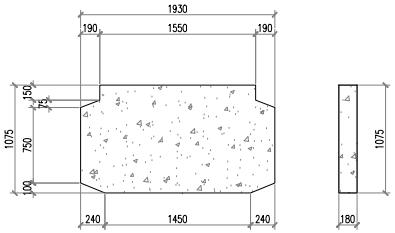
DENAH DIAFRAGMA

SKALA 1 : 200



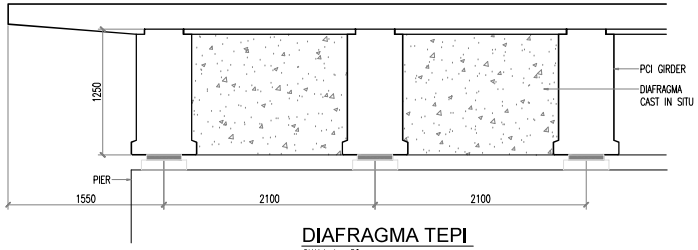
DETAIL DIAFRAGMA TEPI

SKALA 1 : 25



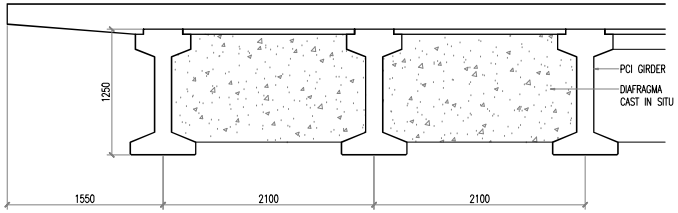
DETAIL DIAFRAGMA TENGAH

SKALA 1 : 50



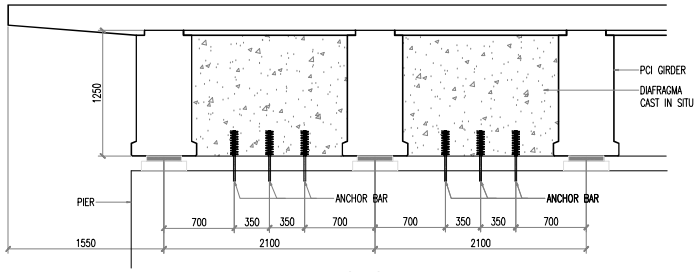
DIAFRAGMA TEPI

SKALA 1 : 50



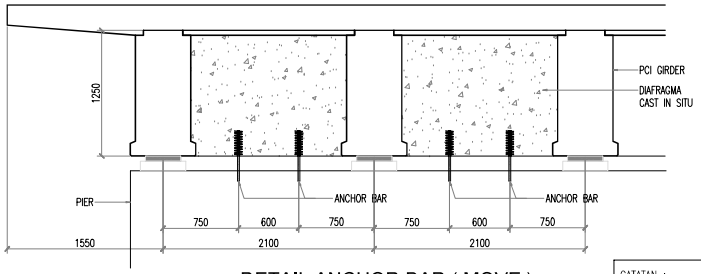
DIAFRAGMA TENGAH

SKALA 1 : 50



DETAIL ANCHOR BAR (FIXED)

SKALA 1 : 50

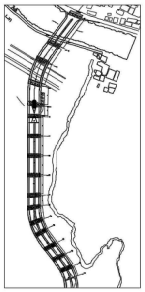


DETAIL ANCHOR BAR (MOVE)

SKALA 1 : 50

CATATAN :
- UNTUK PENULANGAN DIAFRAGMA LIHAT DI GAMBAR PENULANGAN PLAT LANTAI
- UNTUK ANGKUR DAN BEARING LIHAT DI GAMBAR TYPICAL BEARING PAD

Key Plan:



PEMBERI TUGAS

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PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

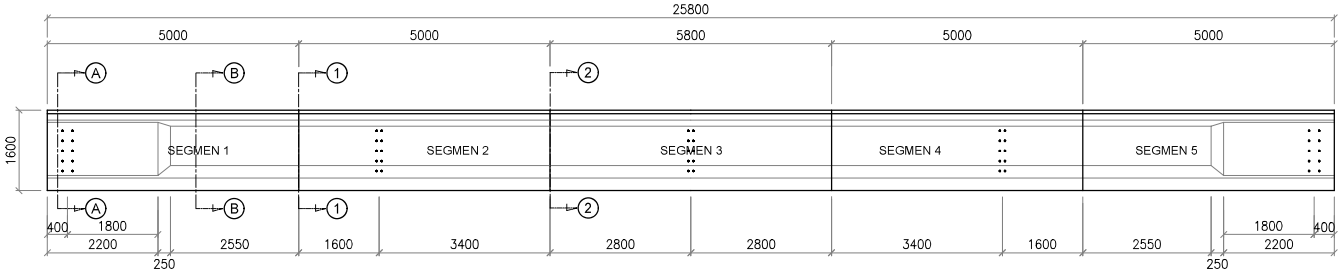
DENAH, DETAIL DAN PENGANGKURAN DIAFRAGMA
H = 1.25 m, L = 20.80m ctc 2.10m

SBI-IKIKSO-K-E01-BR-DR-G204

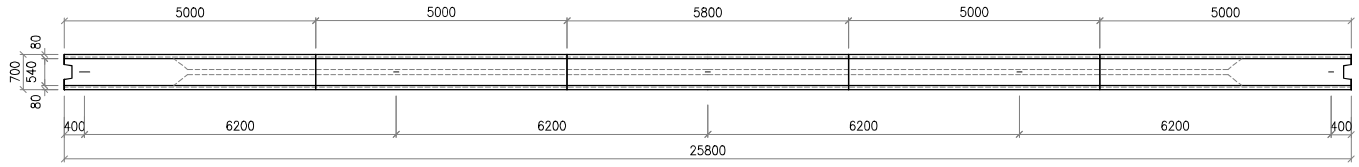
DETAIL ENGINEERING DESIGN | 16 Desember 2022

CATATAN

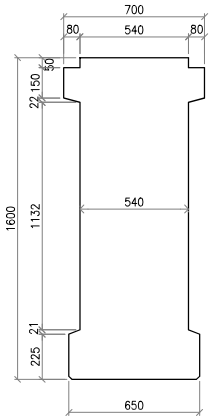
1. SEMUA UKURAN DIMENSI DALAM MILLIMETER KECUALI DISEBUTKAN LAIN.
2. SPESIFIKASI BETON
   MUTU BETON 28HARI fc' = 52.8 MPa (K600)
   MUTU BETON SAAT STRESSING fci = 44.9 MPa (85% fc')
   ø AGGREGATE MAX. 20MM
3. SPESIFIKASI TULANGAN BETON & PIN :
   - MUTU BAJA TULANGAN = BjTS 420B, fy=400Mpa
   - TEBAL SELIMUT BETON SETIAP SISI = 30 MM
   - KECUALI BAGIAN BAWAH GIRDER = 50 MM
   - PIN CONNECTOR : S45C; C45
4. SPESIFIKASI TULANGAN PRESTRESSING :
   - PC STRAND DIAMETER = 12,7 mm (0.5 INCH)
   - UTS : 1860 MPa (GRADE 270 LOW RELAXATION)
   - GAYA STRESSING SAAT TRANSFER = 137.69 KN/STRAND
   - GAYA STRESSING EFEKTIF = 121 KN/STRAND



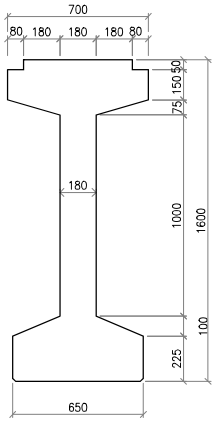
TAMPAK SAMPING
SKALA 1:100



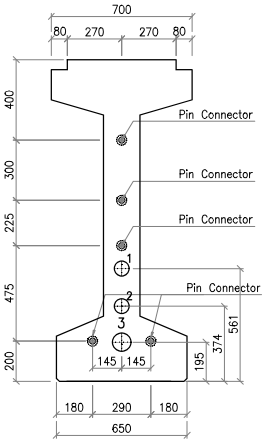
TAMPAK ATAS
SKALA 1:100



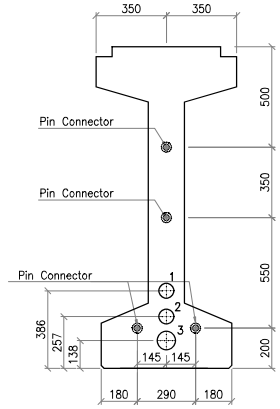
POTONGAN A-A
SKALA 1:25



POTONGAN B-B
SKALA 1:25



POTONGAN 1-1
SKALA 1:25



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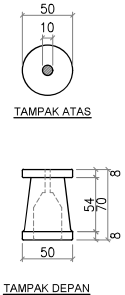
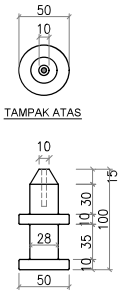
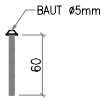


FEMALE PIN CONNECTOR
SKALA 1:5

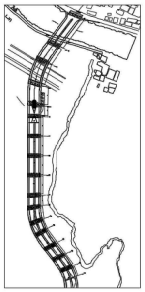


MALE PIN CONNECTOR
SKALA 1:5



BAUT PIN CONNECTOR

Key Plan:



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PERANCANGAN TERINTEGRASI
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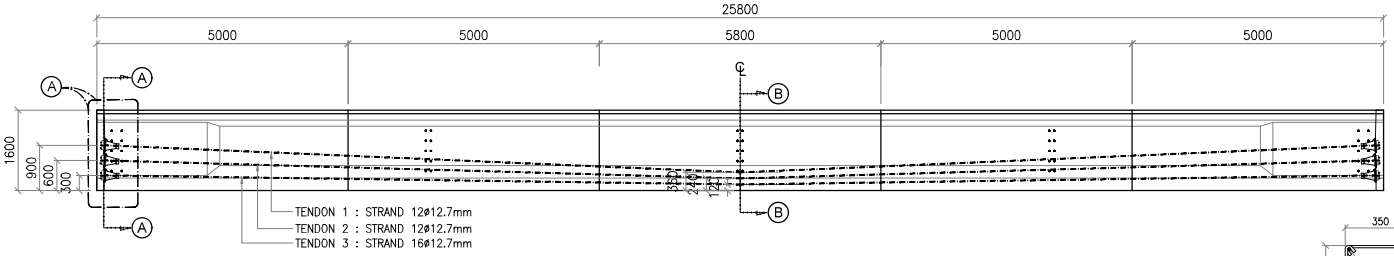
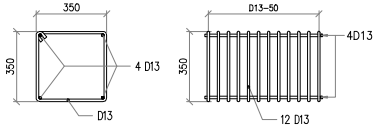
DETAIL PC-I GIRDER
H = 1.60m, L = 25.80m, CTC 2.1m

SBI-IKIKSO-K-E01-BR-DR-G301

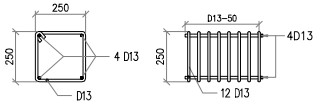
DETAIL ENGINEERING DESIGN | 16 Desember 2022



TAMPAK SAMPING
SKALA 1:100

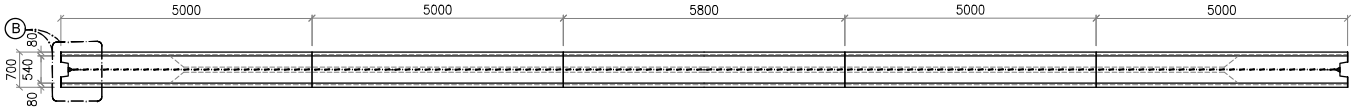


BURSTING STEEL 16 PC STRAND
SKALA 1 : 25

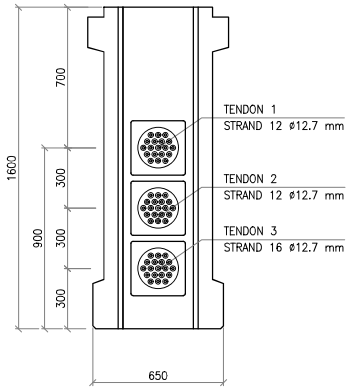


BURSTING STEEL 12 PC STRAND
SKALA 1 : 25

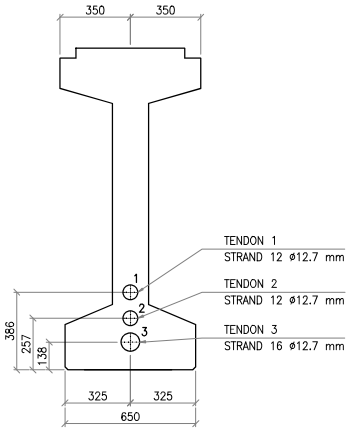
No. Tendon	No. of PC Strand ø12.7mm	Cable Coord.	Profile (mm)		Distance From Edge Beam (mm)															CL
			Edge	Mid	0	150	300	1300	2300	3300	4300	5300	6300	7300	8300	9300	10300	11300	12300	12900
1	12	y	900	360	900	887	875	796	723	657	598	545	499	460	427	400	381	367	361	360
2	12	y	600	240	600	592	583	531	482	438	399	364	333	306	284	267	254	245	241	240
3	16	y	300	120	300	296	292	265	241	219	199	182	166	153	142	133	127	122	120	120
TOTAL	40																			



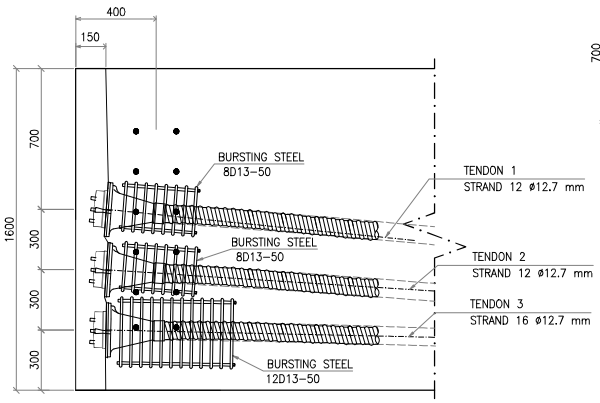
TAMPAK ATAS
SKALA 1:100



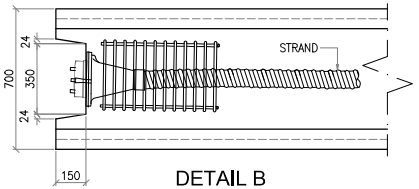
POTONGAN A-A
SKALA 1:25



POTONGAN B-B
SKALA 1:25



DETAIL A
SKALA 1:25

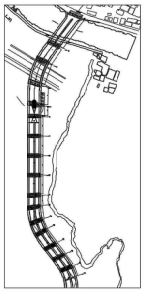


DETAIL B
SKALA 1:25

CATATAN

1. SEMUA UKURAN DALAM MILIMETER KECUALI DISEBUTKAN LAIN.
2. MUTU BETON K600 (fc' = 52.8 MPa)
3. MUTU BETON STRESSING fci = 44.8 MPa (85%)
4. MUTU BAJA TULANGAN = BTJS 420B, fy min =400Mpa
5. TEBAL SELIMUT BETON T = 30 MM (UMUM)
   T = 50 MM (KHUSUS PADA BAGIAN BAWAH GIRDER)
6. PIN CONNECTOR : S45C; C45
7. STRAND :
   - KELAS B, RELAKSASI RENDAH KBJP–P7 RB (SNI 1154–2016) SETARA 7–WIRE–STRAND, GRADE 270 (ASTM–A416)
   - TEGANGAN PUTUS (UTS) : 1860 MPa
   - DIAMETER STRAND ø 12.7 MM, A= 98.7 MM^2 ± 2% TOLERANCE
   - JUMLAH STRAND :
     KABEL 1 = STRAND 12 ø12.7 MM
     KABEL 2 = STRAND 12 ø12.7 MM
     KABEL 3 = STRAND 16 ø12.7 MM
   - GAYA STRESSING SAAT TRANSFER = 137.69 KN/STRAND
   - EFFECTIVE PRESTRESS FORCE 121 KN/STRAND

