

JAPAN INTERNATIONAL COOPERATION AGENCY
PUBLIC WORKS DEPARTMENT
MINISTRY OF WORKS, MALAYSIA

THE STUDY
ON
THE STANDARDIZATION OF BRIDGE DESIGN
IN
MALAYSIA

FINAL REPORT

VOLUME IV (2/2)

STANDARD DRAWINGS
FOR
SUBSTRUCTURE

AUGUST 1996

JAPAN BRIDGE & STRUCTURE INSTITUTE, INC., TOKYO
PACIFIC CONSULTANTS INTERNATIONAL, TOKYO

Substructure

1. Outline

The "Drawings" were prepared for easy understanding by visual aspect of standardized bridge design which could be used practically for actual bridge designing with high accuracy by engineers as many as possible whole in Malaysia.

2. Specification Applied

Malaysian specifications applied for these Drawings are "Guidelines for Presentation of Engineering Drawings" and "Guide Book for Bridge Drawings". Considering any drawing practice in Malaysia, these specifications were applied as much as possible, however, Japanese Standards were also applied in the case these Malaysian specifications were not able to be applied.

For superstructure CADD (Computer Aided Design and Drawing) programme system were used for the Drawings, and the Drawings of substructure were made by Auto CAD (manual operation) based on calculation results.

3. Design Conditions

Matters that require attention for use of the Drawings are a range of its application and design conditions. Applicable instruction under the following categories shall be carefully read before use.

1. Total cross section
2. Structure type and application span length
3. Naming of standard drawings
4. Markings, dimensions and general notes for structure drawings

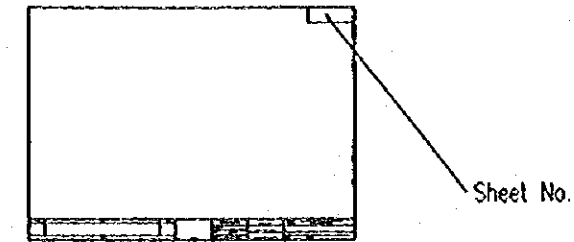
4. Composition of the Drawings

Drawings cover the substructure type of Inverted T-wall Abutment, T-Type Pier and Multiple Column Pier.

5. Usage

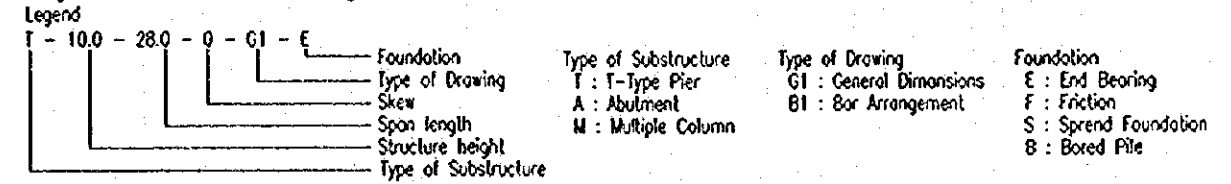
5.1 Reference Method for Specific Drawing

These Drawings consist of 'general dimensions' and 'bar arrangement', and each sheet has a number which identify its type (design condition) at upper right. Therefore, applicable standardized drawings can be found by its number. Example is shown below.



Example for Substructure

Naming of standard Drawings.



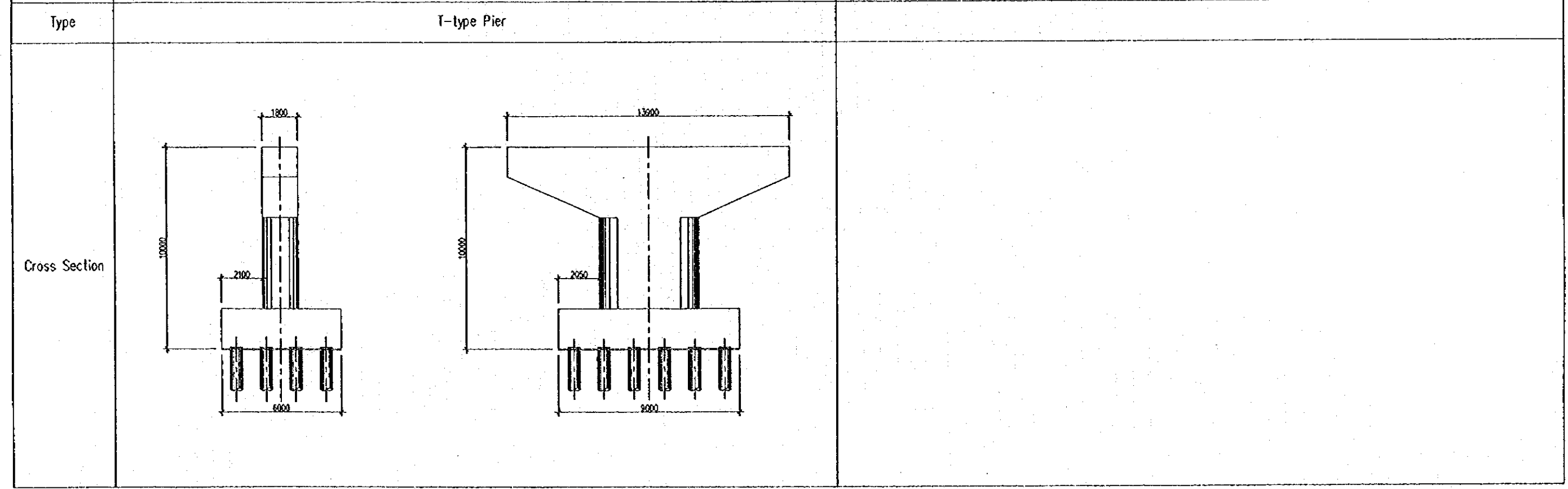
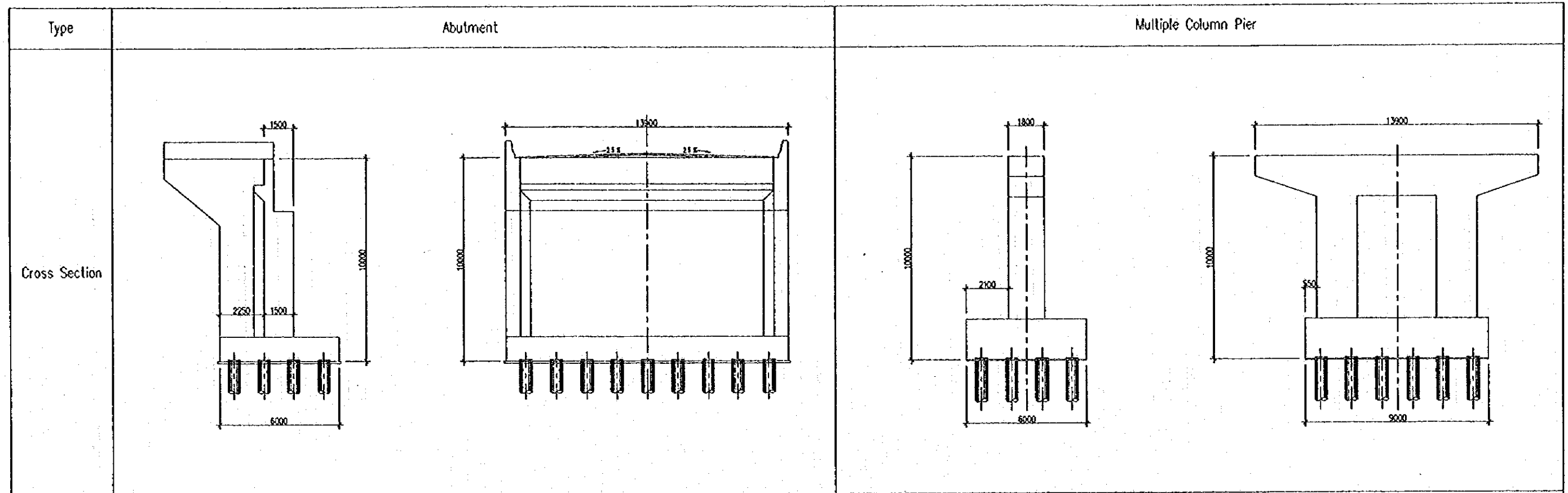
Abutment		T-Type Pier		Multiple Column	
Sheet No	Drawing Name	Sheet No	Drawing Name	Sheet No	Drawing Name
1	A- 6.0-10.0- 0-G1-E	23	T-10.0-16.0- 0-G1-E	41	M-10.0-16.0- 0-G1-E
2	- do - -B1-E	24	- do - -B1-E	42	- do - -B1-E
3	- do - -G1-F	25	- do - -G1-F	43	- do - -G1-F
4	- do - -B1-F	26	- do - -B1-F	44	- do - -B1-F
5	A- 6.0-16.0- 0-G1-E	27	T-10.0-28.0- 0-G1-E	45	M-10.0-28.0- 0-G1-E
6	- do - -B1-E	28	- do - -B1-E	46	- do - -B1-E
7	A- 6.0-28.0- 0-G1-E	29	- do - -G1-F	47	- do - -G1-F
8	- do - -B1-E	30	- do - -B1-F	48	- do - -B1-F

6. Instruction

- 1) The pile foundation (PC spun pile, diameter 0.6m) proposed in the Standard Design is only a sample design. Although the pile was selected from its recent popular use and the ground condition was assumed to represent the typical geological feature in Malaysia, the Standard Design can not answer every local problems. In general, for the design of foundation, the design parameters should be decided individually according to each bridge construction site, and the Standard Design will help the design process as a reference.
- 2) Standardized drawings for wingwall of abutment were prepared for 3 types shown in the table below. If applicable dimension can not be found in the Drawings, drawings of general dimensions and bar arrangement shall be made based on design calculations referring to the Drawings.



Tarikh	Bulunan	Rujukan		UNIT JAMBATAN	PENGARAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
				DIREKABENTUK:		
				DILUNAS:	DISEMBAK:	JURUTERA PENKUSA KAJIAN
				DILULUSKAN: PENYONG PANGRAH (M)		PENYONG PANGRAH KAJIAN (J)
				UKURAN		TARIKH: <input type="text"/> <input type="text"/>
						BL: <input type="text"/> LUKSANE



Tarikh	Baitan	Rujukan	UNIT JAMBATAN	PONORAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKABENTUK	JURUTERA PENGEJASA KANAN	
			DILUAS	DISEMAK	PENYOLONG PENGARAH KANAN (K)
			DILUKUSKAN PENYOLONG PENGARAH (P)		TARAH
					BUKURSAN

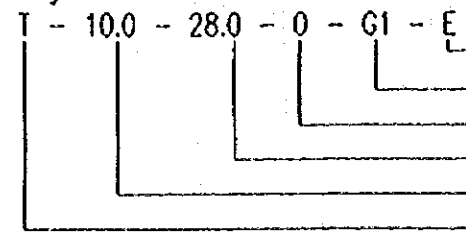
Preparation of Standard Drawings

	Type	Height (m)	Skew (degree)	Span length (m)						Foundation	
				10	16	22	28	32	35		45
Standard Drawings	Abutment	6	0	⊙	○		⊙				○ : End Bearing only ⊙ : End Bearing and Friction
			15				○				
			30				○				
		8	0						○		
			15								
			30								
		10	0						○	⊙	
			15								
			30								
	T-type Pier	10	0		⊙		⊙				○ : End Bearing only ⊙ : End Bearing and Friction
			15				○				
			30				○				
		15	0				○				
			15								
			30								
		20	0							⊙	
			15								
			30								
	Multiple Column Pier	10	0		⊙		⊙				○ : End Bearing only ⊙ : End Bearing and Friction
			15				○				
			30				○				
		15	0				○				
			15								
			30								
20		0							⊙		
		15									
		30									
Sample Drawings	Abutment	8	0					○		Spread	
		12	0					○		End Bearing	
	T-type Pier	30	0					○		End Bearing	
		30	0					○		Friction	
	Multiple Pier	30	0					○		Bored Pile	
		20	0					○		Bored Pile	

Form	Bulatan	Rujukan		UNIT JAMBATAN	PENGARAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
				DIREKABENK:		
				DILUNIS: DISIAK:	JURUTERA PENJAJA KAJAN	
	PINDAAN		URUFAN	DILULUSKAN PENYALONG PENGARAH (P)	PENYALONG PENGARAH KAJAN (K)	TARIKH: BLOK: NO. SAK:

Naming of Standard Drawings.

Legend



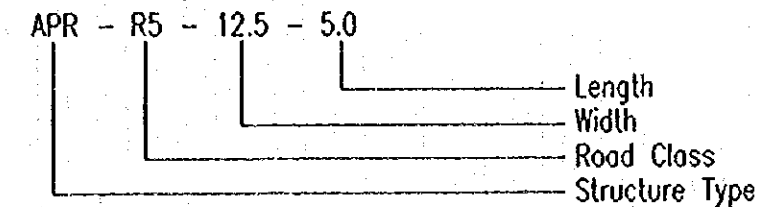
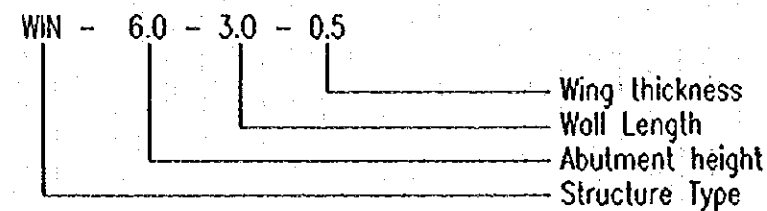
T : T-Type Pier
 A : Abutment
 M : Multiple Column
 G1 : General Dimensions
 B1 : Bar Arrangement
 E : End Bearing
 F : Friction
 S : Spread Foundation
 B : Bored Pile

Foundation
 Type of Drawing
 Skew
 Span length
 Structure height
 Type of Substructure

Type of Substructure
 Type of Drawing
 Foundation

Foundation
 E : End Bearing
 F : Friction
 S : Spread Foundation
 B : Bored Pile

Abutment		T-Type Pier		Multiple Column		Sample Drawings		Structure Type	
Sheet No	Drawing Name	Sheet No	Drawing Name	Sheet No	Drawing Name	Sheet No	Drawing Name	Sheet No	Drawing Name
1	A- 6.0-10.0- 0-G1-E	23	T-10.0-16.0- 0-G1-E	41	M-10.0-16.0- 0-G1-E	59	A- 8.0-32.0- 0-G1-S	71	WIN- 6.0- 3.0-0.5
2	- do - -B1-E	24	- do - -B1-E	42	- do - -B1-E	60	- do - -B1-S	72	WIN- 8.0- 5.0-0.7
3	- do - -G1-F	25	- do - -G1-F	43	- do - -G1-F	61	A-12.0-32.0- 0-G1-E	73	WIN-10.0- 5.0-0.7
4	- do - -B1-F	26	- do - -B1-F	44	- do - -B1-F	62	- do - -B1-E	74	APR- R5-12.5-5.0
5	A- 6.0-16.0- 0-G1-E	27	T-10.0-28.0- 0-G1-E	45	M-10.0-28.0- 0-G1-E	63	T-30.0-32.0- 0-G1-E	75	APR- R5-12.9-5.0
6	- do - -B1-E	28	- do - -B1-E	46	- do - -B1-E	64	- do - -B1-E	76	BORED PILE
7	A- 6.0-28.0- 0-G1-E	29	- do - -G1-F	47	- do - -G1-F	65	- do - -G1-F		
8	- do - -B1-E	30	- do - -B1-F	48	- do - -B1-F	66	- do - -B1-F		
9	- do - -G1-F	31	T-10.0-28.0-15-G1-E	49	M-10.0-28.0-15-G1-E	67	- do - -G1-B		
10	- do - -B1-F	32	- do - -B1-E	50	- do - -B1-E	68	- do - -B1-B		
11	A- 6.0-28.0-15-G1-E	33	T-10.0-28.0-30-G1-E	51	M-10.0-28.0-30-G1-E	69	M-20.0-32.0- 0-G1-B		
12	- do - -B1-E	34	- do - -B1-E	52	- do - -B1-E	70	- do - -B1-B		
13	A- 6.0-28.0-30-G1-E	35	T-15.0-28.0- 0-G1-E	53	M-15.0-28.0- 0-G1-E				
14	- do - -B1-E	36	- do - -B1-E	54	- do - -B1-E				
15	A- 8.0-35.0- 0-G1-E	37	T-20.0-45.0- 0-G1-E	55	M-20.0-45.0- 0-G1-E				
16	- do - -B1-E	38	- do - -B1-E	56	- do - -B1-E				
17	A-10.0-35.0- 0-G1-E	39	- do - -G1-F	57	- do - -G1-F				
18	- do - -B1-E	40	- do - -B1-F	58	- do - -B1-F				
19	A-10.0-45.0- 0-G1-E								
20	- do - -B1-E								
21	- do - -G1-F								
22	- do - -B1-F								



Tarikh	Rujukan		UNIT JAMBATAN		PENGARAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKTOR/		JURUTERA PENGLIASA KAWAN	
			DILUKIS:	DISEKAN:	PENDALING PENGARAH KAWAN (J)	
						TARBIH

MARKINGS, DIMENSIONS AND GENERAL NOTES FOR STRUCTURE DRAWINGS

The following notes shall be taken into account as applicable when reading the drawings.

They are summarized here for ease of reference, some of the notes are already mentioned in the Specification.

1. Geometrical standard for R5/U5 & R3/U3 shall comply with JKR guide on geometric design of roads.
2. Design Load Standard shall comply with B037/88 : 1989.
3. All dimensions as shown on the drawings are in mm unless otherwise stated.
4. Concrete for structural members

Grade of concrete for structural members shall be as follows:

Table 1. Grade of Concrete

Grade of Concrete	Structural Members
40	Reinforced Concrete
60	Prestressed Concrete Spun Pile
30	Bored Pile

5. Reinforcement

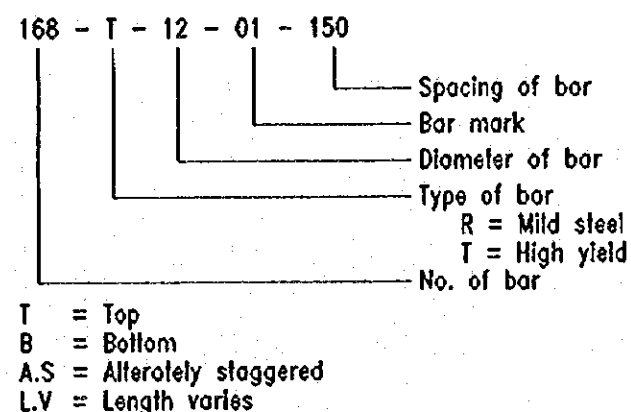
- (1) Bending, cutting, hook and anchoring shall comply with BS4466 as well as BS5400.
- (2) Spacing, splicing and development reinforcement shall comply with BS5400.
- (3) Minimum lap splice length of reinforcement shall be $25D + 150(\text{mm})$ where D is a nominal diameter (mm) of reinforcement.
- (4) The location of lap splices on the longitudinal reinforcement is tentatively given in the Standard Drawing assuming the standard length of a reinforcement to be 9 and 12m. Designers are required to specify the splice location in such manner as not to concentrate splices in a section and to avoid the section of large bending moment.
- (5) Maximum length of a reinforcement shall not exceed 12m in general.
- (6) Cross sectional area, unit weight etc. shall comply with BS4461, 1966.

(7) Concrete Cover for reinforcement bars.

Table 2. Concrete Cover

Structural Members	Concrete Cover (mm)
Abutment and Walls	50
Piers	50
Footing	70
Piles	70

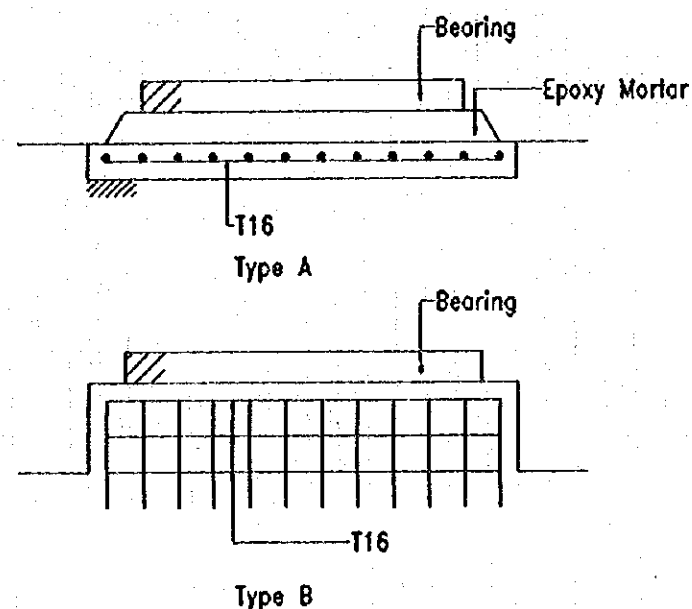
(8) Legend



6. Reinforcement for Bridge Bearing Seats

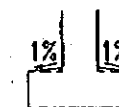
In order to distribute Reactions from superstructures, bridge bearing seat shall be reinforced by using reinforcing bars T16.

Type A (Plain Type), Type B (Bending Type) are commonly adopted.

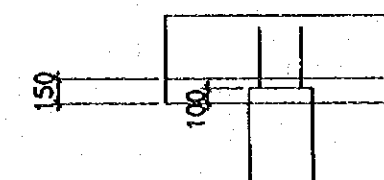


7. Pile cap

- (1) Crossfall on the pile cap shall be 1% for drainage. (In Calculation of section and drawing this crossfall is neglected.)



- (2) Lower reinforcing bar of pile cap is located the 150mm level from bottom of the pile cap. Pile head is embedded in to the pile cap up to 100mm.



Tarikh	Butiran	Pujukan		UNIT JAMBATAN	PENGARAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
				DIREKTOR		
				DILUAS: DISAMAK:	JURUTERA PERUSAHA KANAN	
				DILUKUSKAN: PENOLONG PENGARAH (P)	PENOLONG PENGARAH KANAN (K)	TARIKH
	PINDAAN		UKURAN			DILUKUSKAN

MARKINGS, DIMENSIONS AND GENERAL NOTES FOR STRUCTURE DRAWINGS

8. Pile

(1) PC Spun piles

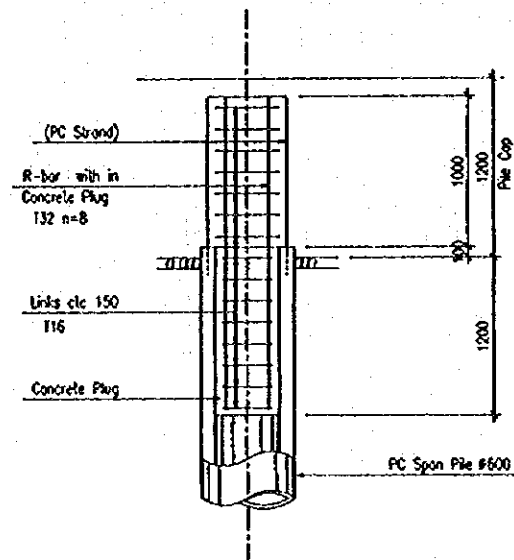
Anchorage depth in pile caps shall be 1000mm complying with JKR Note ($L = 32 \times d$, $d =$ diameter of bars).

Reinforcement shall be taken place embedding into the concrete plaque due to its manufacturing constraint. Anchorage bars shall be over T32-8.

(2) Bored piles

The anchorage depth shall be complied with JKR Note as the same as PC spun piles. Main reinforcing bars shall be extended by extra 1000mm longer than the anchorage length.

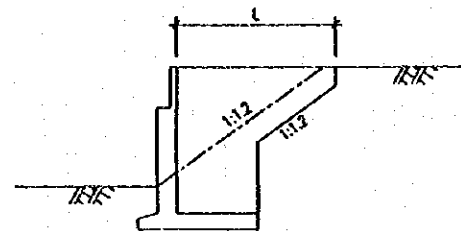
Pile head concrete shall be chipped to eliminate laitance concrete sufficiently.



9. Wing Walls

Wing walls of $l=5m$ and $l=3m$ shall be adopted and shown as samples in the Standard Design. Gradient of a wing edge shall be 1 : 1.2 which is complied with Japanese Standard (Front Gradient of an Embankment). Shape of wing wall shall be determined based on particular conditions of each embankment, but its design cannot be standardized. Therefore drawings for wing walls were prepared just for references.

$L=8m$ is a practical limit for the wing wall length. However, long wing wall is not recommendable due to its uneconomical point which is caused by thick member to be used. In this case, different type shall be considered such as retaining walls practically.

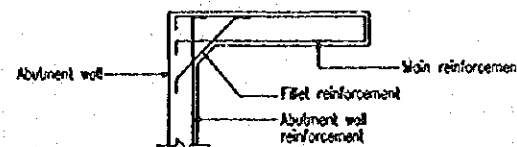


10. Fillet for Wing Walls

Diagonal reinforcements.

Sufficient reinforcement is required because horizontal forces such as a rolling compaction tend to cause displacement of the wall.

Furthermore, working forces effected on wing walls also affect on parapets, therefore, haunches must be reinforced sufficiently.

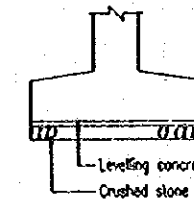


10. Lean concrete

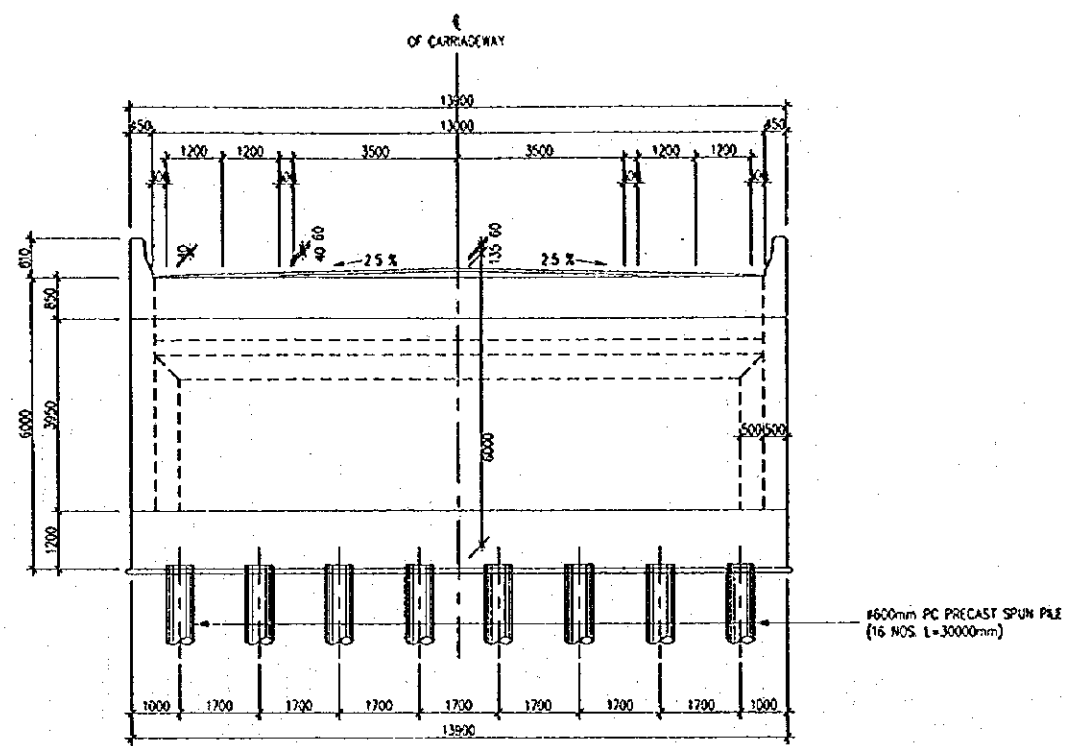
Ground surface shall be finished by levelling concrete for distributing reactions from the structure and for formation level

Thickness of crushed stone shall be $t=200mm$ and levelling concrete for $t=100mm$ generally.

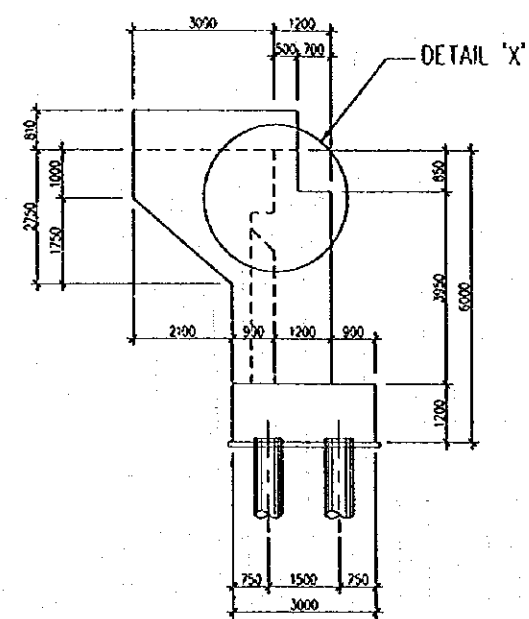
In case of pile foundation, the same manner shall be adopted.



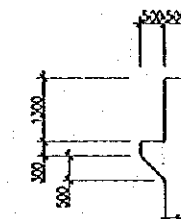
Tolok	Bulan	Rujukan		UNIT JAMBATAN	PENGARAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
				DIREKASENTRAL		
				DILAKS: DISERKAN:	JURUTERA PENGURUS KAWAN	
	PINDAAN		UMURAH	DILAKSUKAN PENGOLONG PENGARAH (JI)	PENGOLONG PENGARAH KAWAN (JI)	TARBIH JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN



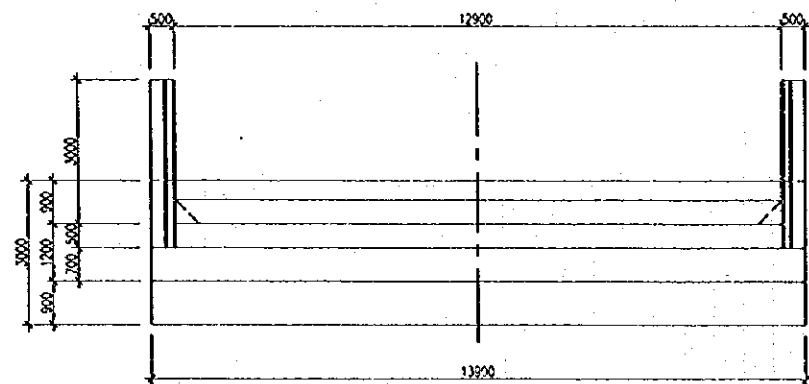
FRONT ELEVATION
SCALE 1:25



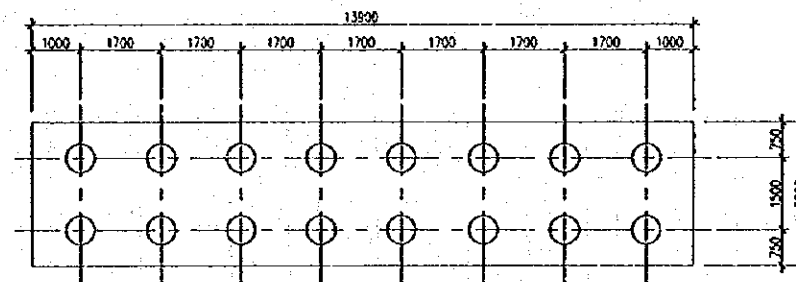
SIDE ELEVATION
SCALE 1:25



DETAIL 'X'
SCALE 1:25



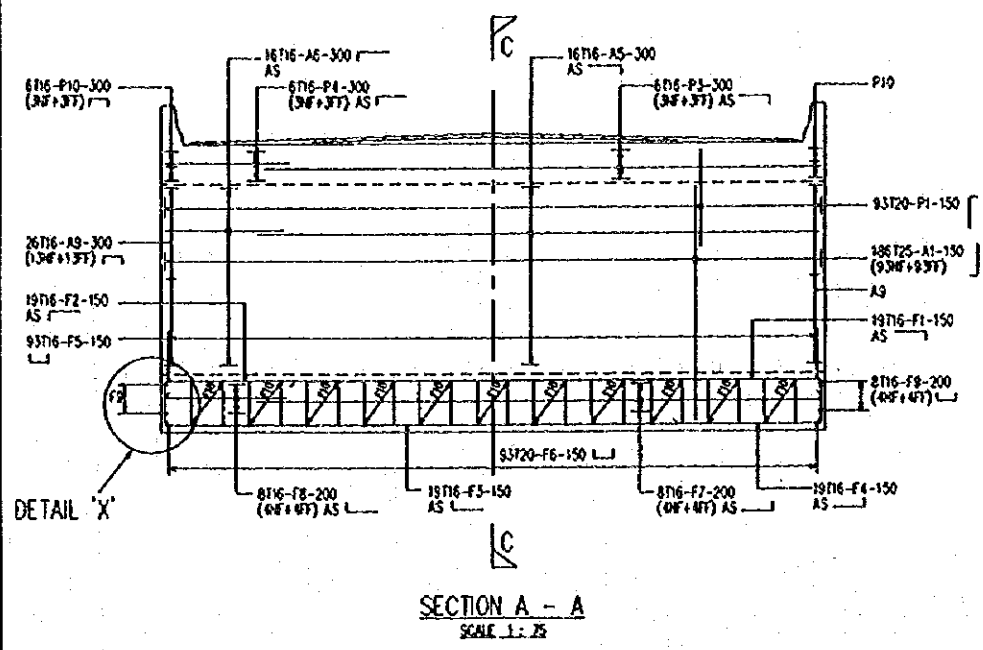
PLAN
SCALE 1:25



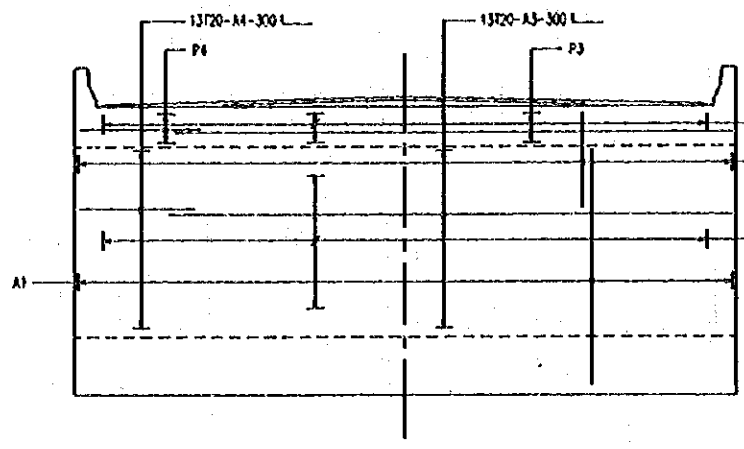
PILE ARRANGEMENT
SCALE 1:25

Tarik	Bulan	Rujukan	UNIT JAMBATAN	PENGARAH JALAN	 JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKABENTUK	JURUTERA PENOLONG KANAN	
			DENYAI	PENOLONG PENGARAH KANAN (J)	TARIKH
			DILULUSKAN: PENOLONG PENGARAH (J)		BL. LUKSAY
					ABUTMENT - GENERAL VIEW

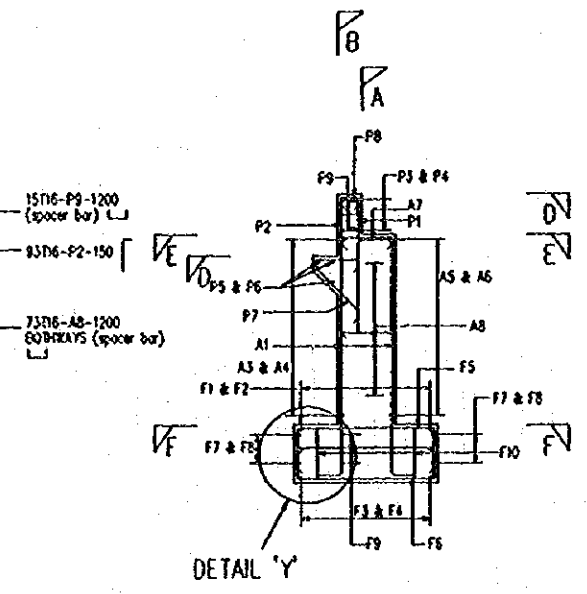
[60 PILE ABUTMENT] NO. 01



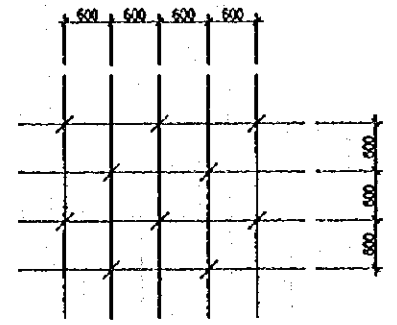
SECTION A - A
SCALE 1:25



SECTION B - B
SCALE 1:25



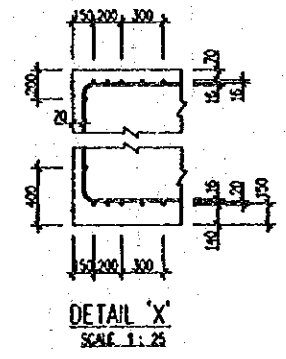
SECTION C - C
SCALE 1:25



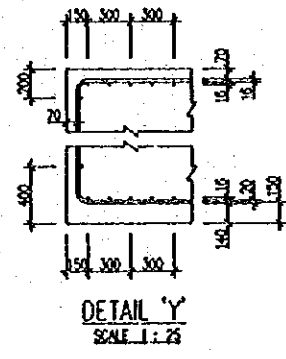
KEY PLAN
SPACER BAR ARRANGEMENT

DETAIL 'X'

DETAIL 'Y'



DETAIL 'X'
SCALE 1:25

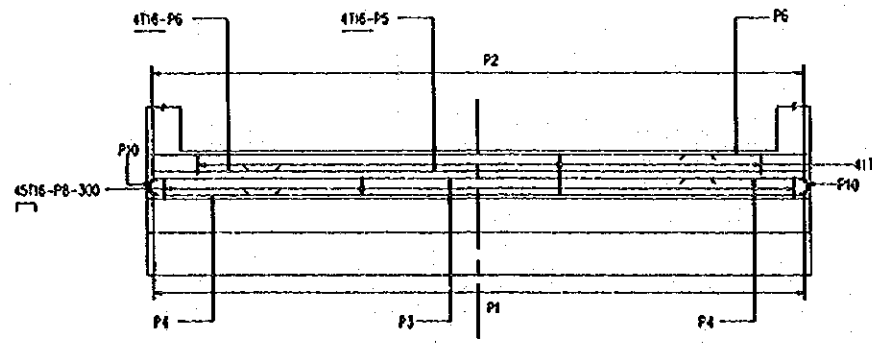


DETAIL 'Y'
SCALE 1:25

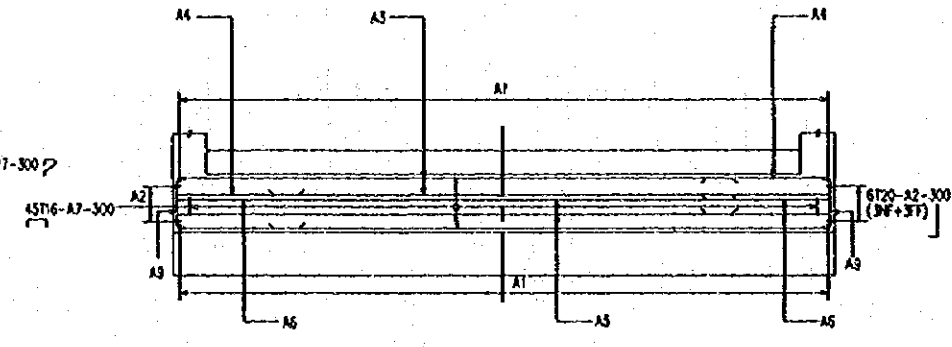
LEGEND:

- 14 T 32-B1-125
- SPACING OF BAR
- BAR MARK
- B = BEAM
- F = COLUMN
- F = FOOTING
- SIZE OF BAR
- TYPE OF BAR
- T = HIGH YIELD
- R = MILD STEEL
- NO. OF BAR

