



THE GMS NORTH-SOUTH ECONOMIC CORRIDOR INTERNATIONAL BRIDGE PROJECT (HOUAYXAY-CHIANG KHONG) **FRIENDSHIP BRIDGE IV**



Thai-Laos Friendship Bridges



Thai-Laos Friendship Bridges





Components of Route R3 4

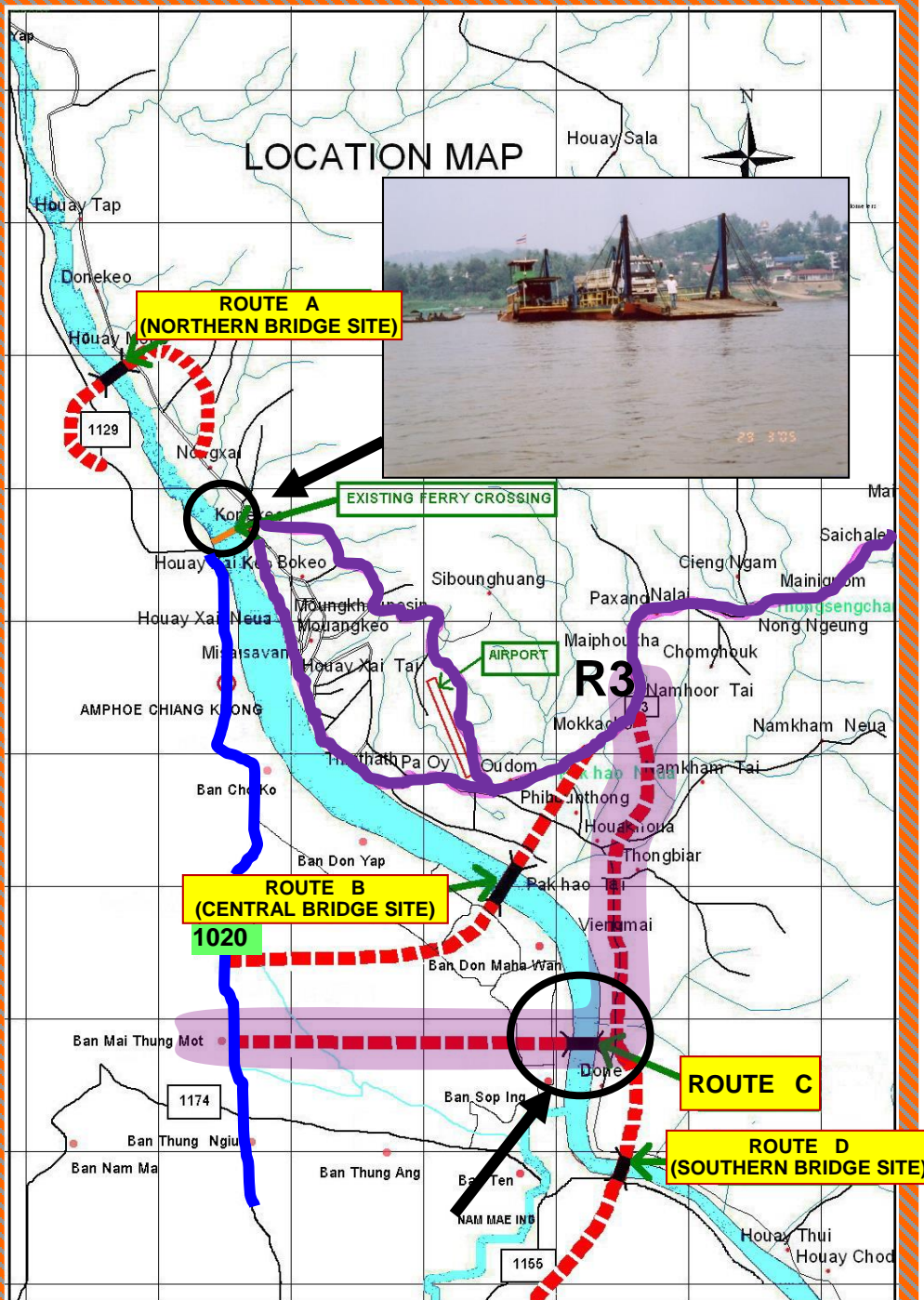
(Chiang Rai - Kunming 1018 km.)