Key Plan:



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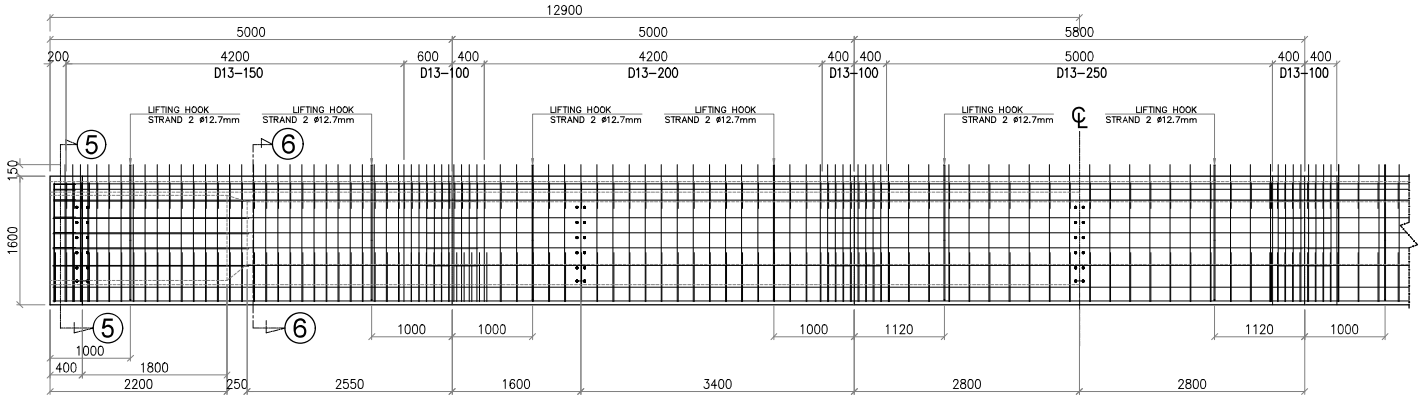
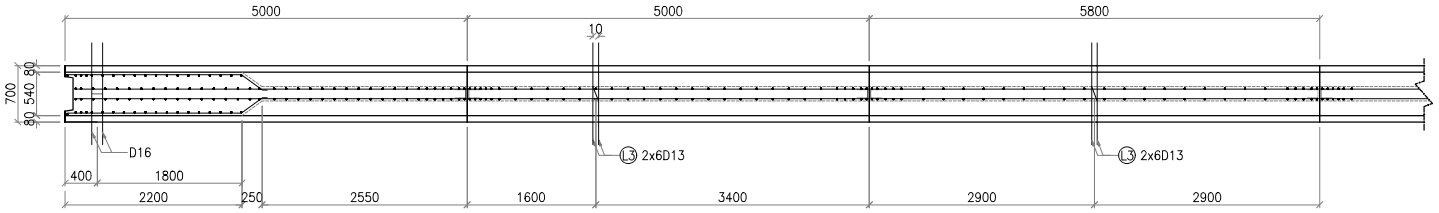
SBI-IKIKSO-K-E01-BR-DR-G302

DETAIL ENGINEERING DESIGN | 16 Desember 2022



TAMPAK PEMBESIAN SAMPING
SKALA 1 : 50



TAMPAK PEMBESIAN ATAS
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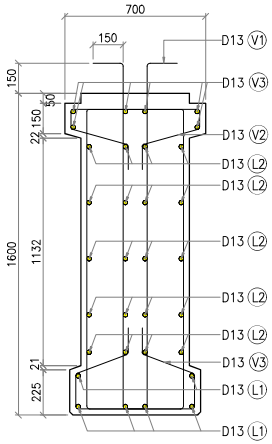
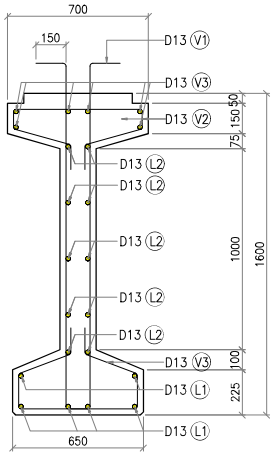
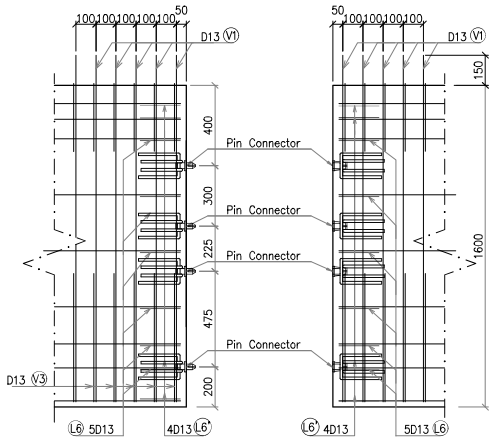


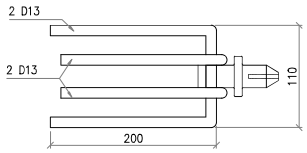
POTONGAN 5-5
SKALA 1:50



POTONGAN 6-6
SKALA 1:50



DETAIL SAMBUNGAN ANTAR SEGMEN GIRDER
SKALA 1 : 25



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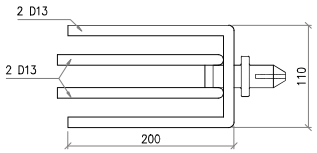

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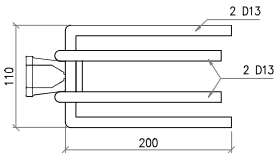

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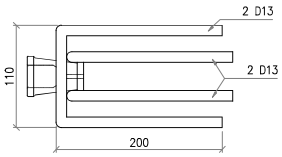
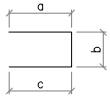


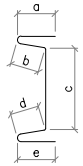
TAMPAK SAMPING

BENTUK TULANGAN
CLOSE REBAR SEGMEN



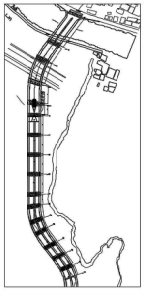
POSISI	DIMENSI (cm)			JUMLAH (bh)
	A	B	C	
BADAN D13 (L6)	30	12	30	5
ATAS D13 (L6')	30	71	30	2
BAWAH D13 (L6")	30	61	30	2

BENTUK TULANGAN
CLOSE REBAR



POSISI	DIMENSI (cm)					JUMLAH (bh)
	A	B	C	D	E	
TEPI (L7)	30	15	VAR	15	30	8

Key Plan:



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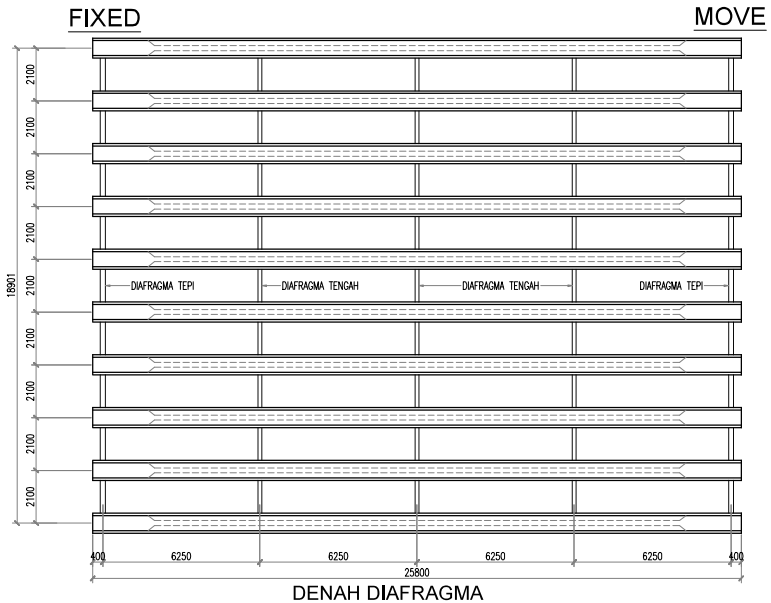
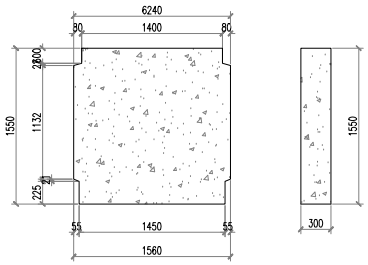
SBI-IKIKSO-K-E01-BR-DR-G303

DETAIL ENGINEERING DESIGN | 16 Desember 2022



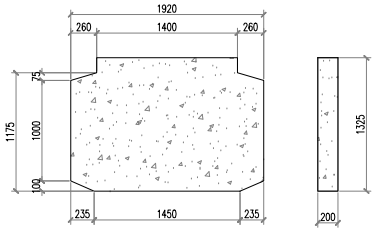
DENAH DIAFRAGMA

SKALA 1 : 100



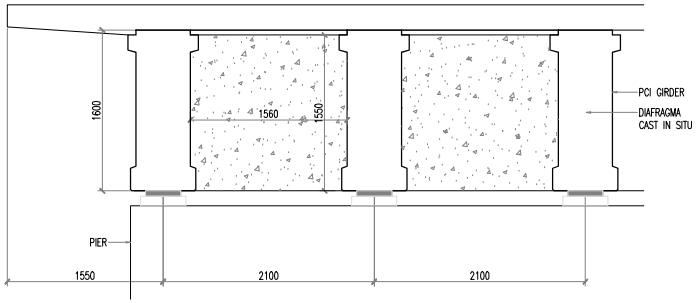
DETAIL DIAFRAGMA TEPI

SKALA 1 : 25



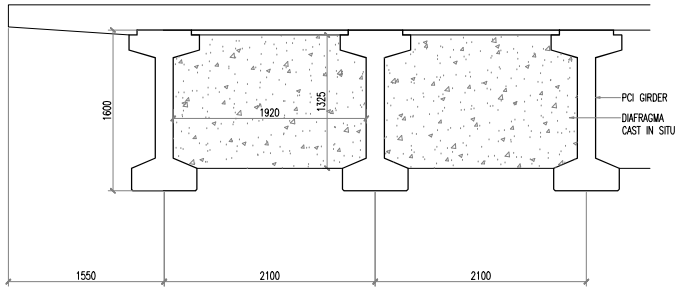
DETAIL DIAFRAGMA TENGAH

SKALA 1 : 50



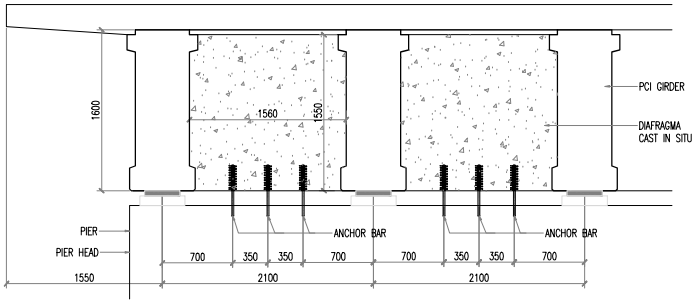
DIAFRAGMA TEPI

SKALA 1 : 50



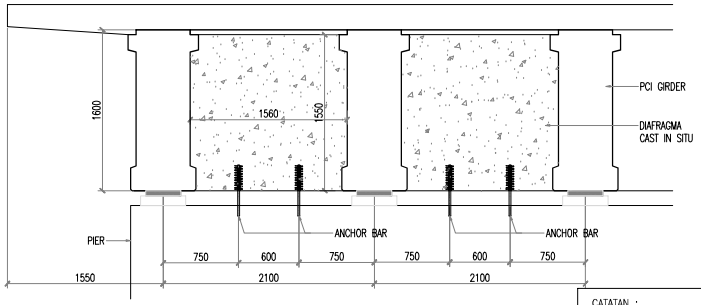
DIAFRAGMA TENGAH

SKALA 1 : 50



DETAIL ANCHOR BAR (FIXED)

SKALA 1:50

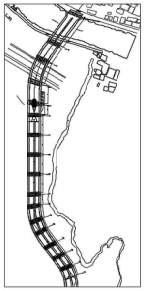


DETAIL ANCHOR BAR (MOVE)

SKALA 1:50

CATATAN :
- UNTUK PENULANGAN DIAFRAGMA LIHAT DI GAMBAR PENULANGAN PLAT LANTAI
- UNTUK ANGKUR DAN BEARING LIHAT DI GAMBAR TYPICAL BEARING PAD

Key Plan:



PEMBERI TUGAS

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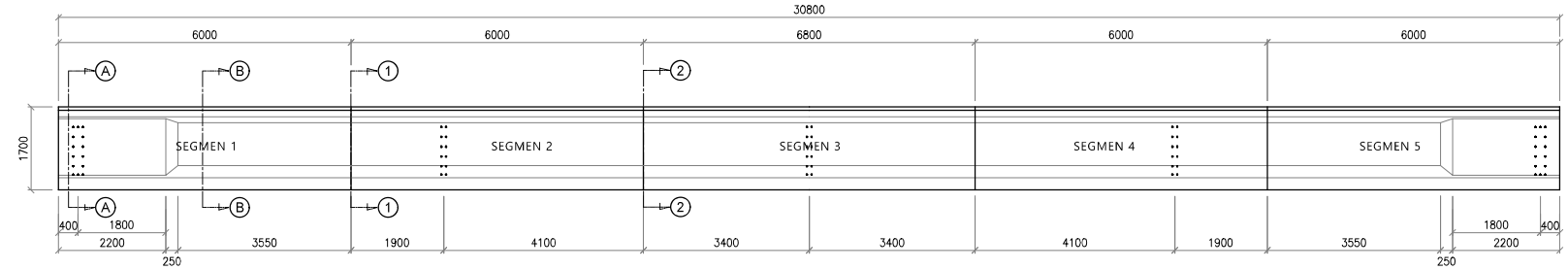
PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