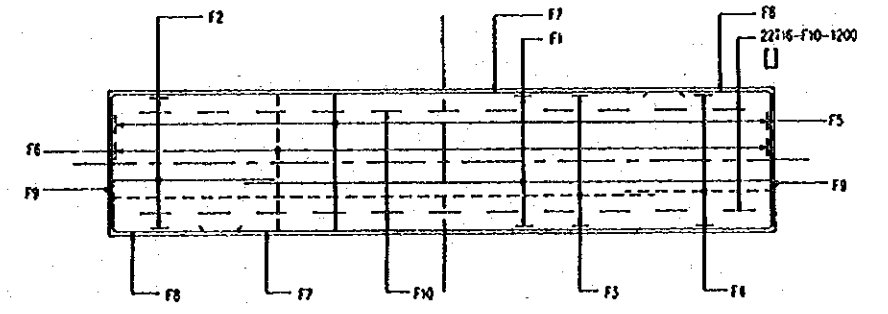
AS = ALTERNATELY STAGGERED
 LV = LENGTH VARIES
 NF = NEAR FACE
 FF = FAR FACE



SECTION D - D
SCALE 1:25

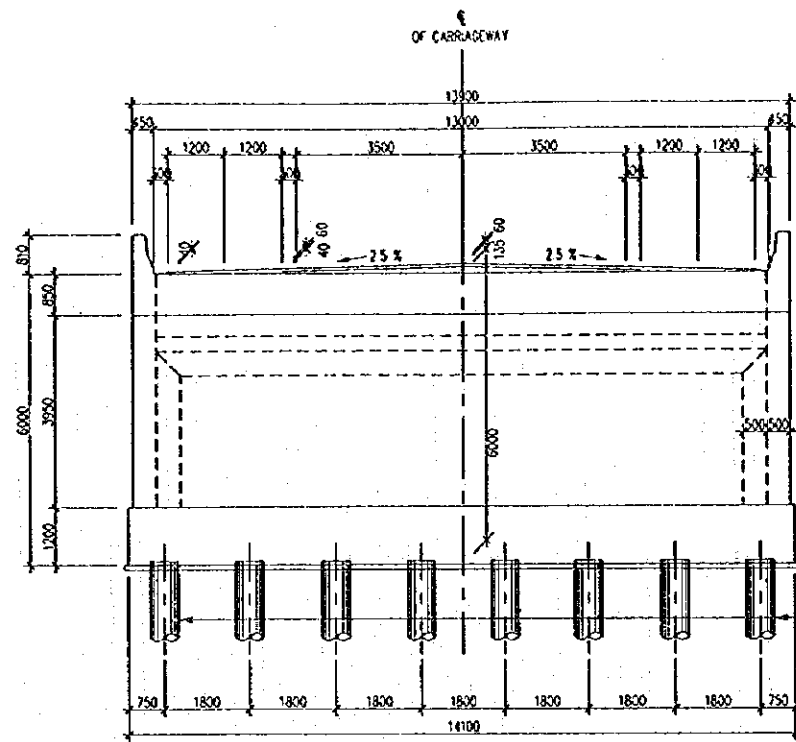


SECTION E - E
SCALE 1:25

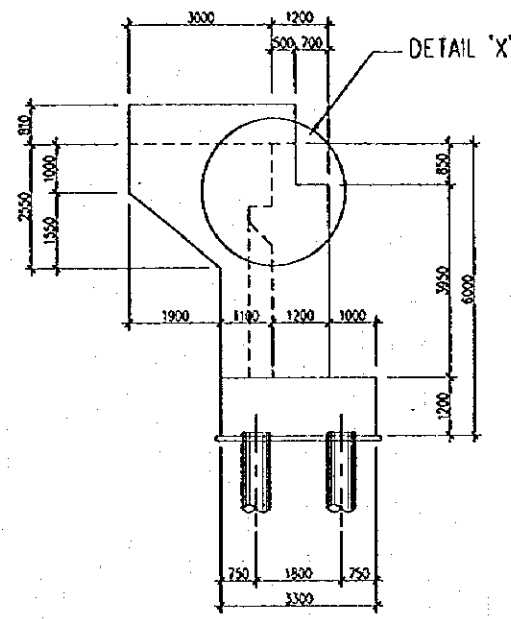


SECTION F - F
SCALE 1:25

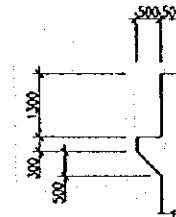
Tarikh	Betiran	Rujukan	UNIT JAMBATAN	PENGARAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKABENTUK:	JURUTERA PENOLONG KAWAN	ABUTMENT -- REINFORCEMENT
			DALUAS:	PENOLONG PENGARAH KAWAN (A)	
			DALUASKAH PENOLONG PENGARAH (A)	TARBIK:	
	PINDAAN		UKURAN		BE LUKSAK



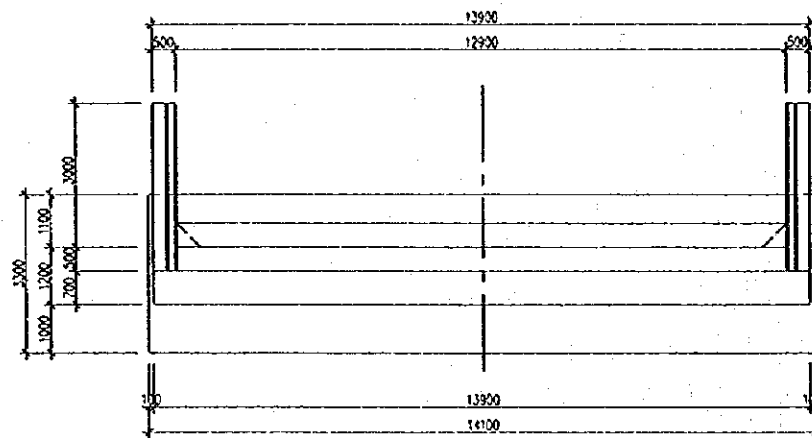
FRONT ELEVATION
SCALE 1 : 25



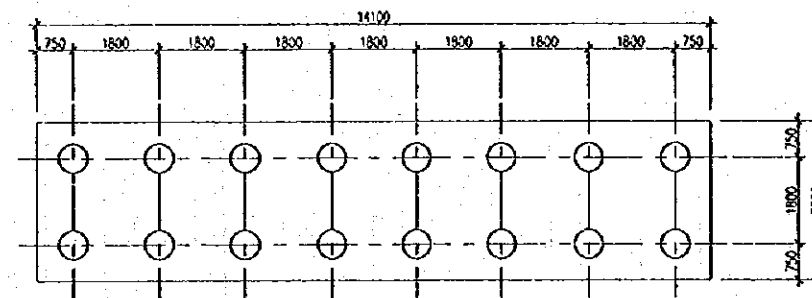
SIDE ELEVATION
SCALE 1 : 25



DETAIL 'X'
SCALE 1 : 25

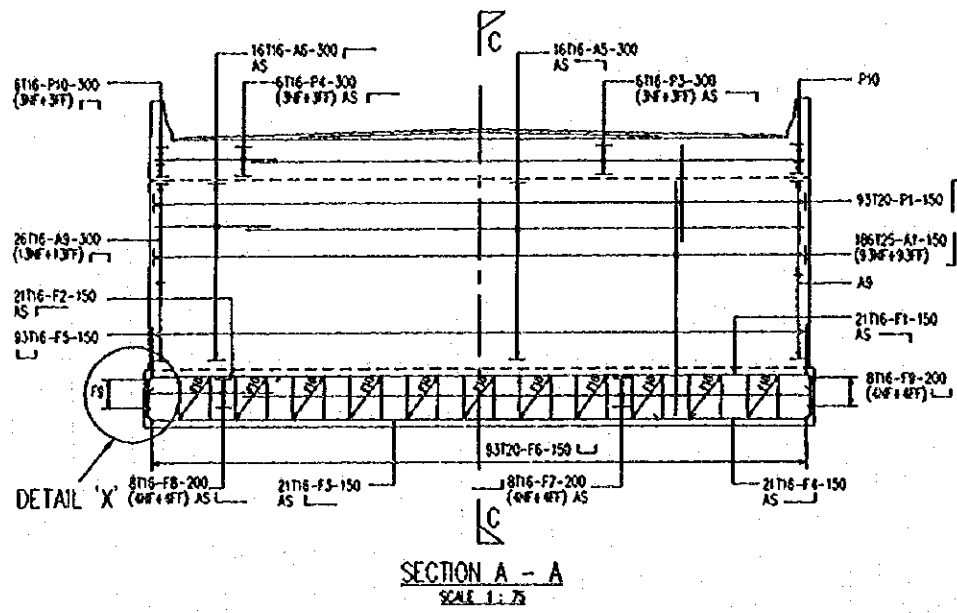


PLAN
SCALE 1 : 25

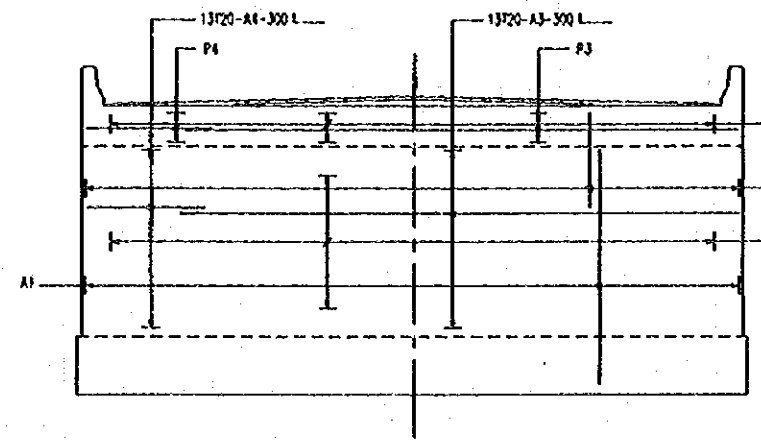


PILE ARRANGEMENT
SCALE 1 : 25

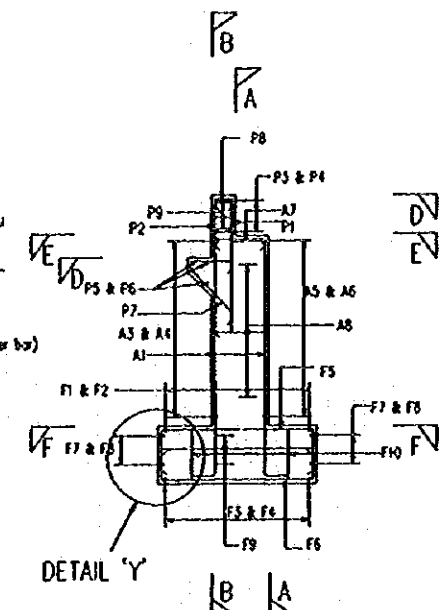
Torah	Buikan	Rujikan	UNIT JAMBATAN	PENGARAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKASENTUK:	JUSUTERA PENGUSAHA KANAN	ABUTMENT - GENERAL VIEW
			DILUKUS:	PENOLONG PENGARAH (A)	
			DILUKUSKAN: PENOLONG PENGARAH (A)	PENOLONG PENGARAH KANAN (A)	
	PINDAAN	UKURAN			FABRIK: BIL: LUKUSAN:



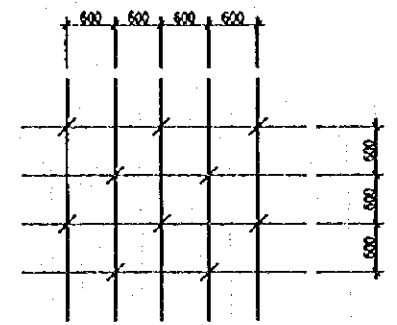
SECTION A - A
SCALE 1:25



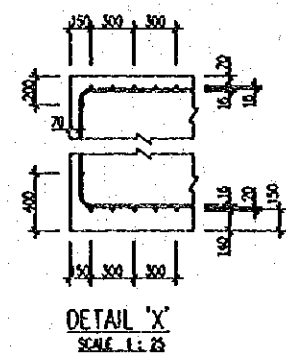
SECTION B - B
SCALE 1:25



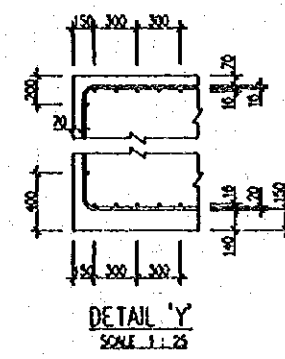
SECTION C - C
SCALE 1:25



KEY PLAN
SPACER BAR ARRANGEMENT



DETAIL X
SCALE 1:25



DETAIL Y
SCALE 1:25

LEGEND:

16 T 32-81-125

SPACING OF BAR

BAR MARK

B = BEAM

C = COLUMN

F = FOOTING

SIZE OF BAR

TYPE OF BAR

T = HIGH YIELD

R = MILD STEEL

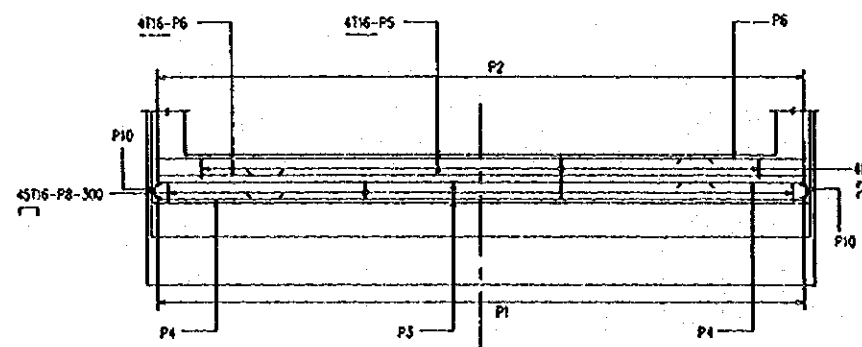
NO. OF BAR

AS = ALTERNATELY STAGGERED

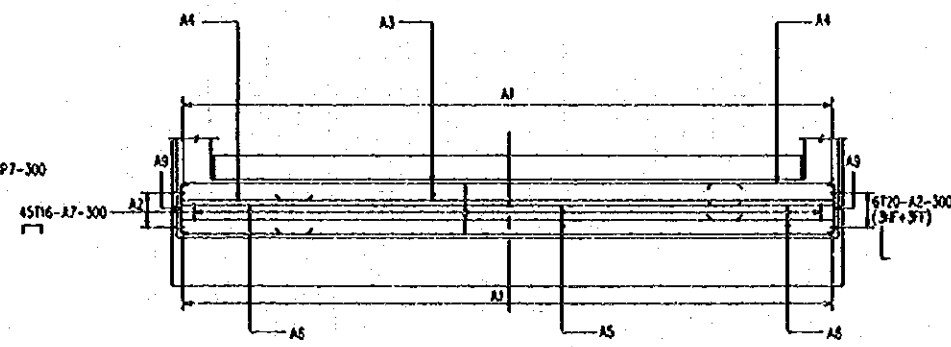
LV = LENGTH VARIES

NF = NEAR FACE

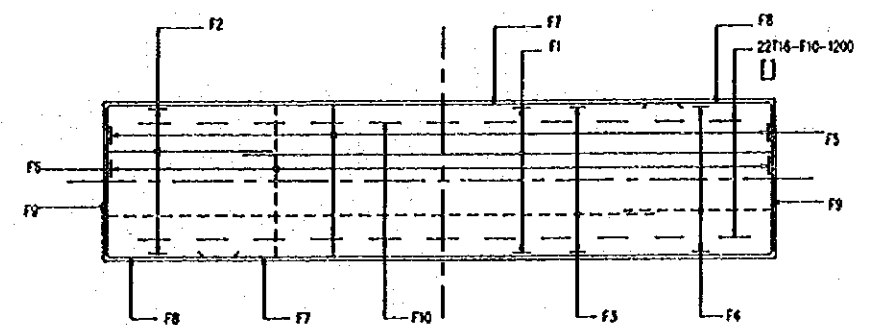
FF = FAR FACE



SECTION D - D
SCALE 1:25

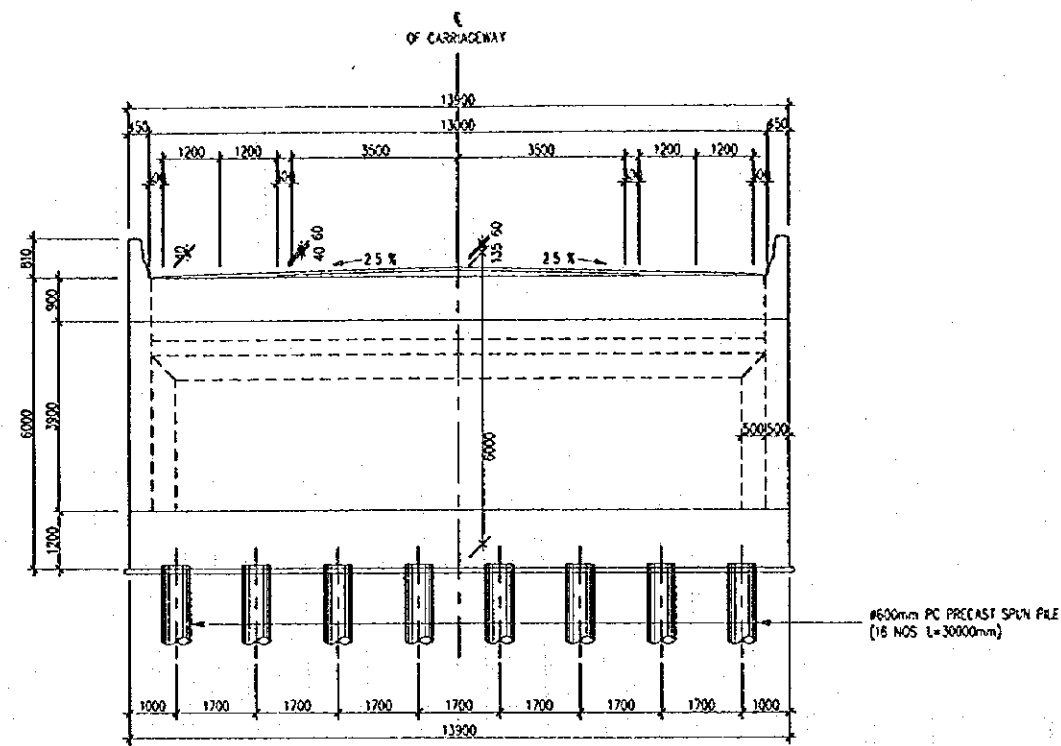


SECTION E - E
SCALE 1:25

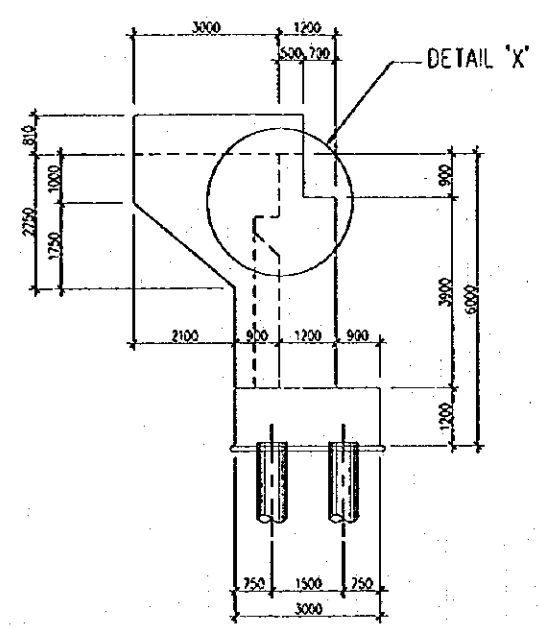


SECTION F - F
SCALE 1:25

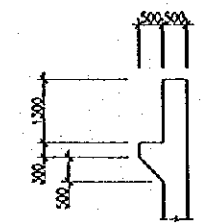
Terdah	Bulatan	Rujukan	UNIT JAMBATAN		PENGARAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKASHTUR:	DILUKS:		
PINDAAN			LAURAN	DILUKSUKAN PENOLONG PENGARAH (A)	PENOLONG PENGARAH KAHAN (A)	ABUTMENT - REINFORCEMENT
					TARIKAH:	LUKUSAN



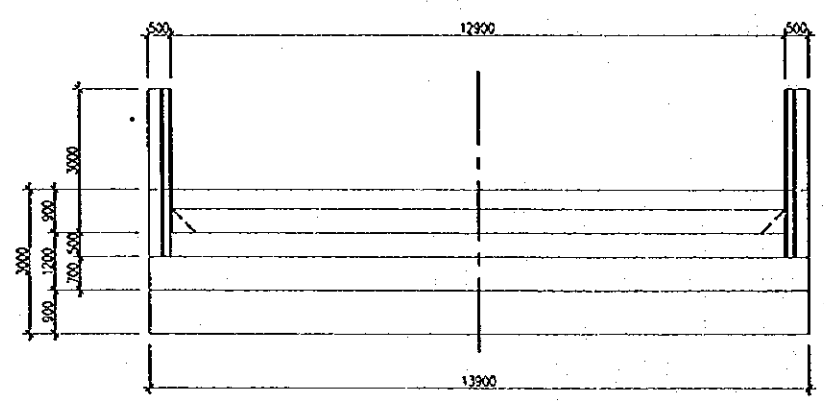
FRONT ELEVATION
SCALE 1 : 25



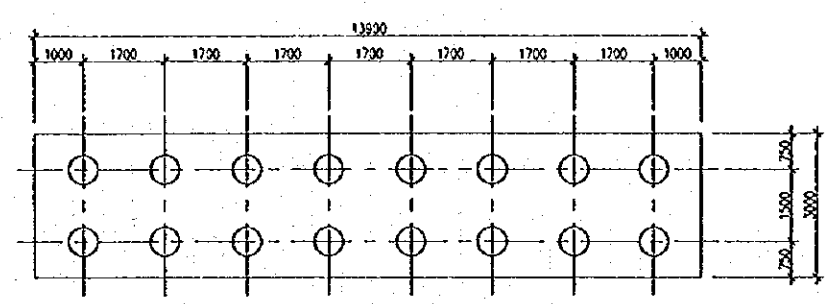
SIDE ELEVATION
SCALE 1 : 25



DETAIL 'X'
SCALE 1 : 25

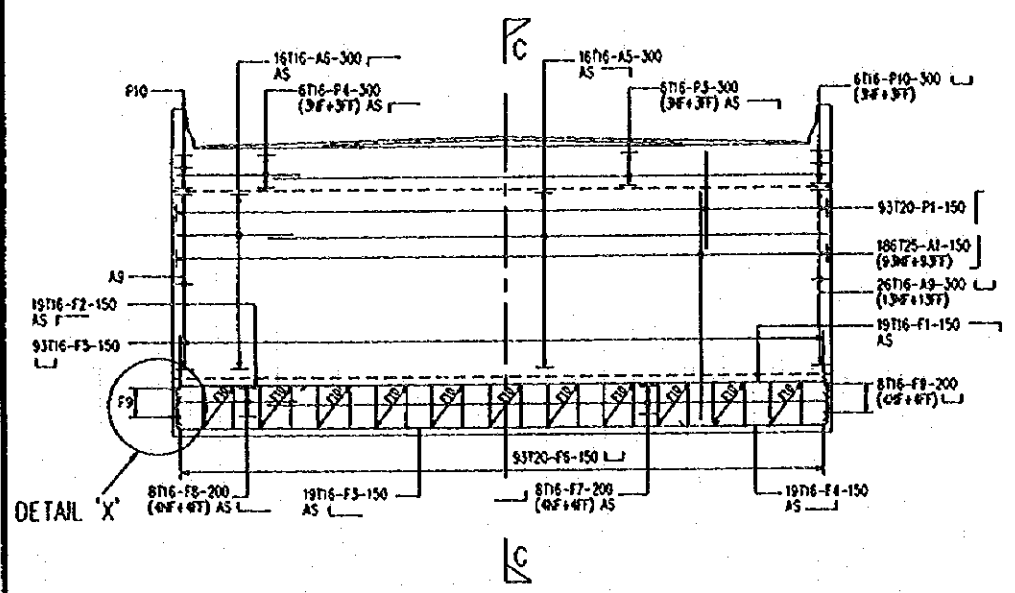


PLAN
SCALE 1 : 25

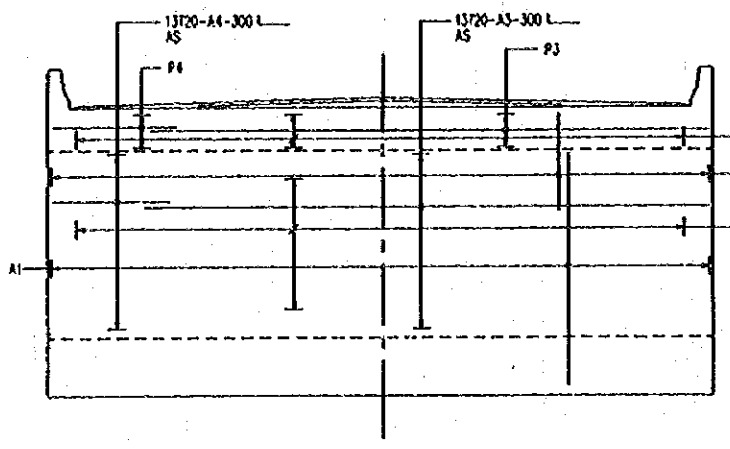


PILE ARRANGEMENT
SCALE 1 : 25

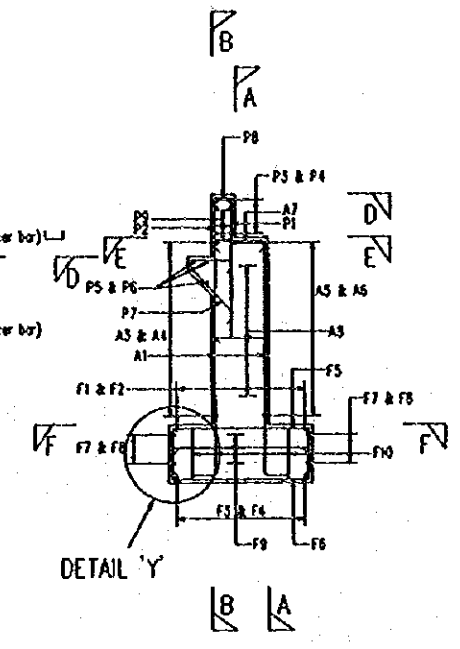
Tarah	Butiran	Rujukan	UNIT JAMBATAN		 JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKABENTUK:	PENCARAH JALAN	
PINDAAN	UNJURAN		DILUKIS:	DISEMAK:	JURUTERA PENGUASA KANAN
			DILULUSKAN: PENOLONG PENCARAH (R)	PENOLONG PENCARAH KANAN (A)	TARIKH:
					ABUTMENT - GENERAL VIEW
					SIL LUKSIAN:



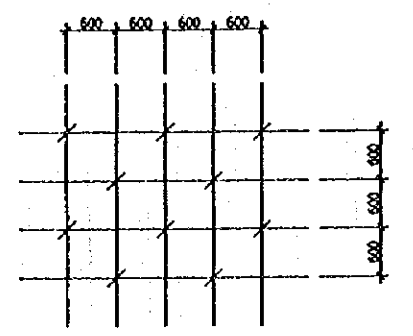
SECTION A - A
SCALE 1:25



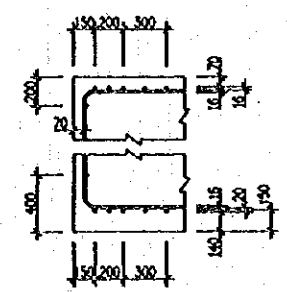
SECTION B - B
SCALE 1:25



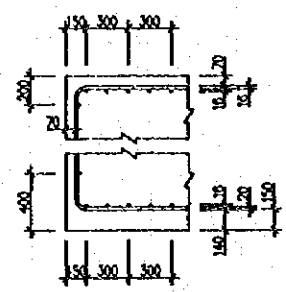
SECTION C - C
SCALE 1:25



KEY PLAN
SPACER BAR ARRANGEMENT

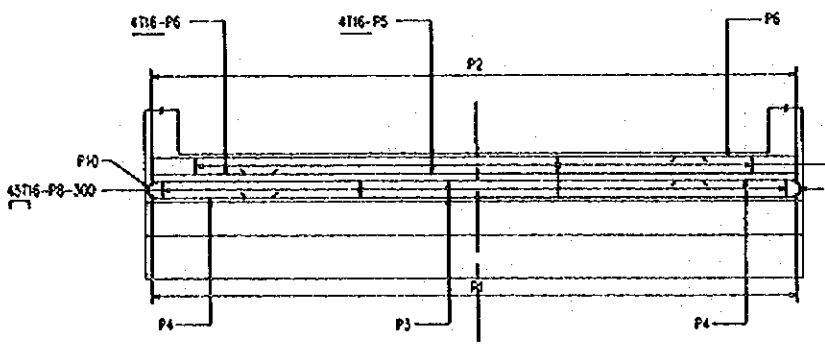


DETAIL 'X'
SCALE 1:25

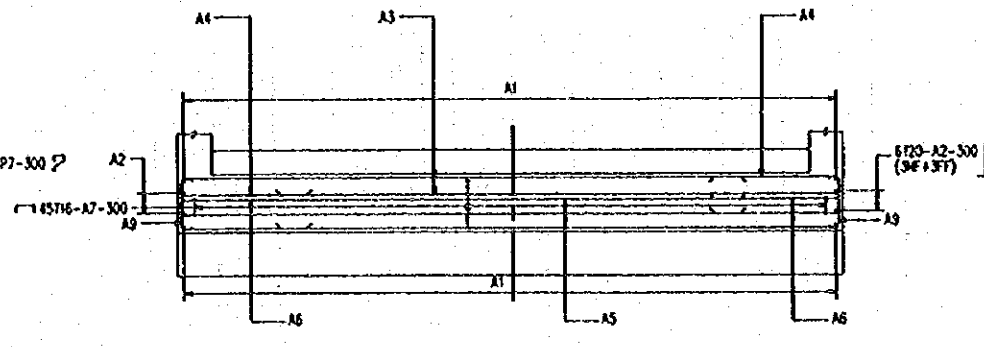


DETAIL 'Y'
SCALE 1:25

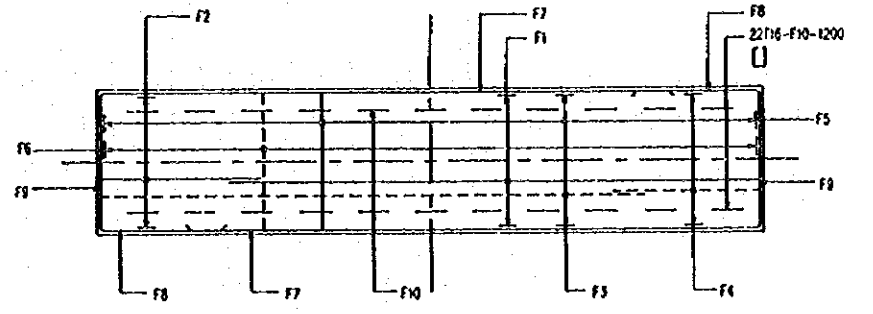
LEGEND:
 14 # 52-B1-125
 SPACING OF BAR
 BAR MARK
 B = BEAM
 C = COLUMN
 F = FOOTING
 SIZE OF BAR
 TYPE OF BAR
 T = TENSILE
 R = MILD STEEL
 NO. OF BAR
 AS = ALTERNATELY STAGGERED
 LV = LENGTH VARIES
 NF = NEAR FACE
 FF = FAR FACE



SECTION D - D
SCALE 1:25

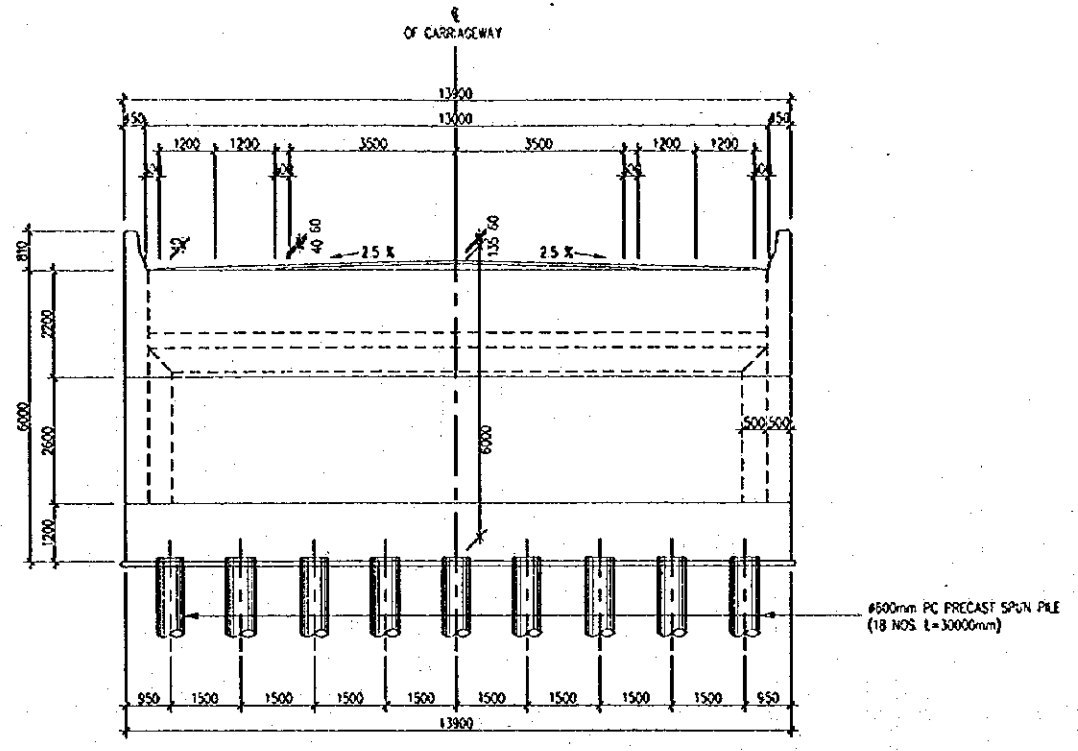


SECTION E - E
SCALE 1:25

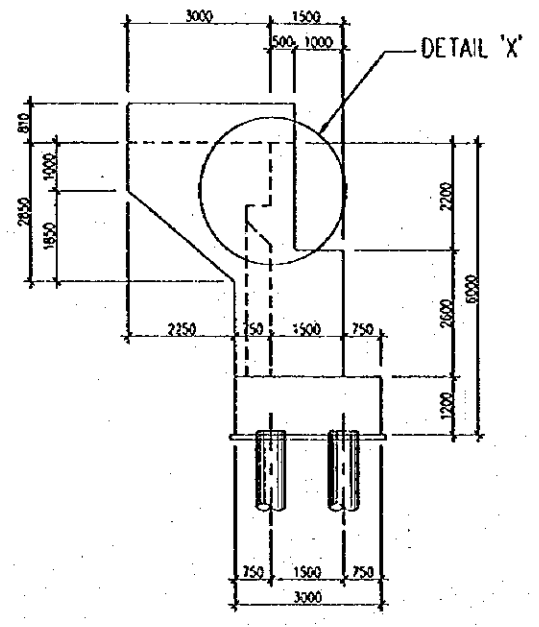


SECTION F - F
SCALE 1:25

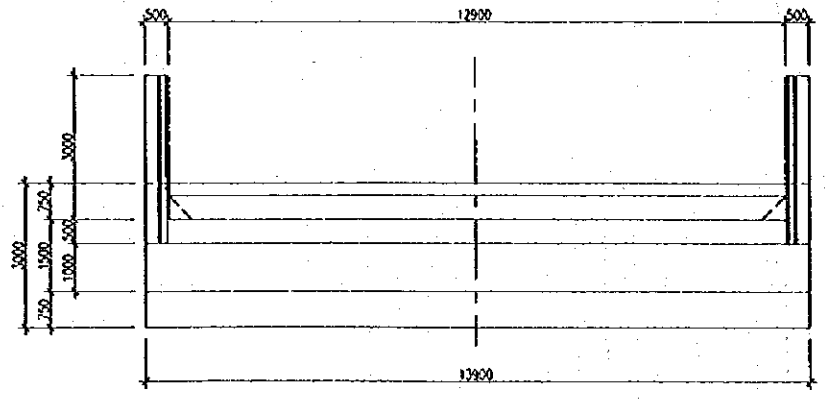
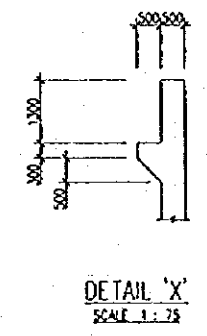
Tarikh	Buikan	Rujukan	UNIT JAMBATAN	PENGARAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DISEKAJENKAN:	JURUTERA PENYUSAHA KAJAN	ABUTMENT - REINFORCEMENT
			DIKURUS:		
			DILULUSKAN: POKOKLOK PENGARAH (R)	PEMONGKONG PENGARAH KAJAN (L)	
	PADAM		UMURAN	TAPSAK	BUKURSAK



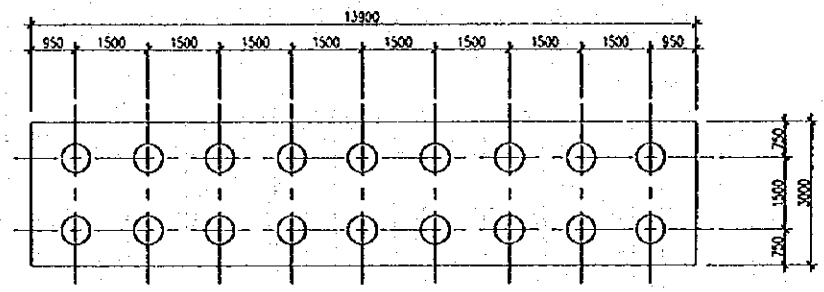
FRONT ELEVATION
SCALE 1:25



SIDE ELEVATION
SCALE 1:25

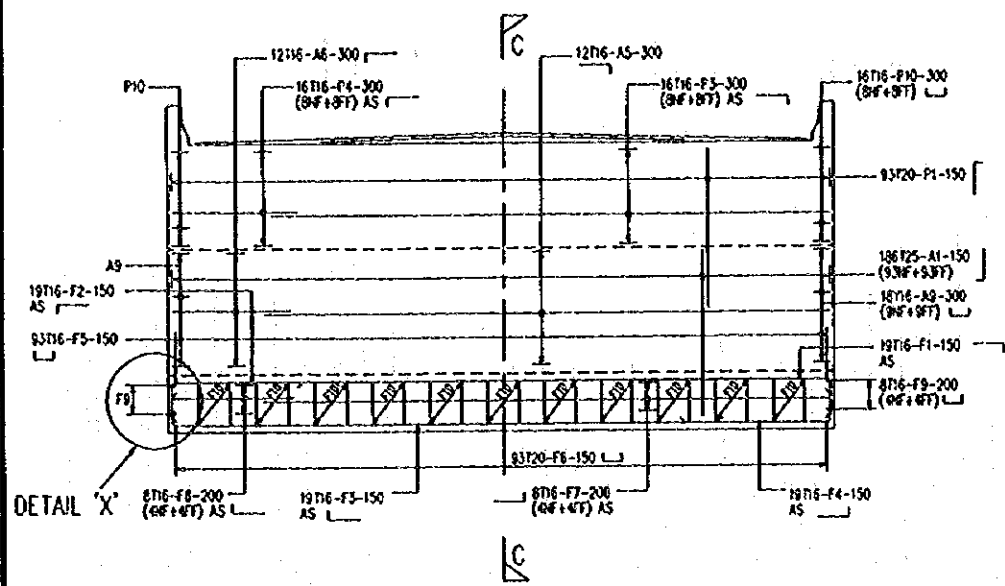


PLAN
SCALE 1:25

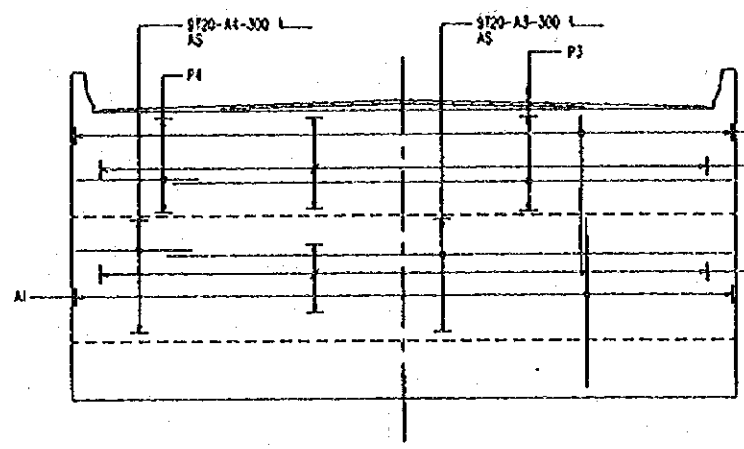


PILE ARRANGEMENT
SCALE 1:25

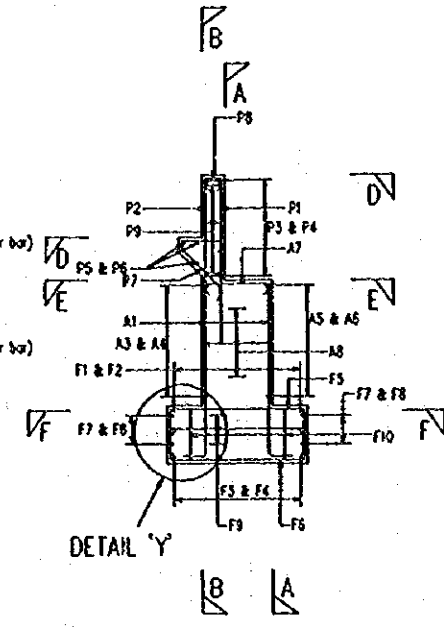
TAKL	Butiran		Rujukan	UNIT JAMBATAN		JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
	PINDAAN			DIREKABENTUK: DILUKUS: DISWAR: DILAKSUKAN: PENOLONG PENGARAH (P)		
				LAKSIAN	TARIKH:	ABUTMENT - GENERAL VIEW BIL: LURUSAP



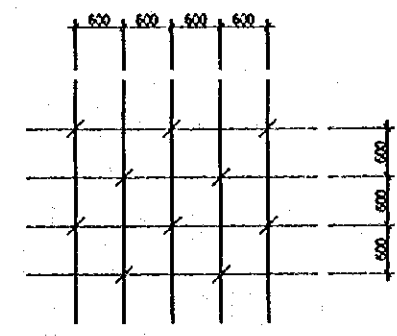
SECTION A - A
SCALE 1:25



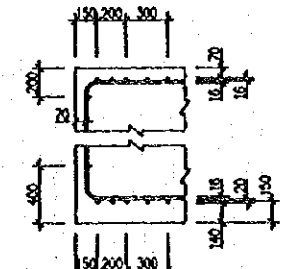
SECTION B - B
SCALE 1:25



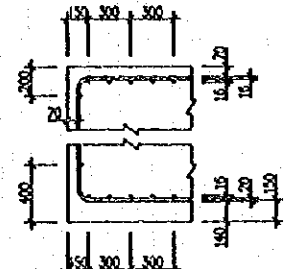
SECTION C - C
SCALE 1:25



KEY PLAN
SPACER BAR ARRANGEMENT

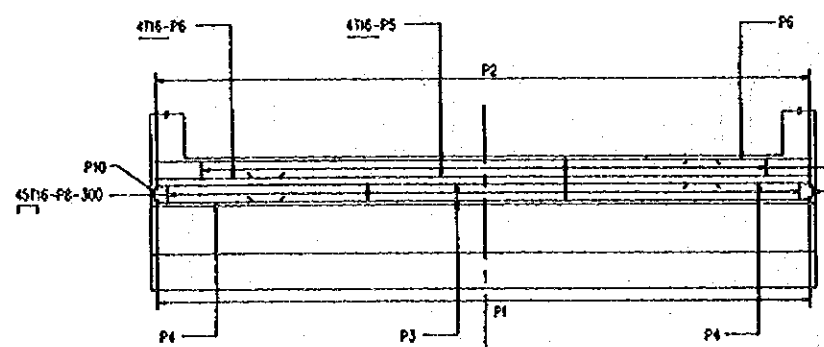


DETAIL 'X'
SCALE 1:25

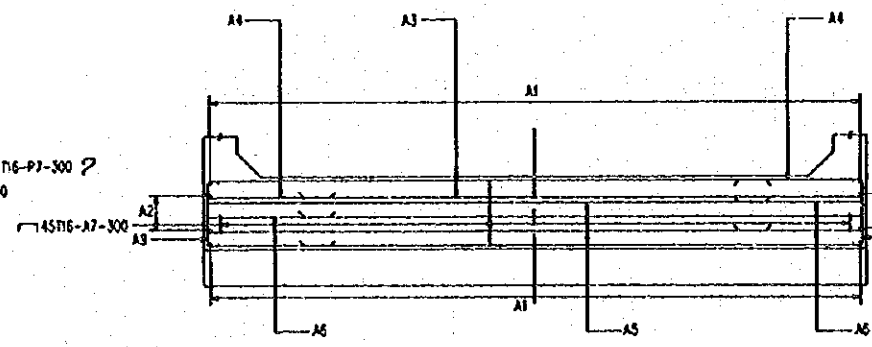


DETAIL 'Y'
SCALE 1:25

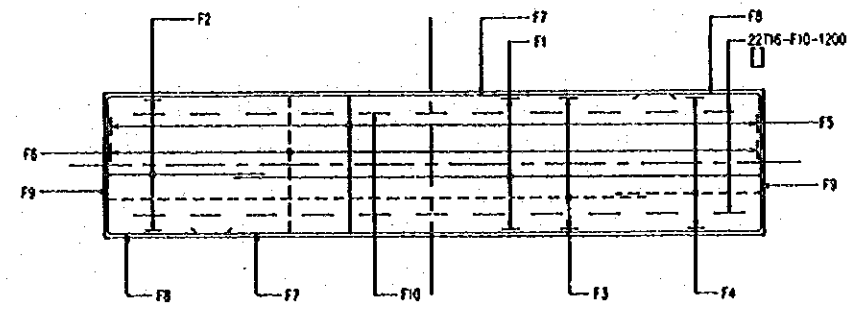
LEGEND:
 14 I 32-81-125
 SPACING OF BAR
 BAR MARK
 B = BEAM
 F = FOOTING
 SIZE OF BAR
 TYPE OF BAR
 I = INCH YIELD
 M = MILD STEEL
 NO. OF BAR
 AS = ALTERNATELY STAGGERED
 LV = LONG IN VAPERS
 NF = NEAR FACE
 FF = FAR FACE





SECTION D - D
SCALE 1:25

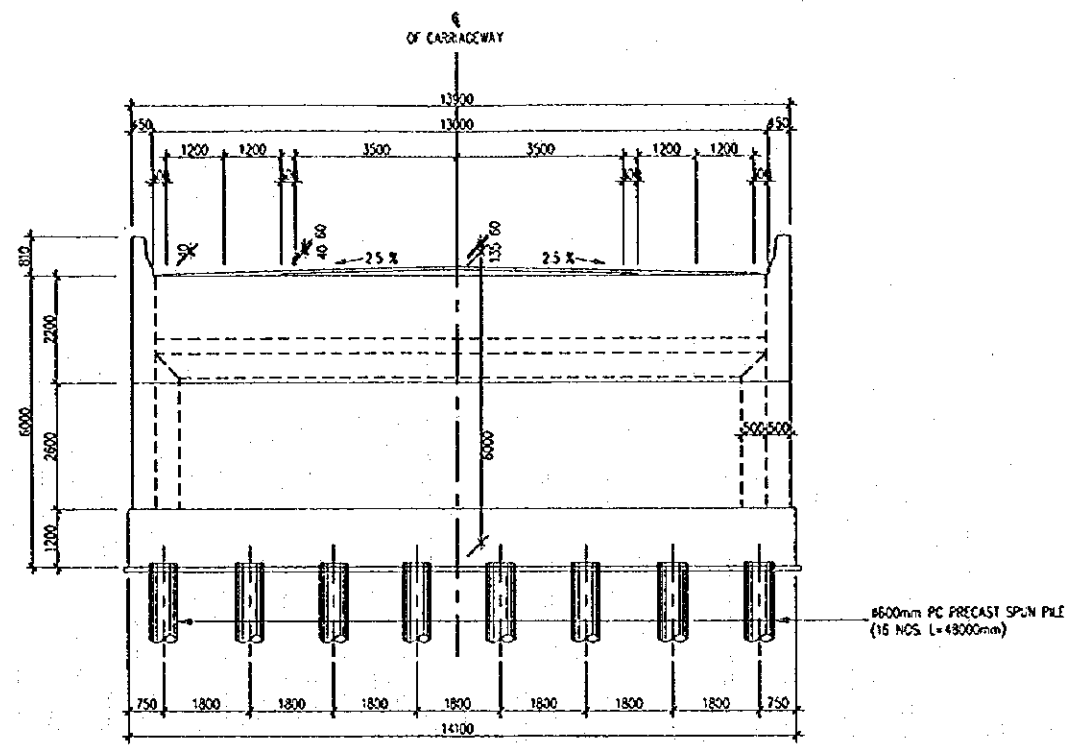


SECTION E - E
SCALE 1:25

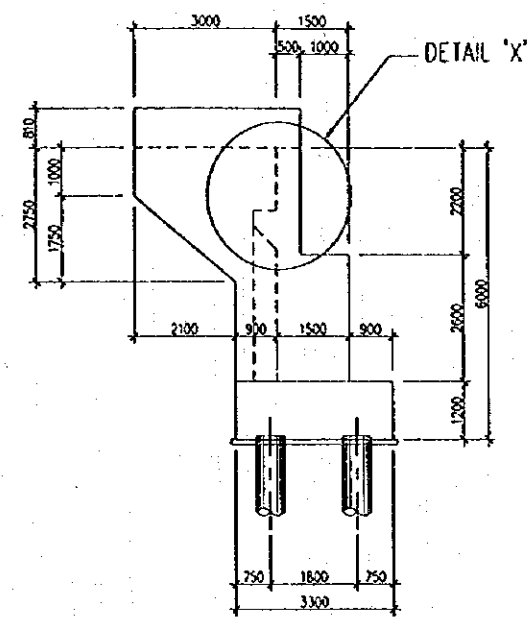


SECTION F - F
SCALE 1:25

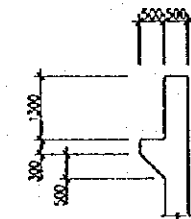
Tarikh	Buahan	Rujukan	UNIT JAMBATAN	PENGARAH JALAN	 JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKABENTUK:	JURUTERA PENJAJA KAWAN	
			DILUAS:	PENOLONG PENGARAH KAWAN (A)	
	PINDAAN		UKURAN	PENOLONG PENGARAH KAWAN (A)	ABUTMENT - REINFORCEMENT
					TAPAK:  ULUKSAN



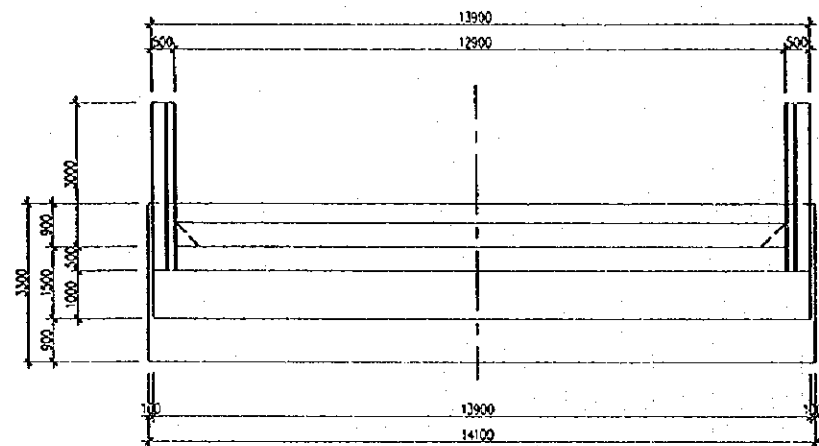
FRONT ELEVATION
SCALE 1:25



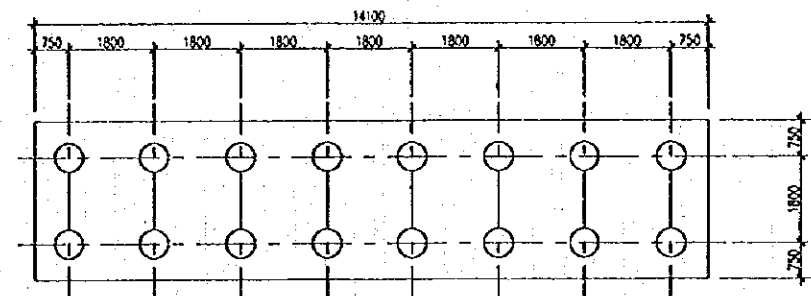
SIDE ELEVATION
SCALE 1:25



DETAIL 'X'
SCALE 1:25

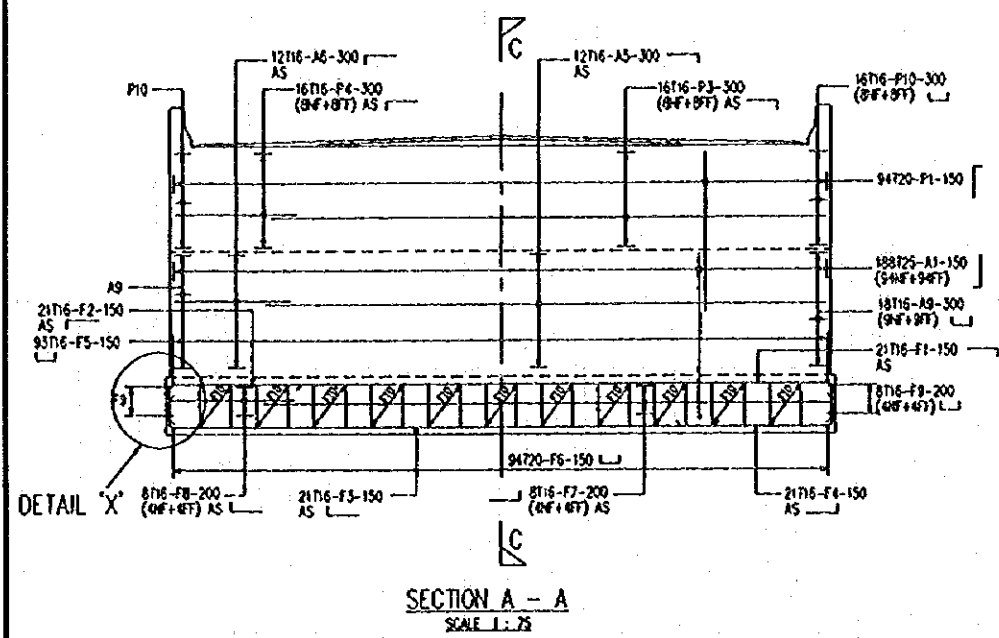


PLAN
SCALE 1:25

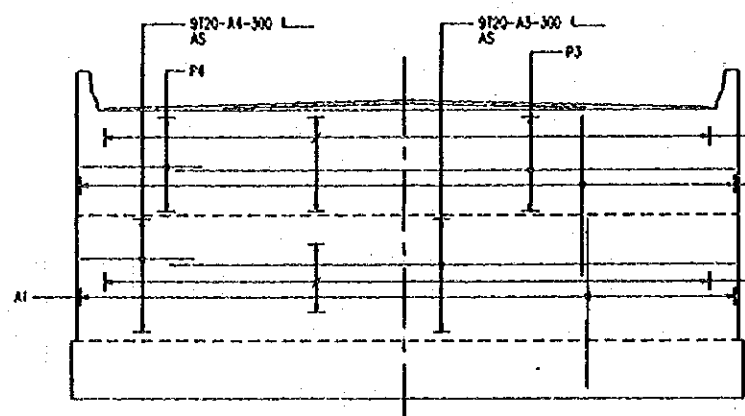


PILE ARRANGEMENT
SCALE 1:25

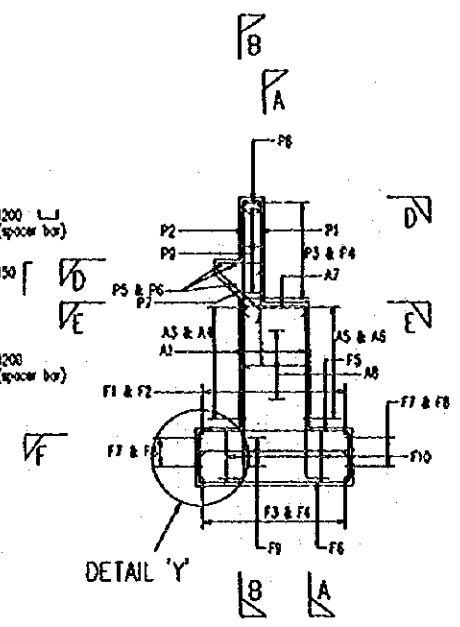
1:25	Bulatan	Rujukan	UNIT JAMBATAN	PENGARAH JALAN	 JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DREKASANTUK	JURUTERA PENGUSAHA KANAN	
			DELUKAS: DESEMAK:	PENDOLONG PENGARAH (P)	ABUTMENT - GENERAL VIEW
	PINDAAN	UKURAN		PENDOLONG PENGARAH KANAN (J)	FAKSI: 88- LUGSAN:



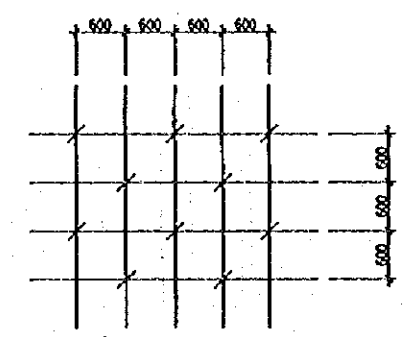
SECTION A - A
SCALE 1:25



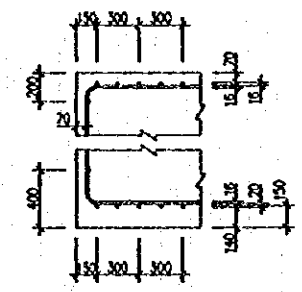
SECTION B - B
SCALE 1:25



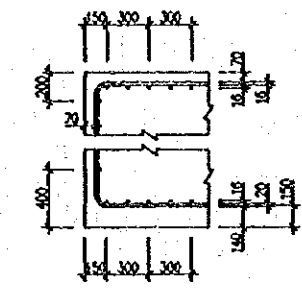
SECTION C - C
SCALE 1:25



KEY PLAN
SPACER BAR ARRANGEMENT



DETAIL X
SCALE 1:25

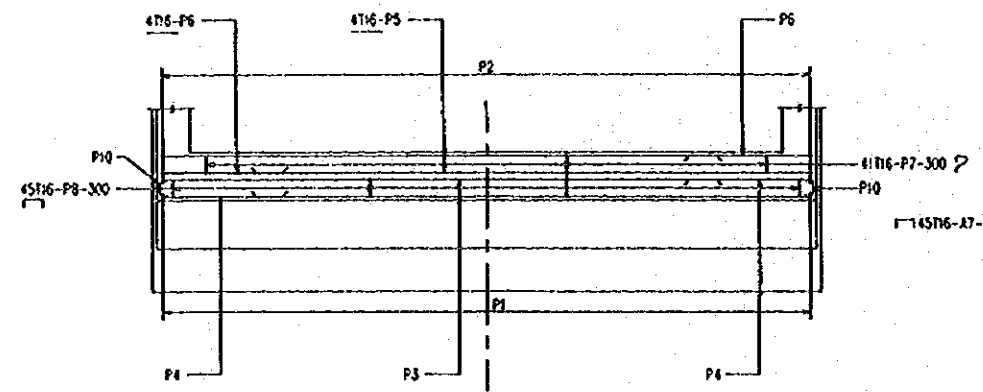


DETAIL Y
SCALE 1:25

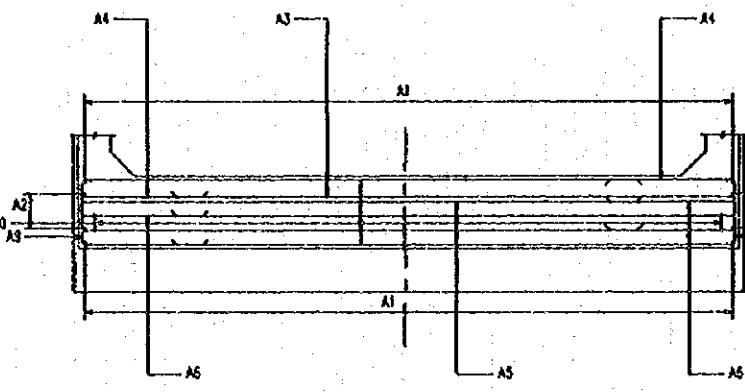
LEGEND:

- 14 T 32-B1-125
- SPACING OF BAR
- BAR MARK
- B = BEAM
- P = COLUMN
- F = FOOTING
- SIZE OF BAR
- TYPE OF BAR
- T = HIGH YIELD
- R = MILD STEEL
- NO. OF BAR

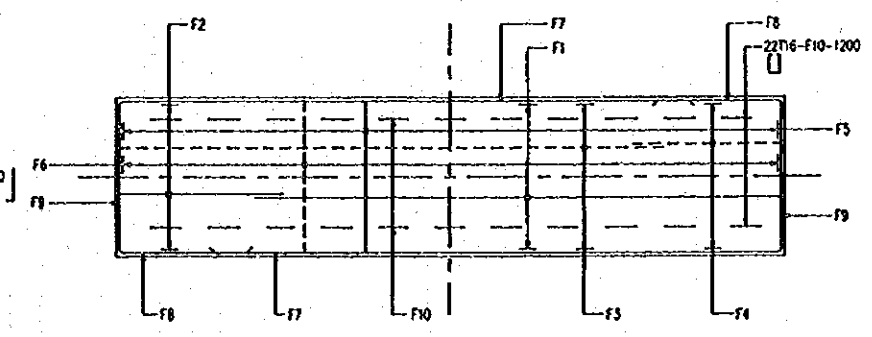
AS = ALTERNATELY STAGGERED
 LV = LENGTH VARIES
 NF = NEAR FACE
 FF = FAR FACE



SECTION D - D
SCALE 1:25

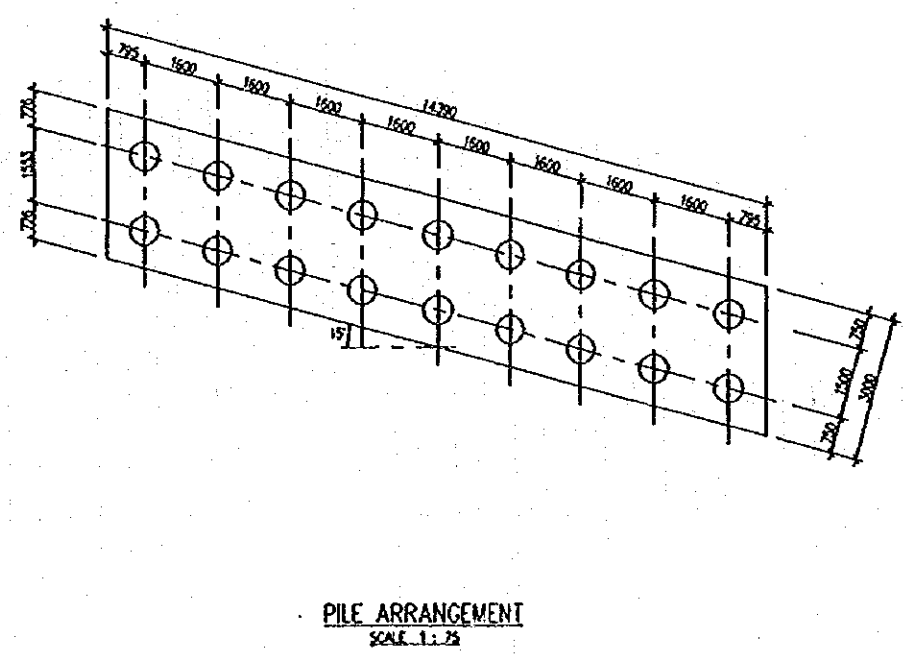
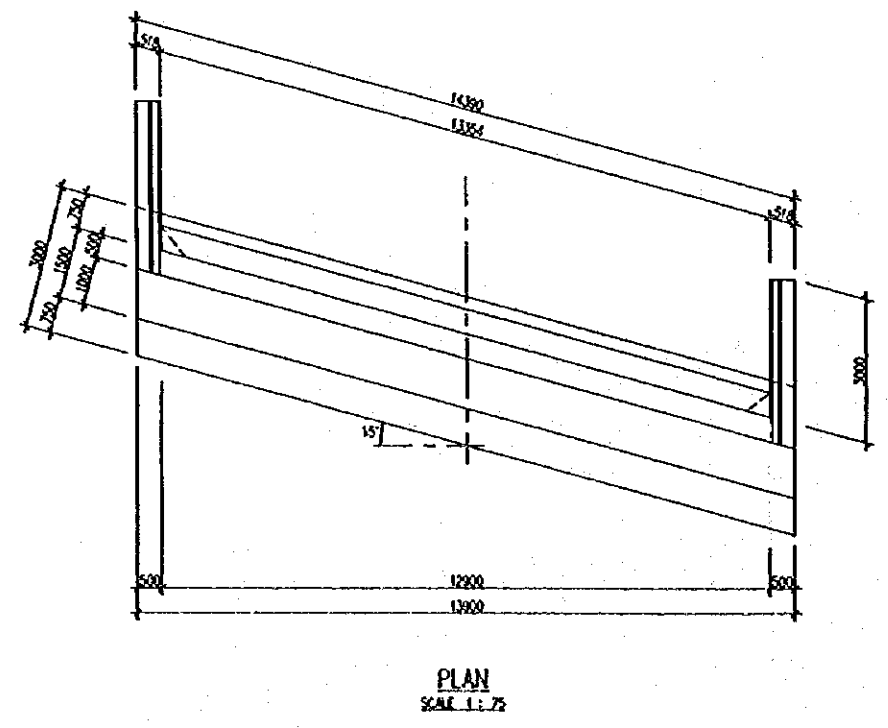
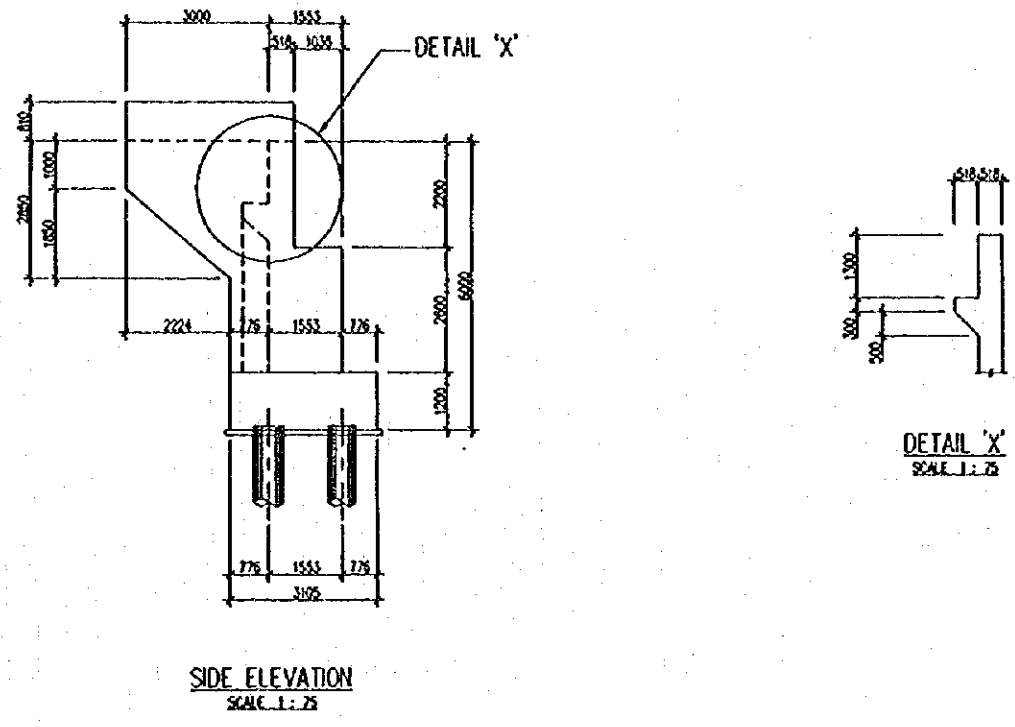
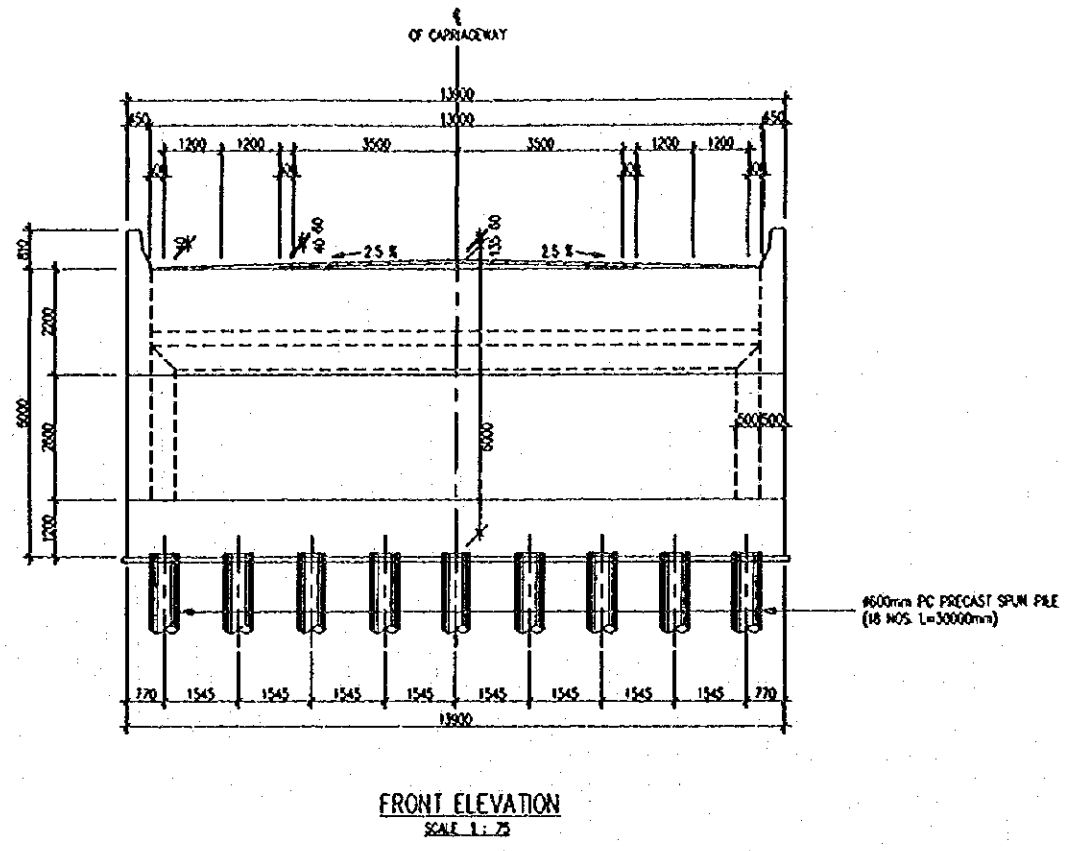


SECTION E - E
SCALE 1:25

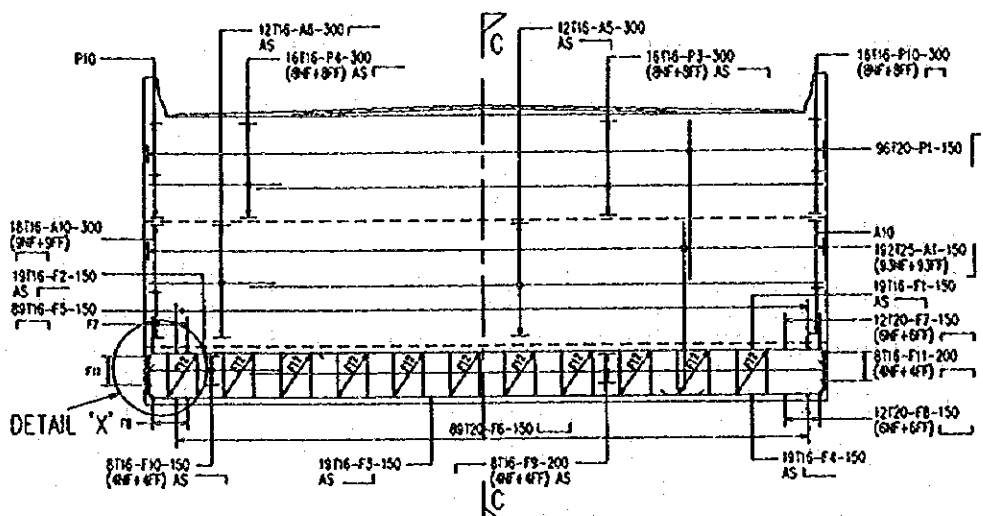


SECTION F - F
SCALE 1:25

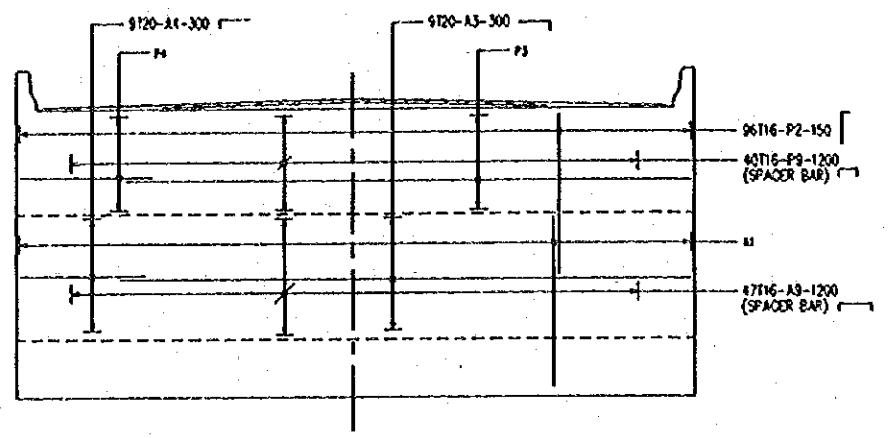
Terkut	Buliran		Rujukan	UNIT JAMBATAN		JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN	
	PINDAJAN			DIREKABENTUK:			PONORAH JALAN
	UKURAN			DILUAS:			JURUTERA PENJAJA KAWAN
				DILUASKAN PENOLONG PONGARAH (P)			PENOLONG PONGARAH KAWAN (A)
				ABUTMENT - REINFORCEMENT		TARIX	



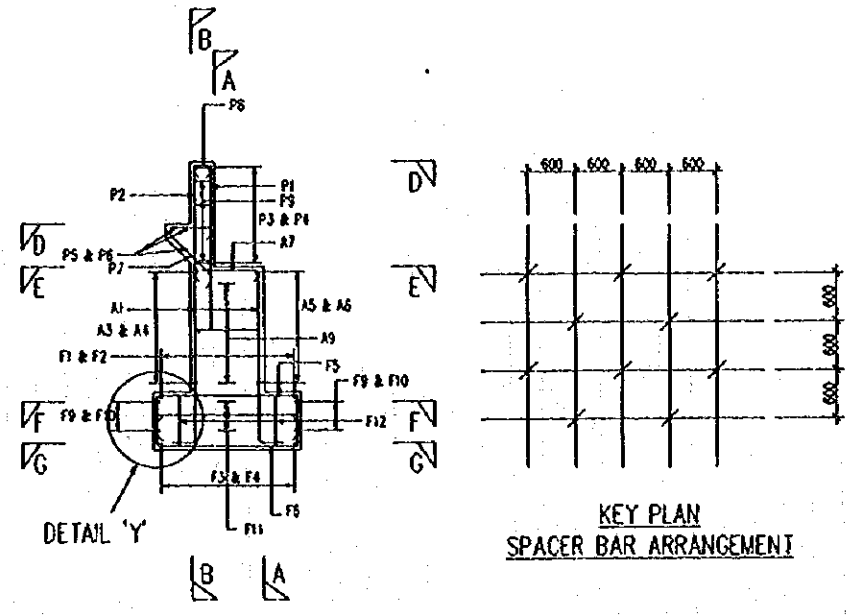
Tarikh	Bilik	Rujukan	UNIT JAMBATAN		 JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DISKABENTUK: DILUAS: DILUSKAN POKONG POKONGAN (R)	POKONG JALAN JURUTERA POKONGAN KAWAN POKONG POKONGAN KAWAN (R)	
FINDAH			UKURAN		TAROK



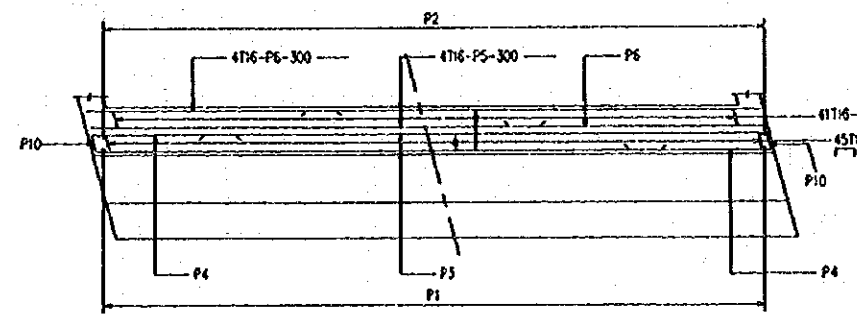
SECTION A - A
SCALE 1:25



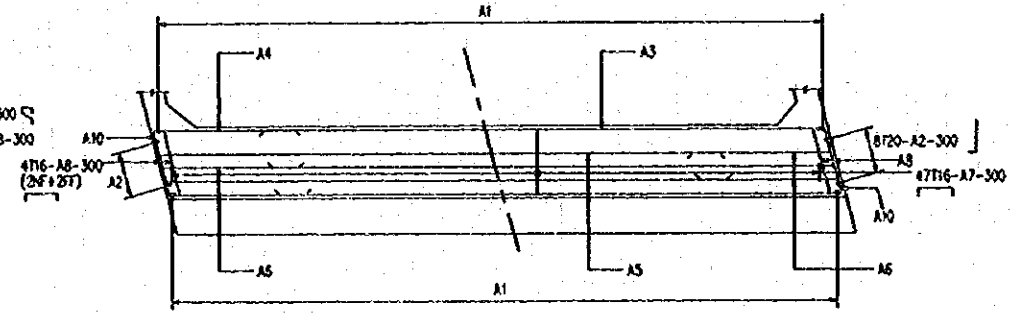
SECTION B - B
SCALE 1:25



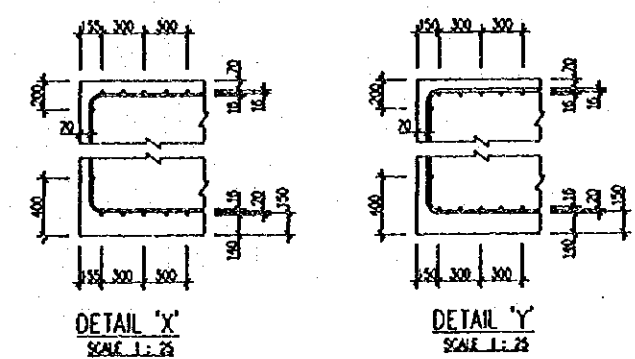
SECTION C - C
SCALE 1:25



SECTION D - D
SCALE 1:25

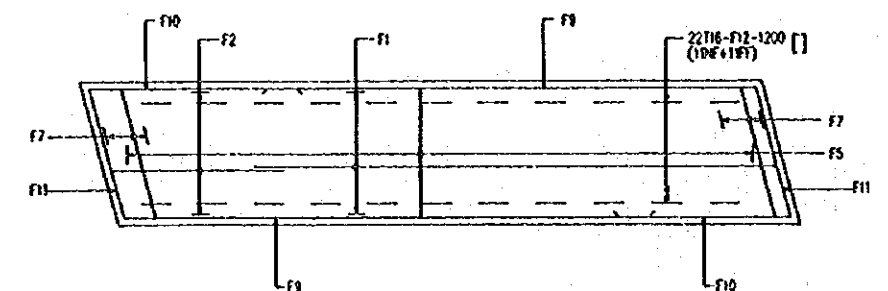


SECTION E - E
SCALE 1:25

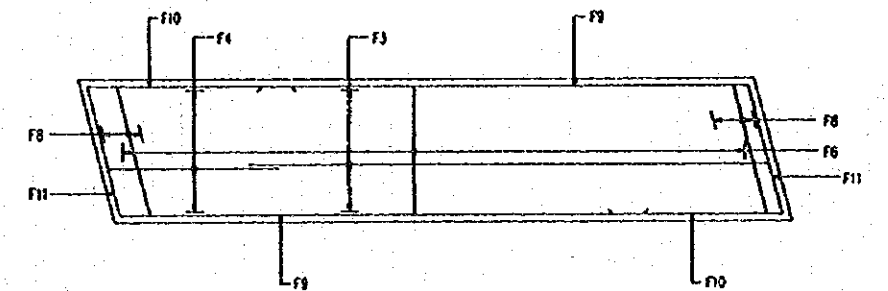


DETAIL 'X'
SCALE 1:25

DETAIL 'Y'
SCALE 1:25




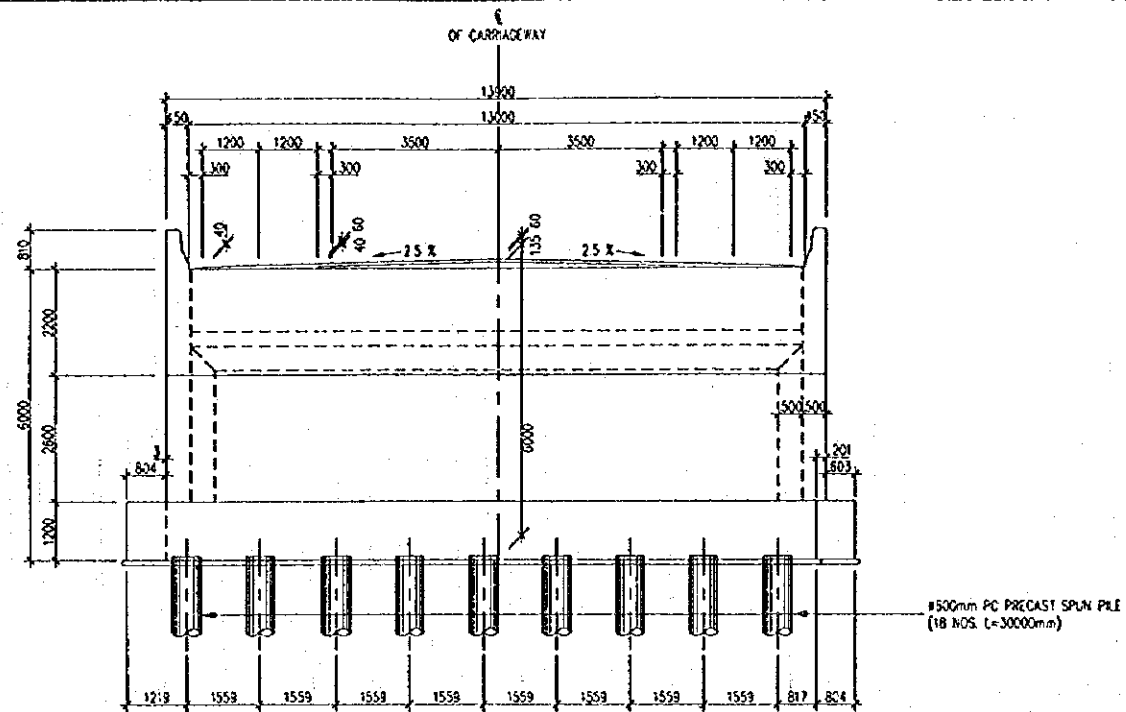
SECTION F - F
SCALE 1:25



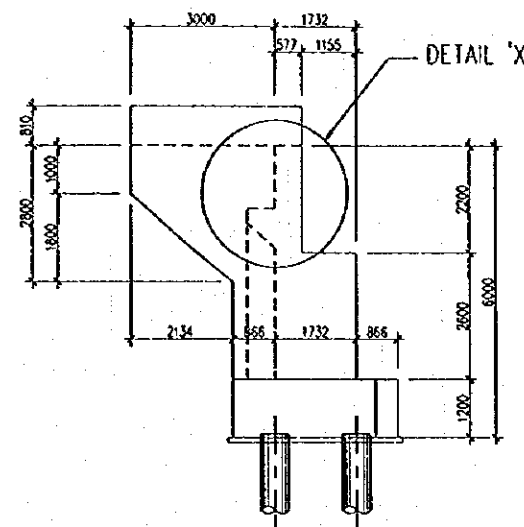
SECTION G - G
SCALE 1:25

LEGEND:
 14 Y 32-B1-125
 SPACING OF BAR
 BAR MARK
 B = BEAM
 C = COLUMN
 F = FOOTING
 SIZE OF BAR
 TYPE OF BAR
 I = HIGH TENSILE
 M = MILD STEEL
 NO. OF BAR
 AS = ALTERNATELY STAGGERED
 LV = LENGTH VARIES
 NF = NEAR FACE
 FF = FAR FACE

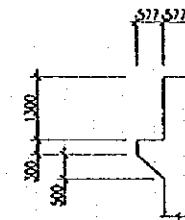
Tajuk		Bulatan		Rujukan		UNIT JAMBATAN		PENGARAH JALAN		 JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN	
						DOKUMEN: BALUR: DISEKAI: DEURUSKAN PENOLONG PENGARAH (A)		JURUTERA PENOLONG KANAN PENOLONG PENGARAH KANAN (A)		ABUTMENT - REINFORCEMENT TARIKH: BR: LUSOKAN:	
PINDAAN				UKURAN							