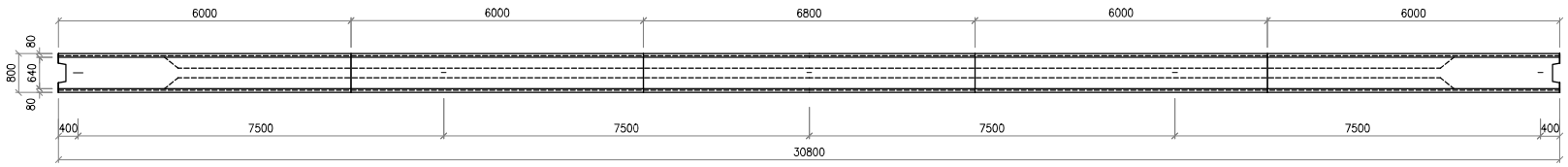
DENAH DAN DETAIL DIAFRAGMA
H = 1.60m, L = 25.60m, CTC 2.1m

SBI-IKIKSO-K-E01-BR-DR-G304

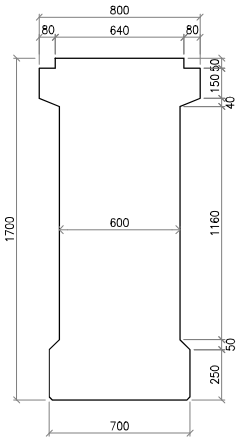
DETAIL ENGINEERING DESIGN | 16 Desember 2022



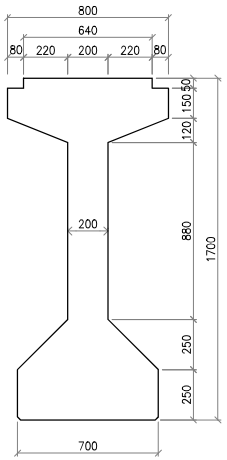
TAMPAK SAMPING
SKALA 1:100



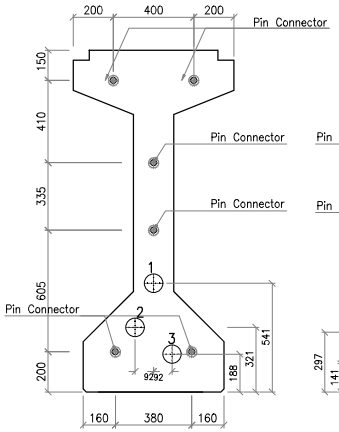
TAMPAK ATAS
SKALA 1:100



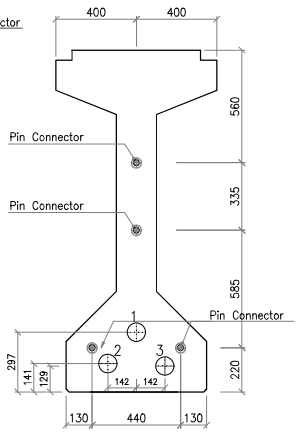
POTONGAN A-A
SKALA 1:25



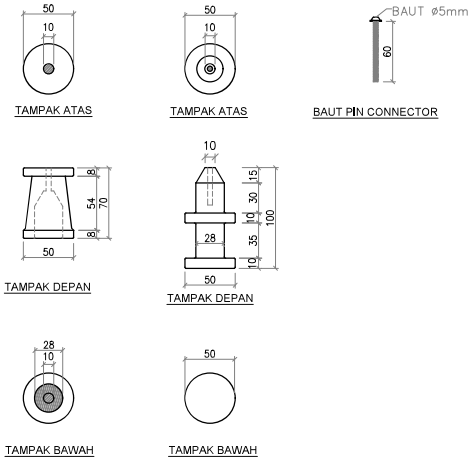
POTONGAN B-B
SKALA 1:25



POTONGAN 1-1
SKALA 1:25



POTONGAN 2-2
SKALA 1:25



FEMALE PIN CONNECTOR
SKALA 1:5

MALE PIN CONNECTOR
SKALA 1:5

CATATAN

1. SEMUA UKURAN DIMENSI DALAM MILLIMETER KECUALI DISEBUTKAN LAIN.
2. SPESIFIKASI BETON
   MUTU BETON 28HARI fc' = 52.8 MPa (K600)
   MUTU BETON SAAT STRESSING fci = 44.9 MPa (85% fc')
   ø AGGREGATE MAX. 20MM
3. SPESIFIKASI TULANGAN BETON & PIN :
   - MUTU BAJA TULANGAN = BJTS 420B, fy=400Mpa
   - TEBAL SELIMUT BETON SETIAP SISI = 30 MM
   - KECUALI BAGIAN BAWAH GIRDER = 50 MM
   - PIN CONNECTOR : S45C; C45
4. SPESIFIKASI TULANGAN PRESTRESSING :
   - PC STRAND DIAMETER = 12.7 mm (0.5 INCH)
   - UTS : 1860 MPa (GRADE 270 LOW RELAXATION)
   - GAYA STRESSING SAAT TRANSFER = 137.69 KN/STRAND
   - GAYA STRESSING EFEKTIF = 121 KN/STRAND

Key Plan :

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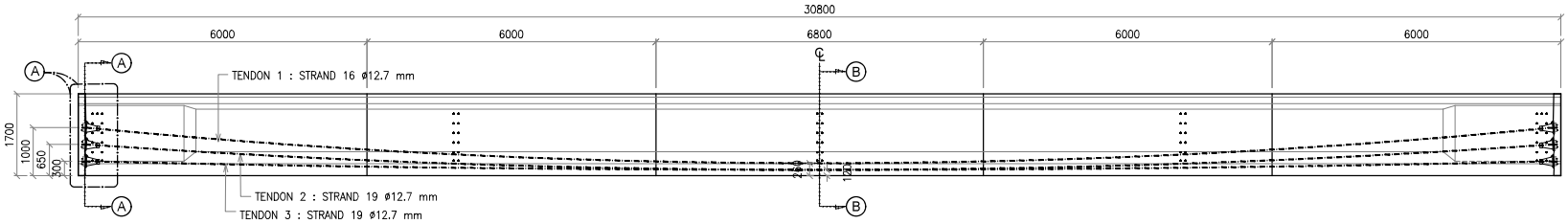
PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

DETAIL PC-I GIRDER
H = 1.70m, L = 30.80m, CTC 2.1m

SBI-IKIKSO-K-E01-BR-DR-G401

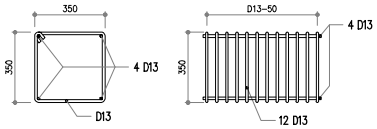
DETAIL ENGINEERING DESIGN | 16 Desember 2022



TAMPAK SAMPING

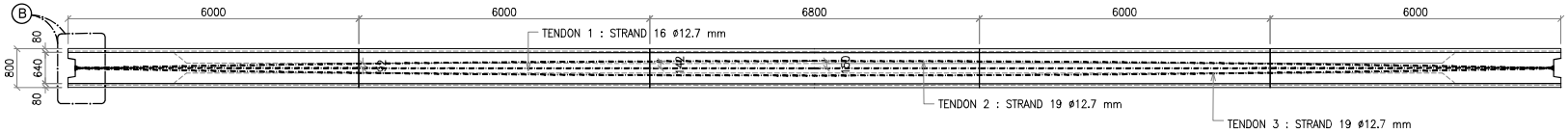
SKALA 1:NTS

No. Tendon	No. of PC Strand Φ 12.7 mm	Cable Coord.	Profile (mm) Edge	Profile (mm) Mid	Distance From Edge Beam (mm) 0	150	300	1300	2300	3300	4300	5300	6300	7300	8300	9300	10300	11300	12300	13300	14300	CL 15400
1	16	X	1,000	260	1,000	986	971	880	795	717	644	578	518	465	417	376	341	312	290	274	264	260
2	19	X	650	120	650	640	630	564	504	447	395	348	305	267	233	203	178	158	141	130	123	120
		Y	0	-150	0	-3	-6	-24	-41	-57	-72	-85	-98	-109	-118	-126	-134	-139	-144	-147	-149	-150
3	19	X	300	120	300	297	293	271	250	231	214	197	183	170	158	148	140	133	127	123	121	120
		Y	0	150	0	3	6	24	41	57	72	85	98	109	118	126	134	139	144	147	149	150
Total	54																					



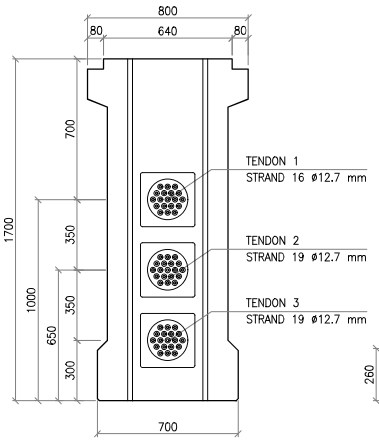
BURSTING STEEL 16 & 19 PC STRAND

SKALA 1 : 25



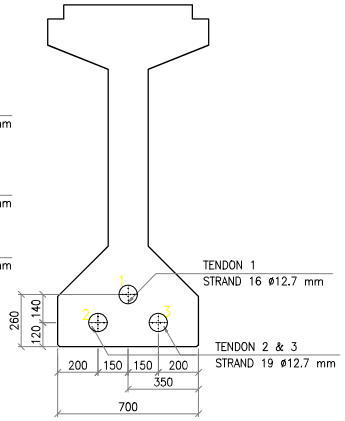
TAMPAK ATAS

SKALA 1:NTS



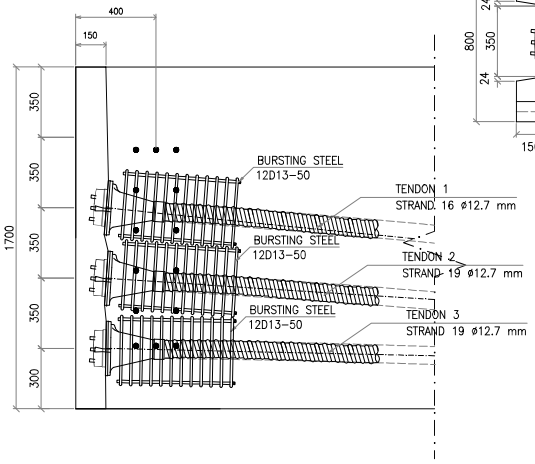
POTONGAN A-A

SKALA 1:25



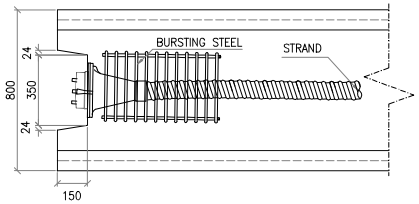
POTONGAN B-B

SKALA 1:25



DETAIL A

SKALA 1:25



DETAIL B

SKALA 1:25

CATATAN

1. SEMUA UKURAN DALAM MILIMETER KECUALI DISEBUTKAN LAIN.
2. MUTU BETON K600 (f_c' = 52.8 MPa)
3. MUTU BETON STRESSING fci = 44.8 MPa (85%)
4. MUTU BAJA TULANGAN = BTJS 420B, fy min =400Mpa
5. TEBAL SELIMUT BETON T = 30 MM (UMUM)
   T = 50 MM (KHUSUS PADA BAGIAN BAWAH GIRDER)
6. PIN CONNECTOR : S45C; C45
7. STRAND :
   - KELAS B, RELAKSASI RENDAH KBJP–P7 RB (SNI 1154–2016) SETARA 7–WIRE–STRAND, GRADE 270 (ASTM–A416)
   - TEGANGAN PUTUS (UTS) : 1860 MPa
   - DIAMETER STRAND ø 12.7 MM, A= 98.7 MM^2 ± 2% TOLERANCE
   - JUMLAH STRAND :
     KABEL 1 = STRAND 16 ø12.7 MM
     KABEL 2 = STRAND 19 ø12.7 MM
     KABEL 3 = STRAND 19 ø12.7 MM
   - GAYA STRESSING SAAT TRANSFER = 137.69 KN/STRAND
   - EFFECTIVE PRESTRESS FORCE 121 KN/STRAND

Key Plan :

PEMBERI TUGAS

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PERANCANGAN TERINTEGRASI
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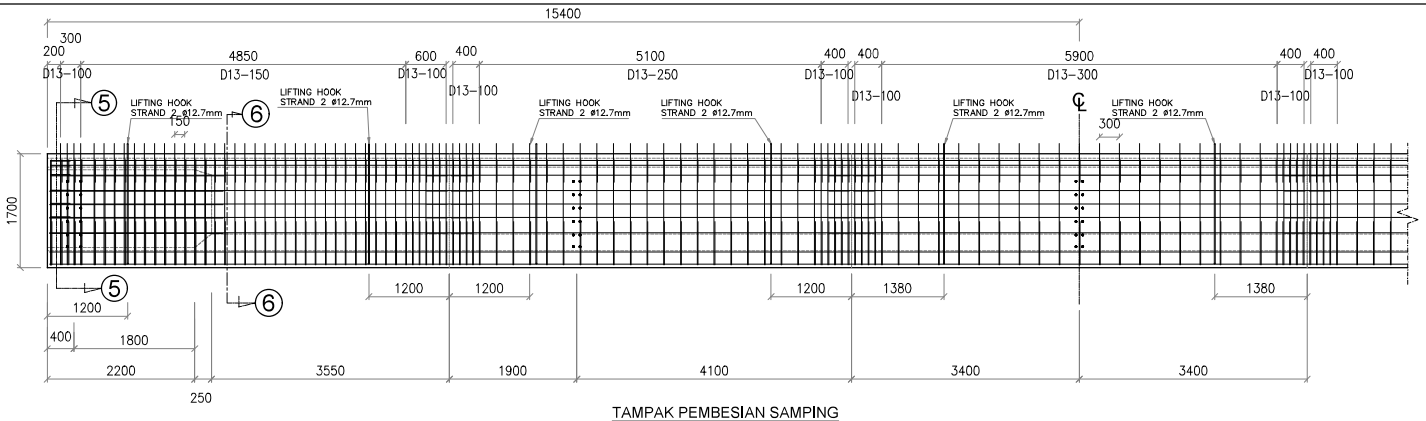
LAYOUT TENDON PC-I GIRDER
H = 1.70m, L = 30.80m, CTC 2.1m

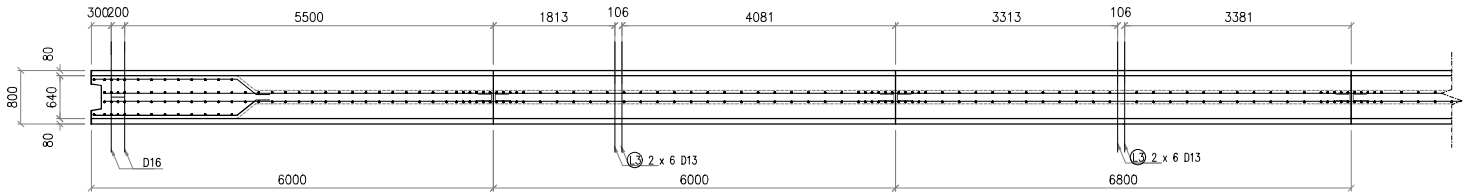
SBI-IKIKSO-K-E01-BR-DR-G402

DETAIL ENGINEERING DESIGN | 16 Desember 2022



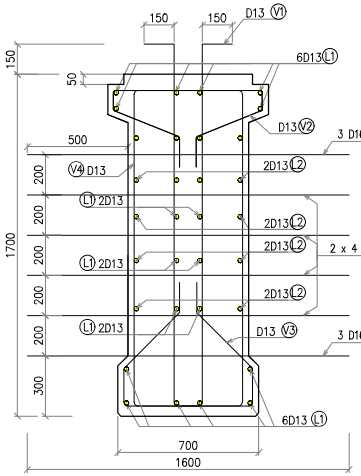
TAMPAK PEMBESIAN SAMPING

SKALA 1:NTS



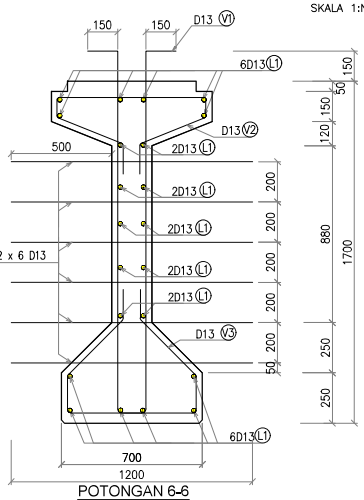
TAMPAK PEMBESIAN ATAS

SKALA 1:NTS



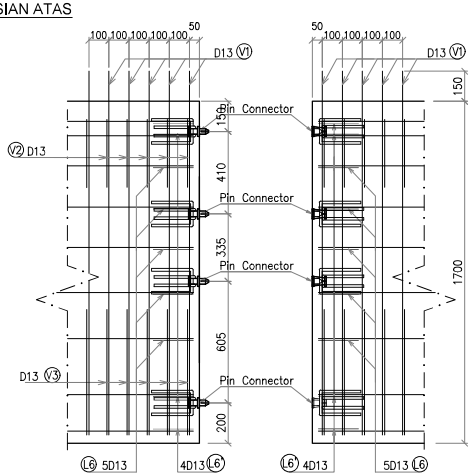
POTONGAN 5-5

SKALA 1 : 25



POTONGAN 6-6

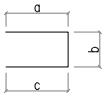
SKALA 1 : 25



DETAIL SAMBUNGAN SEGMEN 1 & 2

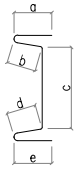
SKALA 1 : 25

BENTUK TULANGAN CLOSE REBAR SEGMEN

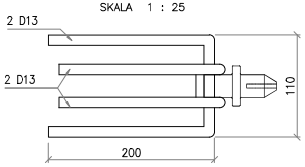


POSISI	DIMENSI (cm)			JUMLAH (bh)
	A	B	C	
BADAN D13 (L6)	30	12	30	5
ATAS D13 (L6')	30	71	30	2
BAWAH D13 (L6')	30	61	30	2

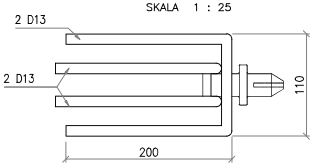
BENTUK TULANGAN CLOSE REBAR



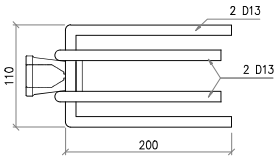
POSISI	DIMENSI (cm)					JUMLAH (bh)
	A	B	C	D	E	
TEPI (L7)	30	15	VAR	15	30	8



TAMPAK SAMPING



TAMPAK ATAS



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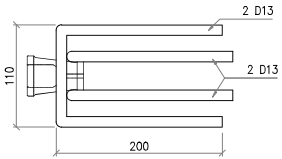

TAMPAK SAMPING

Key Plan :

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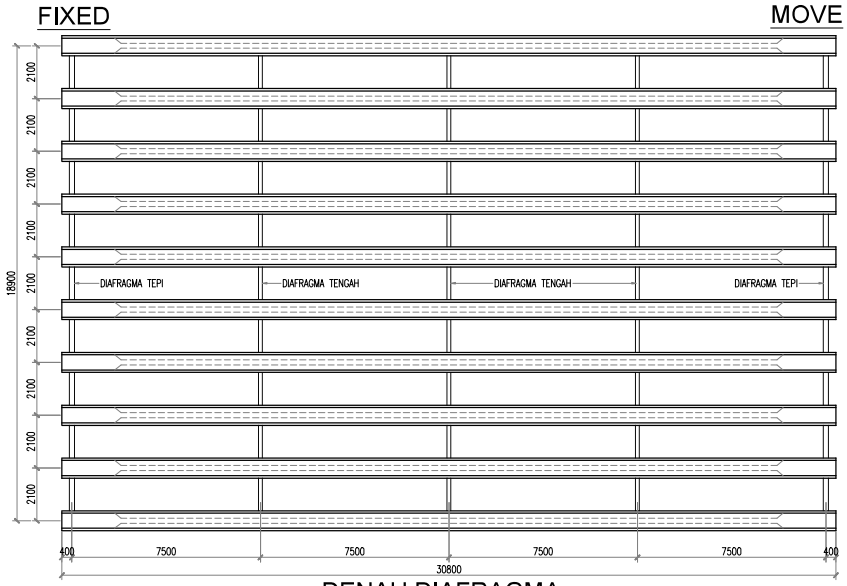
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

PEMBESIAN PC-I GIRDER
H = 1.70m, L = 30.80m, CTC 2.1m

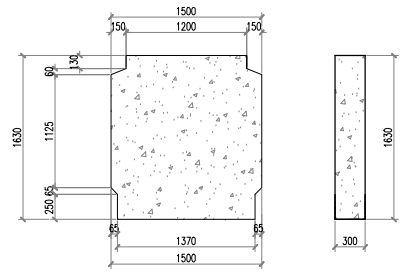
SBI-IKIKSO-K-E01-BR-DR-G403

DETAIL ENGINEERING DESIGN | 16 Desember 2022



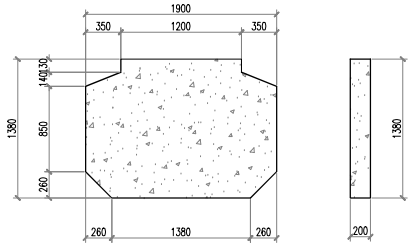
DENAH DIAFRAGMA

SKALA 1:200



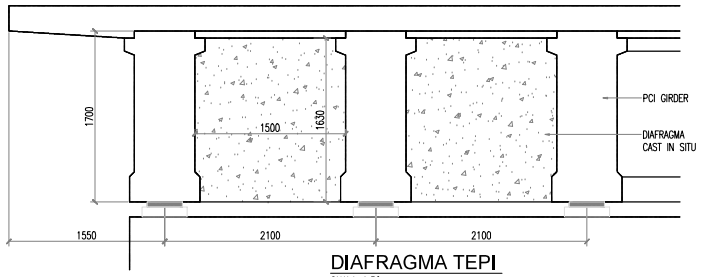
DETAIL DIAFRAGMA TEPI

SKALA 1:50



DETAIL DIAFRAGMA TENGAH

SKALA 1:50



DIAFRAGMA TEPI

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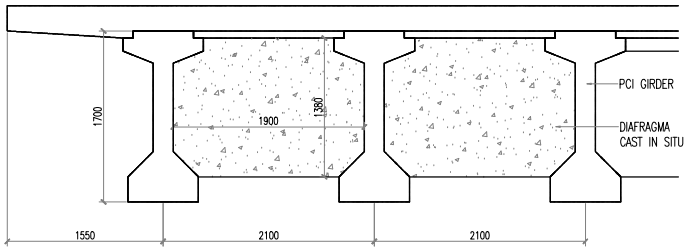

DIAFRAGMA TENGAH

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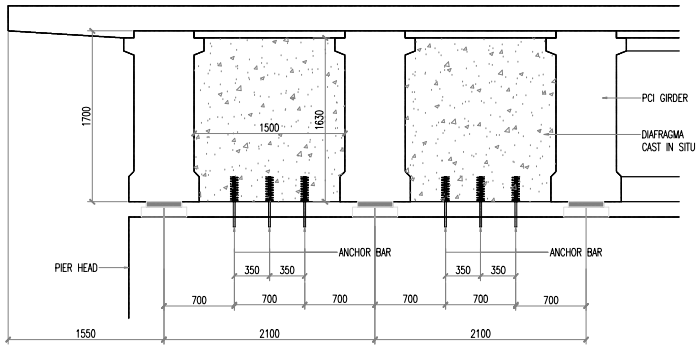
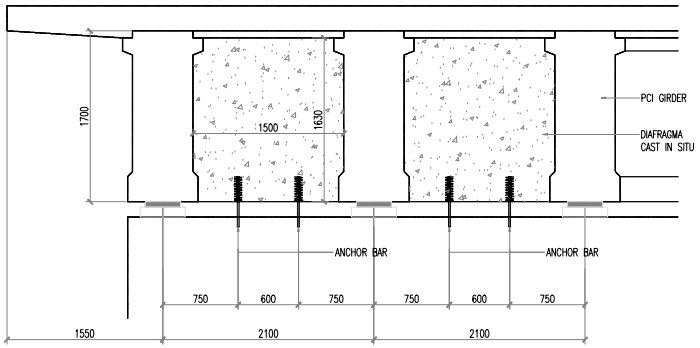


DETAIL ANCHOR BAR (FIXED)

SKALA 1:50

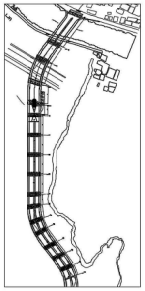


DETAIL ANCHOR BAR (MOVE)

SKALA 1:50

CATATAN :
- UNTUK PENULANGAN DIAFRAGMA LIHAT DI GAMBAR PENULANGAN PLAT LANTAI
- UNTUK ANGKUR DAN BEARING LIHAT DI GAMBAR TYPICAL BEARING PAD

Key Plan:



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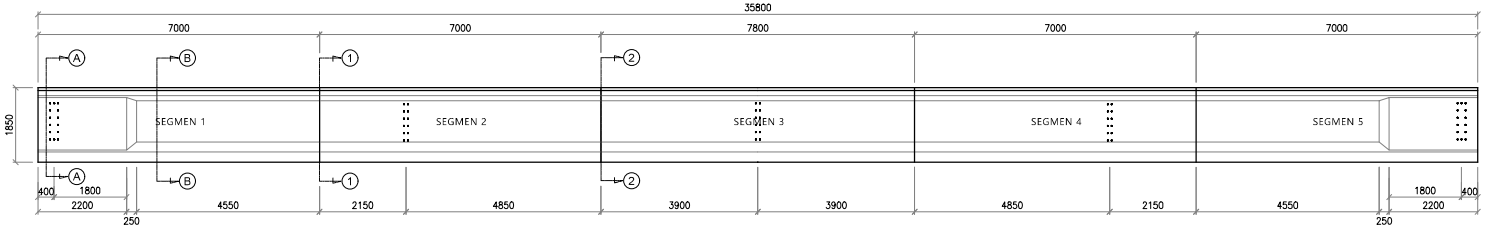
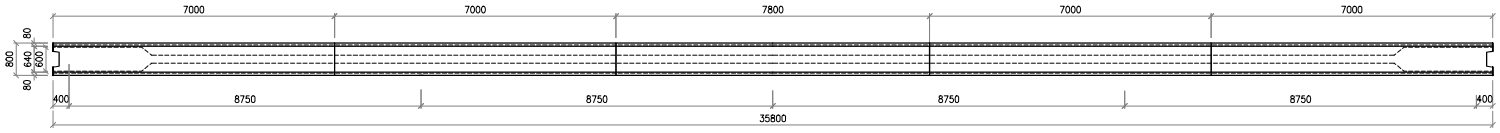
H = 1.70m, L = 30.80m, CTC 2.1m

SBI-IKIKSO-K-E01-BR-DR-G404

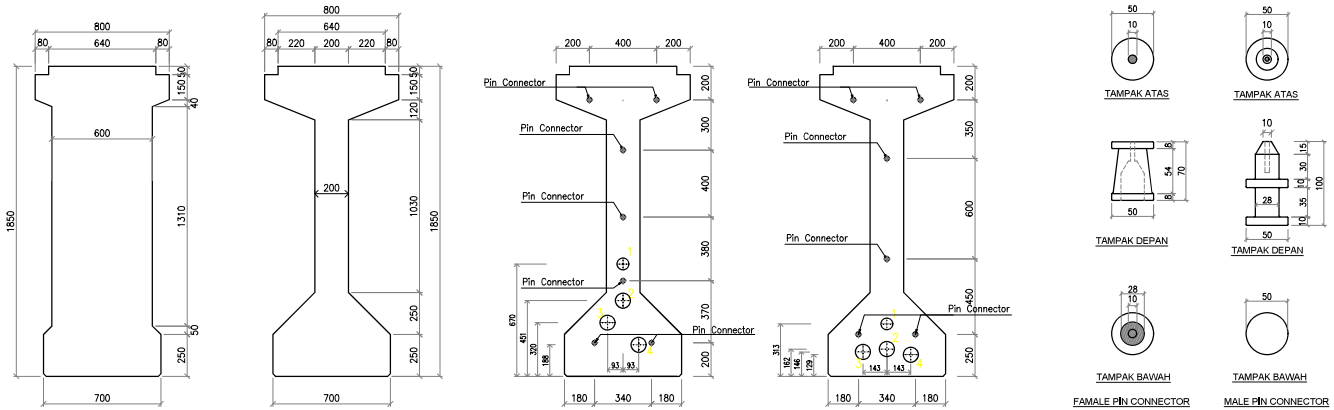
DETAIL ENGINEERING DESIGN | 16 Desember 2022



TAMPAK SAMPING
SKALA 1:125



TAMPAK ATAS
SKALA 1:125



Key Plan :

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DETAIL PCI GIRDER
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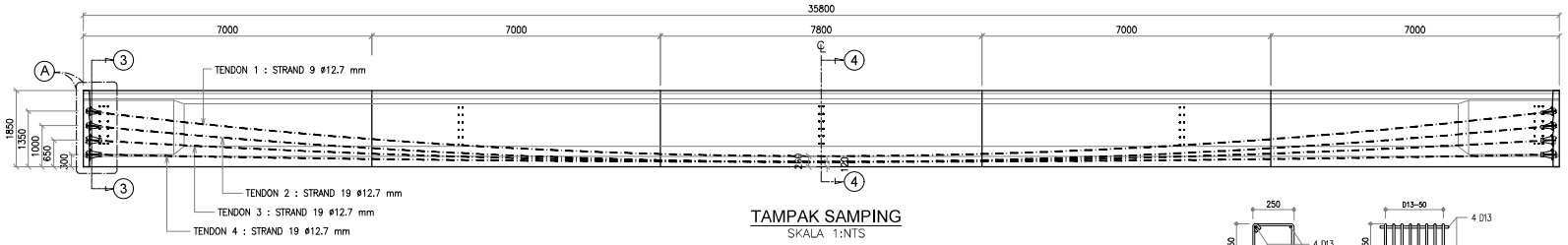
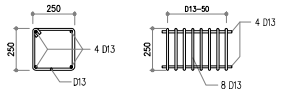
SBI-IKIKSO-K-E01-BR-DR-G501