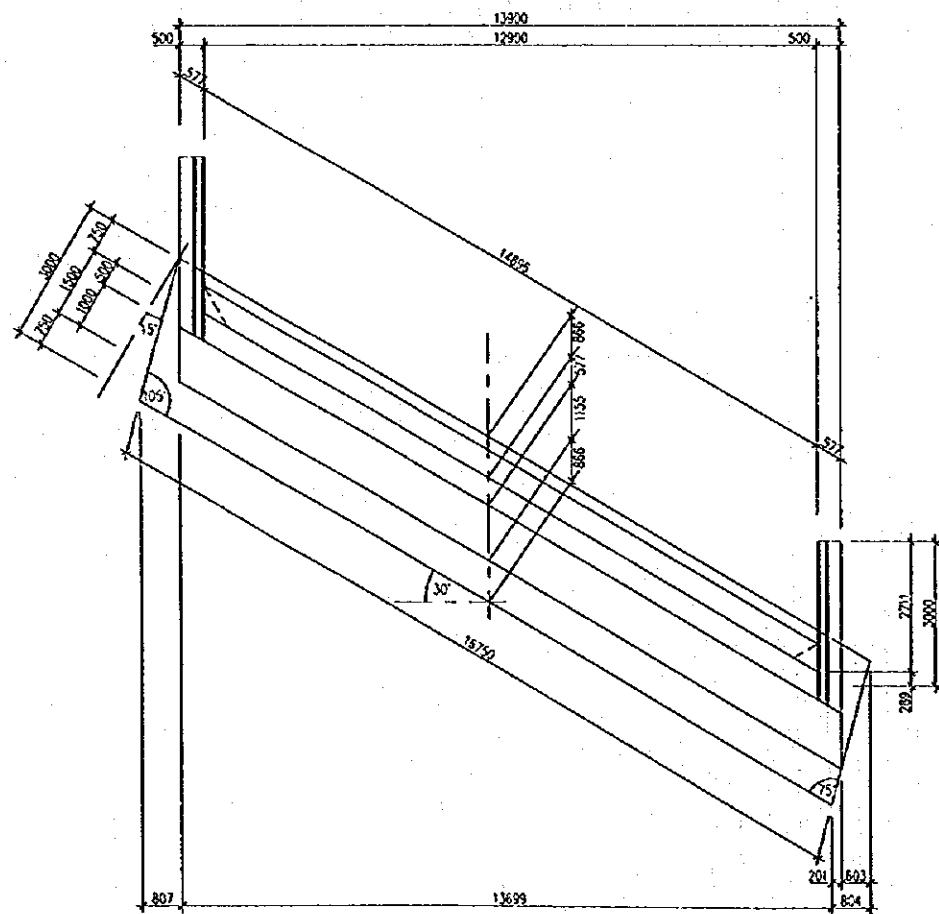
FRONT ELEVATION
SCALE 1:25



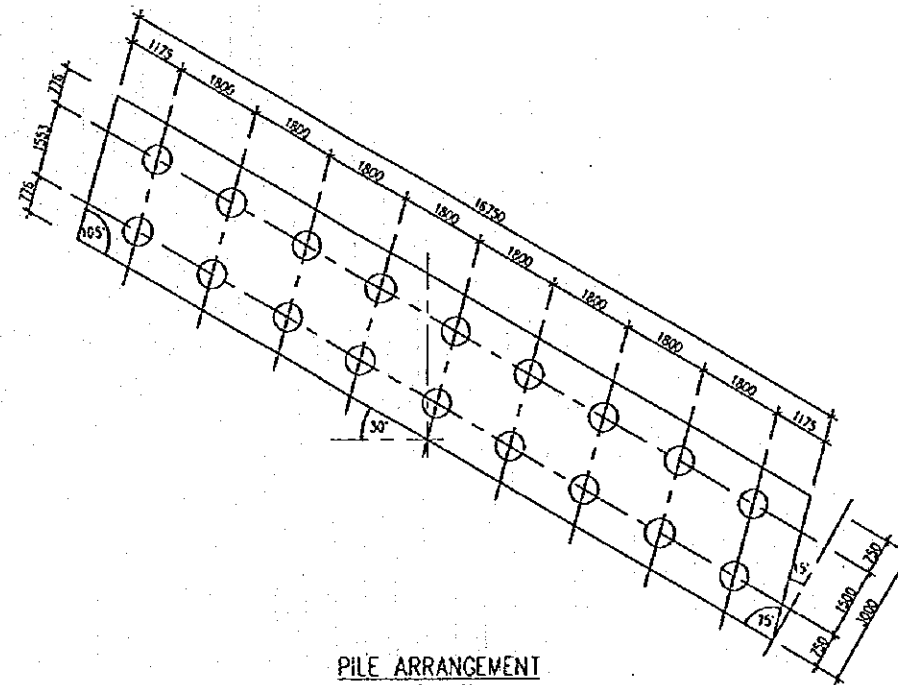
SIDE ELEVATION
SCALE 1:25



DETAIL 'X'
SCALE 1:25

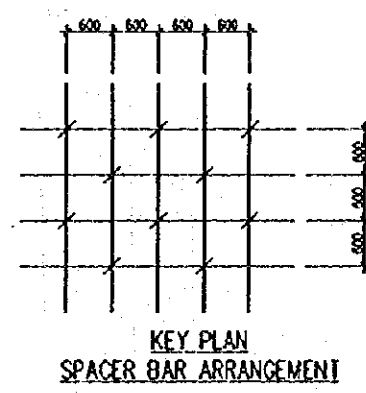
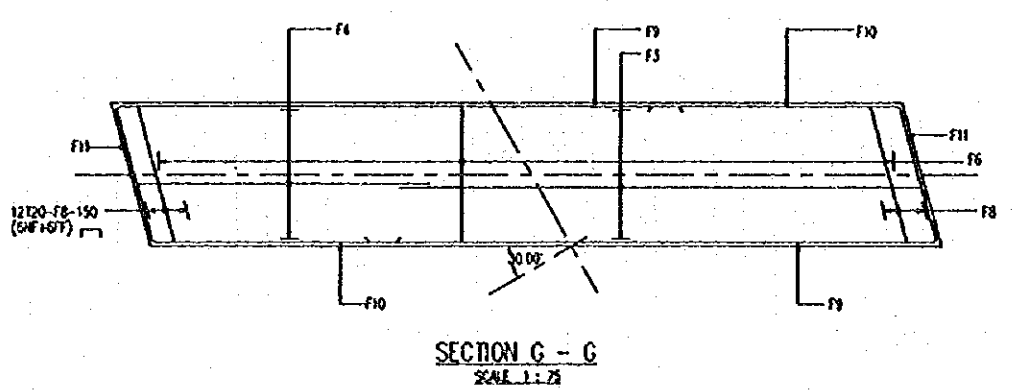
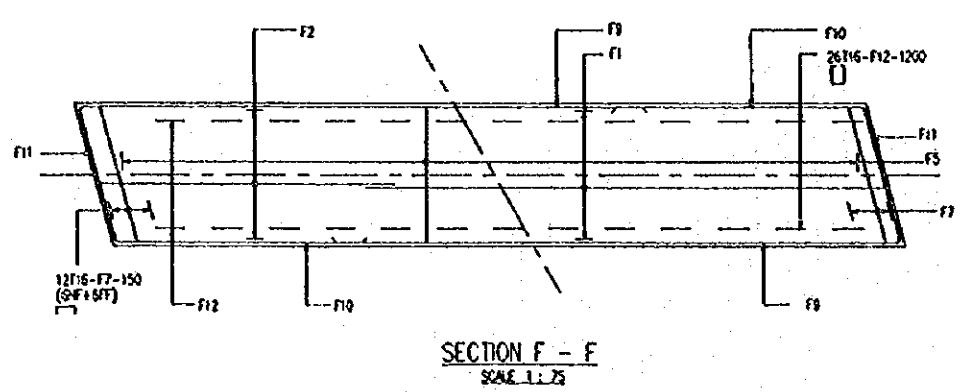
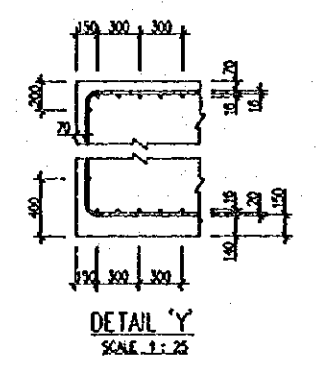
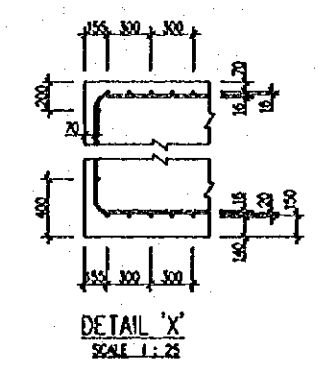
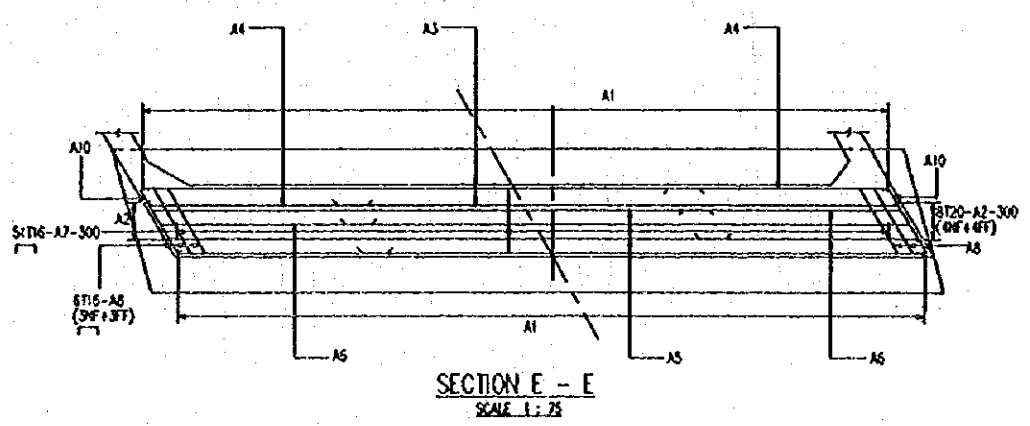
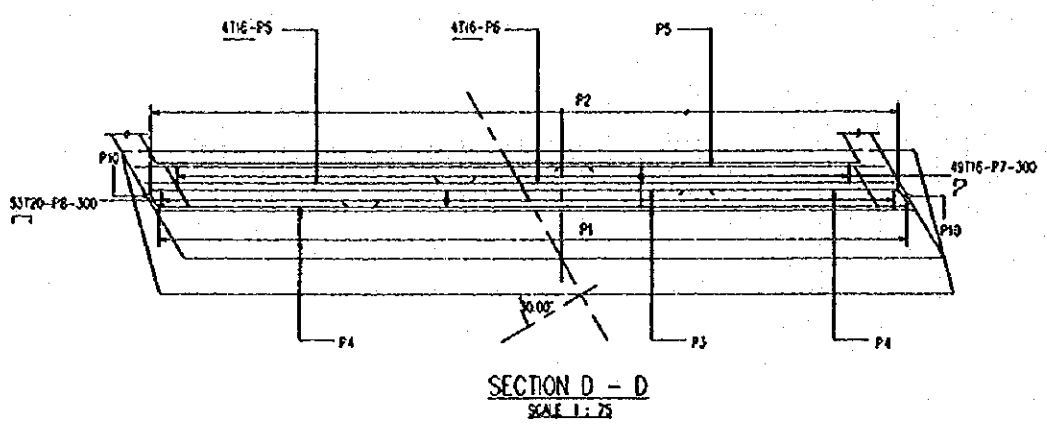
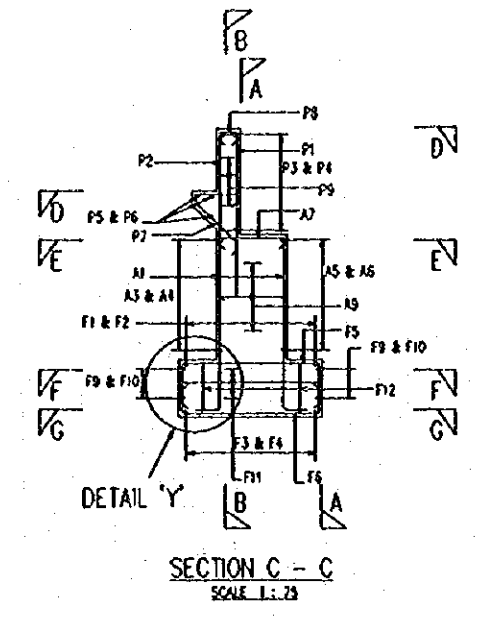
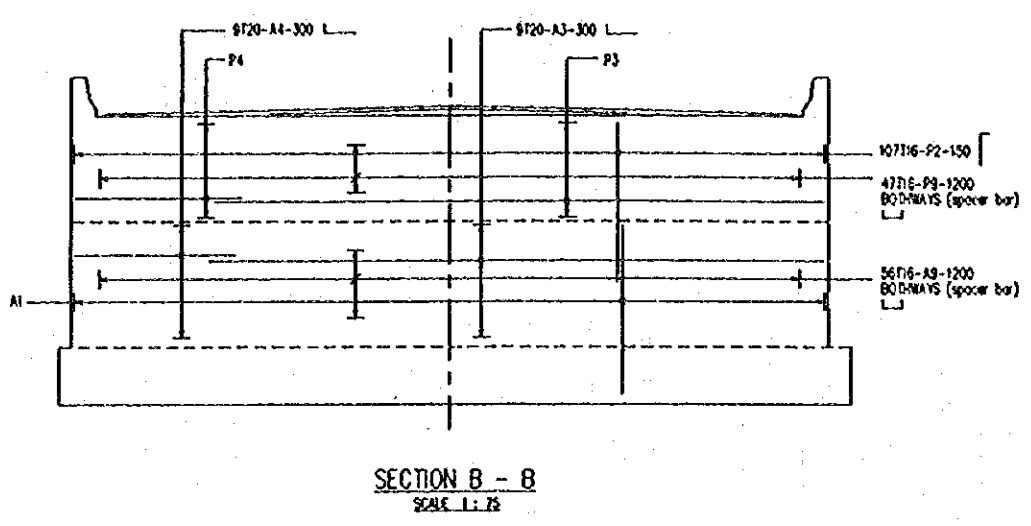
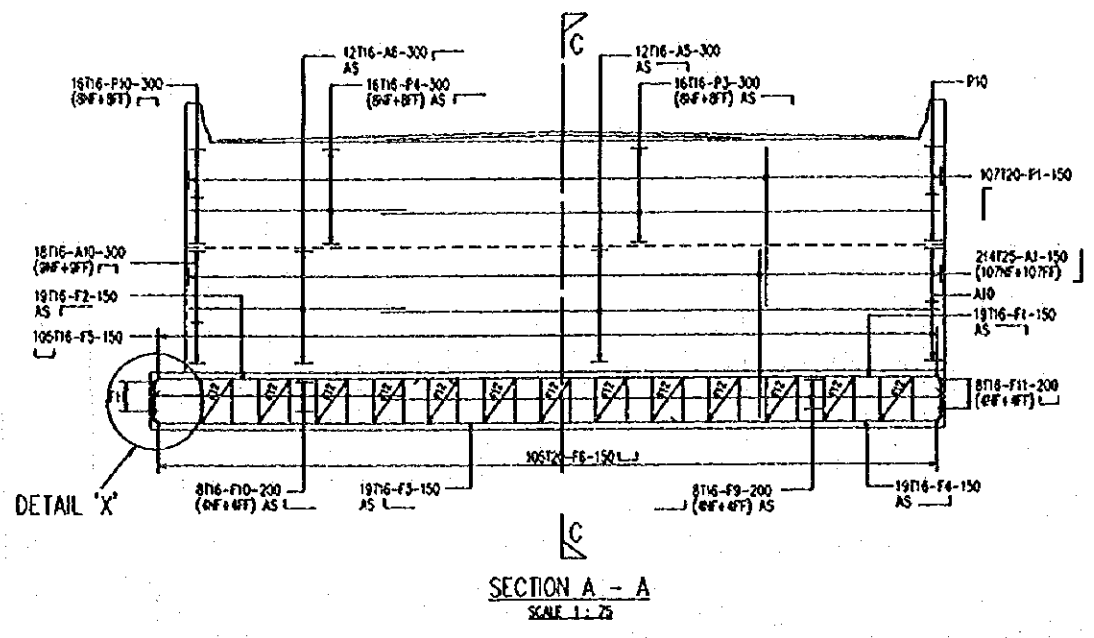


PLAN
SCALE 1:25



PILE ARRANGEMENT
SCALE 1:25

Tajuk	Baitan	Rujukan	UNIT JAMBATAN	PENCAHARAN JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKABENTUK:	JURUTERA PENCAHARA KANAN	
			DILUKIS:	DISEMAK:	
			DILULUSKAN: PENOLONG PENCAHARA (M)	PENOLONG PENCAHARA KANAN (M)	ABUTMENT - GENERAL VIEW
					TARIKH: BIL. LUKSAN:

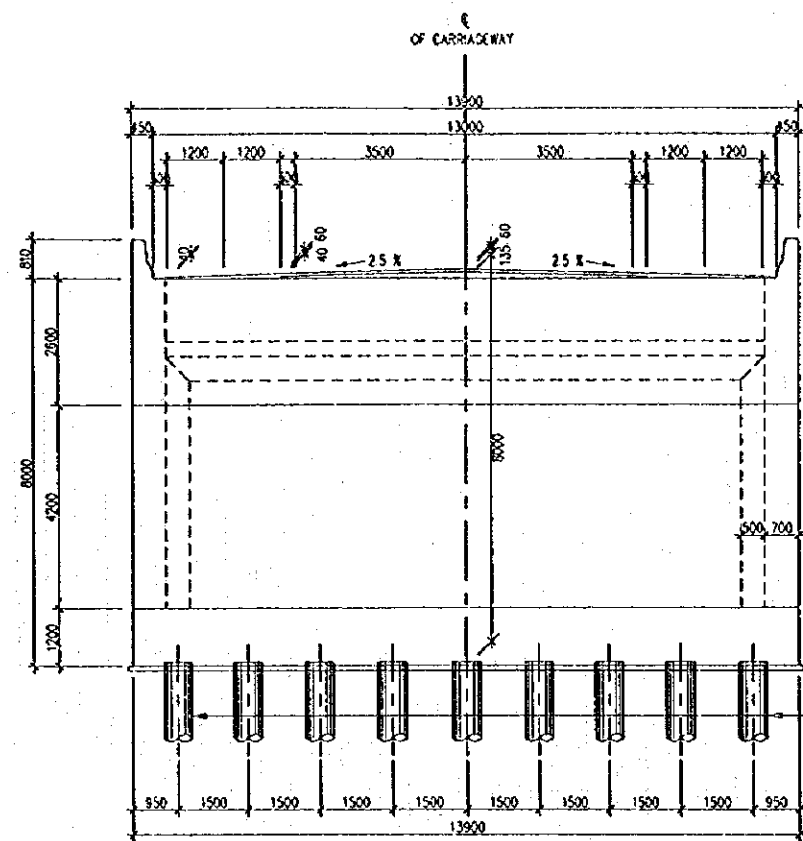


LEGEND:

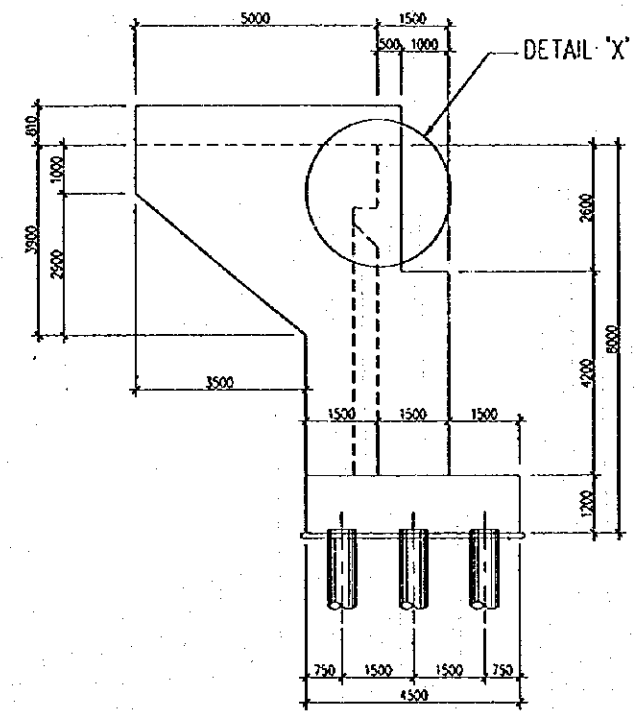
- 14 T 32-B1-125
- SPACING OF BAR
- BAR MARK
- B = BEAM
- C = COLUMN
- F = FOOTING
- SIZE OF BAR
- TYPE OF BAR
- H = HIGH YIELD
- M = MILD STEEL
- NO. OF BAR

AS = ALTERNATELY STAGGERED
 LV = LENGTH VARIES
 NF = NEAR FACE
 FF = FAR FACE

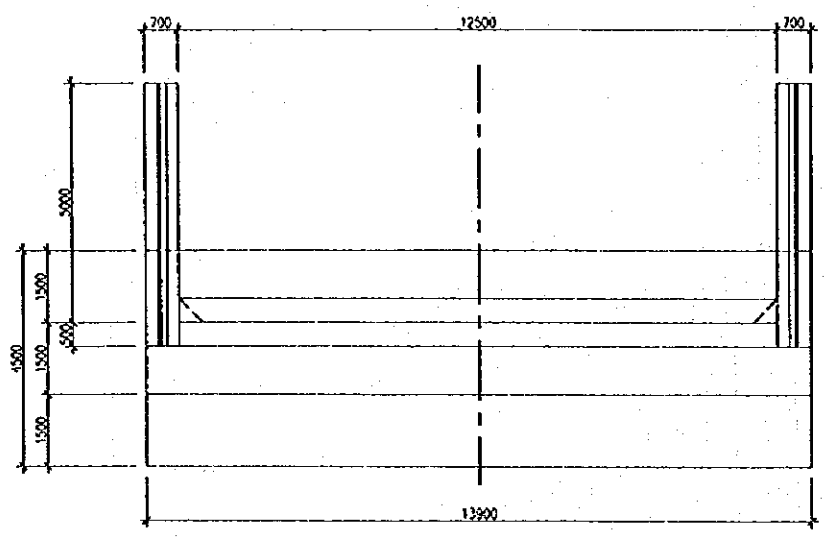
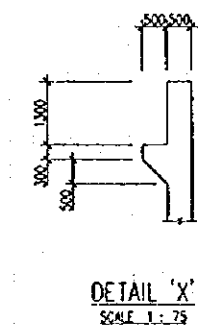
Tarikh	Butiran	Rujukan	UNIT JAMBATAN		PENGARAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKTOR	INSPEKTOR		
			DILUKUS	DIDOKAR	PENYOLONG PENGARAH KANAN (J)	ABUTMENT - REINFORCEMENT
	PROJAM			URUAN		TASKOK



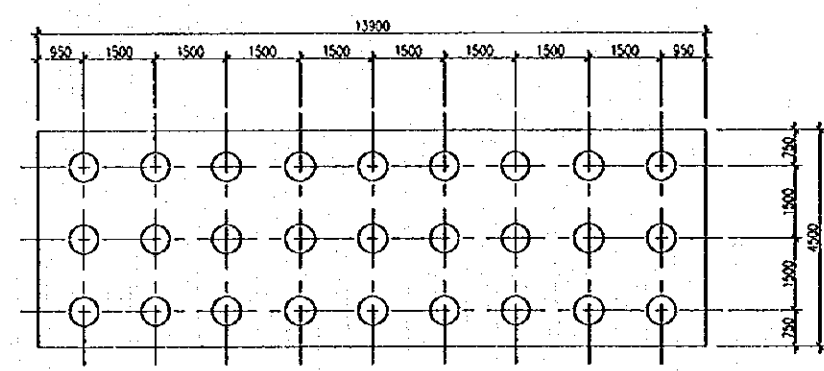
FRONT ELEVATION
SCALE 1 : 25



SIDE ELEVATION
SCALE 1 : 25

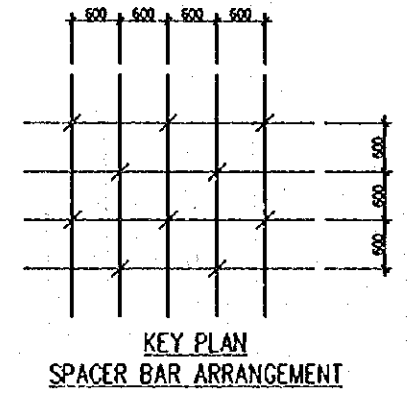
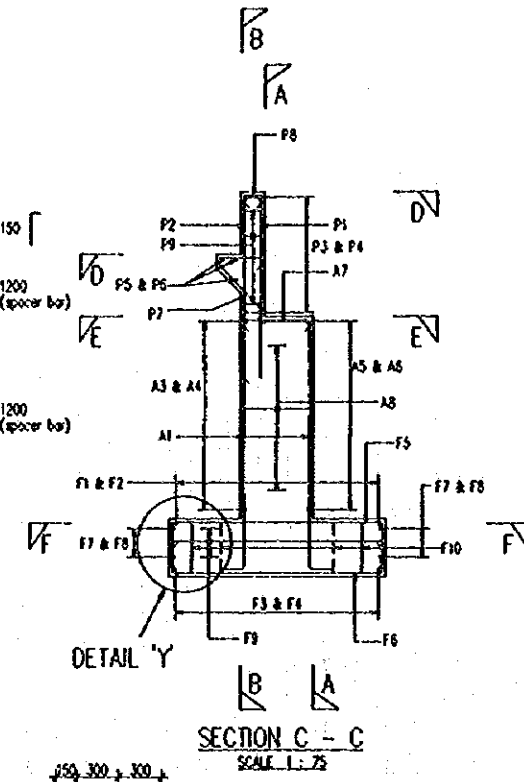
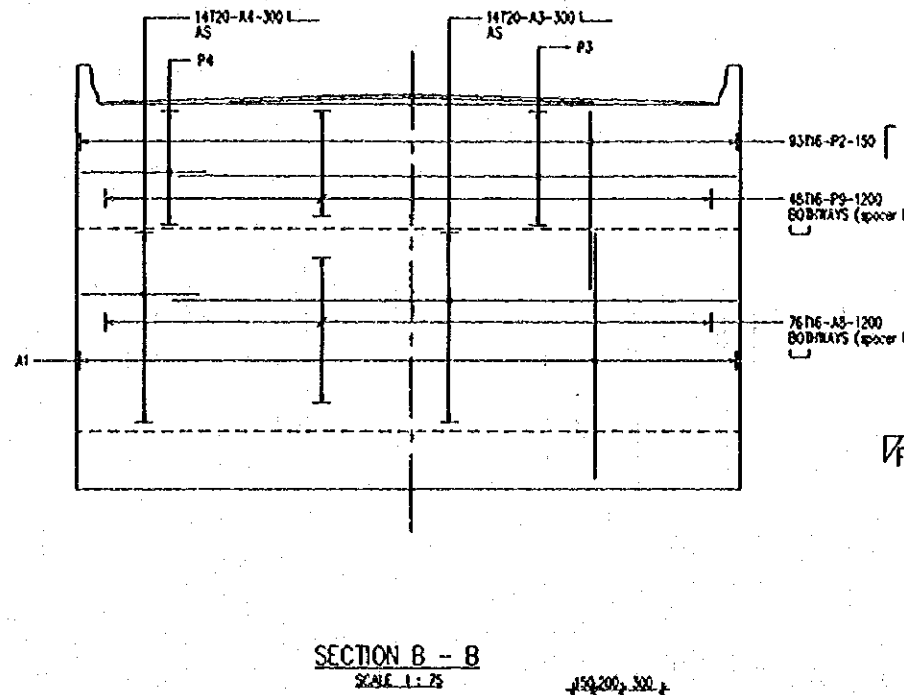
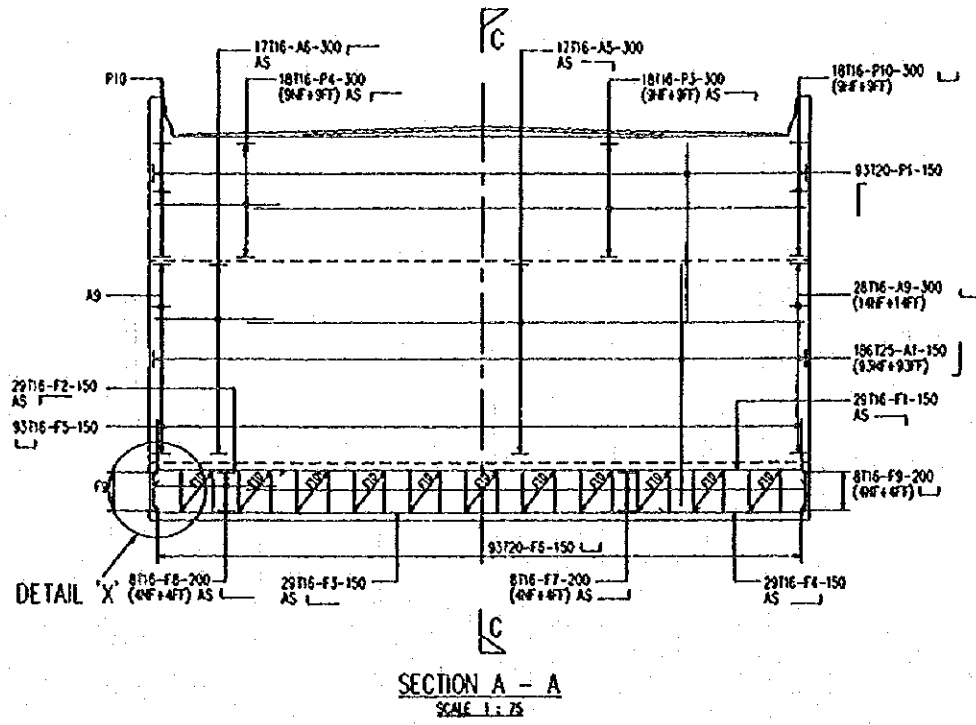


PLAN
SCALE 1 : 25



PILE ARRANGEMENT
SCALE 1 : 25

Tarikh	Buliran	Rejkan	UNIT JAMBATAN	PENCAHAR JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKASENTUK:		
			DILUKIS:	DISEMAK:	JURUTERA PENGAUSA KANAN
			DILUKISKAN: PENOLONG PENGARAH (JP)		PENOLONG PENGARAH KANAN (JK)
					TARIKH:
					BL. LUKISAN:
					ABUTMENT - GENERAL VIEW

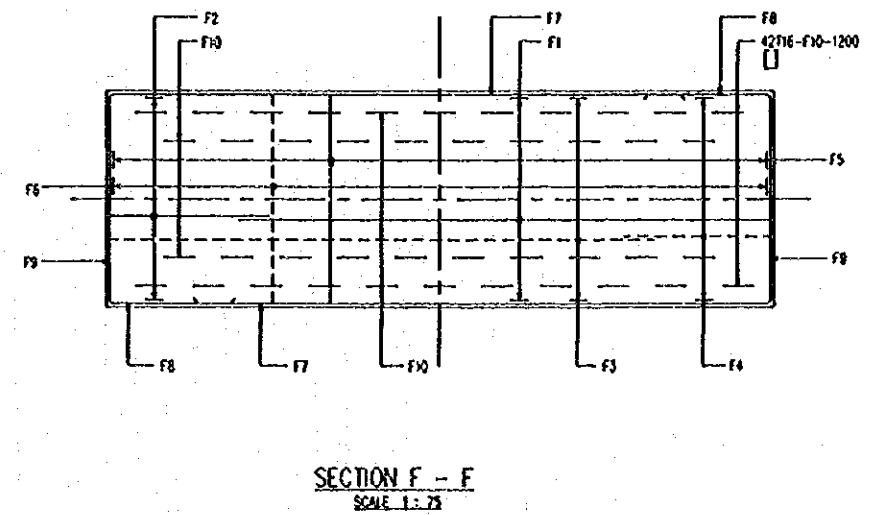
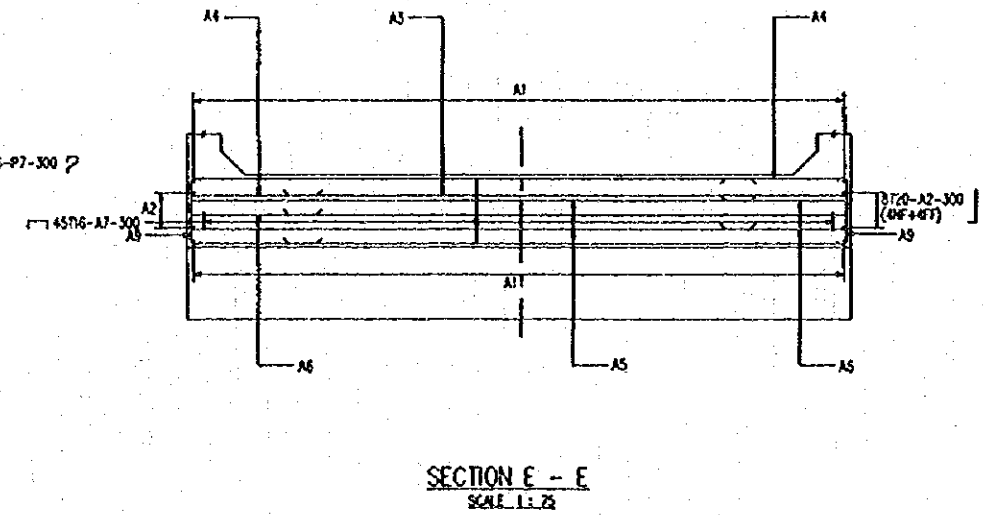
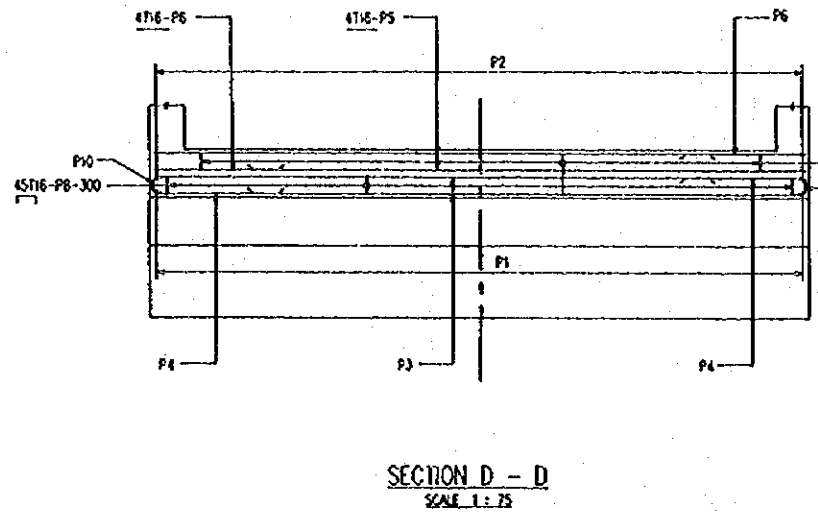


LEGEND:

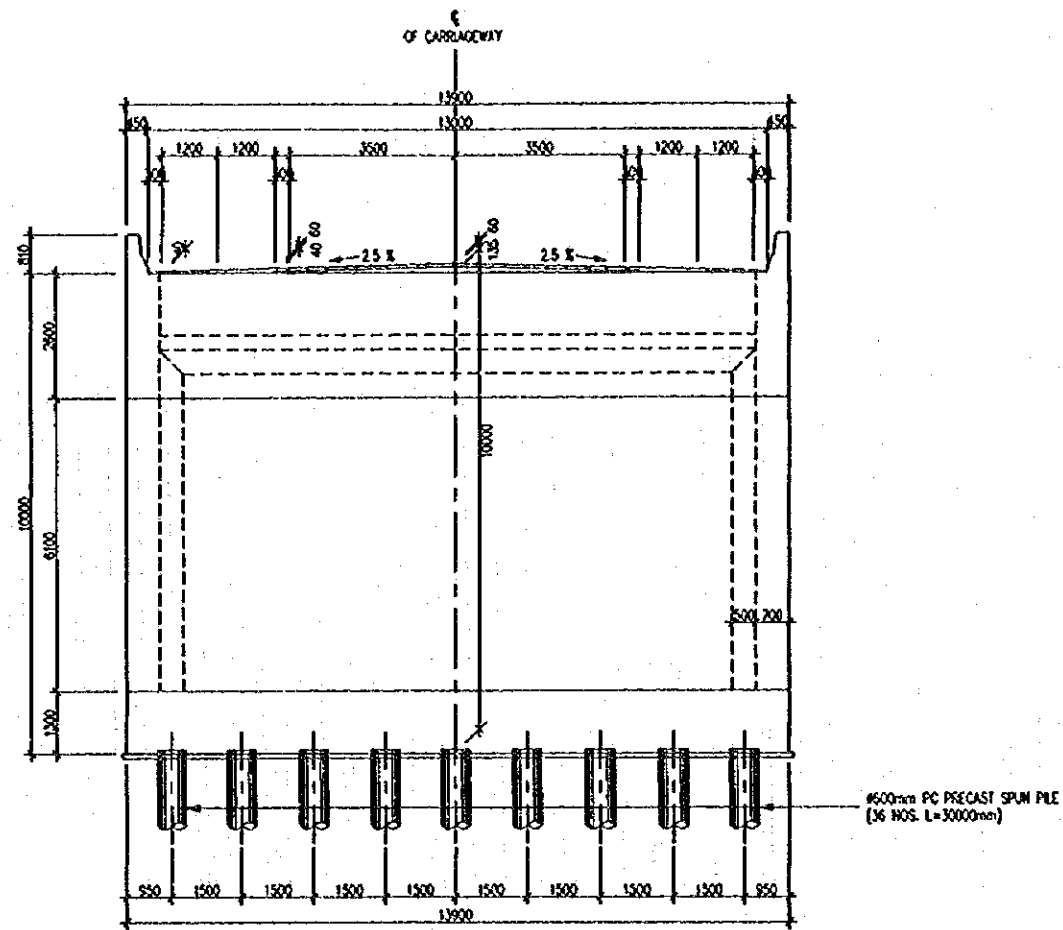
14 I 32-B1-125

- SPACING OF BAR
- BAR MARK
- B = BEAM
- C = COLUMN
- F = FOOTING
- SIZE OF BAR
- TYPE OF BAR
- I = HIGH YIELD
- R = MILD STEEL
- NO. OF BAR

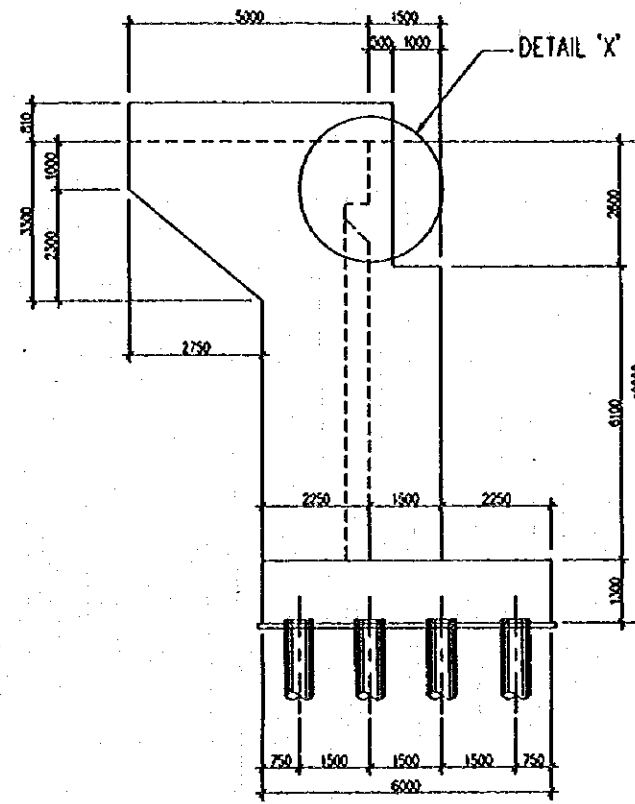
AS = ALTERNATELY STAGGERED
LV = LENGTH VARIES
NF = NEAR FACE
FF = FAR FACE



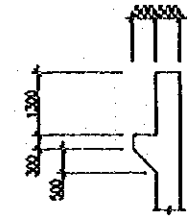
Tarikh	Buikan	Rujukan	UNIT JAMBATAN	PONCAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKASUTUK:	JURUTERA PENJAJAH KANAN	ABUTMENT - REINFORCEMENT
			DILAKS:	DIREKASUTUK:	
			DIREKUSKAN: PONDONG PONCAH (A)	PONDONG PONCAH KANAN (A)	
PINDAAN			LUKARAN	TARJAH	UKURAN