DETAIL ENGINEERING DESIGN	16 Desember 2022

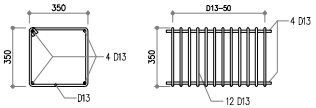


TAMPAK SAMPING
SKALA 1:NTS

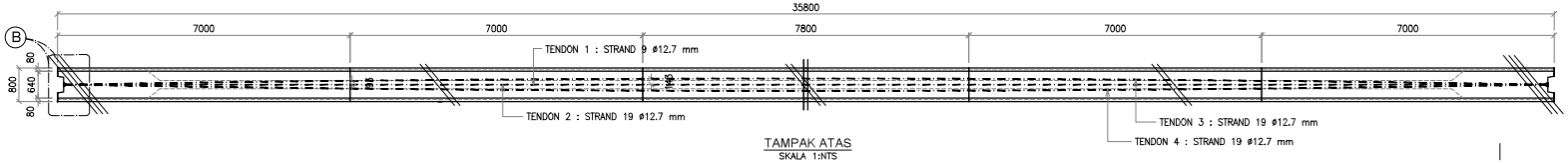
No. Tendon	No. of PC Strand Φ 12.7 mm	Cable Coord.	Profile (mm) Edge	Profile (mm) Mid	Distance From Edge Beam (mm) 0	150	300	1300	2300	3300	4300	5300	6300	7300	8300	9300	10300	11300	12300	13300	14300	15300	16300	CL 17900
1	9	Y	1,350	260	1,350	1,332	1,314	1,197	1,088	985	889	800	718	642	574	512	456	408	367	332	304	283	269	260
2	19	X	1,000	120	1,000	985	971	877	788	705	628	556	490	429	373	323	279	240	206	178	156	139	127	120
3	19	Y	350	120	650	641	632	576	523	473	426	383	343	306	272	242	216	192	172	155	141	131	124	120
		X	0	-150	0	-3	-5	-21	-36	-50	-63	-76	-87	-97	-107	-115	-123	-130	-135	-140	-144	-147	-149	-150
4	19	Y	300	120	300	297	294	275	257	240	224	209	196	183	172	162	152	144	138	132	127	124	121	120
		X	0	150	0	3	5	21	36	50	63	76	87	97	107	115	123	130	135	140	144	147	149	150
Total	66																							



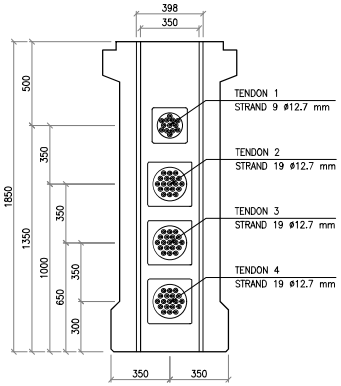
BURSTING STEEL 9 PC STRAND
SKALA 1 : 25



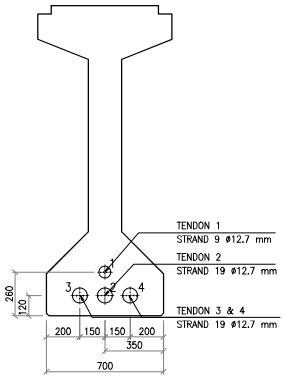
BURSTING STEEL 19 PC STRAND
SKALA 1 : 25



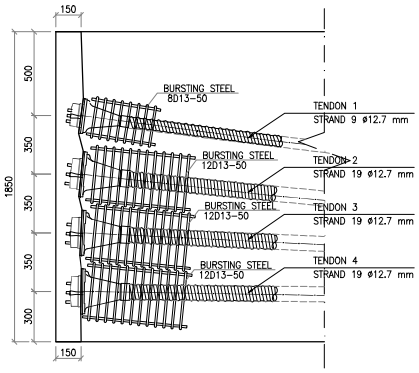
TAMPAK ATAS
SKALA 1:NTS



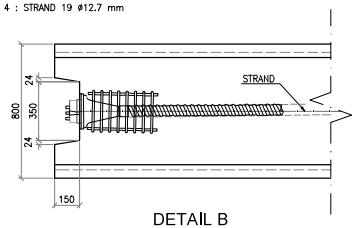
POTONGAN 3-3
SKALA 1:30



POTONGAN 4-4
SKALA 1:30



DETAIL A
SKALA 1:30



DETAIL B
SKALA 1:30

CATATAN

1. SEMUA UKURAN DALAM MILIMETER KECUALI DISEBUTKAN LAIN.
2. MUTU BETON K600 (fc' = 52.8 MPa)
3. MUTU BETON STRESSING fci = 44.8 MPa (85%)
4. MUTU BAJA TULANGAN = BTJS 420B, fy min =400Mpa
5. TEBAL SELIMUT BETON T = 30 MM (UMUM)
   T = 50 MM (KHUSUS PADA BAGIAN BAWAH GIRDER)
6. PIN CONNECTOR : S45C; C45
7. STRAND :
   - KELAS B, RELAKSASI RENDAH KBJP–P7 RB (SNI 1154–2016) SETARA 7–WIRE–STRAND, GRADE 270 (ASTM–A416)
   - TEGANGAN PUTUS (UTS) : 1860 MPa
   - DIAMETER STRAND ø 12.7 MM, A= 98.7 MM² ± 2% TOLERANCE
   - JUMLAH STRAND :
     KABEL 1 = STRAND 9 ø12.7 MM
     KABEL 2 = STRAND 19 ø12.7 MM
     KABEL 3 = STRAND 19 ø12.7 MM
     KABEL 4 = STRAND 19 ø12.7 MM
   - GAYA STRESSING SAAT TRANSFER = 137.69 KN/STRAND
   - EFFECTIVE PRESTRESS FORCE 121 KN/STRAND

Key Plan :

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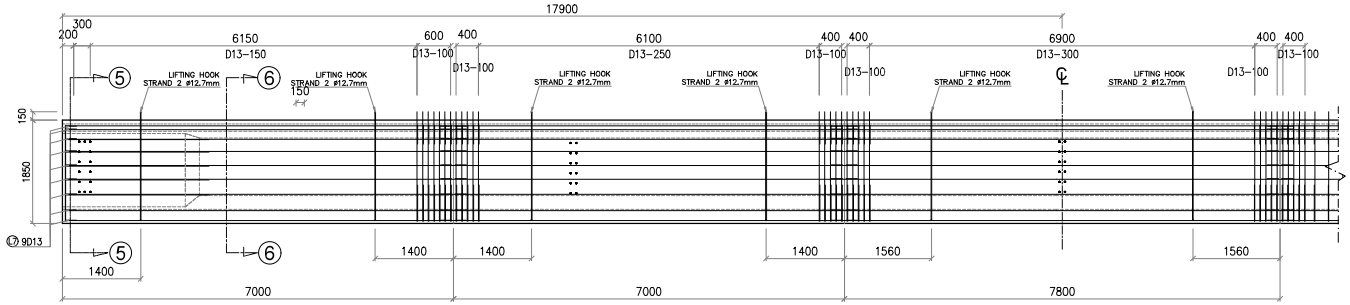
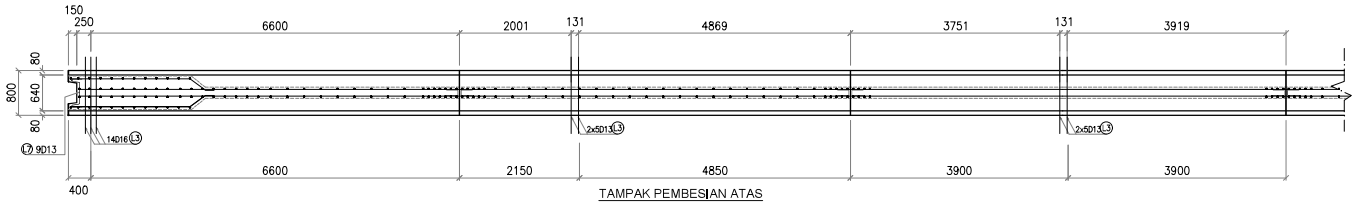
SBI-IKIKSO-K-E01-BR-DR-G502

DETAIL ENGINEERING DESIGN | 16 Desember 2022



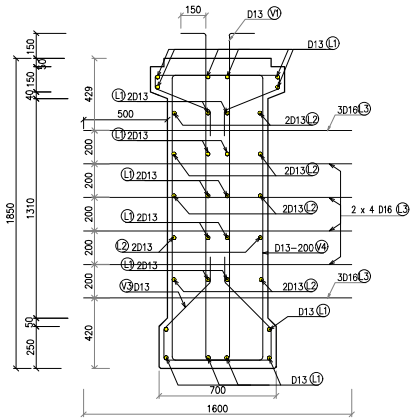
TAMPAK PEMBESIAN SAMPING

SKALA 1:NTS



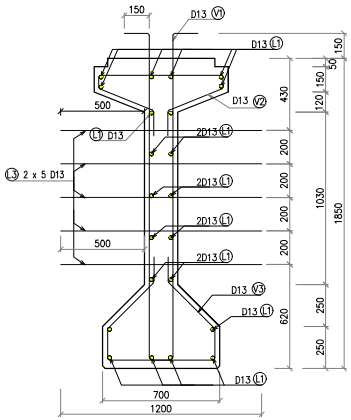
TAMPAK PEMBESIAN ATAS

SKALA 1:NTS



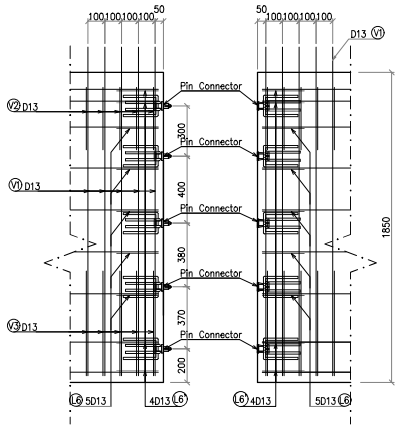
POTONGAN 5-5

SKALA 1 : 30



POTONGAN 6-6

SKALA 1 : 30

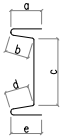


DETAIL SAMBUNGAN SEGMEN 1 & 2

SKALA 1 : 30

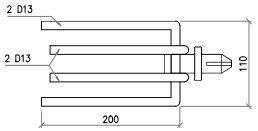
POSISI	DIMENSI (cm)			JUMLAH (bh)
	A	B	C	
BADAN D13 (L6)	30	16,6	30	5x2
ATAS D13 (L6')	30	76,6	30	2x2
BAWAH D13 (L6")	30	66,6	30	2x2

BENTUK TULANGAN
CLOSE REBAR SEGMEN



POSISI	DIMENSI (cm)					JUMLAH (bh)
	A	B	C	D	E	
TEPI (L7)	30	15	VAR	15	30	9x2

BENTUK TULANGAN
CLOSE REBAR UJUNG



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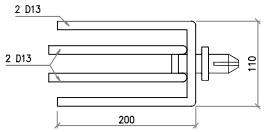

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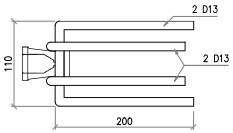

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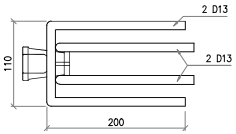

TAMPAK SAMPING

DETAIL PEMBESIAN PIN CONNECTOR (ANGKUR DENGAN PIN DISAMBUNG DENGAN LAS)

Key Plan :

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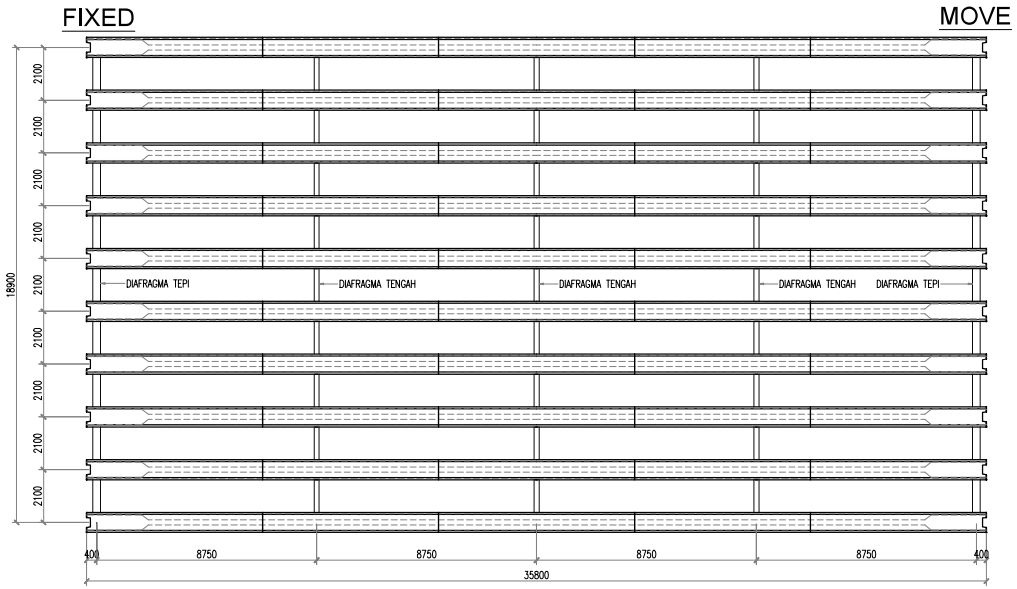
PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

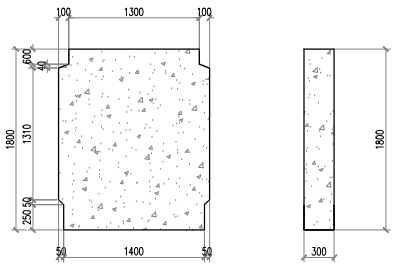
PEMBESIAN PCI GIRDER
H=1.85m, L=35.80m, CTC 2.1m

SBI-IKIKSO-K-E01-BR-DR-G503

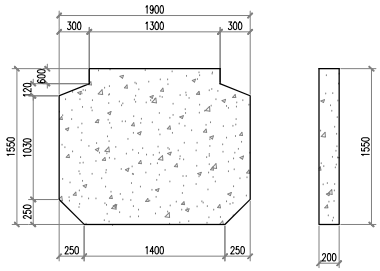
DETAIL ENGINEERING DESIGN | 16 Desember 2022