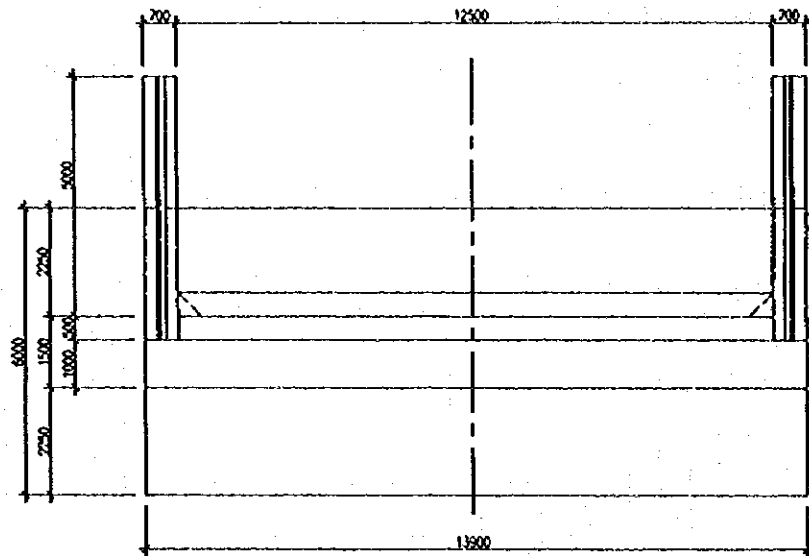
FRONT ELEVATION
SCALE 1:25



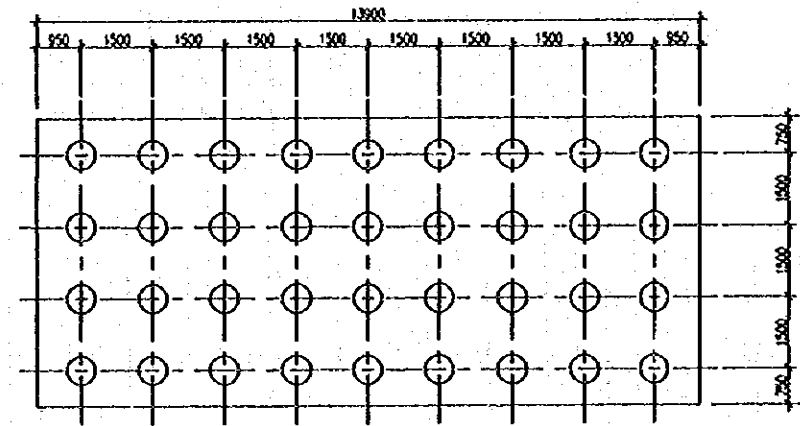
SIDE ELEVATION
SCALE 1:25



DETAIL 'X'
SCALE 1:25

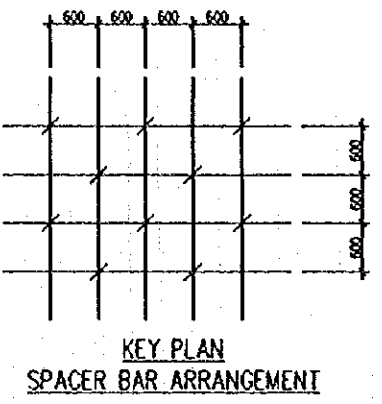
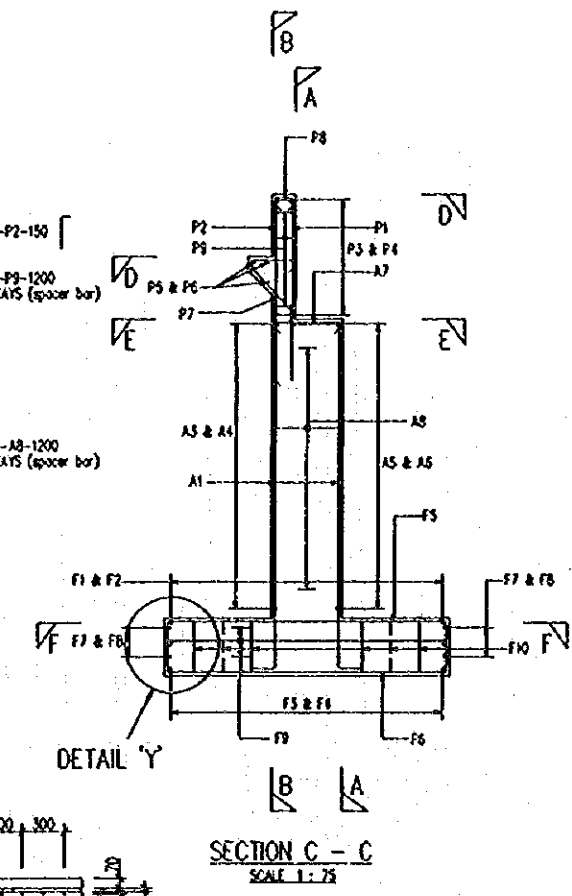
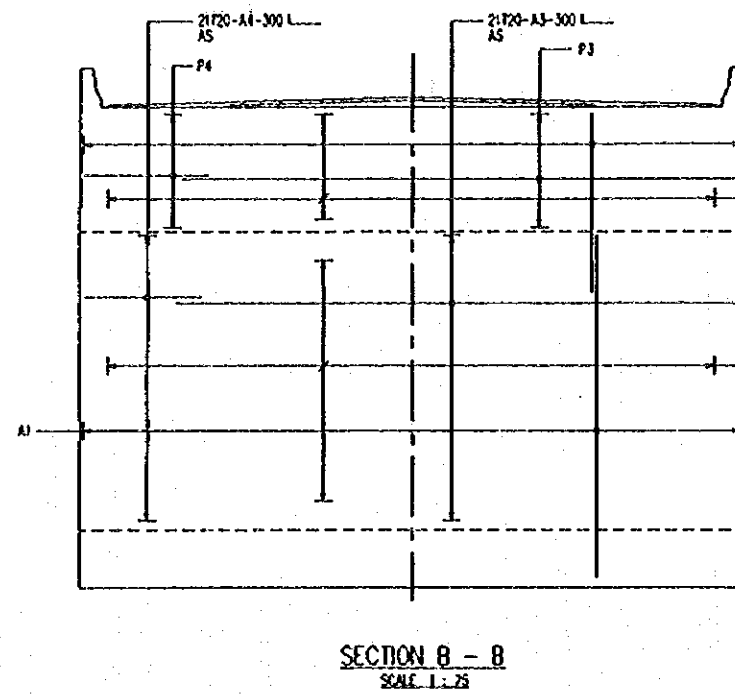
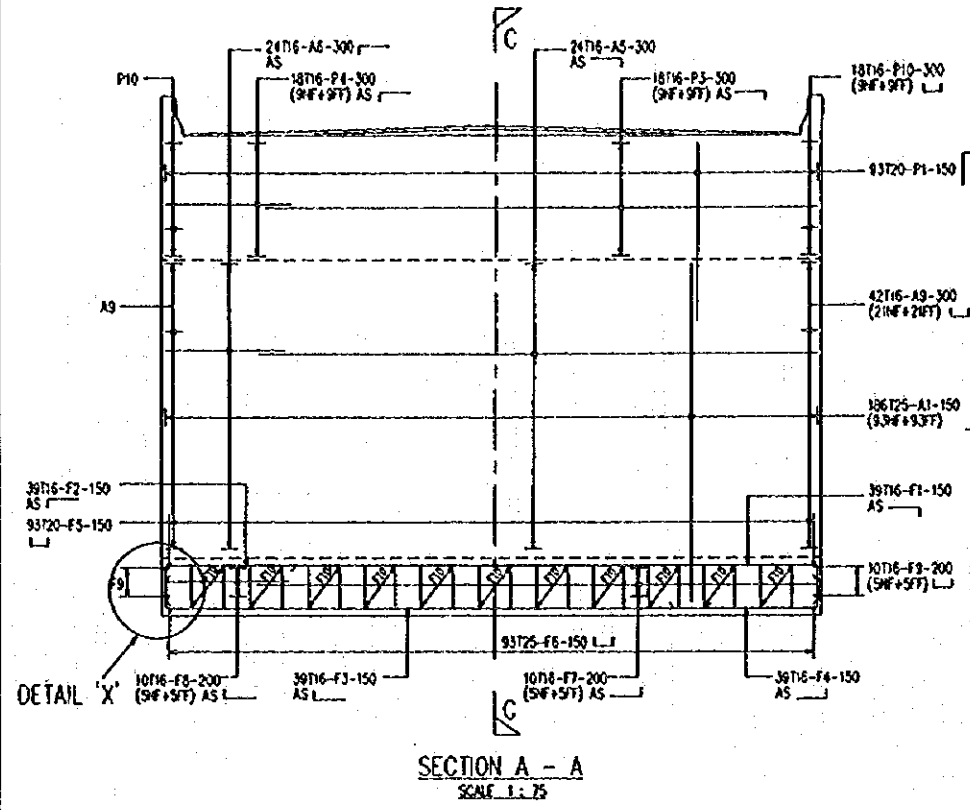


PLAN
SCALE 1:25



PILE ARRANGEMENT
SCALE 1:25

Tarikh	Bulan	Rujukan	UNIT JAMBATAN		JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DREKABENTUK	PONORAH JALAN	
			DILUNGS	DIGEMAK	JURUJERA PENOLONG KANAN
			DILULUSKAN	PENOLONG PONGARAH (R)	PENOLONG PONGARAH KANAN (S)
					TARJUK
					ABUTMENT -- GENERAL VIEW BE LUKSAN



LEGEND:

14 I 32-B1-125

SPACING OF BAR

BAR MARK

B = SEAM

F = JOINT

L = FOOTING

SIZE OF BAR

TYPE OF BAR

Z = HIGH YIELD

R = MILD STEEL

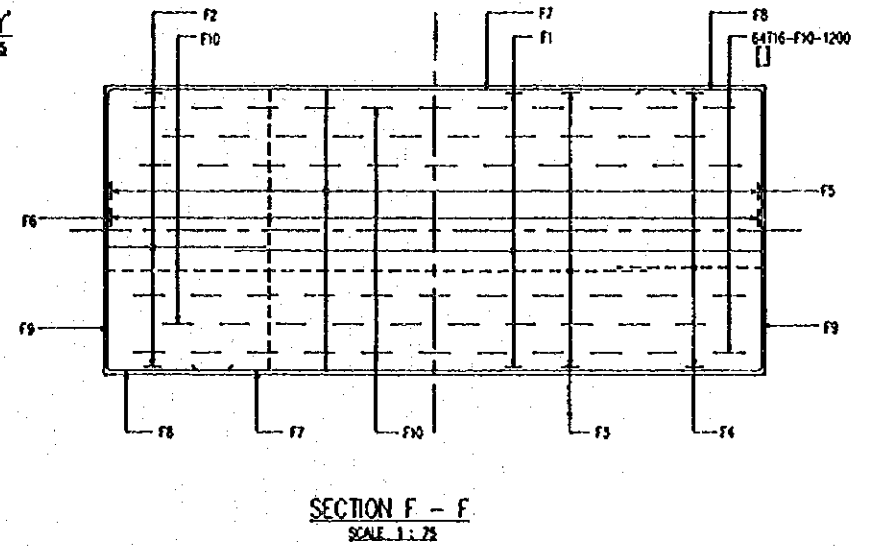
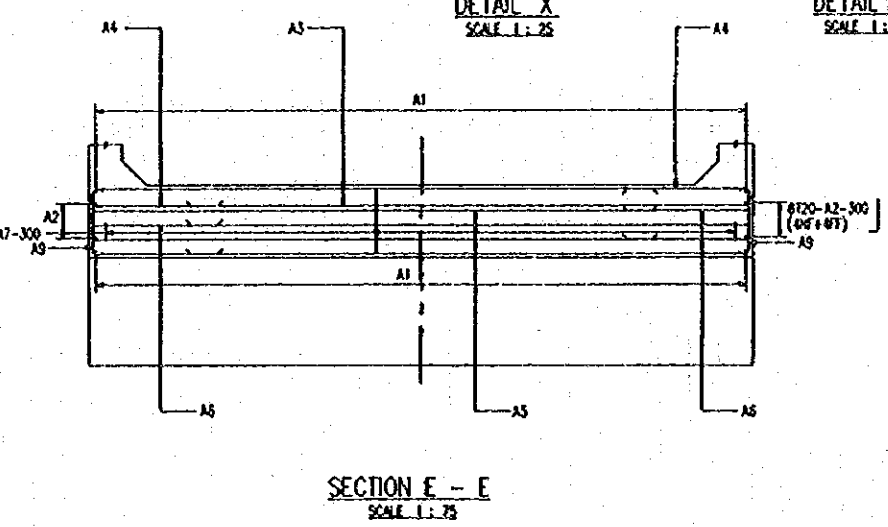
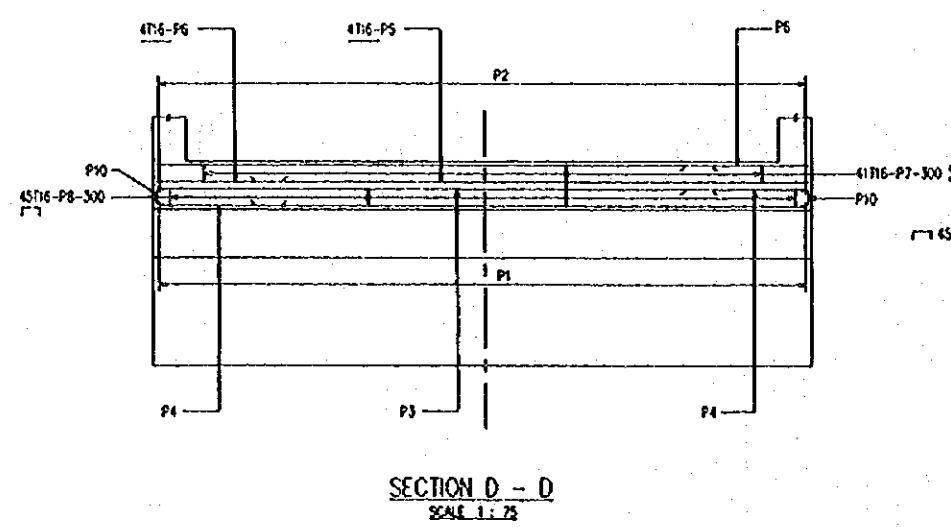
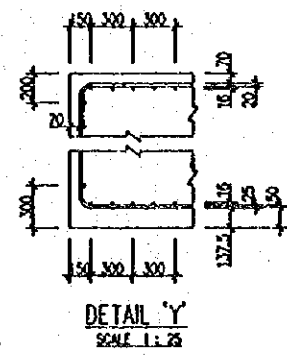
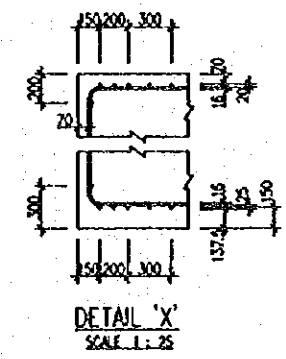
NO. OF BAR

AS = ALTERNATELY STAGGERED

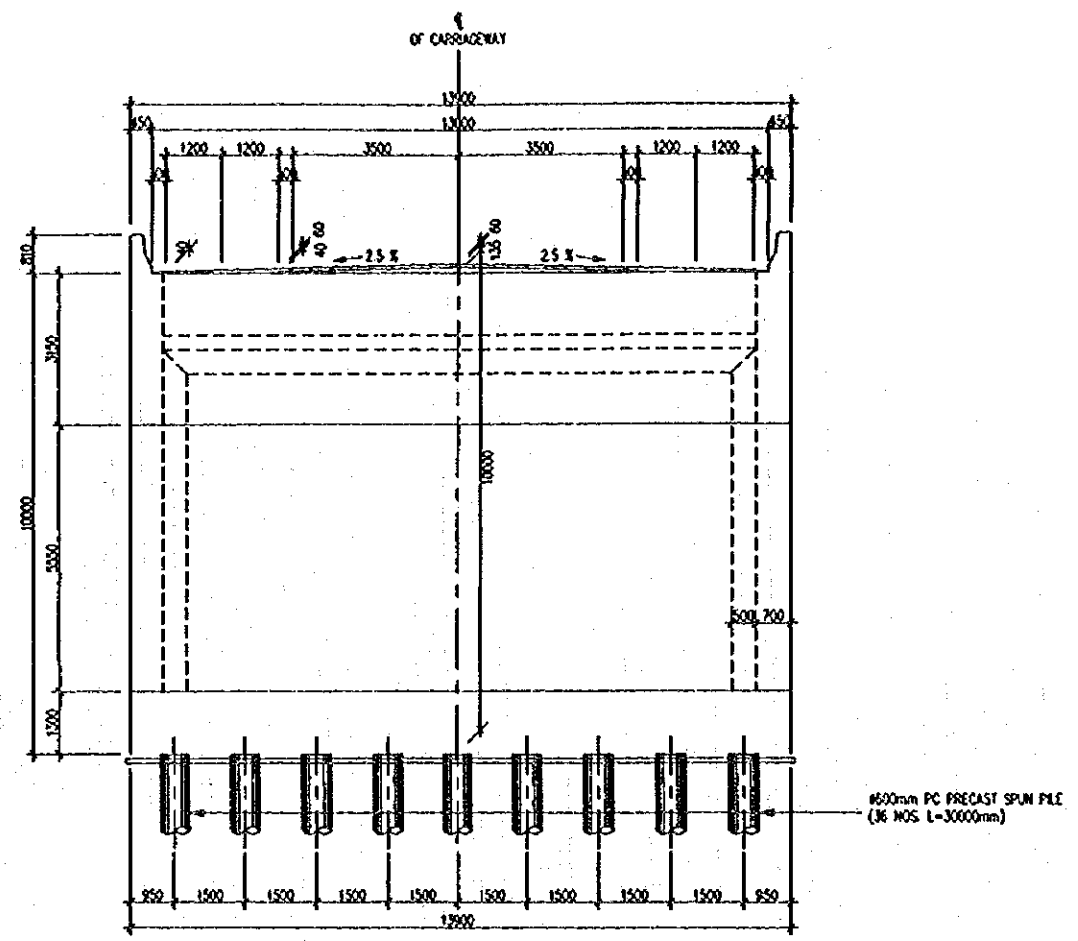
LV = LENGTH VARIES

WF = WEAR FACE

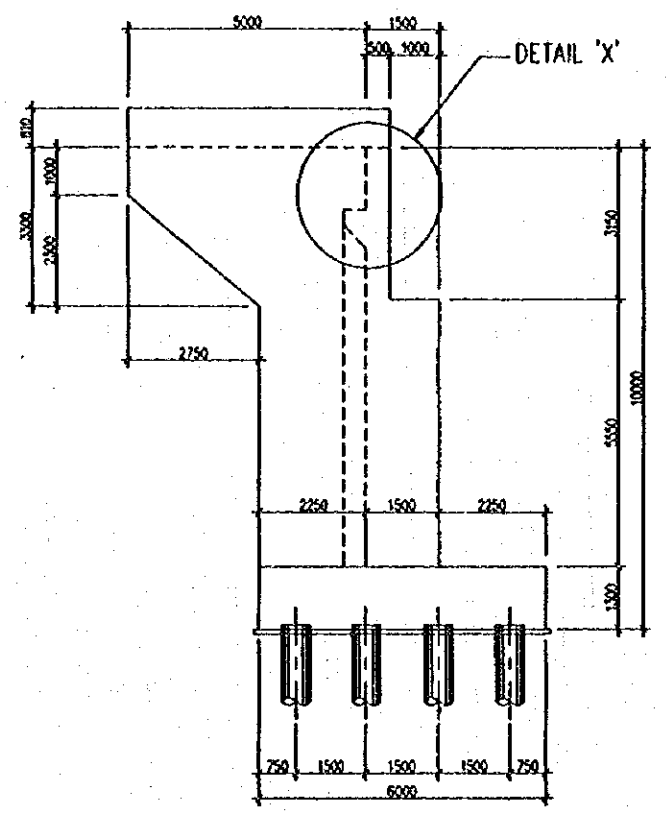
FF = FAR FACE



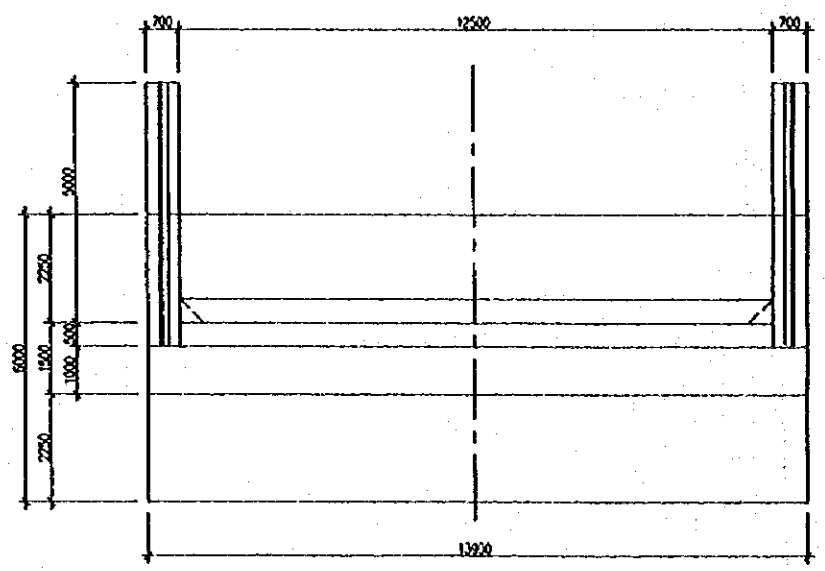
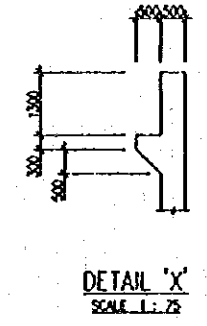
Tarik	Bulan	Rujukan	UNIT JAMBATAN	PENDARAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKABENAM:	JURUTERA PENAJASA KANAN	ABUTMENT - REINFORCEMENT
			DELAYS:	PENOLONG PENCARAH KANAN (J)	
			DIUSKANKAN PENOLONG PENCARAH (A)	TARSOH	
	PROJEK	UKURAN			BLK LURUSKAN



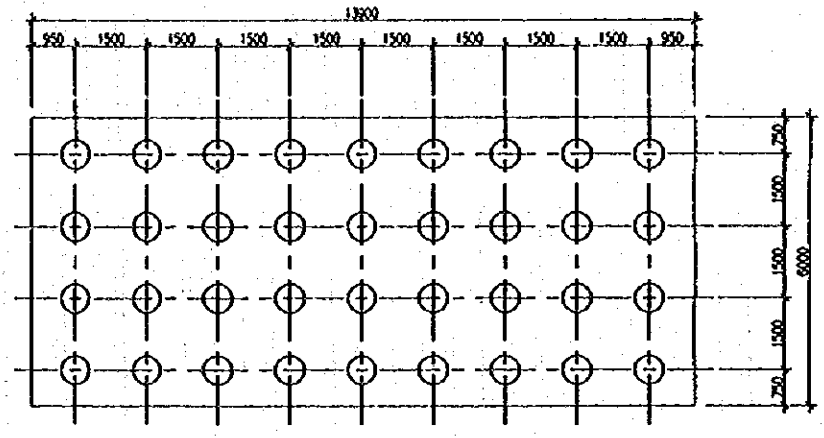
FRONT ELEVATION
SCALE 1:25



SIDE ELEVATION
SCALE 1:25

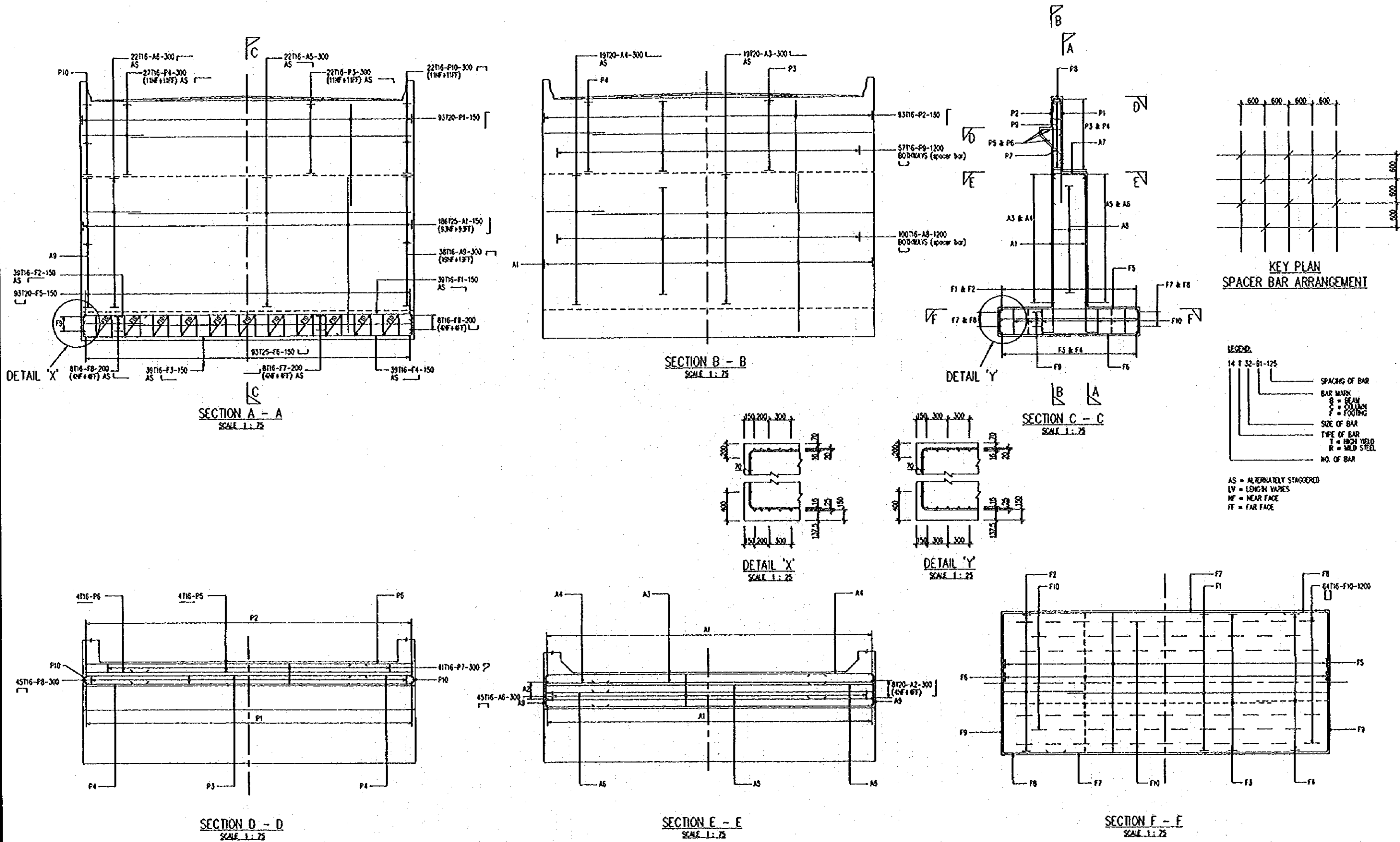


PLAN
SCALE 1:25

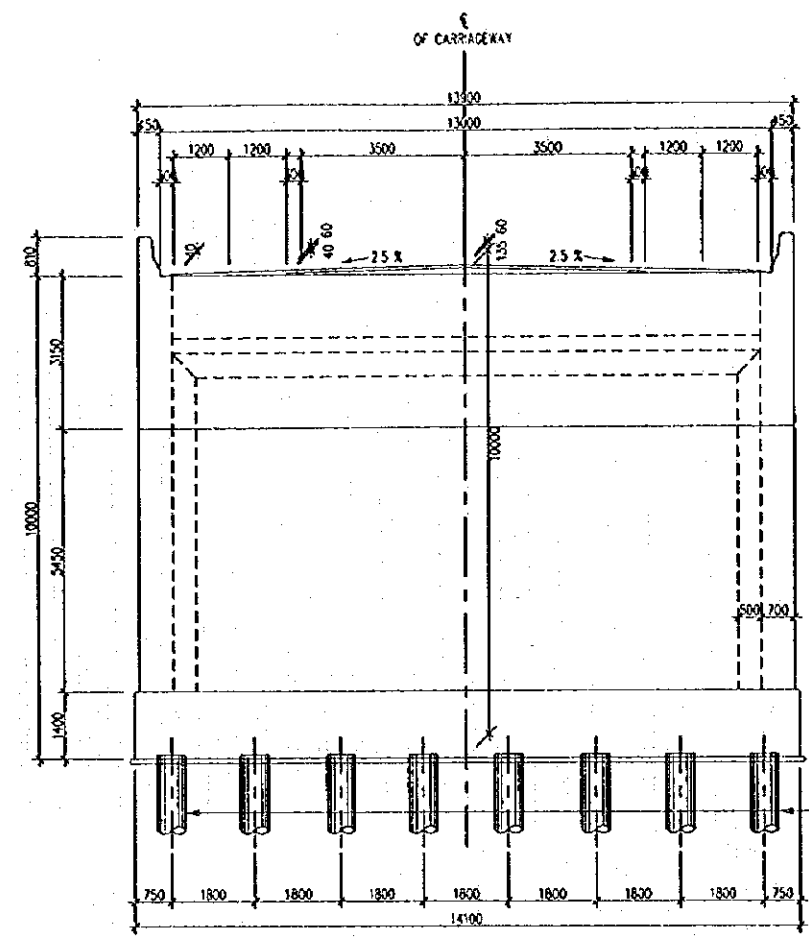


PILE ARRANGEMENT
SCALE 1:25

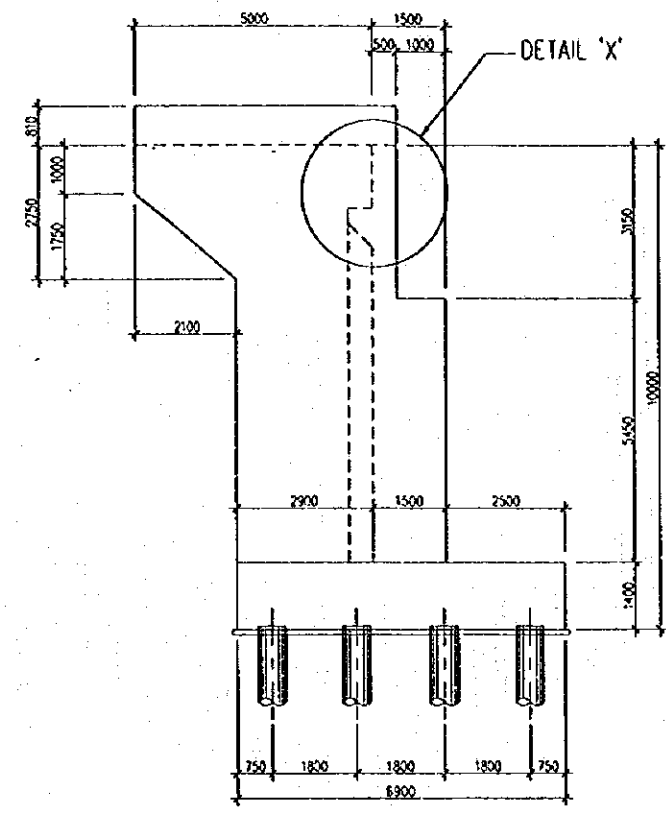
Tarikh	Biliran	Rujukan	UNIT JAMBATAN	PONCAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKTORIAK		
			DALUAS	DASMAK	JURUTERA PENYUSAHA KAJIAN
			PERUBAHAN: PENOLONG PONGARAH (P)		ABUTMENT - GENERAL VIEW
				PENOLONG PONGARAH KAJIAN (P)	TARJAH



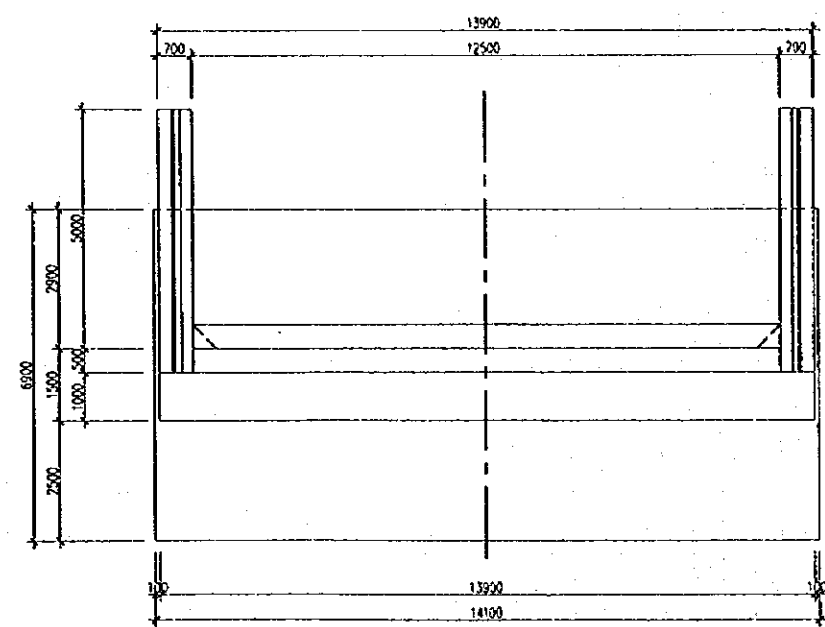
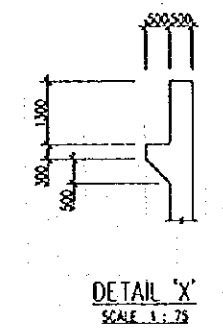
Tarih	Dibuat	Rujukan	UNIT JAMBATAN		PONDORAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKABENBOK			
			DILUKIS	DISEMAK	JUPUTERA PONDORAH KANAN	ABUTMENT - REINFORCEMENT
			DILULUSKAN POKOLONG PONDORAH (A)		POKOLONG PONDORAH KANAN (A)	
	PROJEK		UKURAN		TAPAK	PELUKISAN



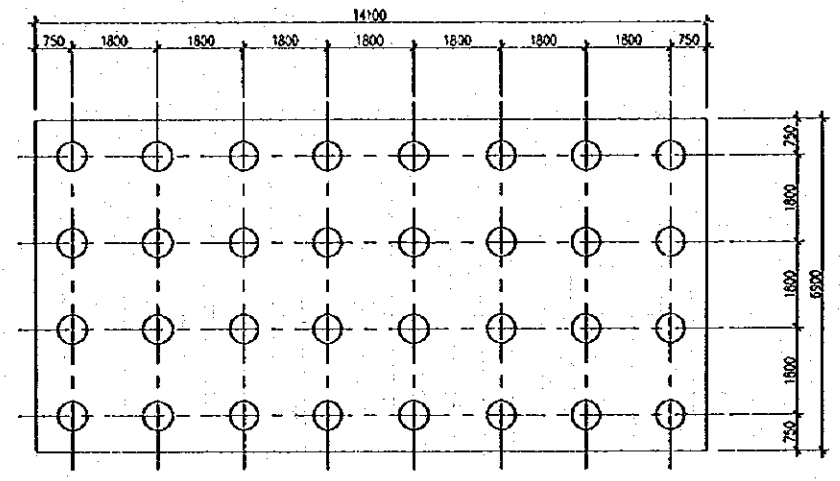
FRONT ELEVATION
SCALE 1 : 25




SIDE ELEVATION
SCALE 1 : 25

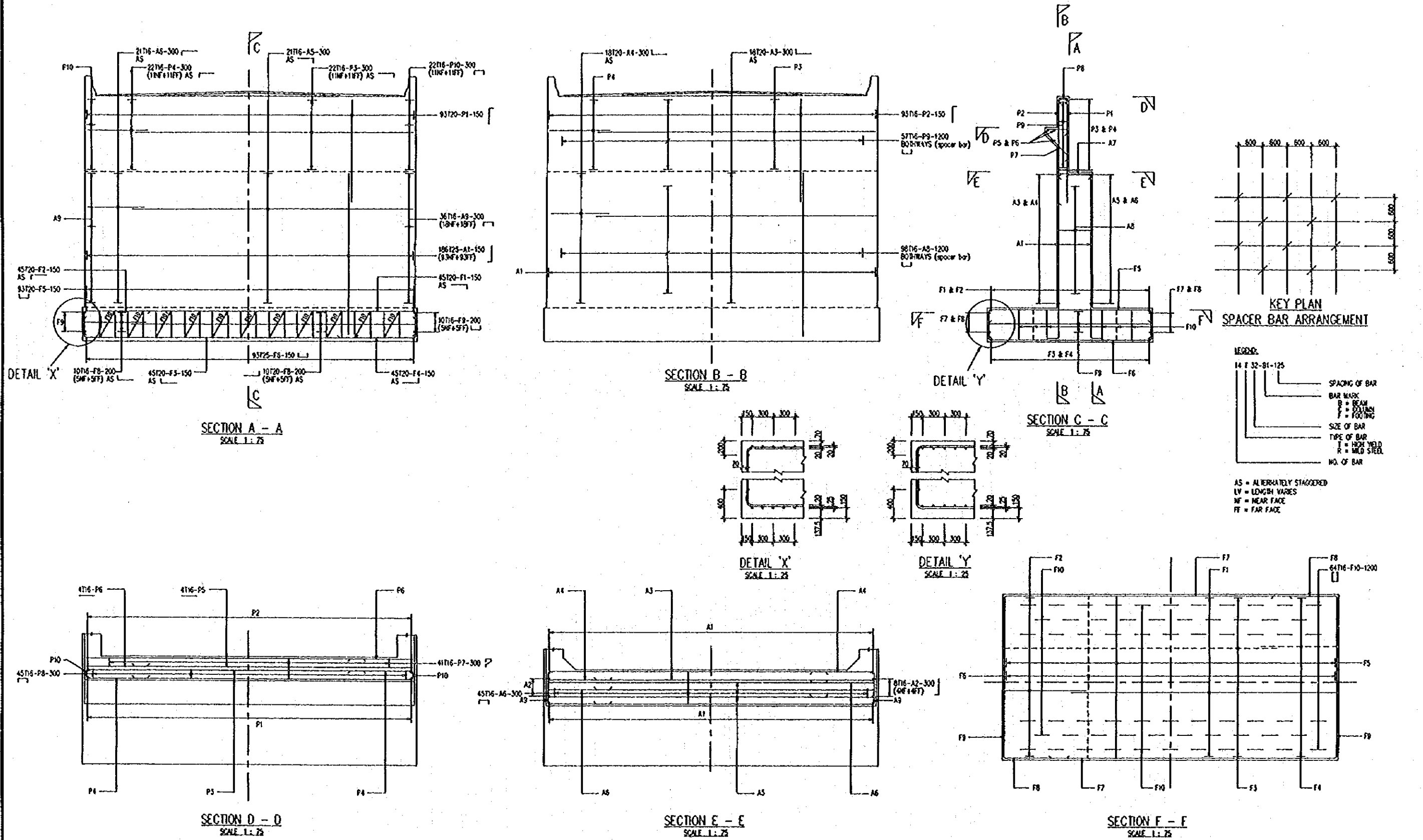


PLAN
SCALE 1 : 25

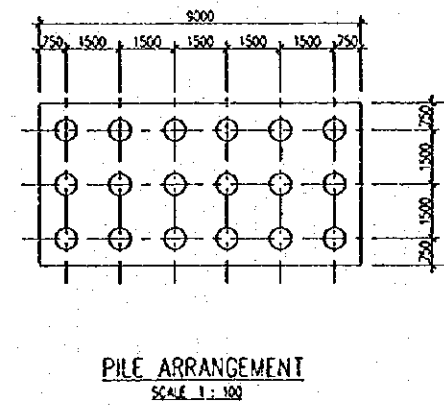
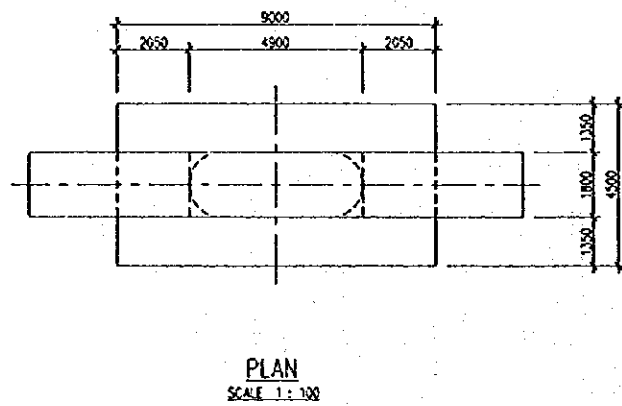
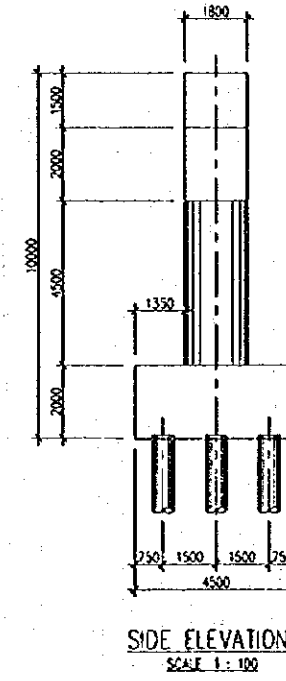
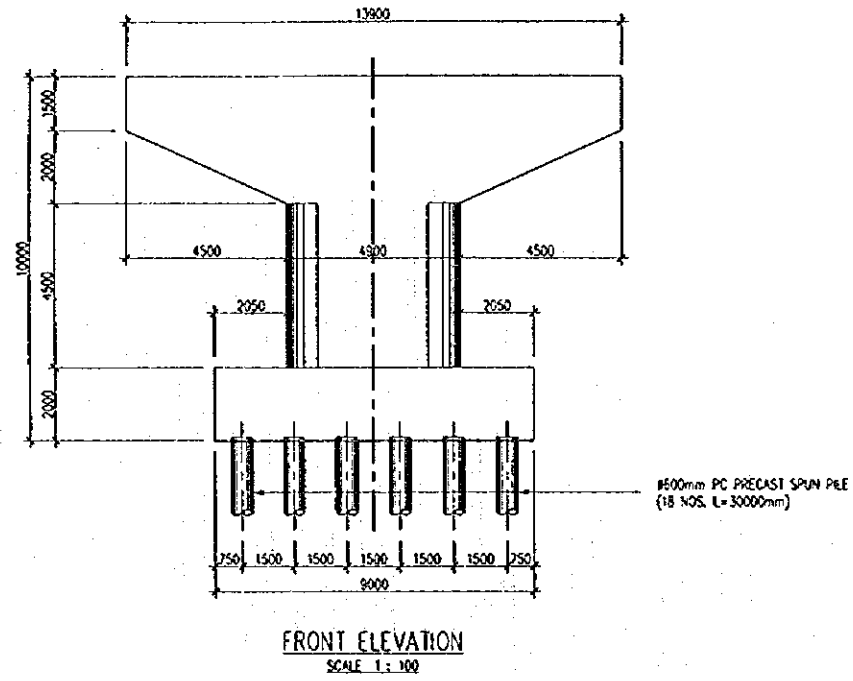