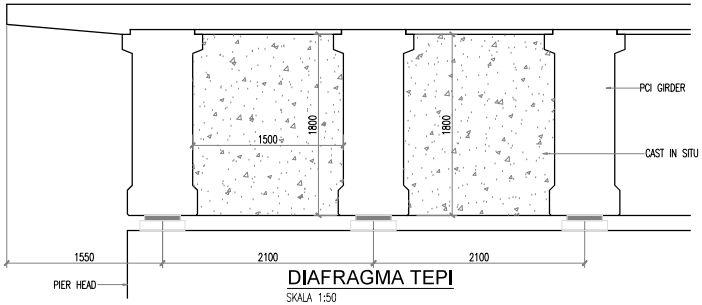
DENAH DIAFRAGMA
SKALA 1:200



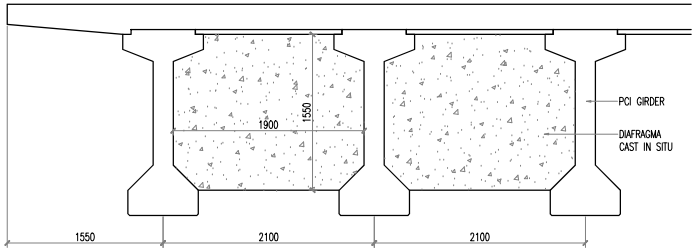
DIAFRAGMA TEPI
SKALA 1:50



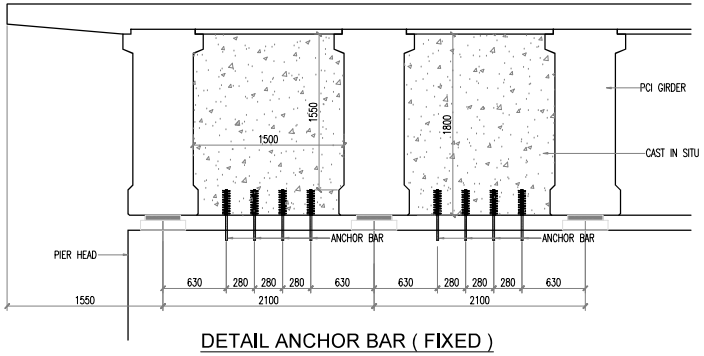
DIAFRAGMA TENGAH
SKALA 1:50



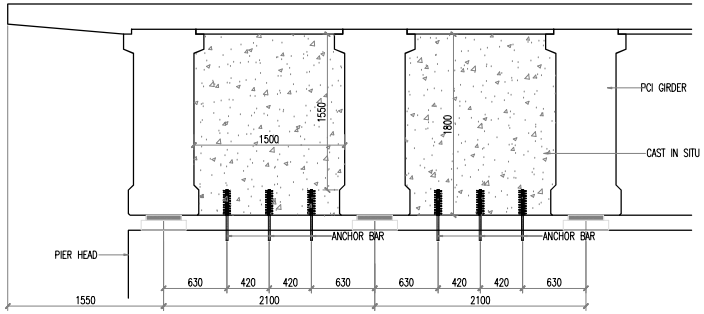
DIAFRAGMA TEPI
SKALA 1:50



DIAFRAGMA TENGAH
SKALA 1:50



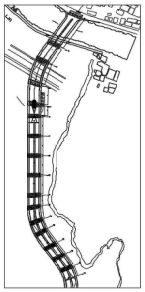
DETAIL ANCHOR BAR (FIXED)
SKALA 1:50



DETAIL ANCHOR BAR (MOVE)
SKALA 1:50

CATATAN :
- UNTUK PENULANGAN DIAFRAGMA LIHAT DI GAMBAR PENULANGAN PLAT LANTAI
- UNTUK ANGKUR DAN BEARING LIHAT DI GAMBAR TYPICAL BEARING PAD

Key Plan:



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PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

DENAH DAN DETAIL DIAFRAGMA
H=1.85m, L=35.80m, CTC 2.1m

SBI-IKIKSO-K-E01-BR-DR-G504

DETAIL ENGINEERING DESIGN | 16 Desember 2022

GENERAL FABRICATION NOTES:

1. STEEL DESIGN

The Steel Box Girder is designed refer to:
AASHTO LRFD : Bridge Design Specification 7th edtion : 2017
SNI 1725–2016 : Indonesian Bridge Loading Standard

2. MATERIAL

2.a Structural Steel Material

Structural Steel Components shall conform to SM520B for Upper and Lower Flange, SM490B for Web and Middle Flange and others components SM400B or SS400. The Segmented Fabricated Girders shall be site welded at controlled environment's site and shall pass 100% UT Test of all site weldings performed.

2.b Structural Concrete Material

Concrete Deck Slab material is designed using fc' 30 MPa

2.c Bolts

All bolts, nuts and washer shall conform to JIS B1186 High Strength Hexagon Bolt, Hexagon Nut, Plain Washer for Friction Grip Joints. All bolts is designed using F10T Grade (Black Oxide).

2.d Stud Bolt/Shear Connector

All stud bolt shall conform to JIS B1198 Headed Stud and they shall meet the mechanical properties as follow:
Yield Strength 235 MPa
Tensile Strength 400 MPa
Elongation min. 20%

3. WELDING

All welding shall be performed to conform AWS D1.5 (Latest Edition).
All welding shall be performed by horizontal/flat or downhand welding direction.
The type and frequency of NDT Welding Test is as follow:

Test Item	Application		Test Frequency
U.T	Upper, Lower FLANGE	Tension, Alternating Section	At full penetration groove welding, the ends (300 mm each)
U.T	Upper, Lower FLANGE	Tension, Alternating Section Compression, front end	In fully penetrated groove welding, the length excluding the end (100%) 25% inspection (full penetration groove welding)
	Abdominal plate (WEB)	Alternation part	100% inspection (full penetration groove welding)
		Except for alternatives	One–third of 100% of the height of the abdomen The remaining 25% inspection
	BOX/PL. GIR. etc	Diaphragm & Vertical Stiffener Diaphragm & Flange Vertical Stiffener & Rib Cross Beam Bracket Stringer Bracket	100% inspection (full penetration groove welding)
		Partially Penetrated Groove Weld	M.T: 300 mm per 3 m of each welding length including end U.T: 300 mm per 6 m of welding machine including end
	FLANGE & WEB	Site Joint Weld	100% inspection (full penetration groove welding)
M.T	SM 520 or less Main Girder	Web & Flange Fillet Welding	Welding length including end 300mm per 3m
	SM 570 or higher Main Girder	Web & Flange Fillet Welding	Welding length including end 300mm per 3m
	LIFTING LUG (SHOP DWG.)		100% UT inspection

4. COATING SYSTEM

Unless otherwise noted all Steel Components shall be protect against corrosion as follow:

Outer Side Surface:

Surface Preparation	SA 2.5	
Primer Coat	80	mikron
Secondary Coat	130	mikron
Finish Coat	60	mikron
Total	270	mikron

Inner Side Surface:

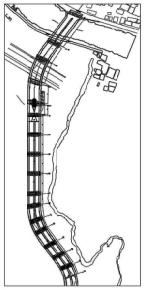
Surface Preparation	SA 2.5	
Primer Coat	80	mikron
Finish Coat	100	mikron
Total	180	mikron

Friction Surface (splice bolts and/or in contact with Infilled concrete):

Surface Preparation	SA 2.5	
Primer Coat	80	mikron
Total	80	mikron

SKALA 1:100 — 0, 1m, 2m, 3m, 4m, 5m

Key Plan:



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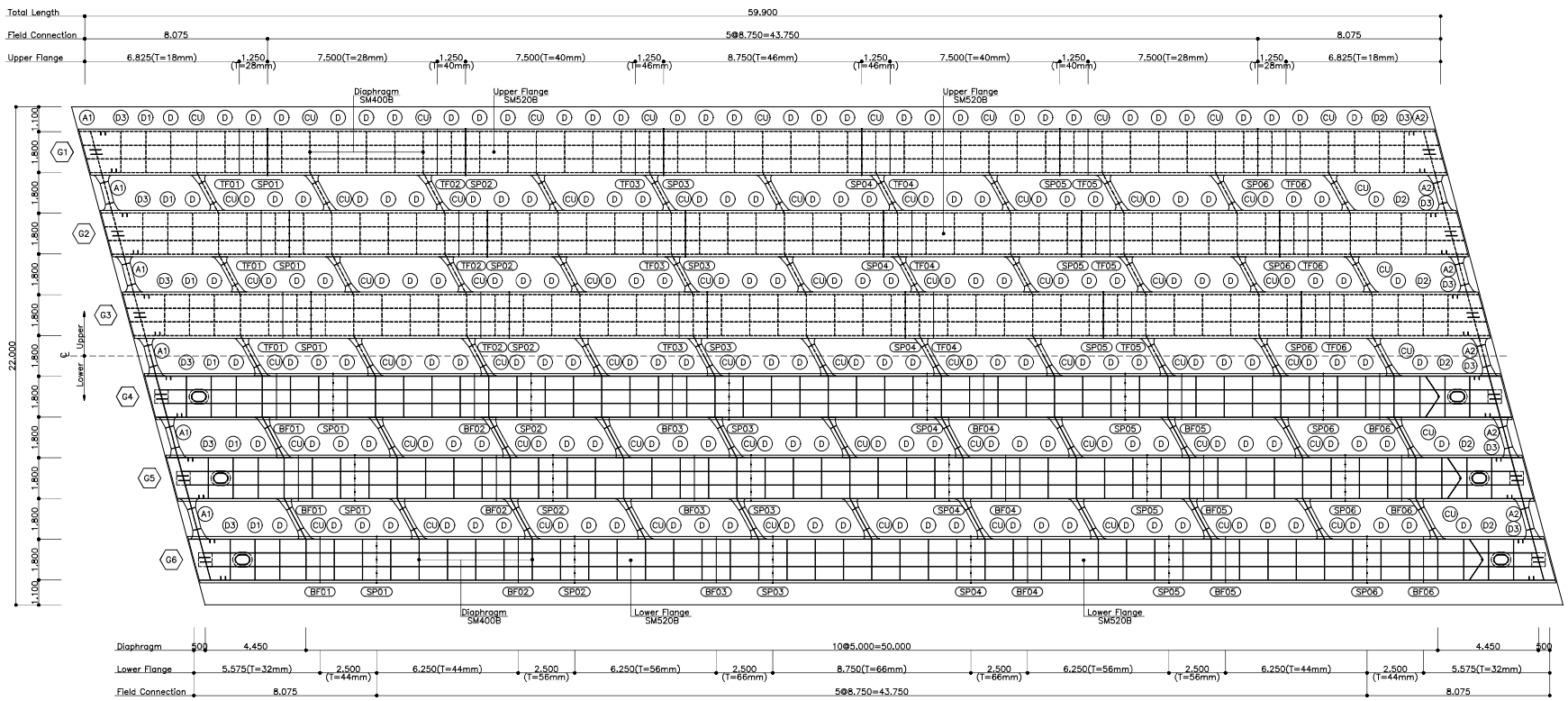
PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

GENERAL NOTES
LOW DEPTH STEEL GIRDER
SPAN 60M, H=1.6m, CTC=3.6m

SBI-IKIKSO-K-E01-BR-DR-SG01

DETAIL ENGINEERING DESIGN | 16 Desember 2022

Design Type : Limit State Design Steel : Main Member–SM520B SM490B Sub Member–SM400B Design Load TT–Load, TD–Load	Main Member : Upper Flange, Lower Flange, Web, Longitudinal Flange Stiffeners, Longitudinal Stiffeners(H–Stiff.), Diaphragm(Support part), Sole Plate, Bearing Stiffeners, Jack up Stiffeners Sub Member : Transverse Stiffeners(V–Stiff.), Cross beam, Stiffeners of Cross Beam, Stringer, Stiffeners of Stringer, Bracket, Diaphragm(Diaphragm excluding support part)



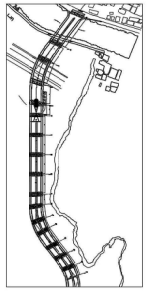
Plan View

S = 1 : 200

Note	
TF	: Factory Splice(Upper Flange)
BF	: Factory Splice(Lower Flange)
WF	: Factory Splice(Web)
SP	: Field Splice

SKALA 1:100 — 0, 1m, 2m, 3m, 4m, 5m

Key Plan:



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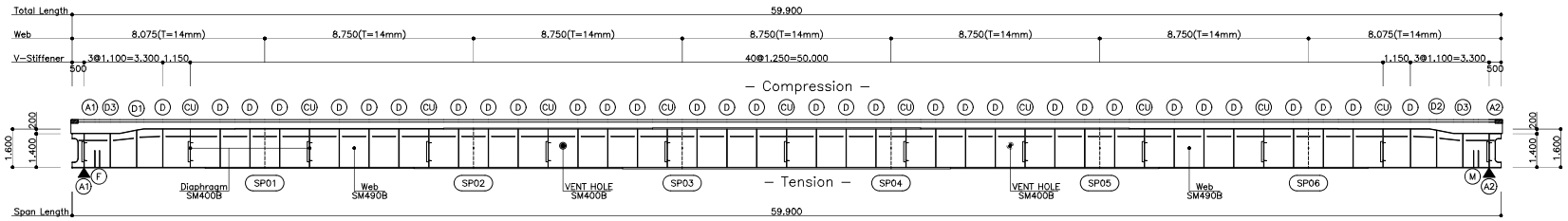
PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

GENERAL PLAN & SECTIONS (1)
LOW DEPTH STEEL GIRDER
SPAN=60m, H=1.6m, CTC=3.6m

SBI-IKIKSO-K-E01-BR-DR-SG02

DETAIL ENGINEERING DESIGN | 16 Desember 2022

Design Type : Limit State Design Steel : Main Member–SM520B SM490B Sub Member–SM400B Design Load TT–Load, TD–Load	Main Member : Upper Flange, Lower Flange, Web, Longitudinal Flange Stiffeners, Longitudinal Stiffeners(H–Stiff.), Diaphragm(Support part), Sole Plate, Bearing Stiffeners, Jack up Stiffeners Sub Member : Transverse Stiffeners(V–Stiff.), Cross beam, Stiffeners of Cross Beam, Stringer, Stiffeners of Stringer, Bracket, Diaphragm(Diaphragm excluding support part)



Side View

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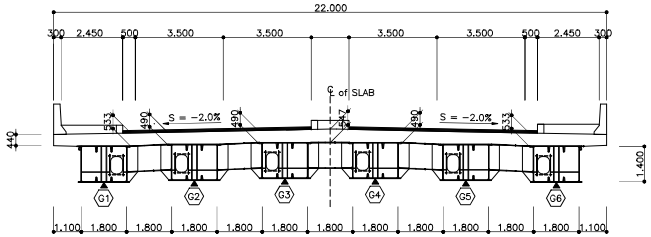

Cross Section (End Span)

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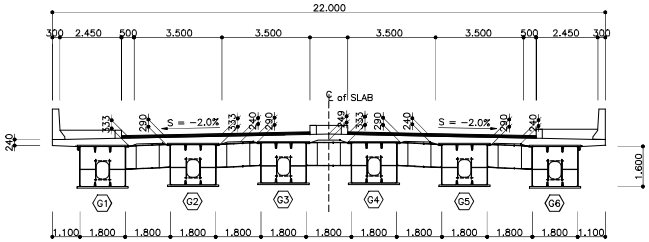


Cross Section (Mid Span)

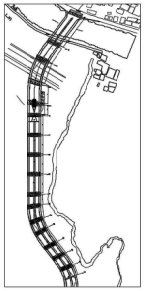
S = 1 : 200

Note

- TF : Factory Splice(Upper Flange)
- BF : Factory Splice(Lower Flange)
- WF : Factory Splice(Web)
- SP : Field Splice

SKALA 1:100 — 0, 1m, 2m, 3m, 4m, 5m

Key Plan:



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PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