PILE ARRANGEMENT
SCALE 1 : 25

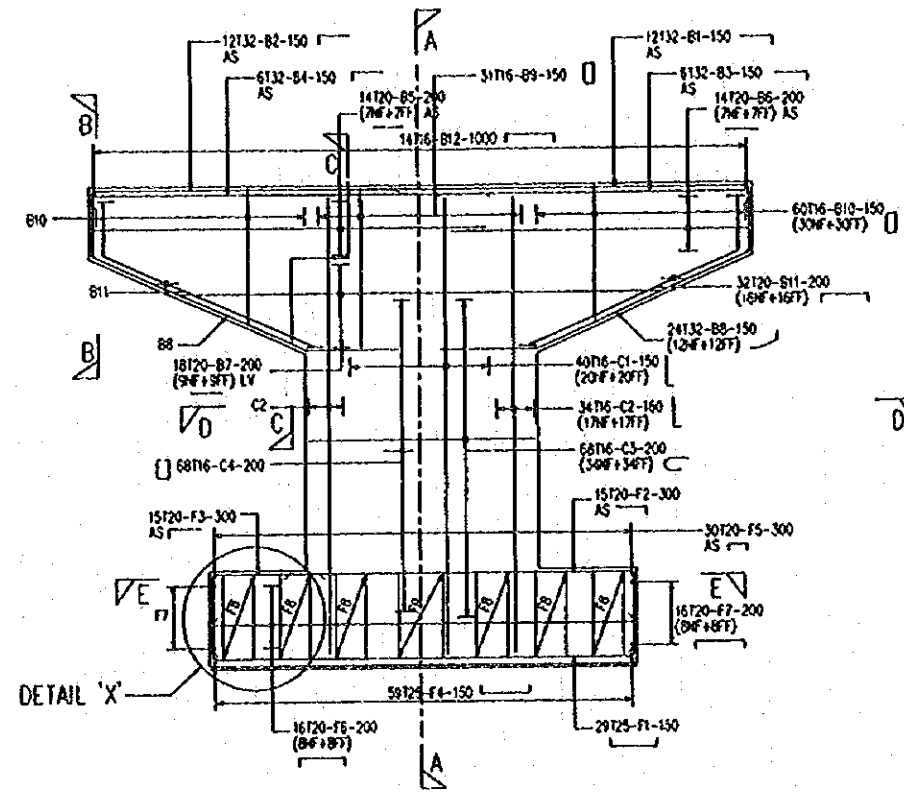
Tarikh	Butiran	Rujukan	UNIT JAMBATAN	PENGARAH JALAN	 JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKASENTRUK	PENGARAH JALAN	
			DILUJUS:	DISEMAK:	JURUTERA PENJAJA KANAN
			DILUJUSKAN: PENJAJA PENGARAH (R)		PENJAJA PENGARAH KANAN (R)
	PINDAAN	UMURAN			TARIK:
					BR. LURUSAN
					ABUTMENT - GENERAL VIEW



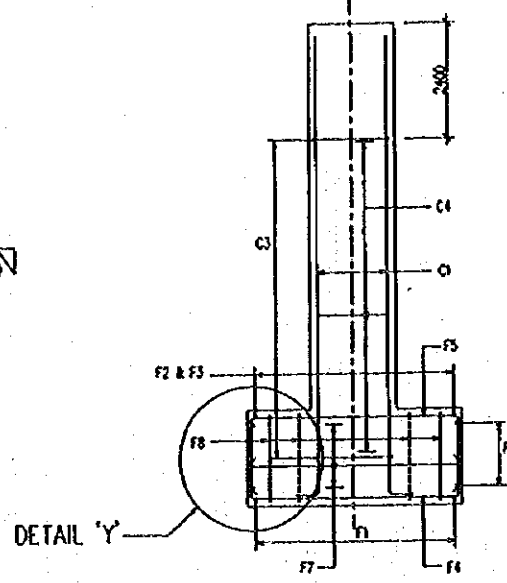
Tarikh	Bulanan	Rujukan	UNIT JAMBATAN		PENGARAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKABENTUK:	DIREKUR:		
			DILUSUKAN: PENOLONG PENGARAH (R)		PENOLONG PENGARAH KANAN (A)	ABUTMENT - REINFORCEMENT
	PINDAAN					TARIKH: BL: URUSAN:



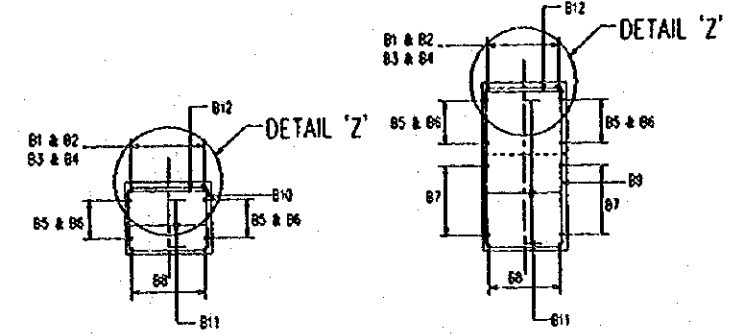
Tarik	BuYran	Rujukan	UNIT JAMBATAN	PENARAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKABENTUK		
			DILUKIS: DISEMAK:	JURUTERA PENJAJA KANAN	
			DILUKUSKAN: PENOLONG PENARAH (JI)	PENOLONG PENARAH KANAN (JI)	PIER TYPE T - GENERAL VIEW
			UKURAN	TARIKH:	RE: LUKUSAN:



SECTIONAL ELEVATION
SCALE 1:25

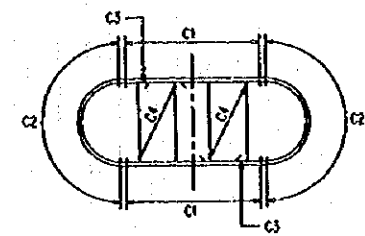


SECTION A - A
SCALE 1:25

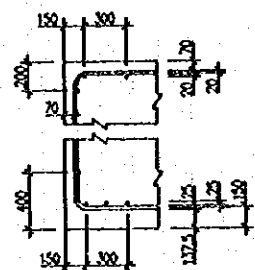


SECTION B - B
SCALE 1:25

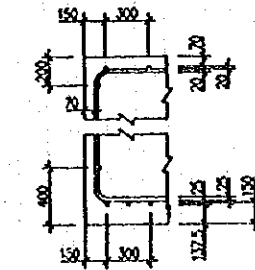
SECTION C - C
SCALE 1:25



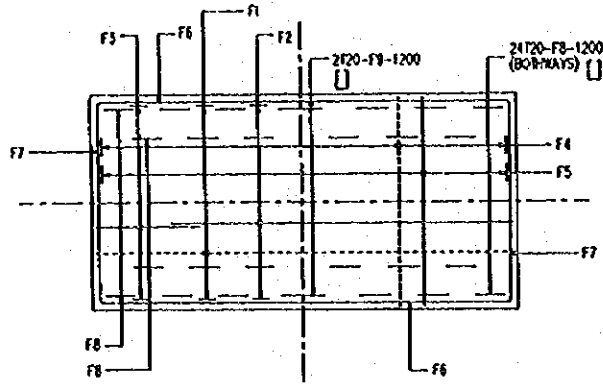
SECTION D - D
SCALE 1:25



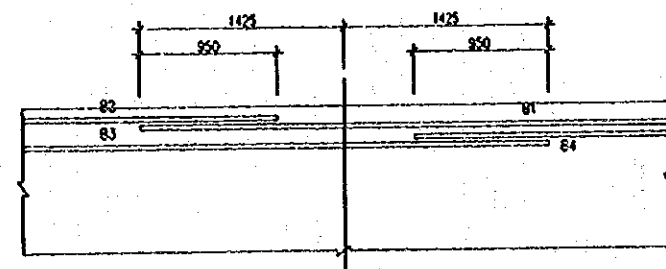
DETAIL 'X'
SCALE 1:25



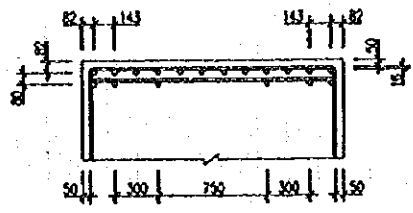
DETAIL 'Y'
SCALE 1:25



SECTION E - E
SCALE 1:25



KEY PLAN OF PLACING REINFORCEMENT
SCALE 1:25

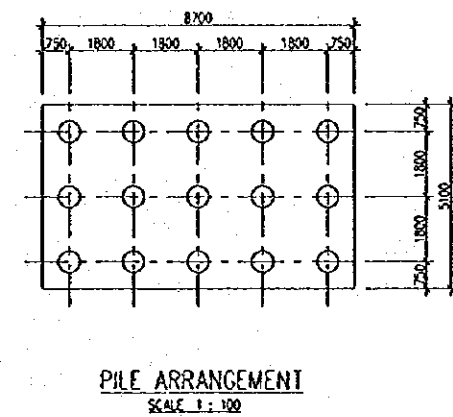
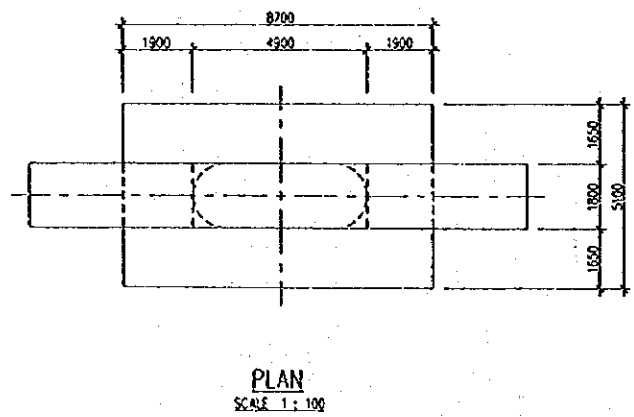
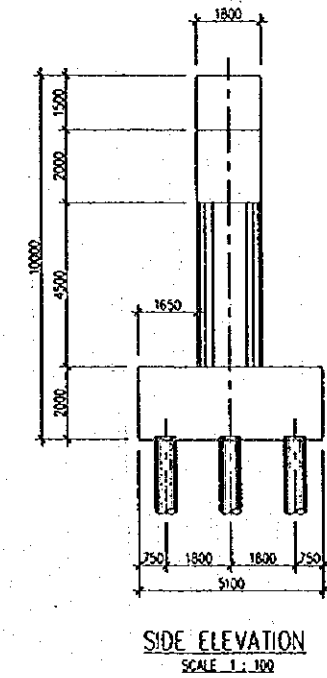
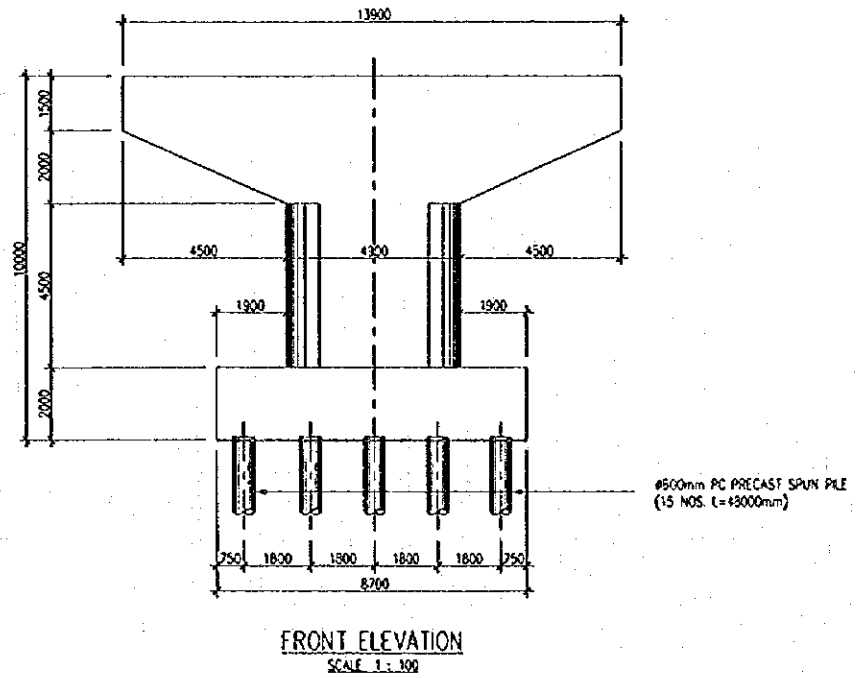



DETAIL 'Z'
SCALE 1:25

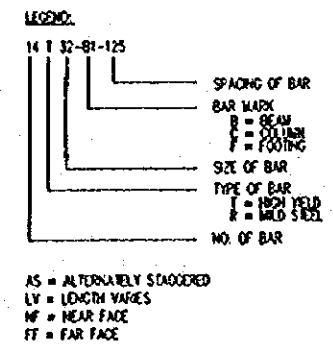
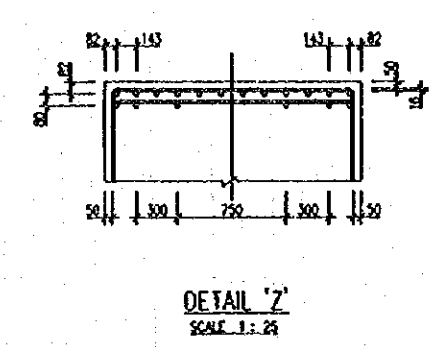
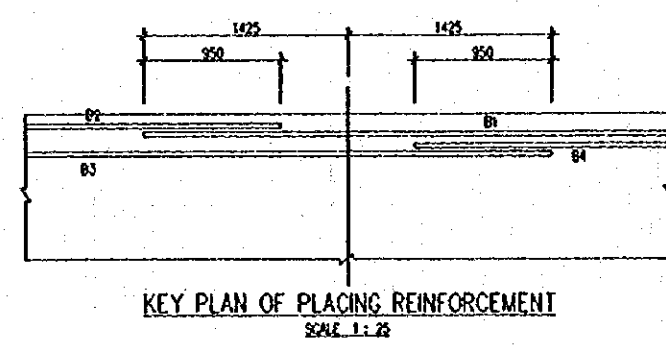
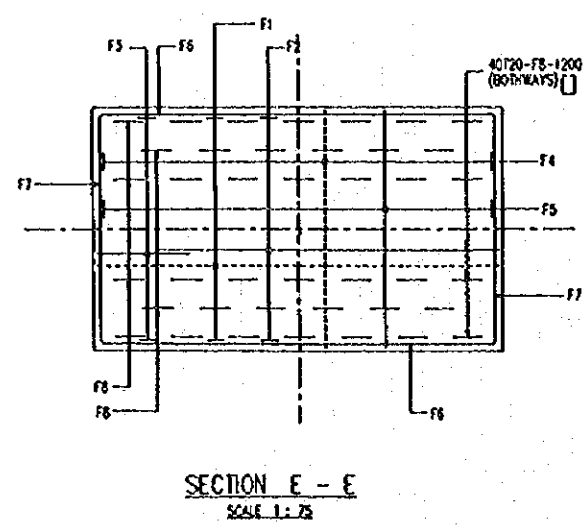
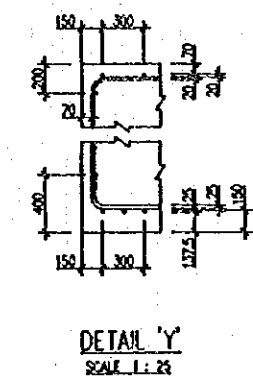
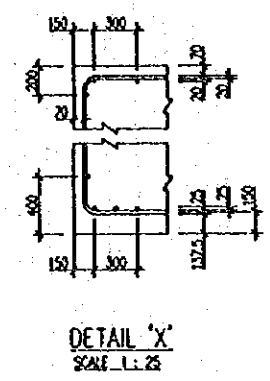
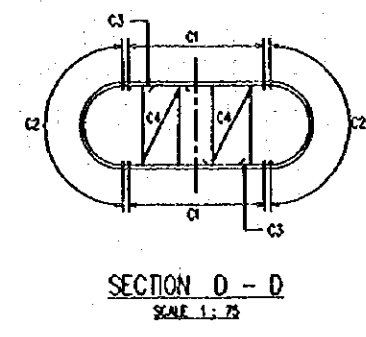
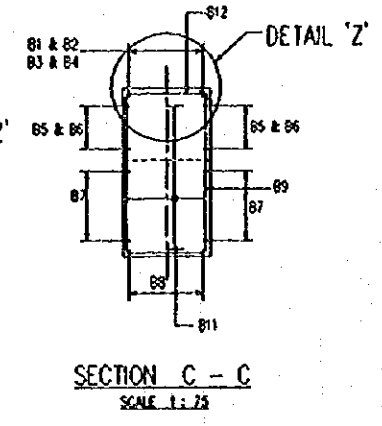
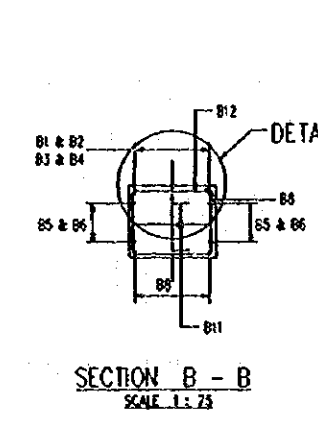
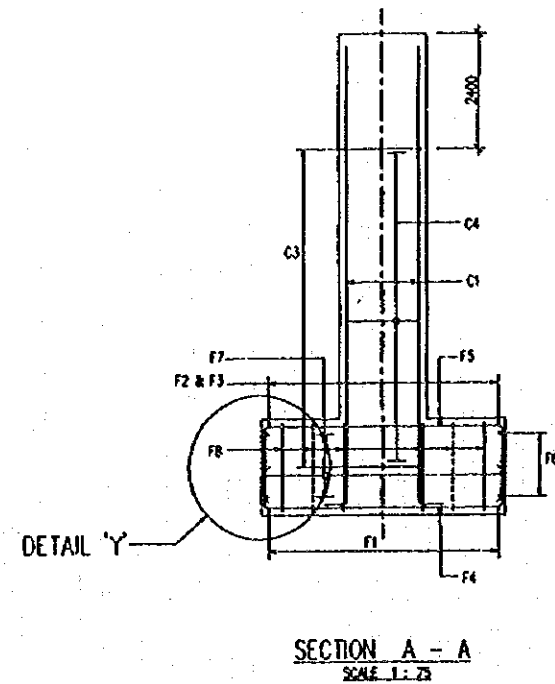
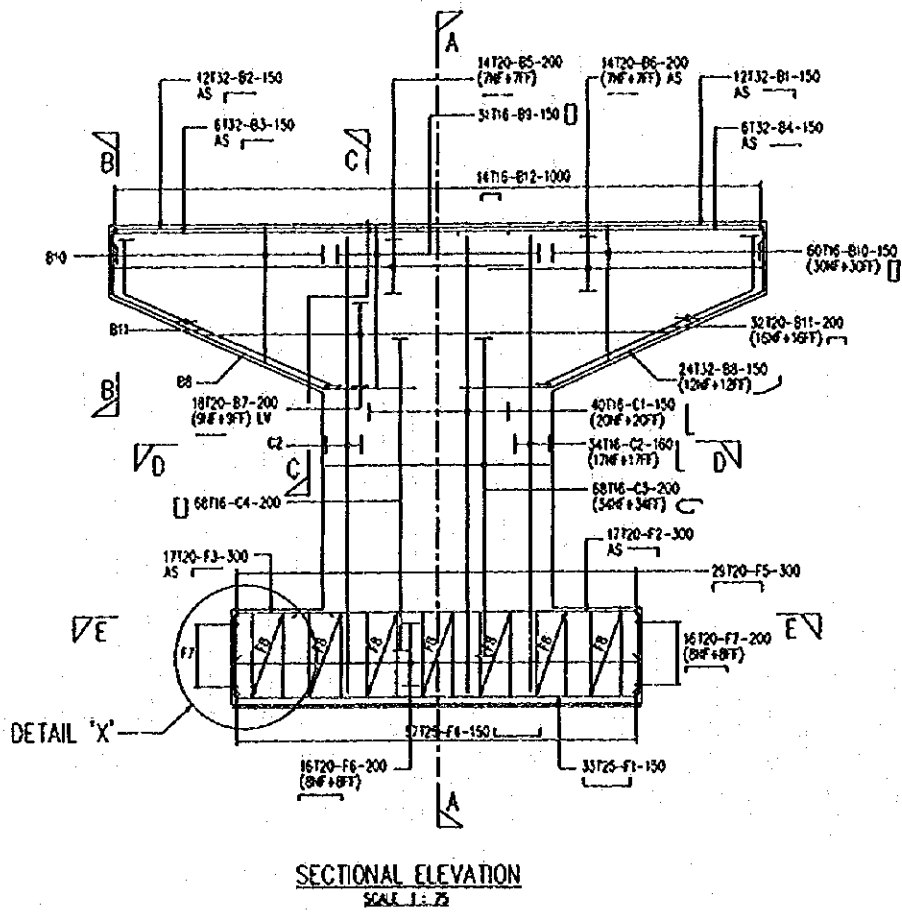
LEGEND:
 14 T 32-B1-125
 SPACING OF BAR
 BAR MARK
 B = BEAM
 C = COLUMN
 F = FOOTING
 SIZE OF BAR
 TYPE OF BAR
 I = HIGH YIELD
 M = MILD STEEL
 NO. OF BAR

AS = ALTERNATELY STAGGERED
 LV = LENGTH VARIES
 NF = NEAR FACE
 FF = FAR FACE

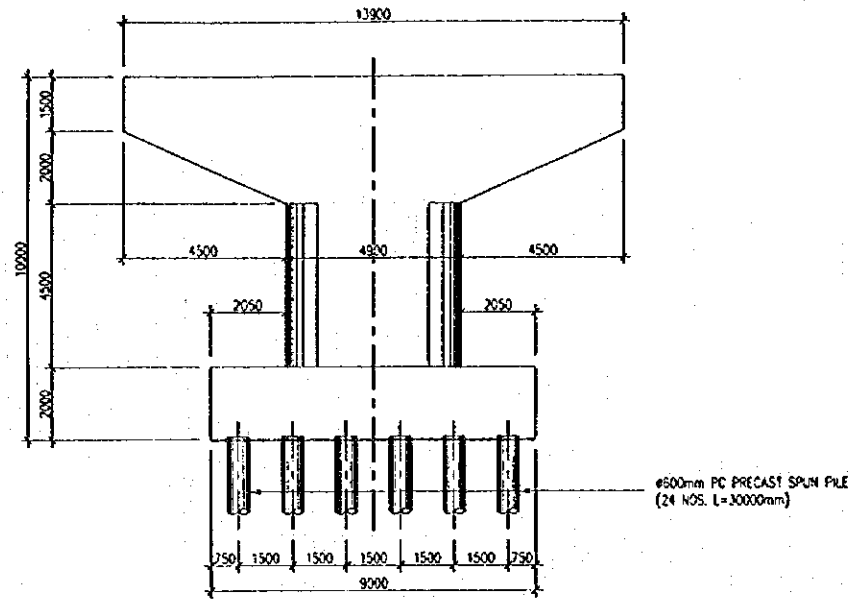
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			DIREKSI/RAK:	PENGARAH JALAN		T-BEAM - REINFORCEMENT
			DEKUS:	JURUTERA PENJAJA KAWAN		
			DEKUS/RAK PENJAJA PENGARAH (JI)	PENJAJA PENGARAH KAWAN (JI)	TARUK	



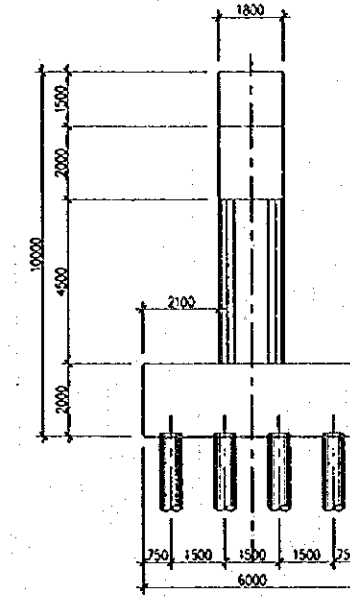
Tajah	Butiran	Rujukan	UKURAN	UNIT JAMBATAN DIREKASHTUK DILUKIS: _____ DISMAK: _____ DILULUSKAN: PENOLONG PENGARAH (P)	PENGARAH JALAN JURUTERA PENJAJA KAYAN PENOLONG PENGARAH KAYAN (J)	 JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN PIER TYPE T - GENERAL VIEW TARIKH: _____ BIL. LUKISAN: _____
	PINDAAN					



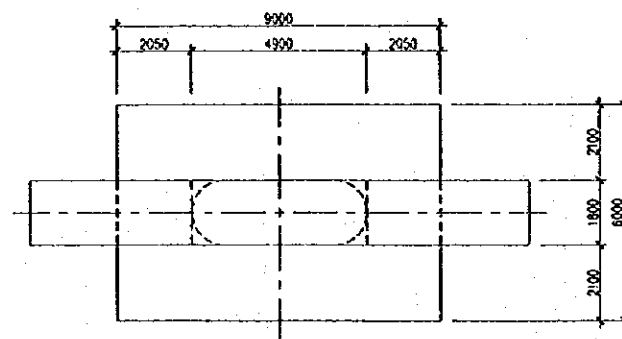
Tarik	BuGuan	Rujukan	UNIT JAMBATAN	PENGARAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKABENTUK:		
			DURUS:	JURUTERA PENOLAKSA RAKAM	
			DOKUSKANE PENOLONG PENGARAH (A)	PENOLONG PENGARAH KARAN (J)	TARBIK
					T-BEAM -- REINFORCEMENT
					BUKUSAN



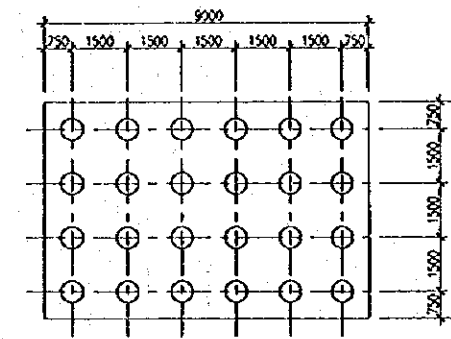
FRONT ELEVATION
SCALE 1 : 100



SIDE ELEVATION
SCALE 1 : 100

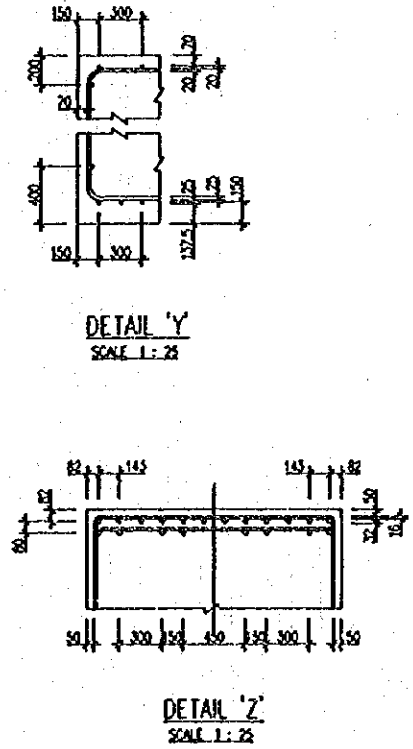
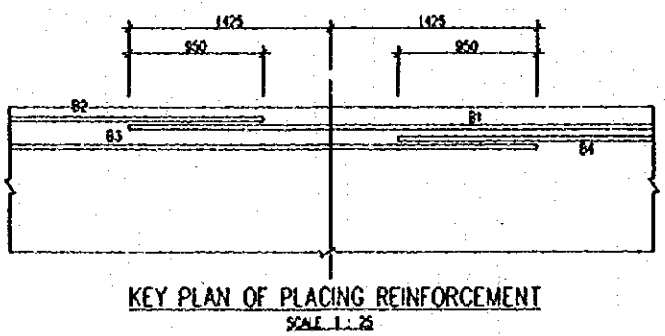
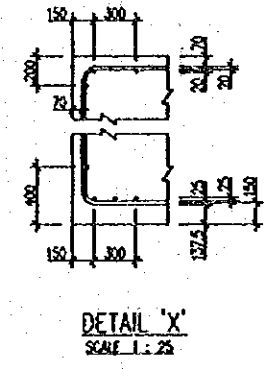
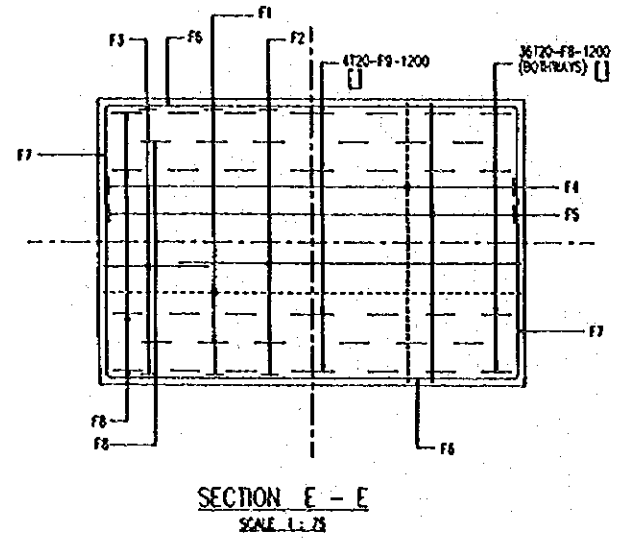
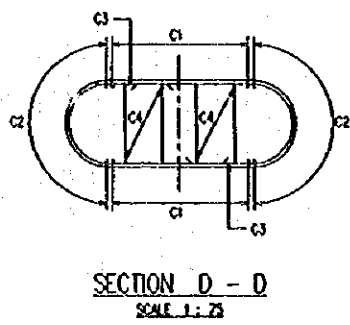
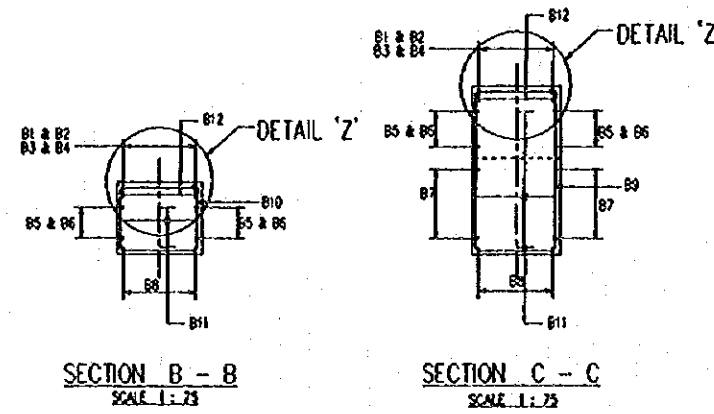
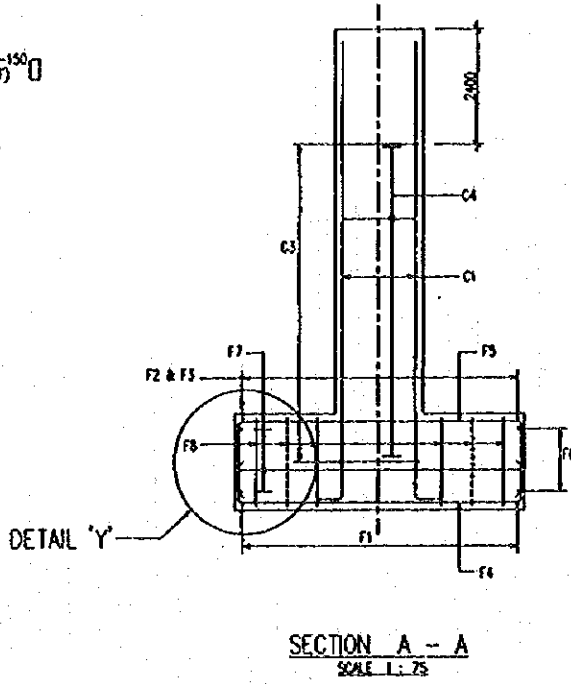
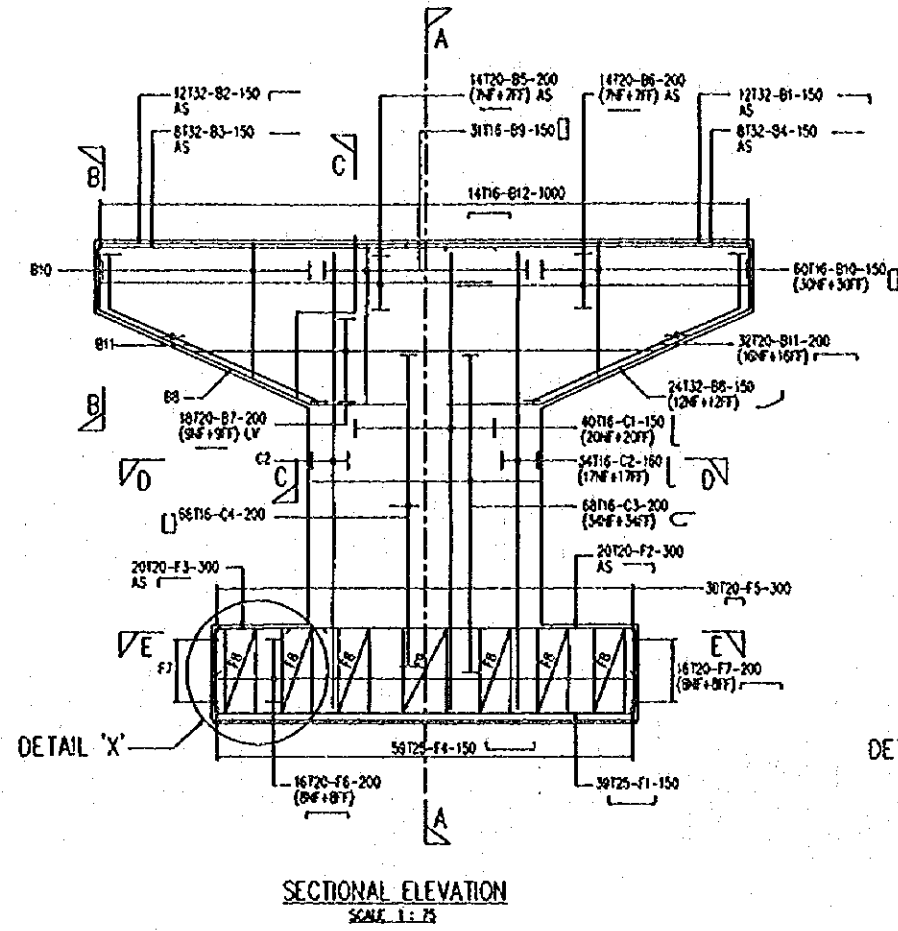


PLAN
SCALE 1 : 100



PILE ARRANGEMENT
SCALE 1 : 100

Tarikh	Butiran	Rujukan	UKURAN	UNIT JAMBATAN		 JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
				DIREKASONTOK:	PENGARAH JALAN	
				DILUKS:	DISEMAY:	JURUTERA PENGUASA KANAN
				DILUKUSKAN: PENOLONG PENGARAH (JP)		PENOLONG PENGARAH KANAN (J)
						PIER TYPE T - GENERAL VIEW TARIKH: _____ BEL: _____ LUKSANS: _____

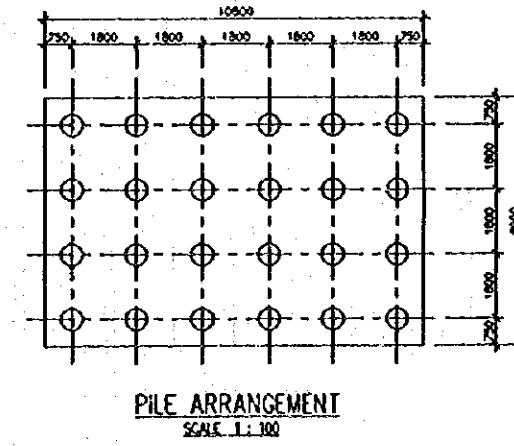
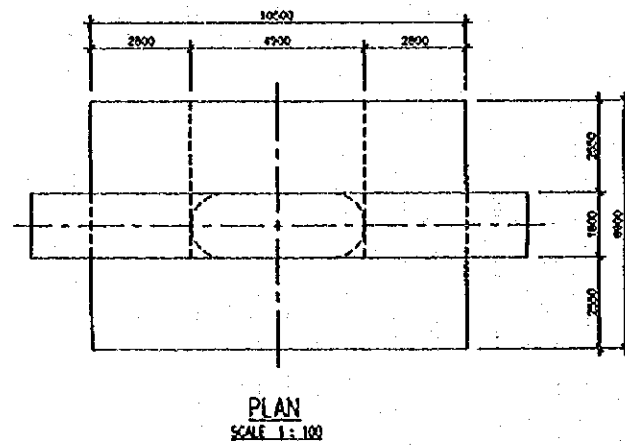
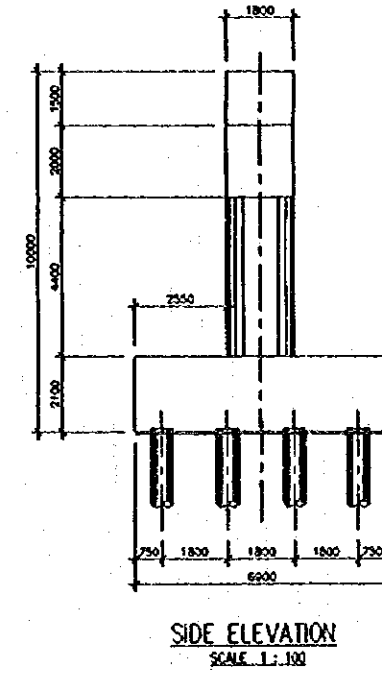
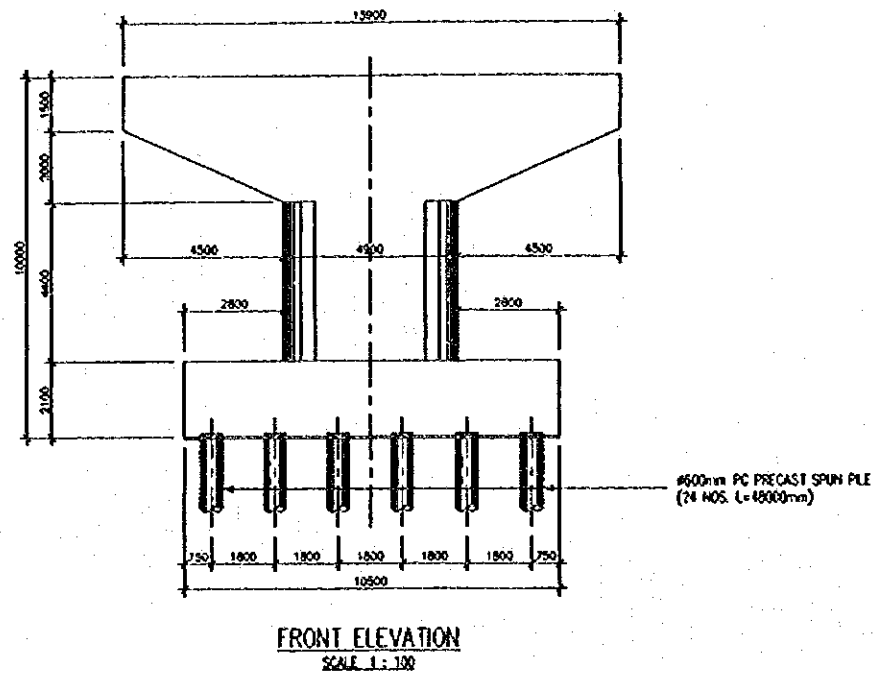


LEGEND:

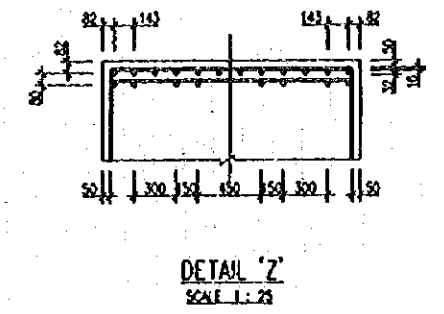
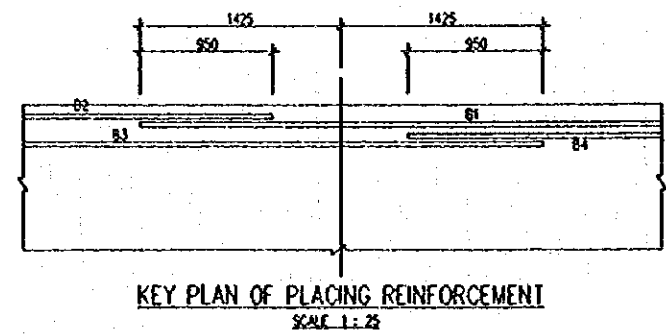
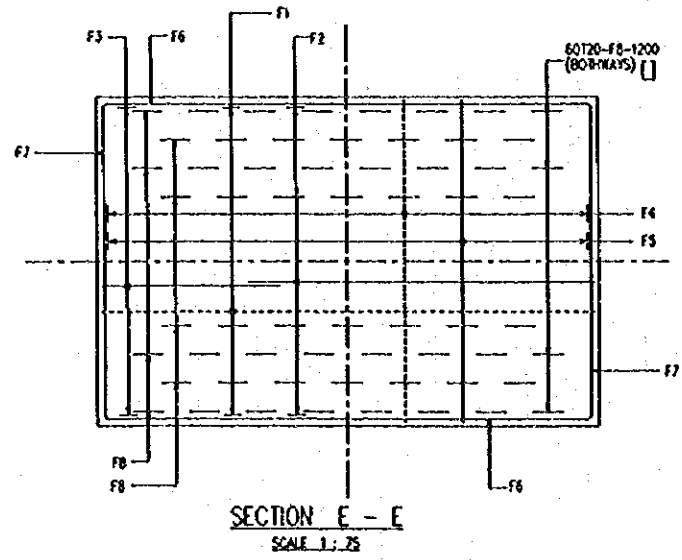
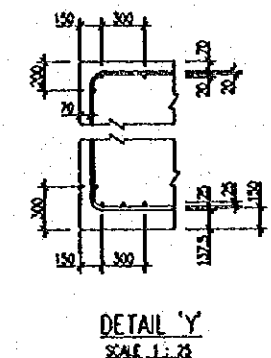
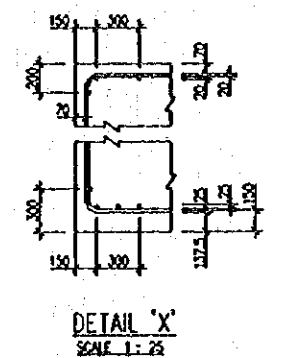
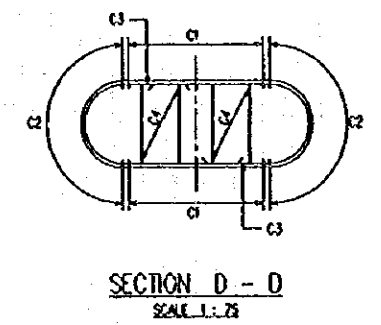
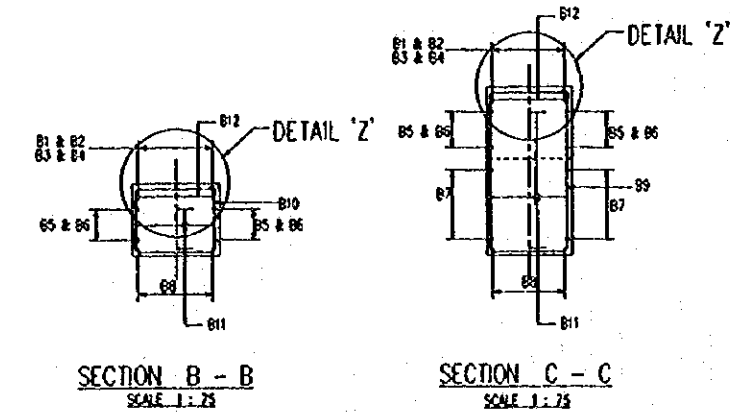
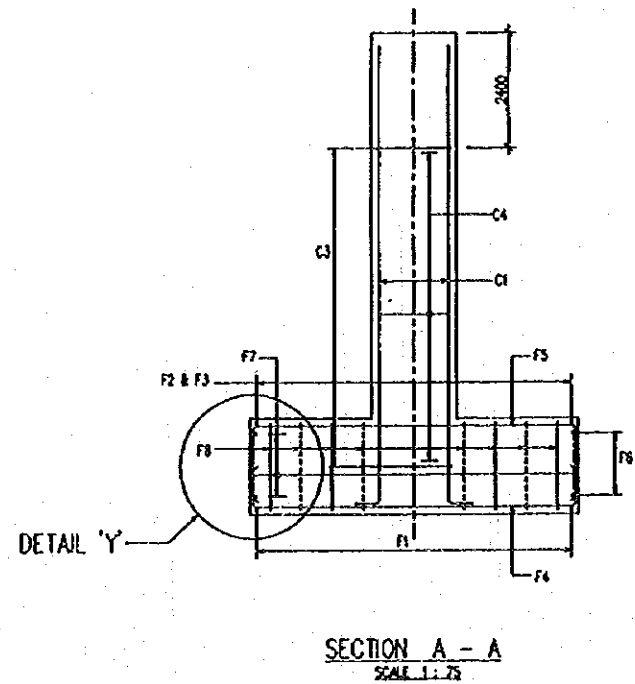
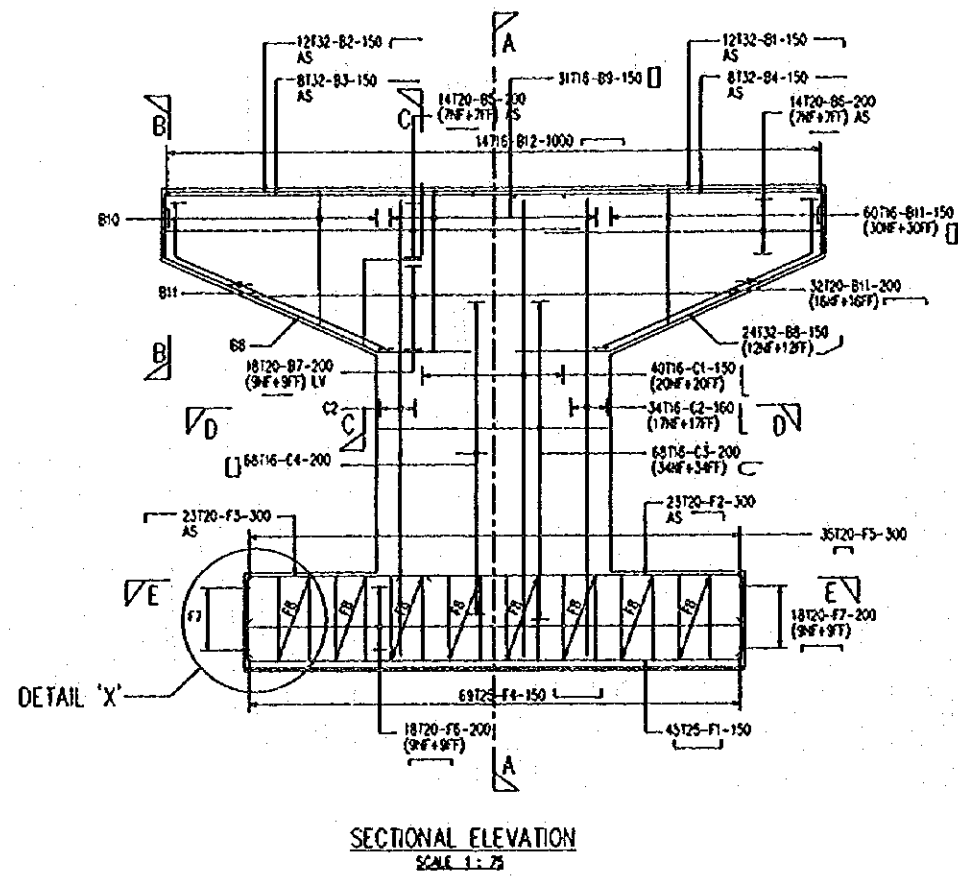
- 14 T 32-B1-125
- SPACING OF BAR
- BAR MARK
- B = BEAM
- L = COLUMN
- F = FOOTING
- SIZE OF BAR
- TYPE OF BAR
- T = HIGH YIELD
- A = MILD STEEL
- NO. OF BAR

AS = ALTERNATELY STAGGERED
 LV = LENGTH VARIES
 NF = NEAR FACE
 FF = FAR FACE

Tarikh	Bahan	Rujukan	UNIT JAMBATAN	PEKARANG JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKABENTUK:	JURUTERA PERAJAAN KAJIAN	T-Beam - REINFORCEMENT
			DILUKIS:	PELOKONG PEKARANG JALAN (A)	TARSIK
			DILULUSKAN PELOKONG PEKARANG (A)	PELOKONG PEKARANG KAJIAN (A)	LUKASAH



Tarikh	Butiran	Rujukan	UNIT JAMBATAN	PONCAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKADUNTUK:	JURUTERA PENKUSA KAJIAN	
			DURAS:	DISEMAK:	PIER TYPE T - GENERAL VIEW
			DELUKSI/SAKSI PENKOLONG PONCAH (A)	PENKOLONG PONCAH KAJIAN (J)	TARIKH: 01/05/2008
			UKURAN		01/05/2008

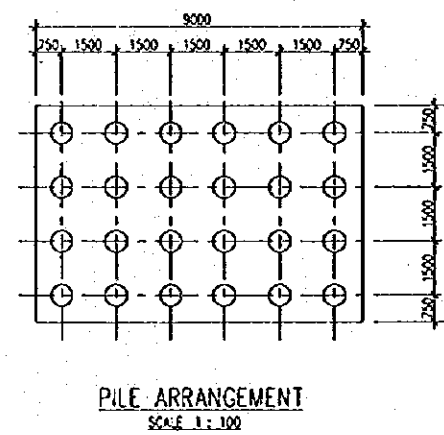
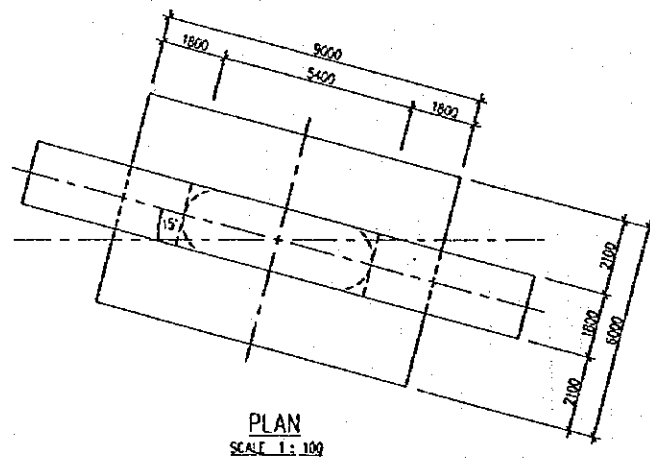
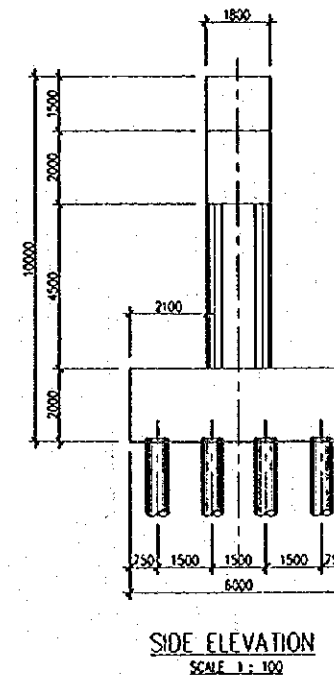
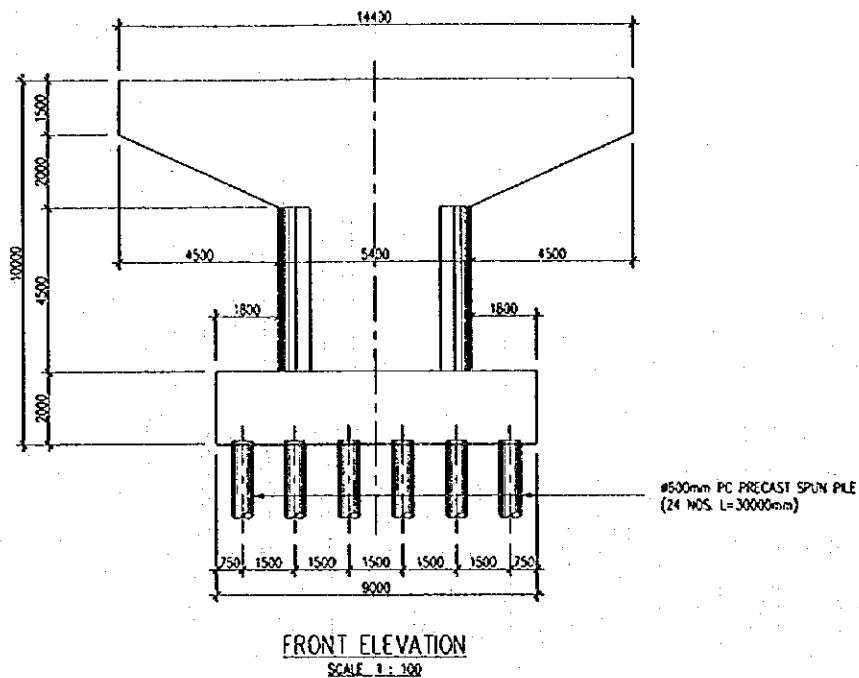


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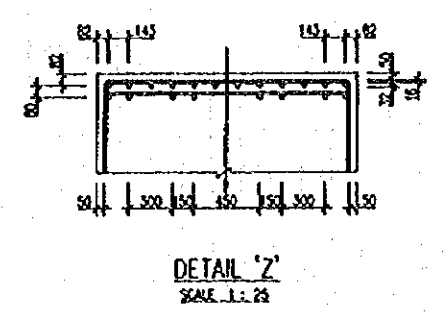
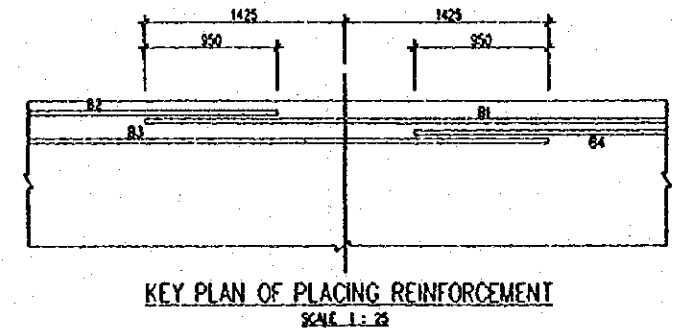
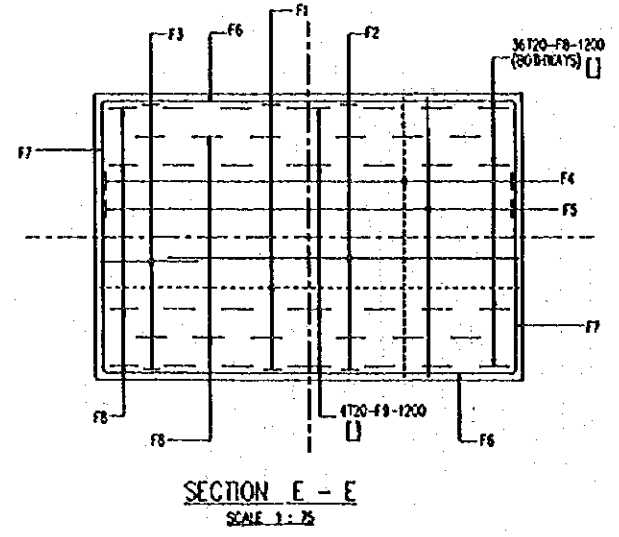
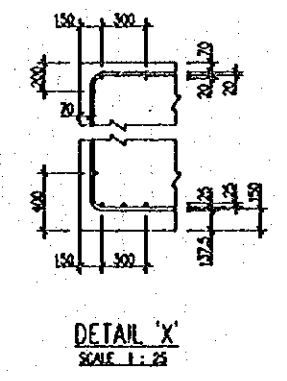
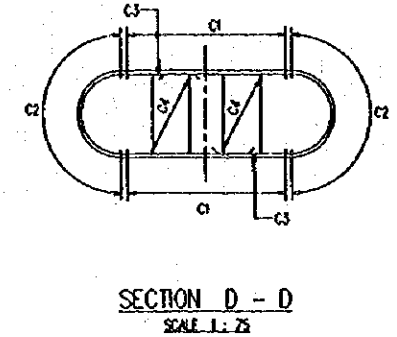
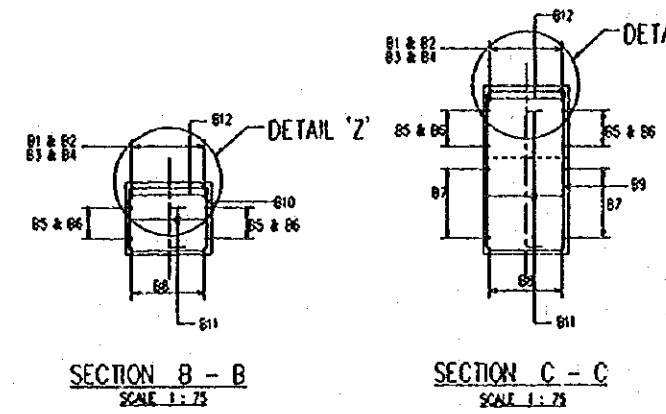
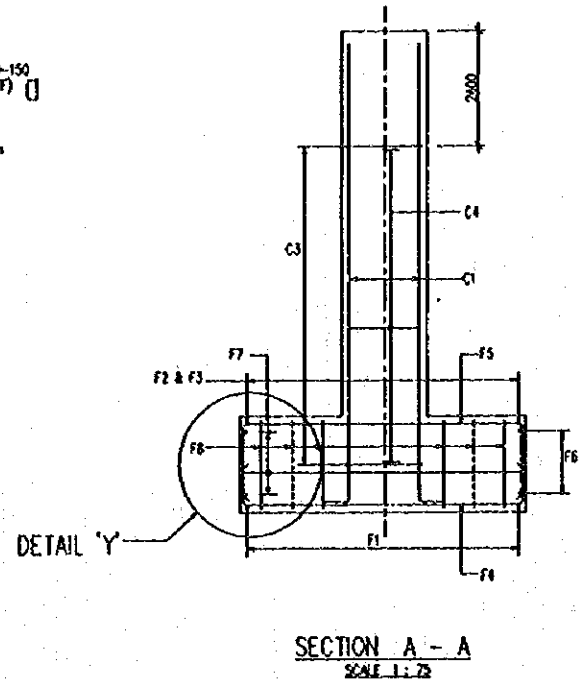
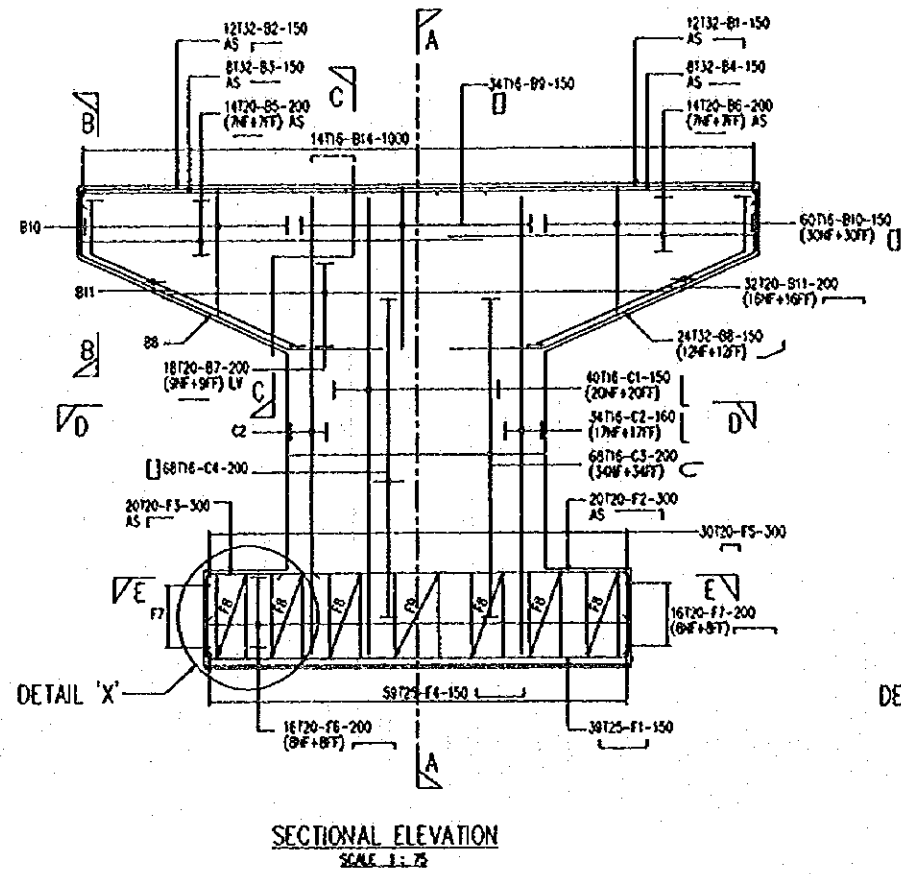
- 14 12 32-B1-125
- SPACING OF BAR
- BAR MARK
- B = BEAM
- F = FOOTING
- SIZE OF BAR
- TYPE OF BAR
- T = HIGH YIELD
- M = MILD STEEL
- NO. OF BAR

AS = ALTERNATELY STAGGERED
 LV = LENGTH VARIES
 NF = NEAR FACE
 FT = FAR FACE

Totol	Duikan	Rujukan	UNIT JAMBATAN	PENGARAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKABENTUK:		
			DALUANG:	DISEMAK:	JURUTERA PENGARAH KAWAN
			DILUKUSKANE PENOLONG PENGARAH (A)	PENOLONG PENGARAH KAWAN (A)	TARBIK:
					T-Beam - REINFORCEMENT



Toraks	Bulatan	Rujukan		UNIT JAMBATAN	PENCAHAR JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
				DIREKABENTUK	DIRUTERA PENGUASA KANAN	
				DALUAS:	DALUAS:	PIER TYPE T - GENERAL VIEW
				DALUASKAN: PENOLONG PENGARAH (A)	PENOLONG PENGARAH KANAN (A)	
	PINDAAN		UMURAN			TARIGH: BIL. LUOSAN:



LEGEND

14 T 32-B1-125

SPACING OF BAR

BAR MARK

B = BEAM

C = COLUMN

F = FOOTING

SIZE OF BAR

TYPE OF BAR

T = HIGH YIELD

M = MILD STEEL

NO. OF BAR

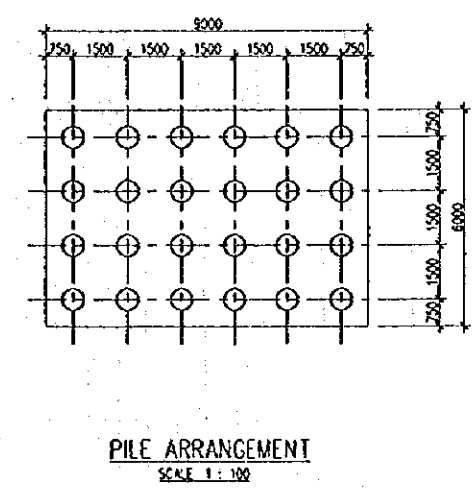
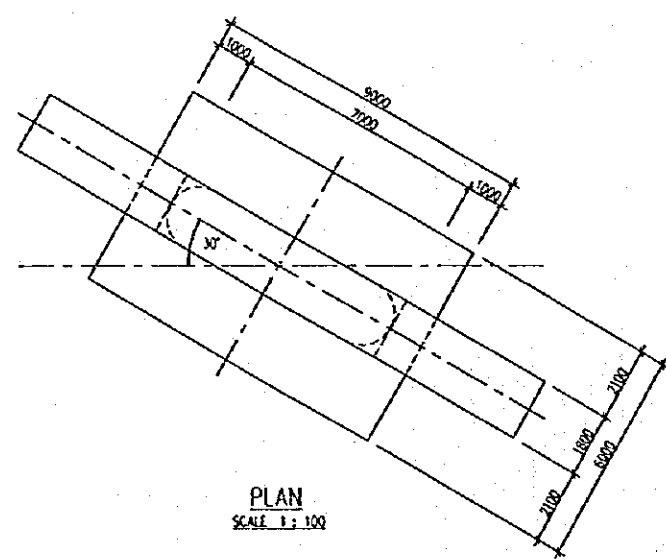
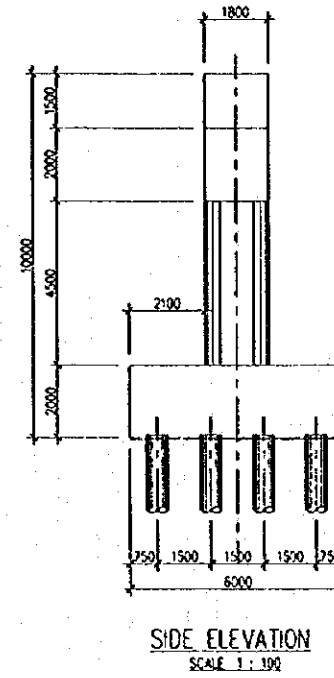
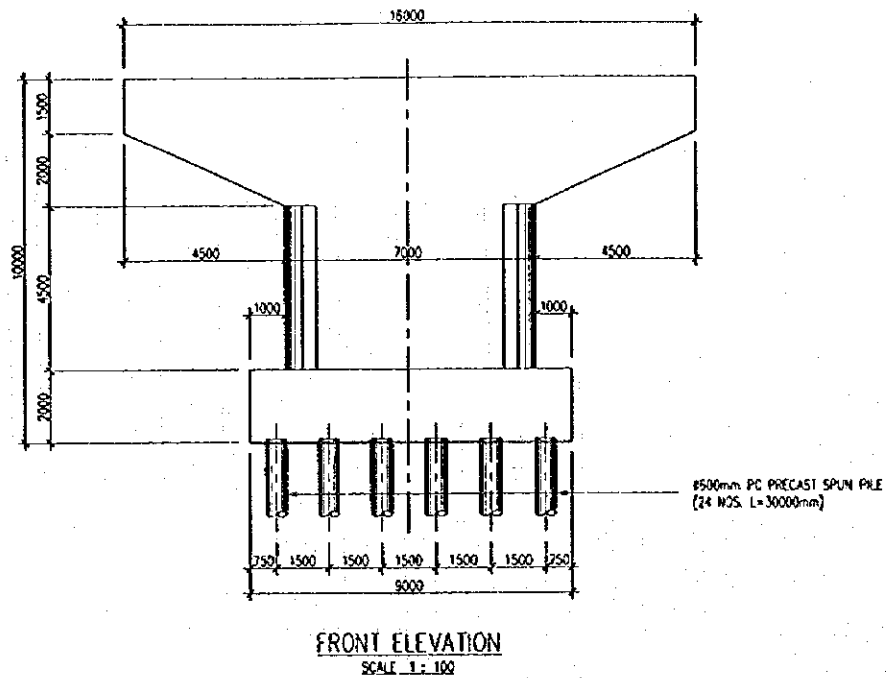
AS = ALTERNATELY SPACED

LV = LENGTH WARES

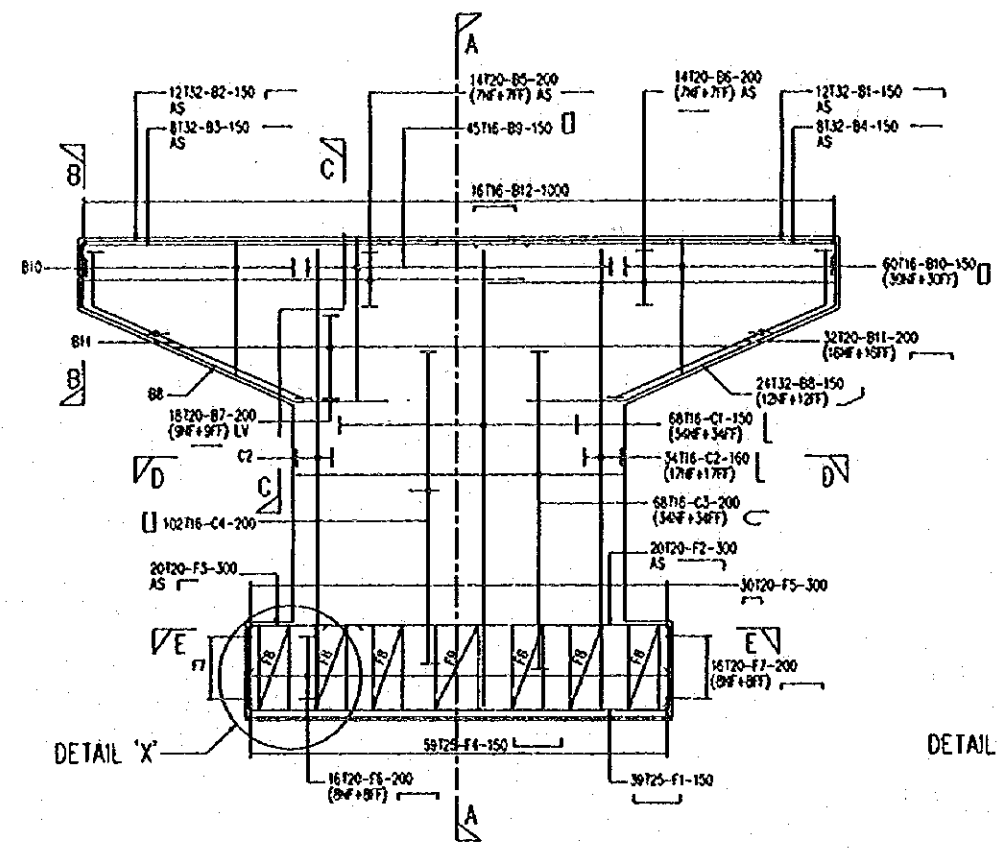
NF = NEAR FACE

FF = FAR FACE

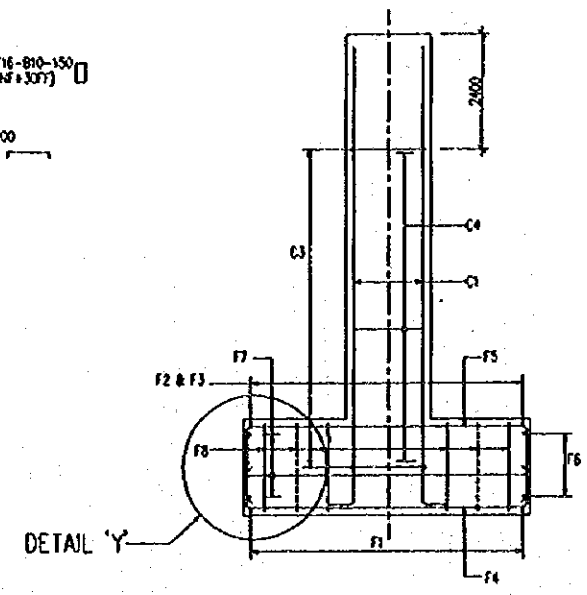
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			DIREKABENTUK	JURUTERA PEROLAKA KAWAN	
			DELAGS	PONJONG PENGARAH KAWAN (A)	T-Beam - REINFORCEMENT
			DELUKSKAN PONDONG PENGARAH (A)		
			URUAN		



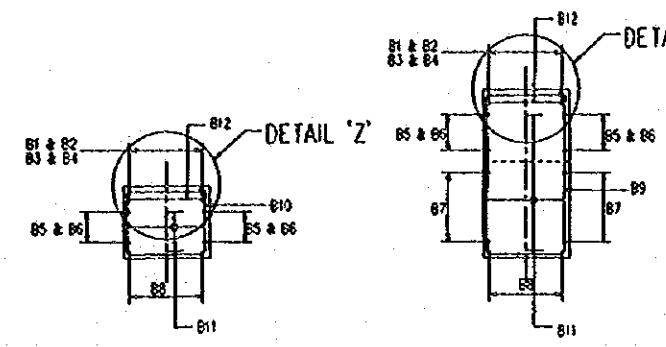
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			DIREKABENTUK:		JURUTERA PENJAJA KANAN	
			DILUKIS:	DISEMAK:		PIER TYPE T - GENERAL VIEW BIL. LUGSAN:
			DIRULUSKAN: PENOLONG PENGARAH (A)		PENOLONG PENGARAH KANAN (J)	
	PINDAAN		LAPORAN		TARICIL	



SECTIONAL ELEVATION
SCALE 1:25

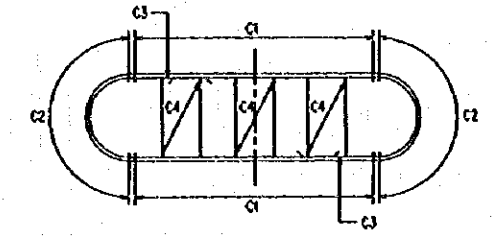


SECTION A - A
SCALE 1:25

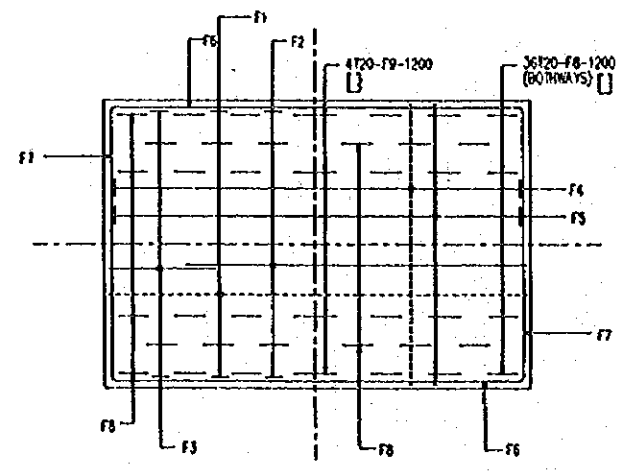


SECTION B - B
SCALE 1:25

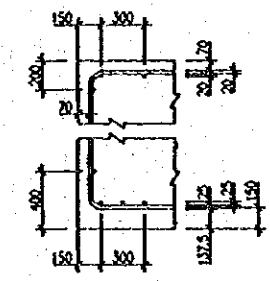
SECTION C - C
SCALE 1:25



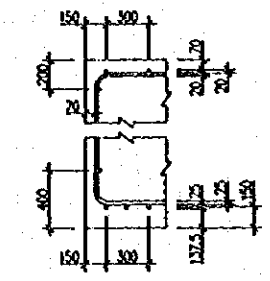
SECTION D - D
SCALE 1:25



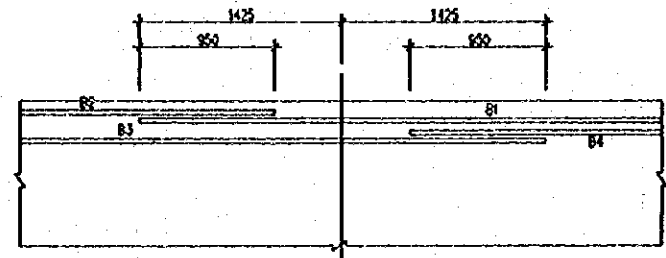
SECTION E - E
SCALE 1:25



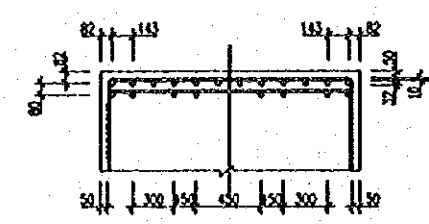
DETAIL 'X'
SCALE 1:25



DETAIL 'Y'
SCALE 1:25



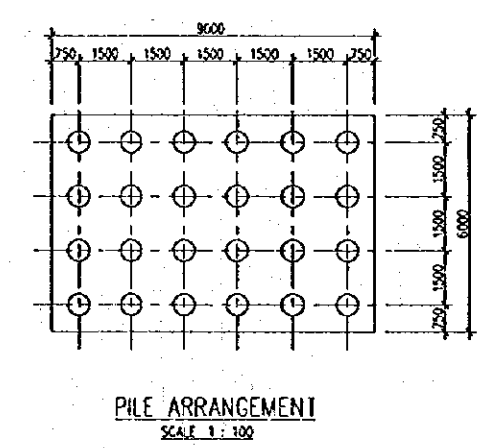
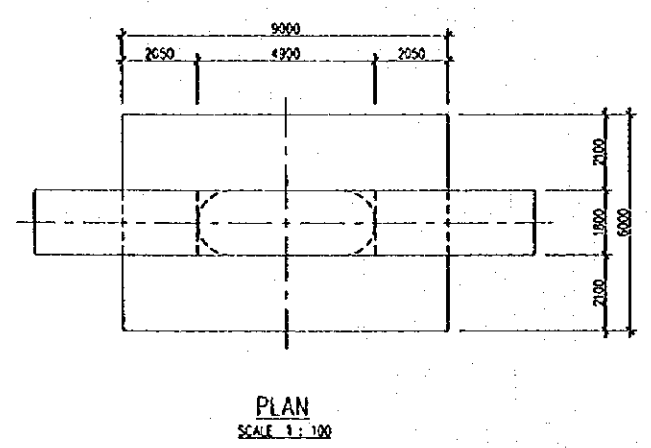
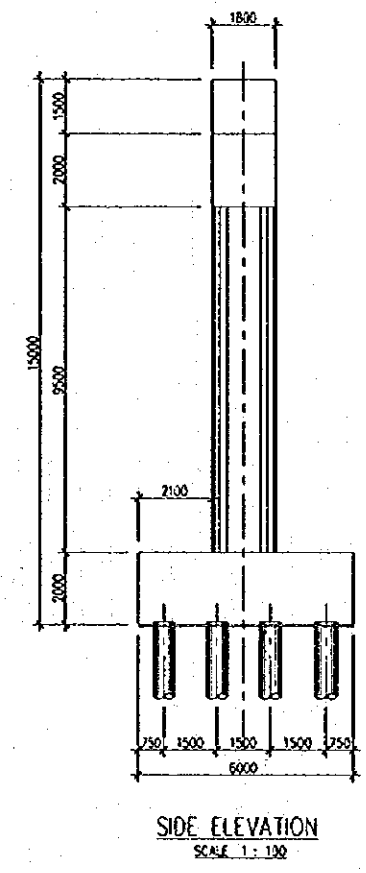
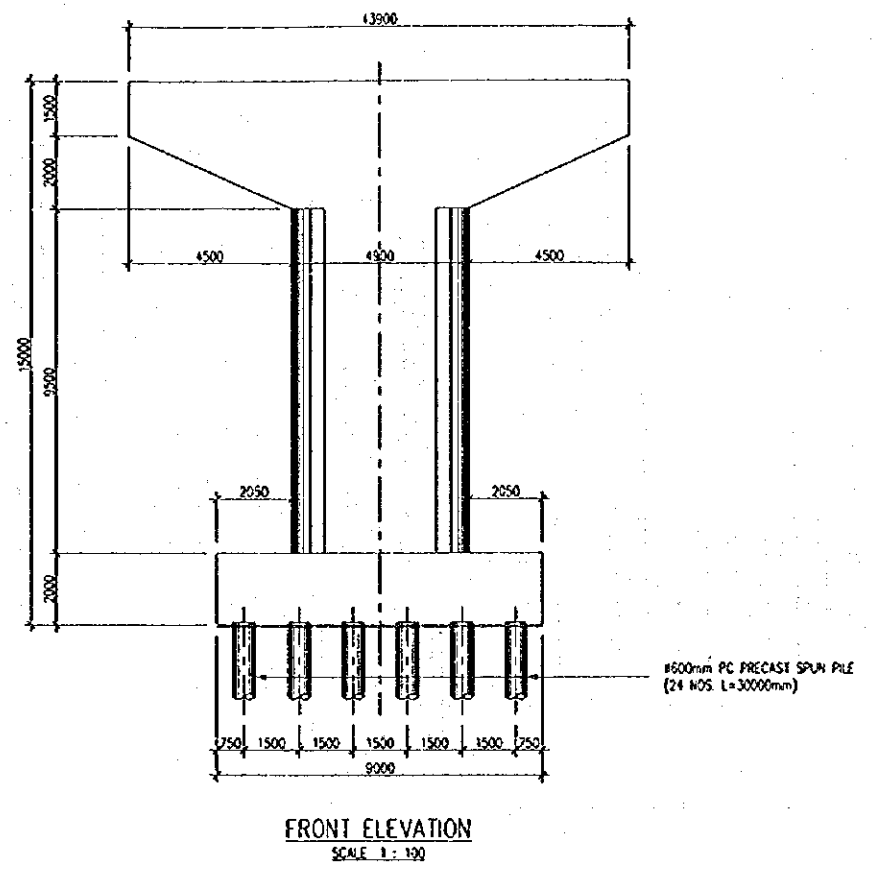
KEY PLAN OF PLACING REINFORCEMENT
SCALE 1:25



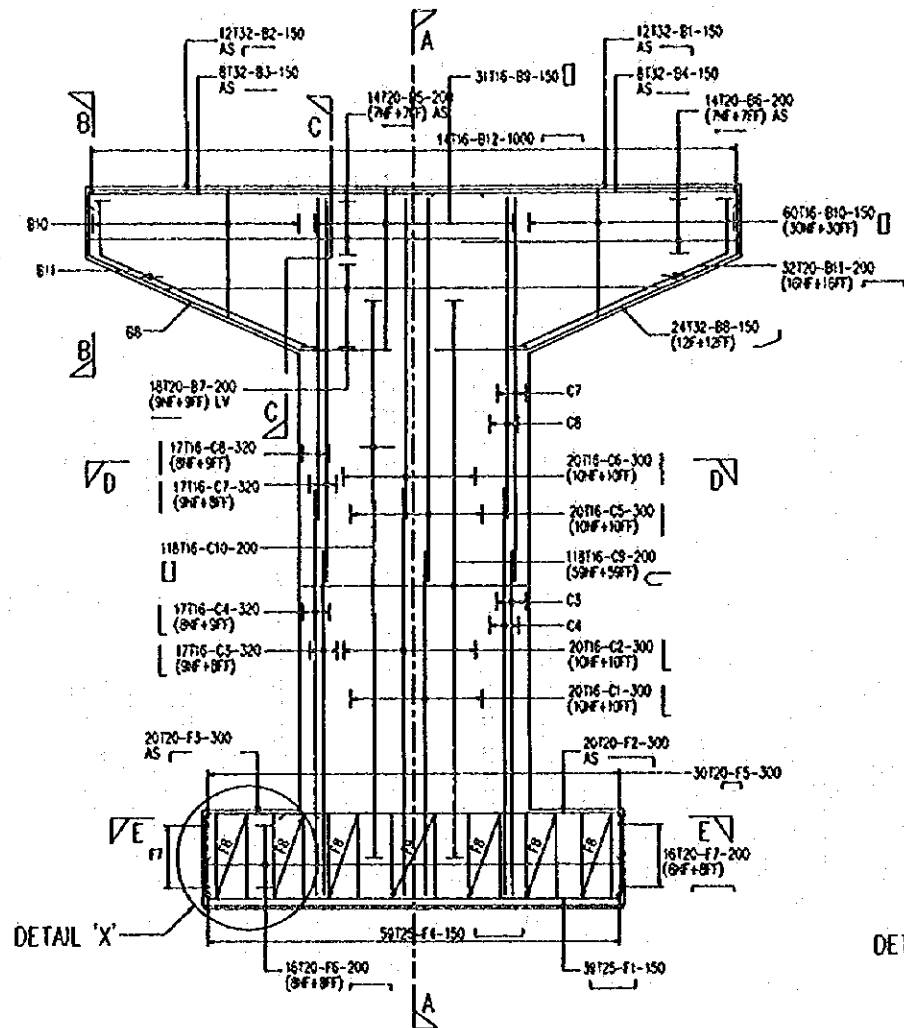
DETAIL 'Z'
SCALE 1:25

LEGEND:
 14 T 32-B1-125 — SPACING OF BAR
 — BAR MARK — BAR MARK
 — TYPE OF BAR — TYPE OF BAR
 — NO. OF BAR — NO. OF BAR
 AS = ALTERNATELY STAGGERED
 LV = LENGTH VARIES
 NF = NEAR FACE
 FF = FAR FACE

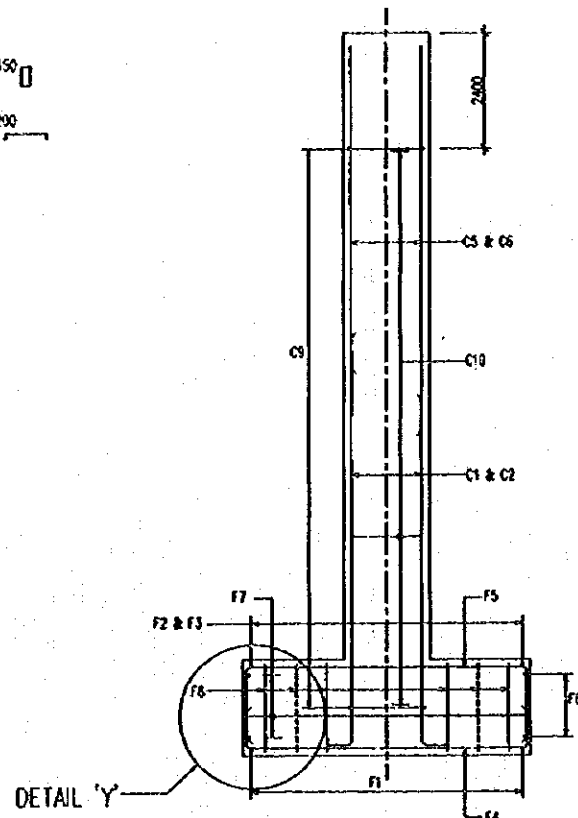
Tarik	Dibuat	Revisi	UNIT JAMBATAN	PEKERJA JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKABENTUK:	JURUTERA PENYASAJA KANAN	T-BEAM - REINFORCEMENT
			DURUS:	PENOLONG PEGARAH KANAN (A)	TARIKH:
			DULUSKAR: PENOLONG PEGARAH (A)		URUSAJA:
			UKURAN		