GENERAL PLAN & SECTIONS (2)
LOW DEPTH STEEL GIRDER
SPAN=60m, H=1.6m, CTC=3.6m

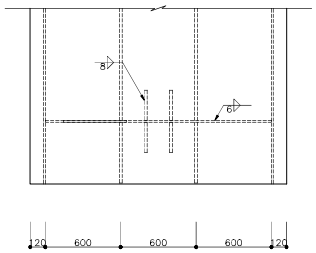
SBI-IKIKSO-K-E01-BR-DR-SG03

DETAIL ENGINEERING DESIGN | 16 Desember 2022

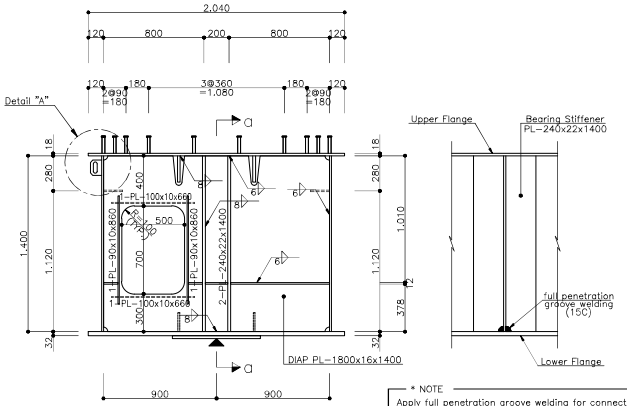
Design Type : Limit State Design
Steel : Main Member–SM520B
SM490B
Sub Member–SM400B
Design Load TT–Load, TD–Load

Main Member : Upper Flange, Lower Flange, Web, Longitudinal Flange Stiffeners, Longitudinal Stiffeners(H–Stiff.), Diaphragm(Support part), Sole Plate, Bearing Stiffeners, Jack up Stiffeners
Sub Member : Transverse Stiffeners(V–Stiff.), Cross beam, Stiffeners of Cross Beam, Stringer, Strffeners of Stringer, Bracket, Diaphragm(Diaphragm excluding support part)

A1, A2 (G1 ~ G6)



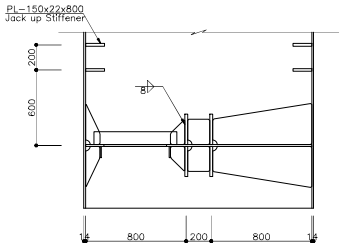
Plan View
S = 1 : 40



Cross Sectional View
S = 1 : 40

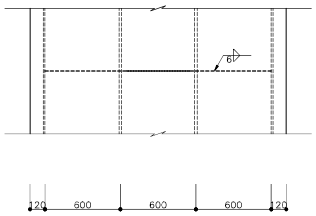
Section a–a

* NOTE
Apply full penetration groove welding for connection between low part of bearing stiffeners and Lower flange.

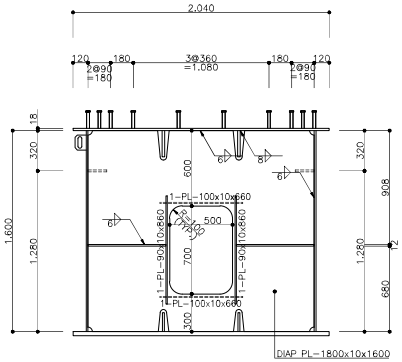


Plan View (Crossbeam)
S = 1 : 40

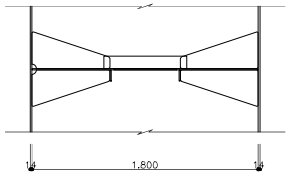
CU (G1 ~ G6)



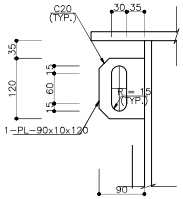
Plan View (Upper Flange)
S = 1 : 40



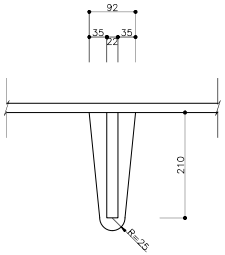
Cross Sectional View
S = 1 : 40



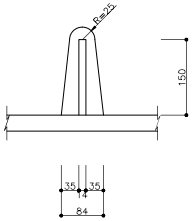
Plan View (Crossbeam)
S = 1 : 40



Detail "A"
S = 1 : 5



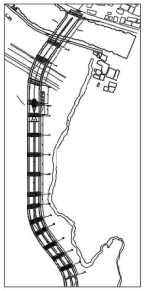
Upper Flange Scallop Detail
S = 1 : 10



Lower Flange Scallop Detail
S = 1 : 10

SKALA 0 1m 2m 3m 4m 5m
1:100

Key Plan:



PEMBERI TUGAS

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PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

TYPICAL SECTIONS (1)
LOW DEPTH STEEL GIRDER
SPAN=60m, H=1.6m, CTC=3.6m

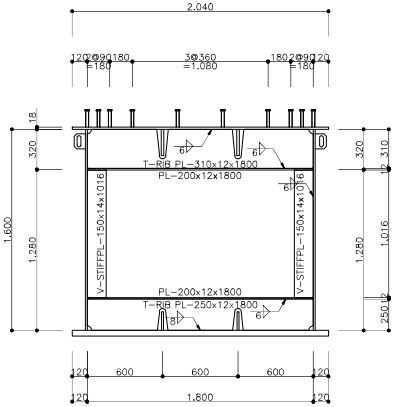
SBI-IKIKSO-K-E01-BR-DR-SG04

DETAIL ENGINEERING DESIGN | 16 Desember 2022

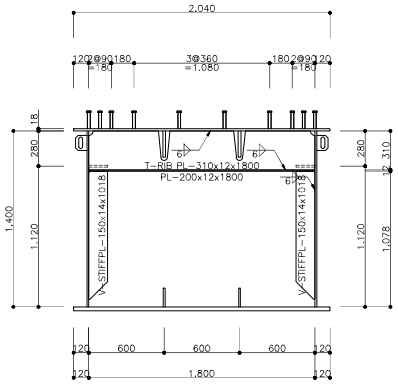
Design Type : Limit State Design
Steel : Main Member–SM520B
SM490B
Sub Member–SM400B
Design Load TT–Load, TD–Load

Main Member : Upper Flange, Lower Flange, Web, Longitudinal Flange Stiffeners, Longitudinal Stiffeners(H–Stiff.), Diaphragm(Support part), Sole Plate, Bearing Stiffeners, Jack up Stiffeners
Sub Member : Transverse Stiffeners(V–Stiff.), Cross beam, Stiffeners of Cross Beam, Stringer, Strffeners of Stringer, Bracket, Diaphragm(Diaphragm excluding support part)

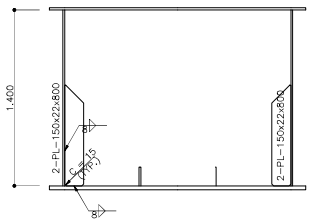
D (G1 ~ G3)



D3 (G1 ~ G3)



J1 (G1 ~ G3)



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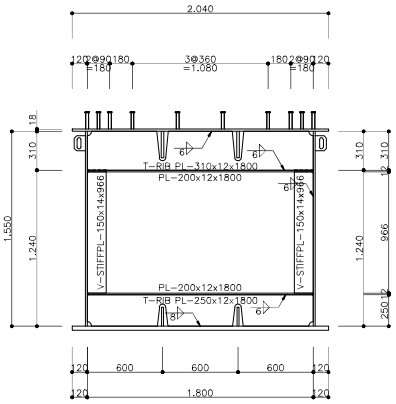

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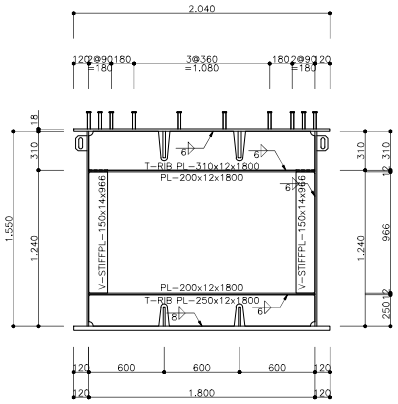
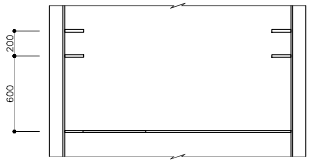
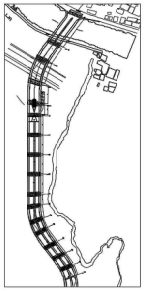


A1 A2



SKALA 1:100 — 0, 1m, 2m, 3m, 4m, 5m

Key Plan:



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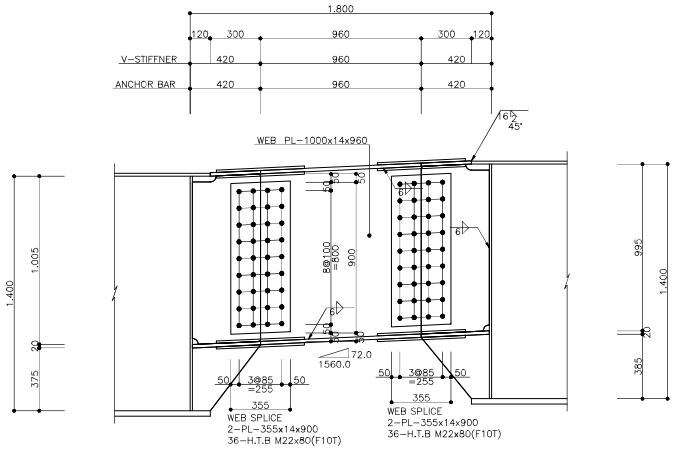
PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

TYPICAL SECTIONS (2)
LOW DEPTH STEEL GIRDER
SPAN=60m, H=1.6m, CTC=3.6m

SBI-IKIKSO-K-E01-BR-DR-SG05

DETAIL ENGINEERING DESIGN | 16 Desember 2022

G1 : CR01,13, G2 : CR01,13



Croess Sectional View

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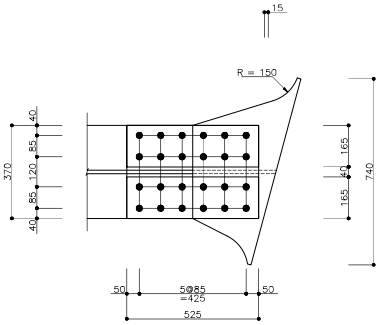
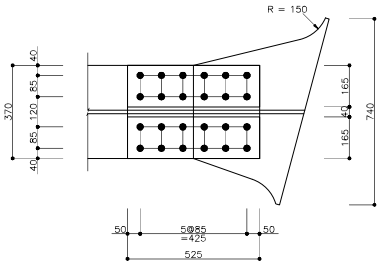


Bracket Upper Detail

S = 1 : 15



Bracket Lower Detail

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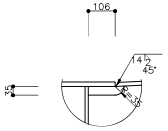
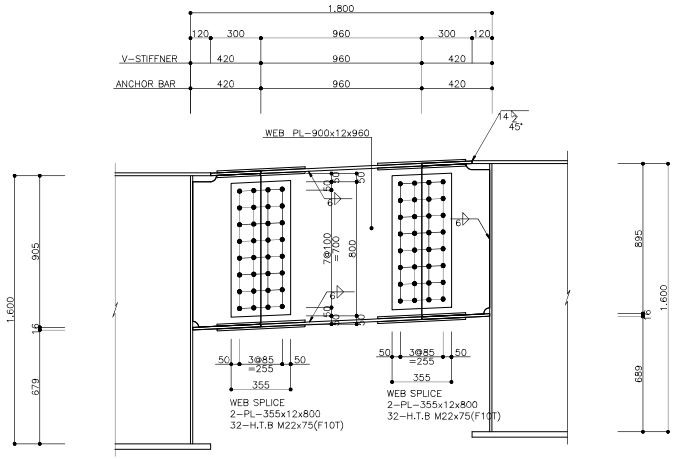


Scallop Detail

S = 1 : 10

G1 : CR02~12, G2 : CR02~12



Croess Sectional View

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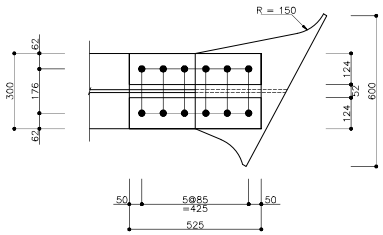
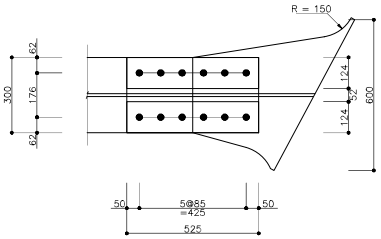


Bracket Upper Detail

S = 1 : 15

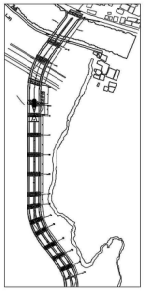


Bracket Lower Detail

S = 1 : 15

SKALA 0 1m 2m 3m 4m 5m
1:100

Key Plan:



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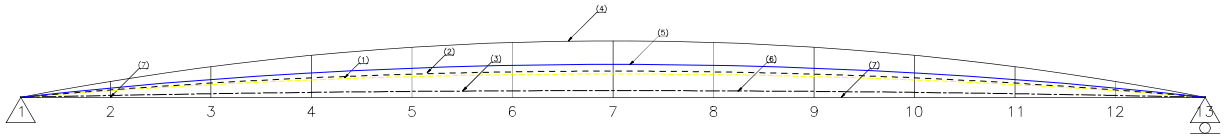
PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

TYPICAL DETAIL CROSS BEAM
LOW DEPTH STEEL GIRDER
SPAN=60m, H=1.6m, CTC=3.6m

SBI-IKIKSO-K-E01-BR-DR-SG06

DETAIL ENGINEERING DESIGN | 16 Desember 2022



CAMBER (GIRDER 1)

Saltation	1	2	3	4	5	6	7	8	9	10	11	12	13
(1) Camber of Steel Weight	0.00	33.04	66.61	94.31	114.60	127.01	131.59	128.13	116.65	96.92	69.12	34.60	0.00
(2) Camber of Con'c Deck Slab Weight	0.00	37.25	74.92	105.80	128.27	141.95	146.98	143.19	130.56	108.74	77.81	39.09	0.00
(3) Camber of Dead Load after Composite	0.00	16.41	33.37	47.53	58.13	64.69	67.09	65.25	59.18	48.87	34.70	17.29	0.00
(4) Manufacture in Factory (Sum(1)~(3))	0.00	86.70	174.90	247.64	301.00	333.65	345.65	336.57	306.39	254.53	181.63	90.98	0.00
(5) Lifting Girder (Sum(4)-(1))	0.00	53.66	108.29	153.33	186.40	206.64	214.06	208.44	189.74	157.61	112.51	56.38	0.00
(6) After First DC Load (Sum(5)-(2))	0.00	16.41	33.37	47.53	58.13	64.69	67.09	65.25	59.18	48.87	34.70	17.29	0.00
(7) After Second DC Load (Sum(6)-(3))	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

CAMBER (GIRDER 4)