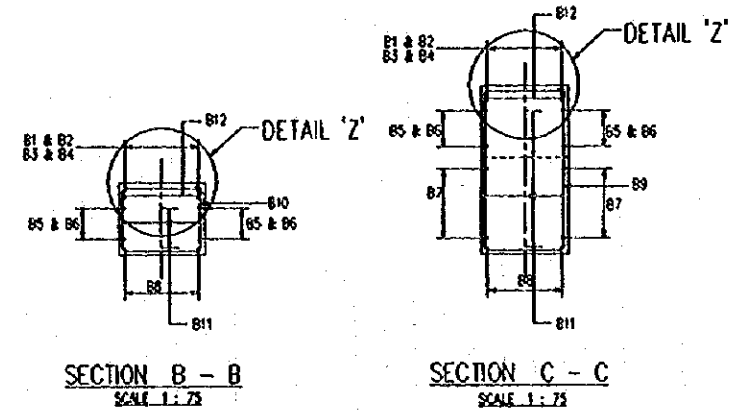
Torah	Bulatan	Rujukan	UNIT JAMBATAN	PENCARAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKABENTUK:	JURUTERA PENGUJASA KANAN	
			DILUKIS:	DISEMAK:	PIER TYPE T - GENERAL VIEW
			DILULUSKAN: PENOLONG PENCARAH (J)	PENOLONG PENCARAH KANAN (J)	TARIC: SR LURISAN:
	PINDAAN		UKURAN		



SECTIONAL ELEVATION
SCALE 1:25

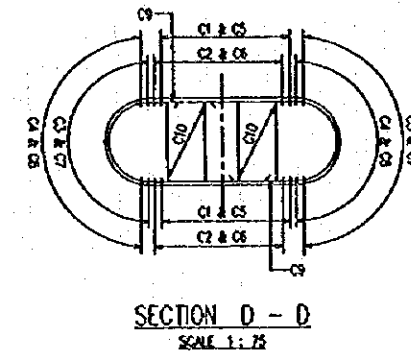


SECTION A - A
SCALE 1:25

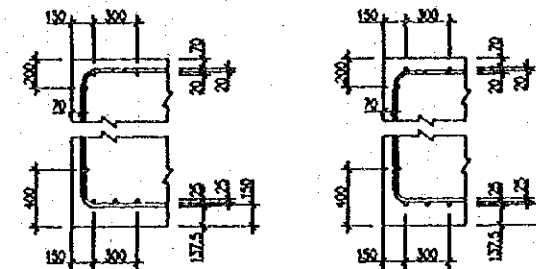


SECTION B - B
SCALE 1:25

SECTION C - C
SCALE 1:25

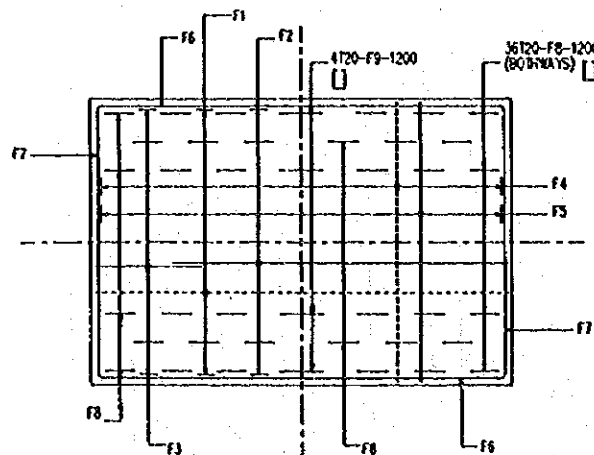


SECTION D - D
SCALE 1:25

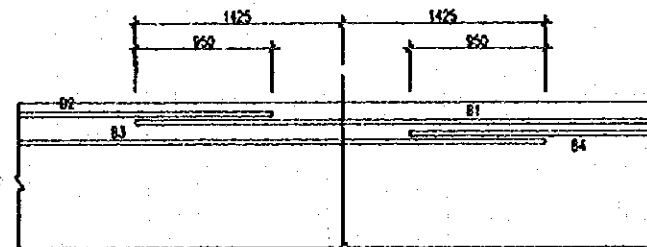


DETAIL 'X'
SCALE 1:25

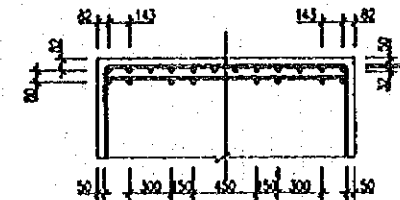
DETAIL 'Y'
SCALE 1:25



SECTION E - E
SCALE 1:25



KEY PLAN OF PLACING REINFORCEMENT
SCALE 1:25



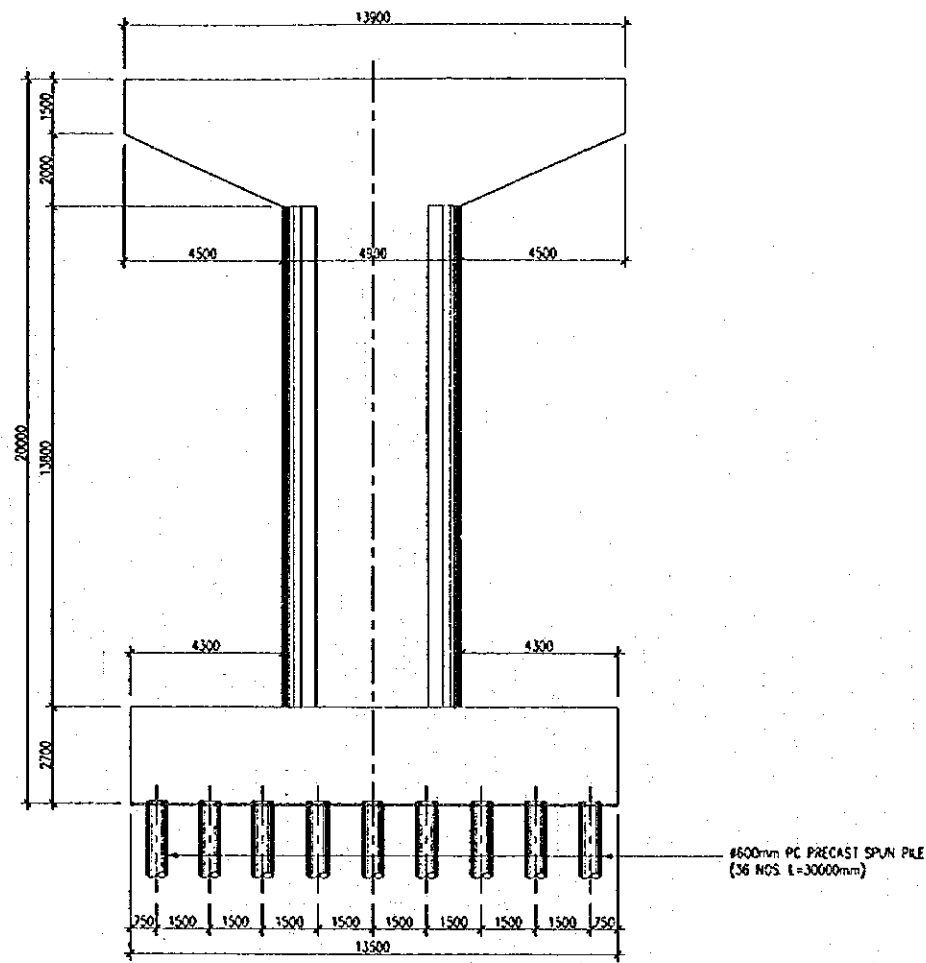
DETAIL 'Z'
SCALE 1:25

LEGEND:

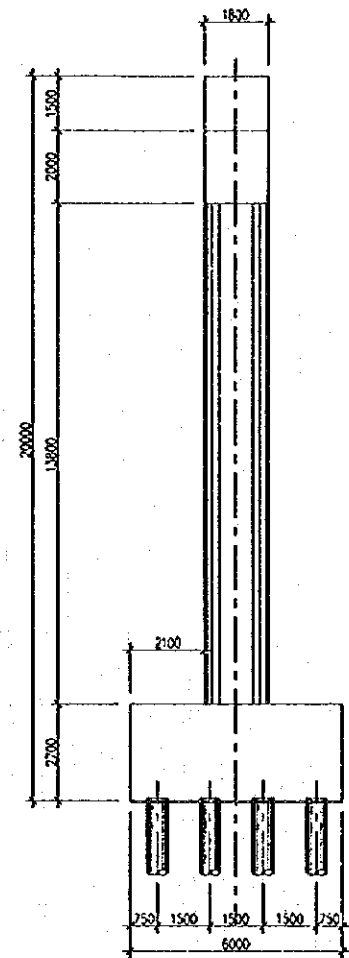
- 14 T 32-B1-125
- SPACING OF BAR
- BAR MARK
- B = BEAM
- F = FOOTING
- SIZE OF BAR
- TYPE OF BAR
- T = HIGH YIELD
- M = MILD STEEL
- NO. OF BAR

AS = ALTERNATELY STAGGERED
LV = LENGTH VARIES
NF = NEAR FACE
FF = FAR FACE

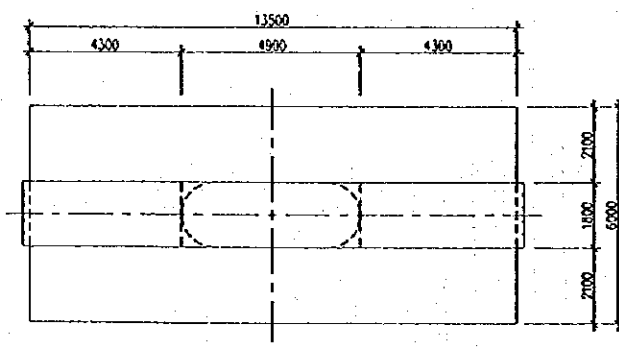
Torah	Bu Uraan	Rujukan	UNIT JAMBATAN	PENGARAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKUSURAN:		
			DUNOS:	DUNOMAK:	JURUTERA PENJAJAH KAWAN
			DULUSURAN PENOLONG PENGARAH (A)	PENOLONG PENGARAH KAWAN (A)	T-Beam -- REINFORCEMENT
					TARBIH: DUNOMAK



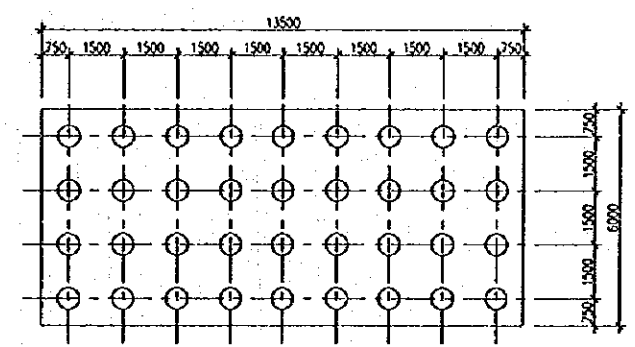
FRONT ELEVATION
SCALE 1 : 100




SIDE ELEVATION
SCALE 1 : 100

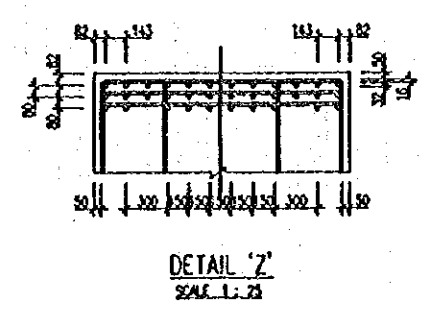
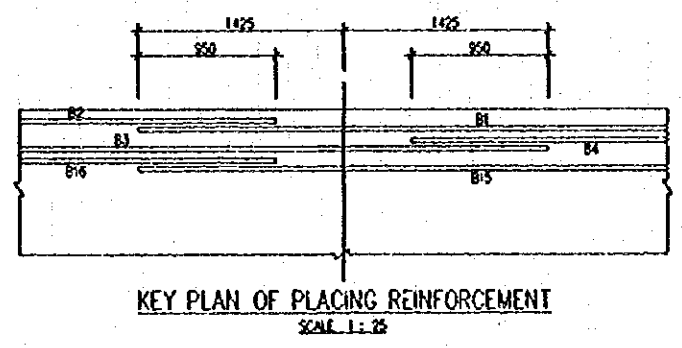
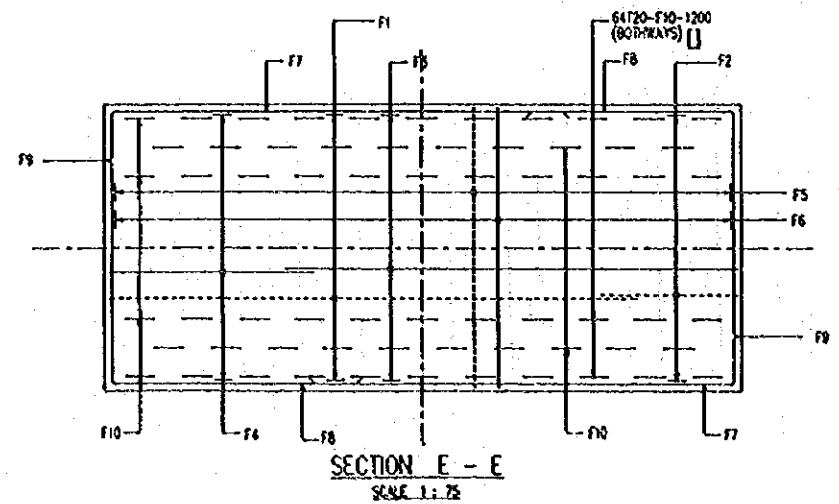
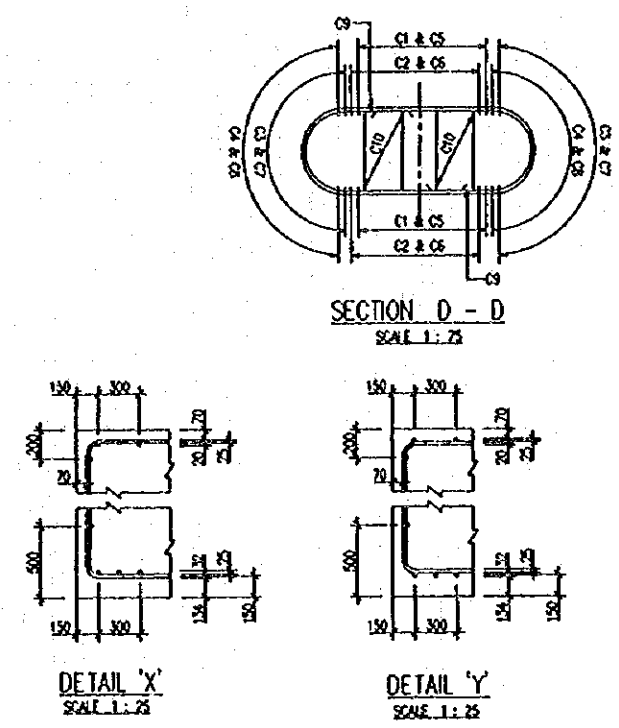
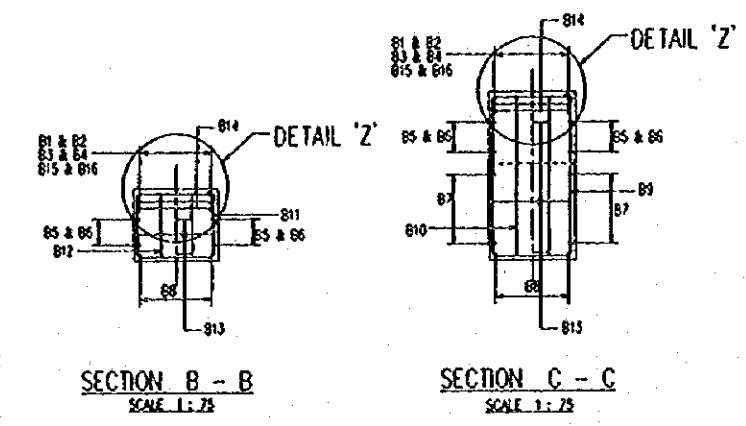
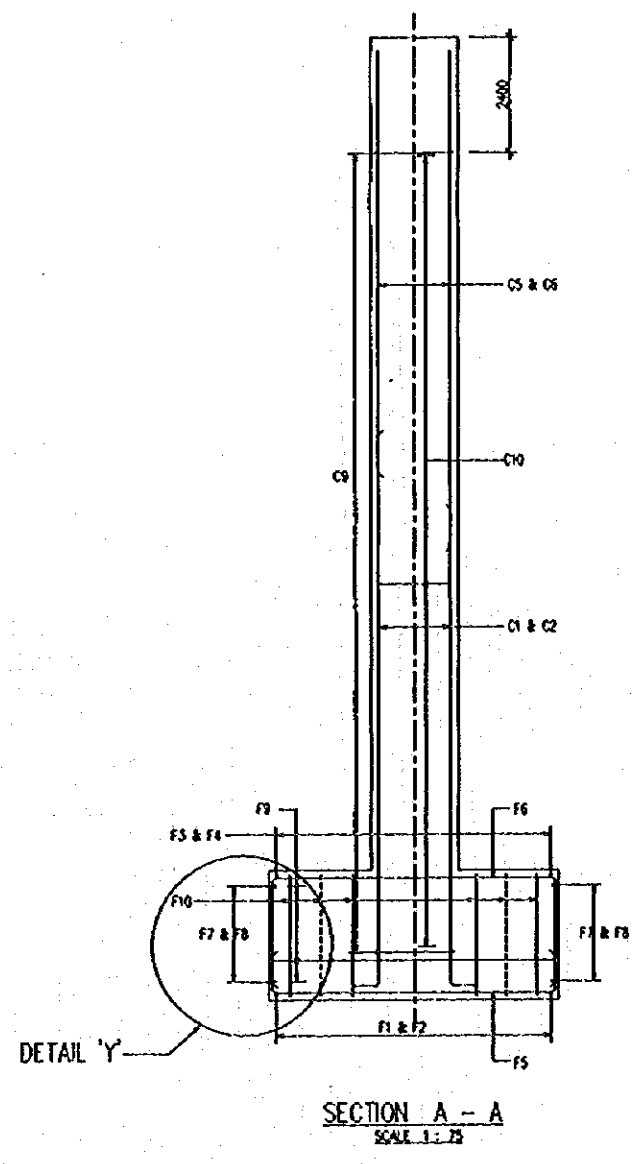
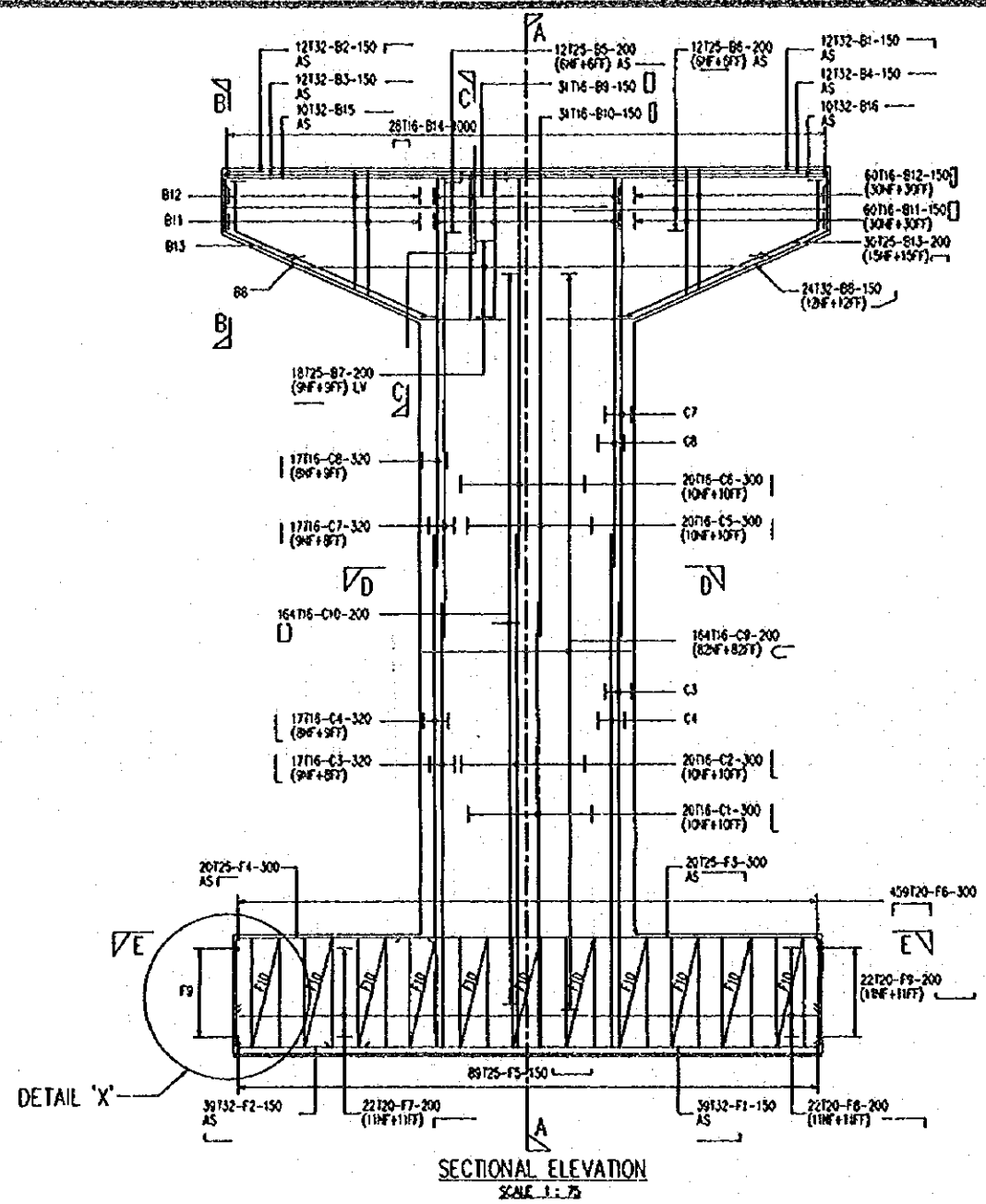


PLAN
SCALE 1 : 100



PILE ARRANGEMENT
SCALE 1 : 100

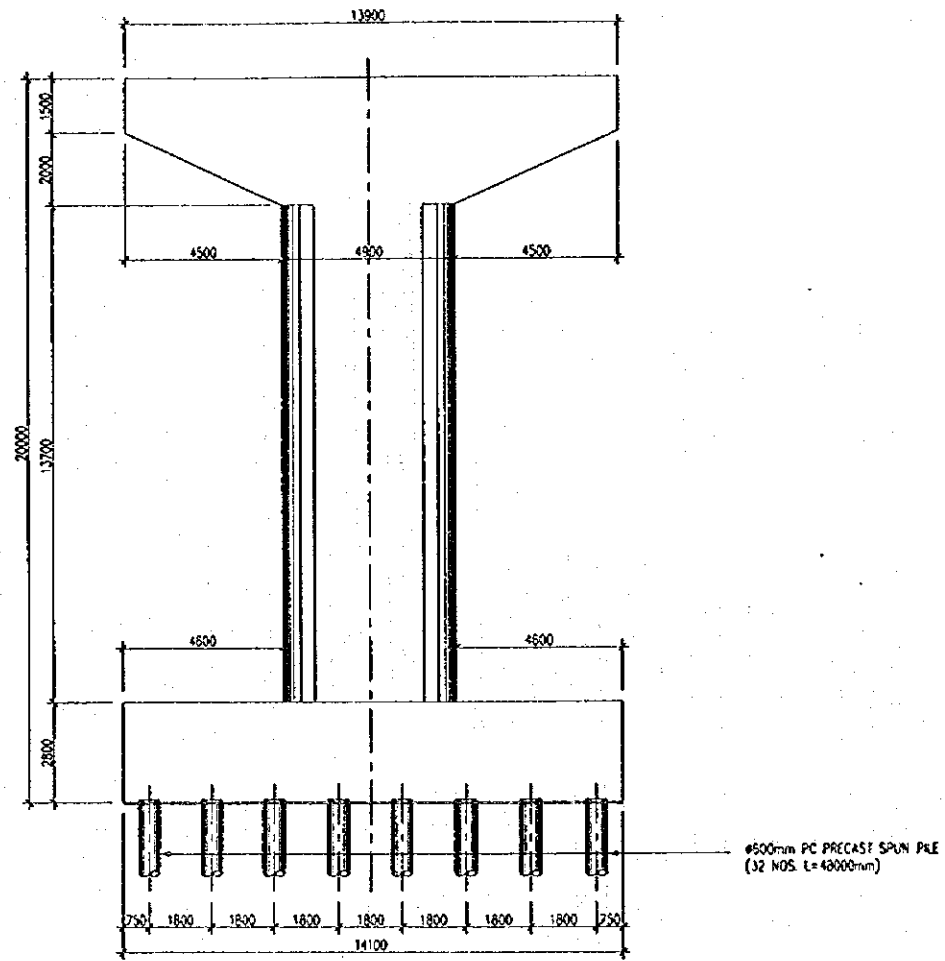
Tarikh	Buikan	Rujukan	UNIT JAMBATAN	PENGARAH JALAN	 JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKASENTOK:	JURUTERA PENQUASA KANAN	
			DILUGS:	DISEMAK:	PIER TYPE T - GENERAL VIEW
			DILULUSKAN: PENOLONG PENGARAH (M)	PENOLONG PENGARAH KANAN (J)	
	PINDAAN		UKURAN	TARIKH:	BL. LUGSAN:



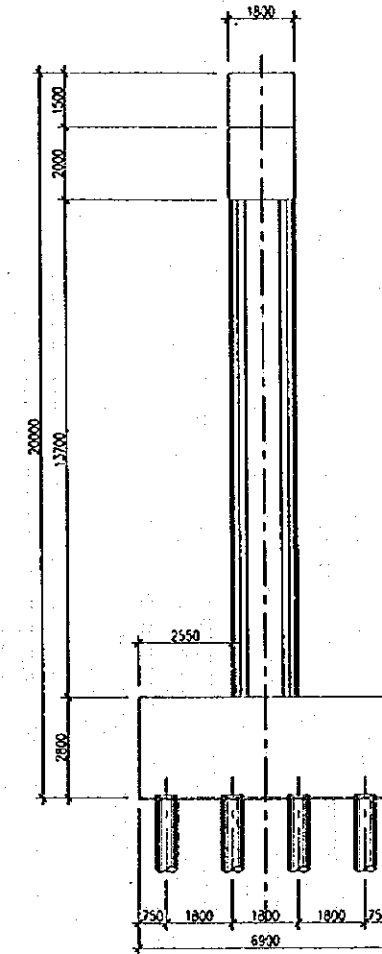
LEGEND:

- 14 | 32-B1-125
- SPACING OF BAR
- BAR MARK
- B = BEAM
- C = COLUMN
- F = FOOTING
- SIZE OF BAR
- TYPE OF BAR
- AS = ALTERNATELY STAGGERED
- LV = LENGTH VARIES
- NF = NEAR FACE
- FF = FAR FACE
- NO. OF BAR

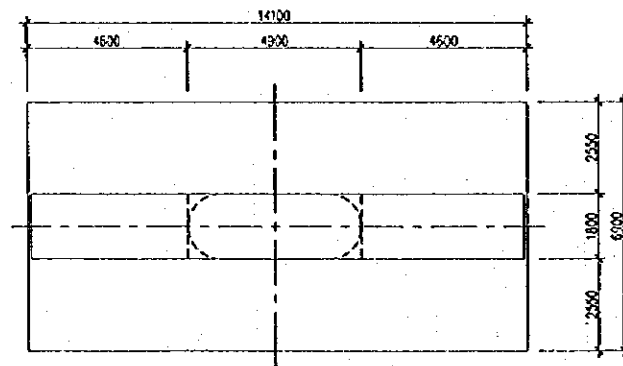
Tarik	Bu/Oron	Rujukan	UNIT JAMBATAN	PENGARAH JALAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKABENTUK	JURUTERA PEKERJA KAWAN	
			DILAKS	DISEKAN	
			DILUKSUKA PENOLONG PENGARAH (JI)	PENOLONG PENGARAH KAWAN (JI)	TARIKH
	PINDAAN	UKURAN			T-Beam - REINFORCEMENT
					BU/LOKAS



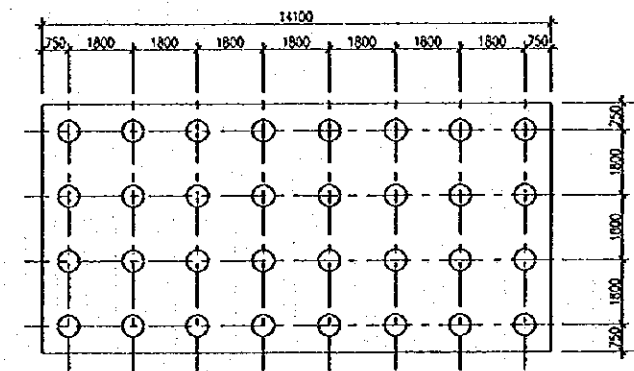
FRONT ELEVATION
SCALE 1 : 100



SIDE ELEVATION
SCALE 1 : 100

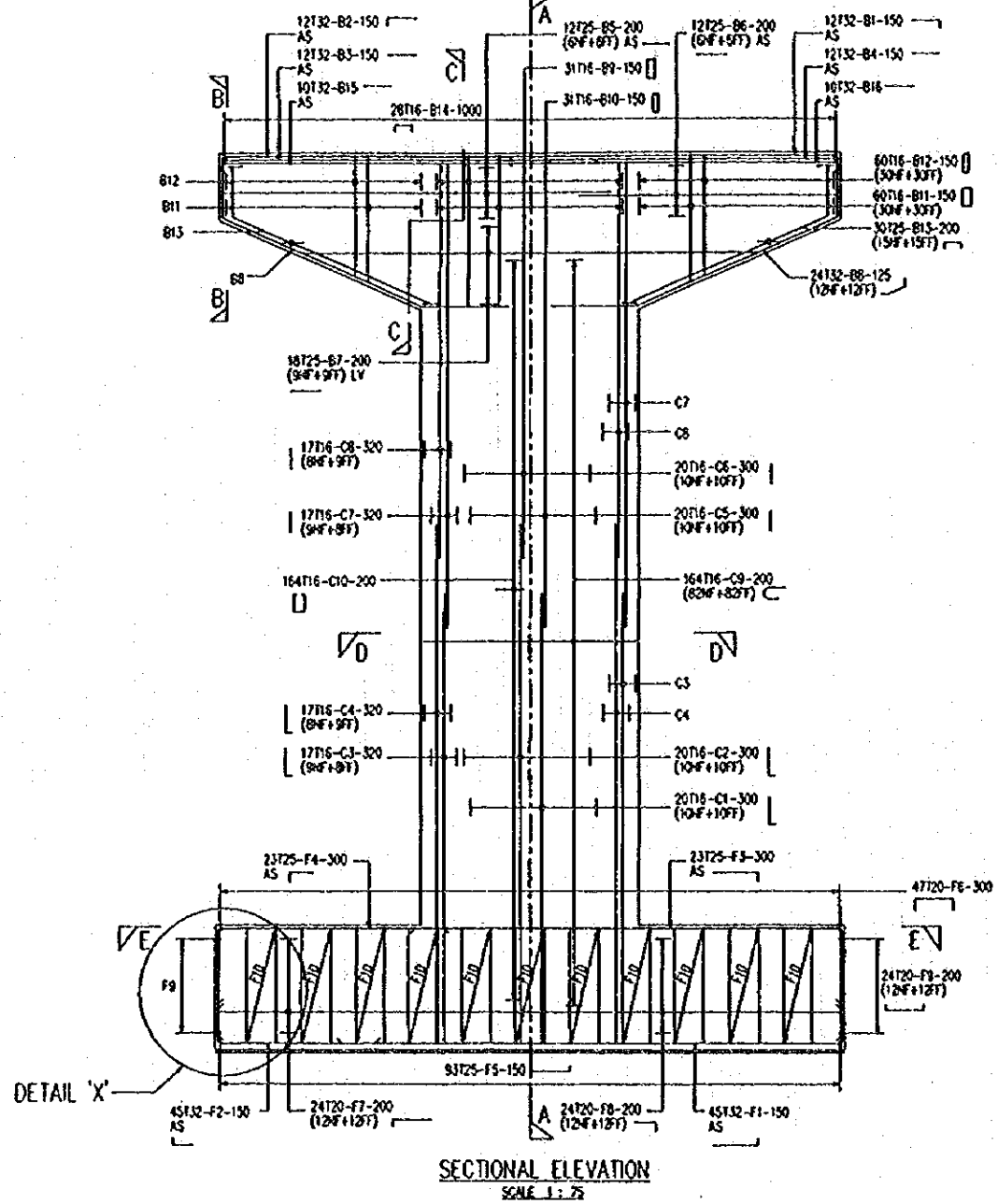


PLAN
SCALE 1 : 100

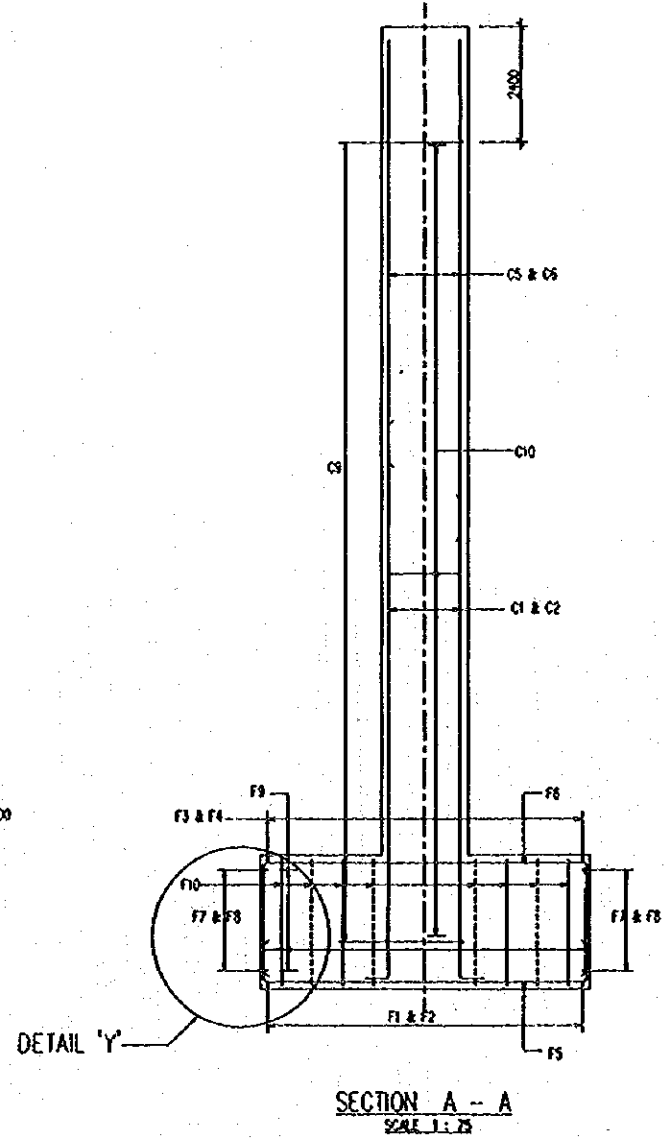


PILE ARRANGEMENT
SCALE 1 : 100

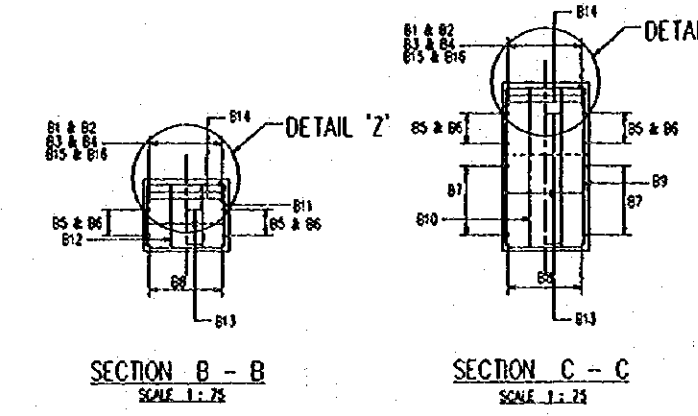
Tarikh	Butiran	Rujukan	UNIT JAMBATAN	PENCARAH JALAN	 JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKASENTUK: DILUKIS: DISEMAK: DILULUSKAN: PENOLONG PENCARAH (JP)	JURUTERA PENOLONG KANAN PENOLONG PENCARAH KANAN (J)	
	PINDAAN	UKURAN			PIER TYPE T - GENERAL VIEW TARUHE: BIL. LUKSAS:



SECTIONAL ELEVATION
SCALE 1:25

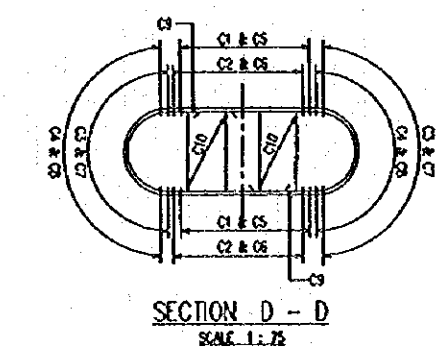


SECTION A - A
SCALE 1:25

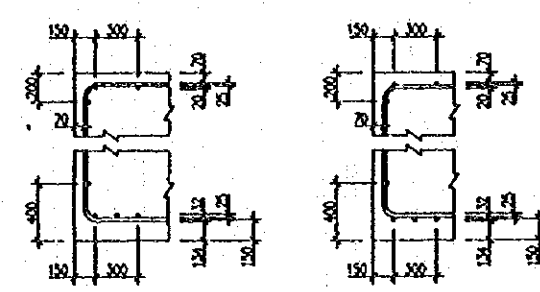


SECTION B - B
SCALE 1:25

SECTION C - C
SCALE 1:25

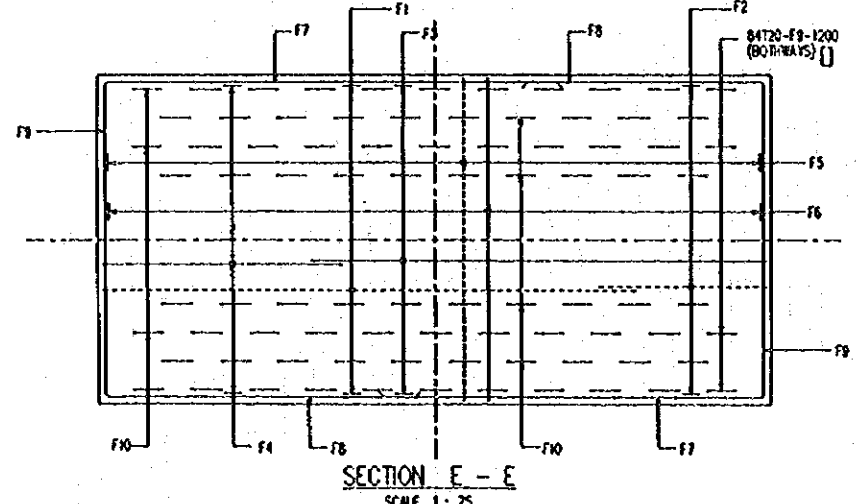


SECTION D - D
SCALE 1:25

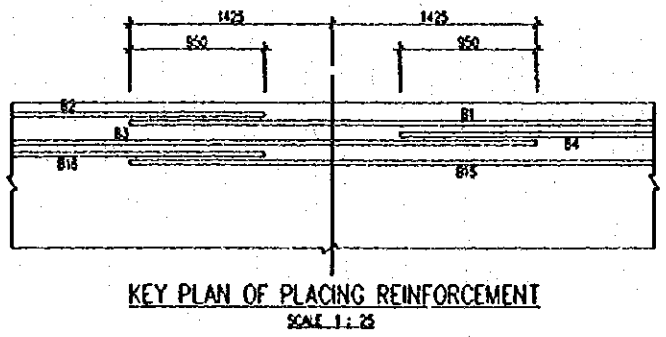


DETAIL 'X'
SCALE 1:25

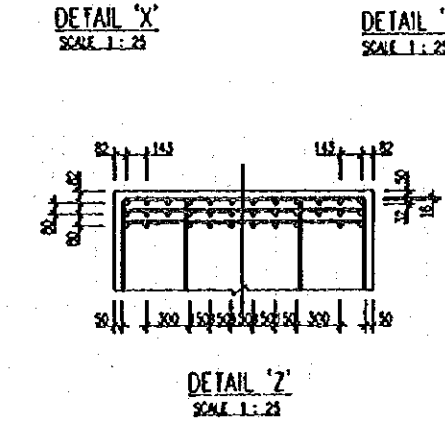
DETAIL 'Y'
SCALE 1:25



SECTION E - E
SCALE 1:25



KEY PLAN OF PLACING REINFORCEMENT
SCALE 1:25



DETAIL 'Z'
SCALE 1:25

LEGEND:
 14 1 32-B1-125
 — SPACING OF BAR
 — BAR MARK
 B = BEAM
 F = COLUMN
 — FOOTING
 — SIZE OF BAR
 T = TENSILE
 C = COMPRESSIVE
 K = MILD STEEL
 — NO. OF BAR
 AS = ALTERNATELY STACKED
 LV = LENGTH VARIES
 NF = NEAR FACE
 FF = FAR FACE

Tarikh	Dibina	Rujukan	UNIT JAMBATAN	PENGARAH JAJAN	JABATAN KERJA RAYA MALAYSIA CAWANGAN JALAN
			DIREKTOR	JURUTERA PENJAJAN KAJAN	T-BEAM - REINFORCEMENT
			DALUAS	PENOLONG PENJAJAN KAJAN (A)	
			DALUAS	PENOLONG PENJAJAN KAJAN (B)	
			UKURAN	TARIKH	