Saltation	1	2	3	4	5	6	7	8	9	10	11	12	13
(1) Camber of Steel Weight	0.00	33.95	68.11	95.93	115.95	127.85	131.81	127.73	115.69	95.58	67.80	33.76	0.00
(2) Camber of Con'c Deck Slab Weight	0.00	38.32	76.60	107.55	129.66	142.76	147.09	142.61	129.37	107.16	76.25	38.10	0.00
(3) Camber of Dead Load after Composite	0.00	15.99	32.23	45.62	55.50	61.45	63.41	61.33	55.30	45.38	32.01	15.86	0.00
(4) Manufacture in Factory (Sum(1)~(3))	0.00	88.25	176.94	249.10	301.11	332.06	342.31	331.67	300.36	248.12	176.06	87.72	0.00
(5) Lifting Girder (Sum(4)-(1))	0.00	54.30	108.83	153.17	185.16	204.21	210.50	203.94	184.67	152.54	108.26	53.96	0.00
(6) After First DC Load (Sum(5)-(2))	0.00	15.99	32.23	45.62	55.50	61.45	63.41	61.33	55.30	45.38	32.01	15.86	0.00
(7) After Second DC Load (Sum(6)-(3))	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(GIRDER 2)

Saltation	1	2	3	4	5	6	7	8	9	10	11	12	13
(1) Camber of Steel Weight	0.00	33.54	67.39	95.11	115.27	127.47	131.79	128.08	116.34	96.40	68.53	34.19	0.00
(2) Camber of Con'c Deck Slab Weight	0.00	37.77	75.69	106.54	128.83	142.25	147.00	142.93	130.04	108.02	77.03	38.54	0.00
(3) Camber of Dead Load after Composite	0.00	16.12	32.60	46.27	56.44	62.67	64.85	62.92	56.89	46.80	33.07	16.39	0.00
(4) Manufacture in Factory (Sum(1)~(3))	0.00	87.44	175.68	247.92	300.54	332.38	343.64	333.93	303.27	251.21	178.64	89.12	0.00
(5) Lifting Girder (Sum(4)-(1))	0.00	53.90	108.29	152.81	185.27	204.92	211.85	205.85	186.93	154.82	110.10	54.93	0.00
(6) After First DC Load (Sum(5)-(2))	0.00	16.12	32.60	46.27	56.44	62.67	64.85	62.92	56.89	46.80	33.07	16.39	0.00
(7) After Second DC Load (Sum(6)-(3))	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(GIRDER 5)

Saltation	1	2	3	4	5	6	7	8	9	10	11	12	13
(1) Camber of Steel Weight	0.00	34.10	68.38	96.20	116.12	127.84	131.60	127.32	115.13	94.97	67.27	33.47	0.00
(2) Camber of Con'c Deck Slab Weight	0.00	38.62	77.15	108.14	130.18	143.09	147.21	142.50	129.08	106.78	75.87	37.89	0.00
(3) Camber of Dead Load after Composite	0.00	16.55	33.32	47.05	57.11	63.09	64.99	62.80	56.58	46.42	32.75	16.24	0.00
(4) Manufacture in Factory (Sum(1)~(3))	0.00	89.27	178.85	251.40	303.40	334.02	343.80	332.62	300.80	248.17	175.90	87.60	0.00
(5) Lifting Girder (Sum(4)-(1))	0.00	55.17	110.47	155.19	187.28	206.18	212.20	205.30	185.67	153.19	108.63	54.13	0.00
(6) After First DC Load (Sum(5)-(2))	0.00	16.55	33.32	47.05	57.11	63.09	64.99	62.80	56.58	46.42	32.75	16.24	0.00
(7) After Second DC Load (Sum(6)-(3))	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(GIRDER 3)

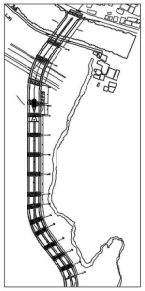
Saltation	1	2	3	4	5	6	7	8	9	10	11	12	13
(1) Camber of Steel Weight	0.00	33.78	67.82	95.60	115.70	127.75	131.89	127.96	116.05	96.01	68.17	33.97	0.00
(2) Camber of Con'c Deck Slab Weight	0.00	38.05	76.16	107.05	129.25	142.49	147.02	142.73	129.65	107.52	76.58	38.30	0.00
(3) Camber of Dead Load after Composite	0.00	15.95	32.12	45.49	55.40	61.41	63.44	61.45	55.46	45.55	32.15	15.93	0.00
(4) Manufacture in Factory (Sum(1)~(3))	0.00	87.78	176.10	248.14	300.35	331.65	342.35	332.14	301.16	249.09	176.90	88.20	0.00
(5) Lifting Girder (Sum(4)-(1))	0.00	54.00	108.28	152.54	184.65	203.90	210.46	204.18	185.11	153.07	108.73	54.23	0.00
(6) After First DC Load (Sum(5)-(2))	0.00	15.95	32.12	45.49	55.40	61.41	63.44	61.45	55.46	45.55	32.15	15.93	0.00
(7) After Second DC Load (Sum(6)-(3))	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(GIRDER 6)

Saltation	1	2	3	4	5	6	7	8	9	10	11	12	13
(1) Camber of Steel Weight	0.00	34.46	68.89	96.62	116.32	127.79	131.27	126.73	114.34	94.05	66.38	32.90	0.00
(2) Camber of Con'c Deck Slab Weight	0.00	39.20	77.99	108.97	130.82	143.47	147.31	142.33	128.65	106.14	75.20	37.41	0.00
(3) Camber of Dead Load after Composite	0.00	17.73	35.30	49.50	59.80	65.86	67.69	65.30	58.78	48.20	34.03	16.90	0.00
(4) Manufacture in Factory (Sum(1)~(3))	0.00	91.40	182.18	255.09	306.94	337.11	346.26	334.36	301.76	248.40	175.61	87.21	0.00
(5) Lifting Girder (Sum(4)-(1))	0.00	56.93	113.29	158.47	190.62	209.32	215.00	207.63	187.42	154.35	109.23	54.30	0.00
(6) After First DC Load (Sum(5)-(2))	0.00	17.73	35.30	49.50	59.80	65.86	67.69	65.30	58.78	48.20	34.03	16.90	0.00
(7) After Second DC Load (Sum(6)-(3))	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SKALA 0 1m 2m 3m 4m 5m
1:100

Key Plan:



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PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

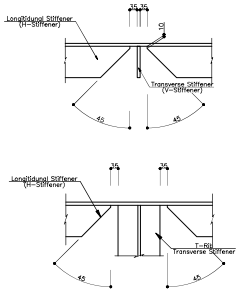
CAMBER DIAGRAM
LOW DEPTH STEEL GIRDER
SPAN=60m, H=1.6m, CTC=3.6m

SBI-IKIKSO-K-E01-BR-DR-SG07

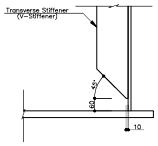
DETAIL ENGINEERING DESIGN | 16 Desember 2022

Longitudinal & Transverse Stiffeners Details

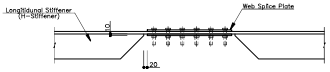
Longitidunal Stiffeners Details



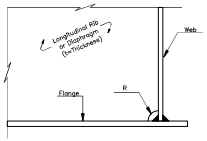
Transverse Stiffeners Details



Longitidunal Stiffeners Joint Details



Scallop Detail

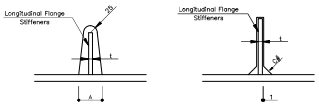


t (mm)	R (mm)
t ≤ 16	35
t > 16	40

NOTE

1. SCALLOP should be installed at the intersection of welds to ensure welding continuity of main part and to avoid stress concentration of welds.
2. Scallop must be installed at the edge of welding connection part of various stiffeners joined to upper and lower flange and Web and Diaphragm.
3. Scallop radius of stiffener shall be more than 35mm to maintain welding and painting quality. 40mm for stiffener plate thickness exceeding 16mm.

Intersection of transverse and longitudinal stiffeners



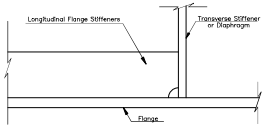
(unit : mm)

t	A	C#	R
t ≤ 12	t + 70	10	25
12 < t ≤ 22	t + 70	10	
22 < t ≤ 32	t + 70	15	

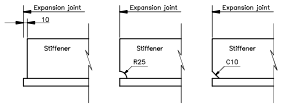
NOTE

1. When a tensile force acts on the longitudinal flange stiffener, the longitudinal flange stiffeners and the transverse stiffeners shall separate the welds from each other, but keep the longitudinal flange stiffeners continuous.
2. When a tensile force acts on the longitudinal flange stiffener, the longitudinal flange stiffeners and the transverse stiffeners shall separate the welds from each other, but at the pier, treat them as shown in Fig (b).

Longitudinal Flange Stiffeners Finishing Details

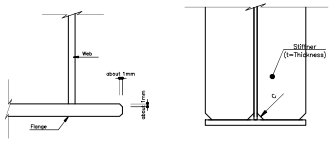


Finishing the end of the girder



* A gap of 10mm or a scallop should be provided for round welding of the ends of longitudinal stiffeners. (Method 1 or 2 or 3)

Chamfering Detail

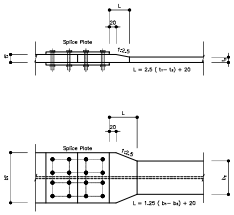


t (mm)	C (mm)
t ≤ 16	10
t > 16	15

NOTE

1. In order to maintain the coating of the main member, grind processing should be performed to have a chamfer or a radius of about 1 mm with respect to the sharp corners of the flange edge.

Tapered section Detail of Flange

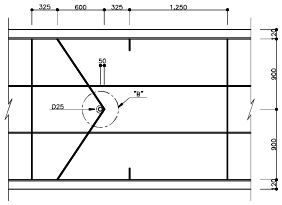


NOTE

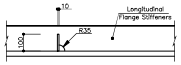
1. When the upper and lower flange tapered parts and the joint plates are close to each other, it is recommended that the taper end and the joint plate are spaced by 20 mm or more.
2. The tapered part of the flange should be 1: 2.5 or less in both the width direction and the thickness direction.

Condensation drain hole

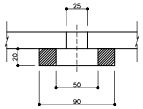
Plan



Side view

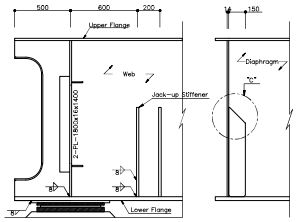


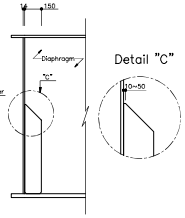
Detail "B"



Jack-up Stiffeners

Side view





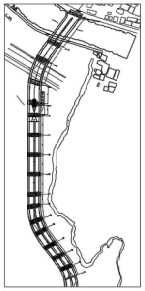
Detail "C"

NOTE

1. Jack-up stiffener shall be installed at less than 1/2 the height of the girder.
2. It is recommended that the scallop be filled where the Jack-up stiffener is installed.

SKALA 1:100 — 0, 1m, 2m, 3m, 4m, 5m

Key Plan:



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PERANCANGAN TERINTEGRASI
BANK INDONESIA DI KAWASAN
KARAWANG DAN KAWASAN GRESIK

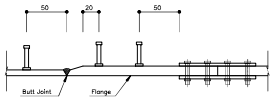
OTHER DETAILS (1)
LOW DEPTH STEEL GIRDER
SPAN=60m, H=1.6m, CTC=3.6m

SBI-IKIKSO-K-E01-BR-DR-SG08

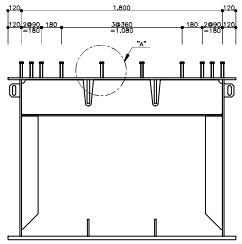
DETAIL ENGINEERING DESIGN | 16 Desember 2022

Shear Connectors(Stud Bolt) Details

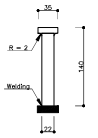
Field Splice Details



Stud Bolt Layout



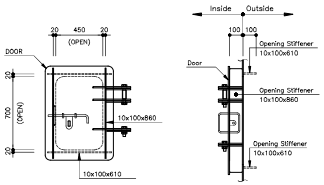
Detail "A"



NOTE

1. Stud welding is used for press welding.
2. For reducing residual stress caused by press welding, stud bolt and its welded joints shall be separated at least 50mm from the joint and at least 20mm from the taper.

Door for Maintenance Inspection

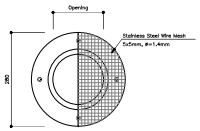


NOTE

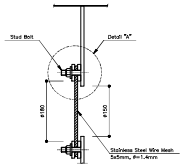
1. If necessary, a door can be installed.
2. Details may be changed according to site conditions.

Vent hole Details

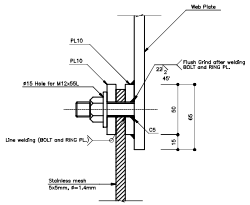
Front View



Section



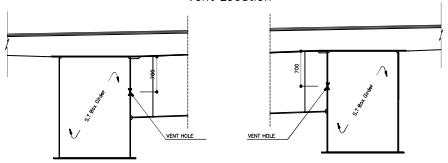
Detail "A"



Material Chart

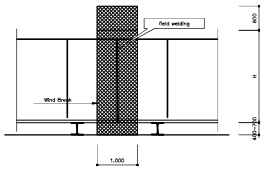
Member	W (mm)	T (mm)	L (mm)	Quantity (ea)	Unit weight (kgf/m3)	Total weight (kgf)	Material
Plate	270	10	270	2	7850	11.4453	SM400B
Stainless mesh	270	16	270	1	0.0009	0.0002	MESH
Bolt-nut		12	45	4	0.0750	0.3000	F10T
Sum						11.7455	

Vent Location

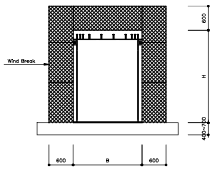


Wind Break Details for Field Welding

Longitudinal Section



Cross Section

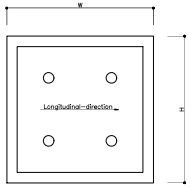


NOTE

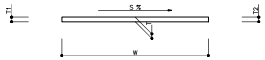
1. The support shall be installed at least 1 m wide from the joint.
2. Wind break shall be installed in the structure that does not spray fire.
3. The support must be attached to the field welding joint to maintain the shape of S.T Box girder.

Sole plate Details

Plan



Side view



Table

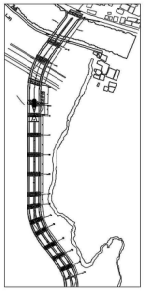
Item	Bearing	S(%)	W	H	T	T1	T2
A1	①	0.000	700	700	22	22	22
	②	0.000	700	700	22	22	22
	③	0.000	700	700	22	22	22
A2	①	0.000	700	700	22	22	22
	②	0.000	700	700	22	22	22
	③	0.000	700	700	22	22	22

NOTE

1. The sole plate should be manufactured in consideration of the site conditions after checking the bearing specifications.
2. The sole plate should be manufactured considering the effect of longitudinal alignment.
3. The size of the sole plate indicated above is an assumption and can be changed after obtaining approval from the supervisor in consideration of the site conditions.
4. The thickness of the sole plate should be 22mm or more.
5. The edge of the sole plate should be separated by at least 15mm from the edge of the flange.

SKALA 1:100 — 0, 1m, 2m, 3m, 4m, 5m

Key Plan:



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LOW DEPTH STEEL GIRDER
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SBI-IKIKSO-K-E01-BR-DR-SG09

DETAIL ENGINEERING DESIGN | 16 Desember 2022