- PRC: Mo Han-Kunming, 680 kms.**
Expressway 4 Lanes width
(Boten-Jinghong , Expressway 2 Lanes width 185 Kms.)
- Lao PDR: Houayxay–Boten, 228 Kms.**
Road 2 Lanes width
- Thailand: Chiang Rai-Chiang Khong, 110 Kms.**
Road 2 Lanes width
(Expanded to 4 Lanes width)
- Thailand-Lao PDR-PRC agreed to Construct Friendship Bridge IV**

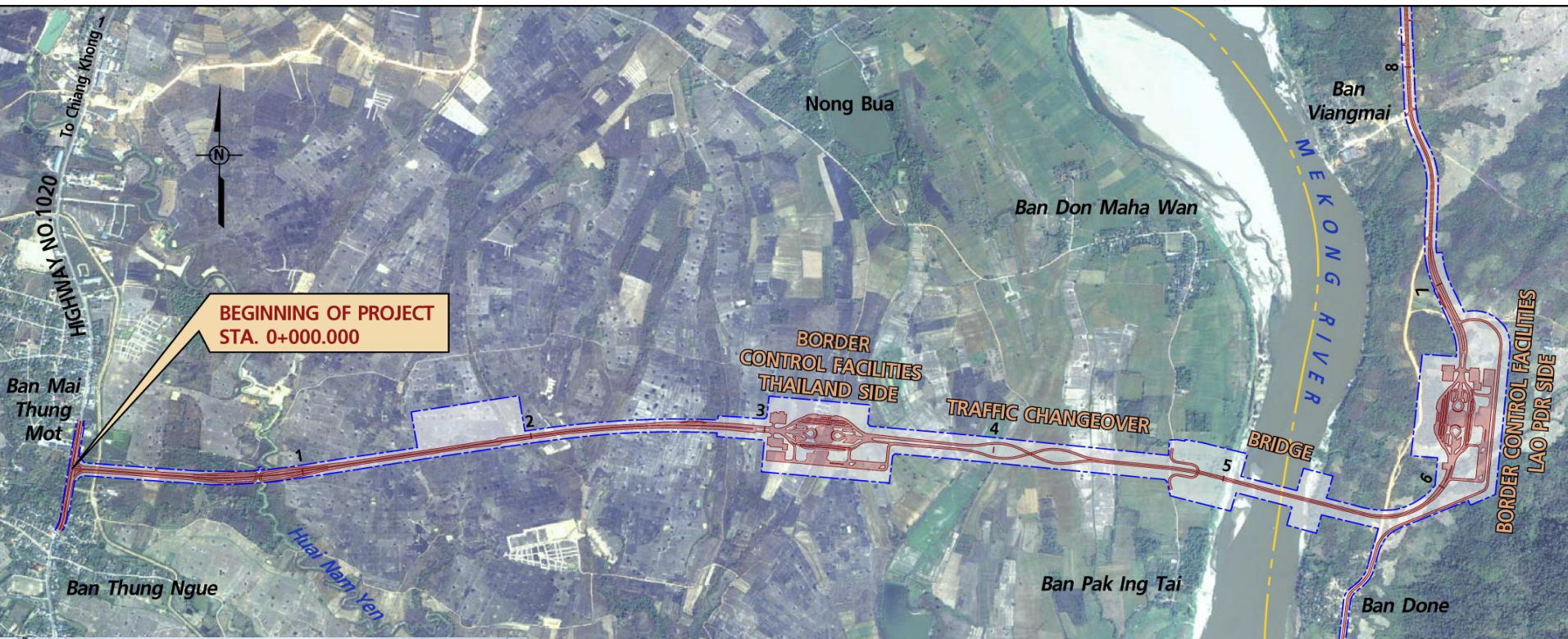
Alignment Selection

Alignment of Friendship Bridge IV (Route C)

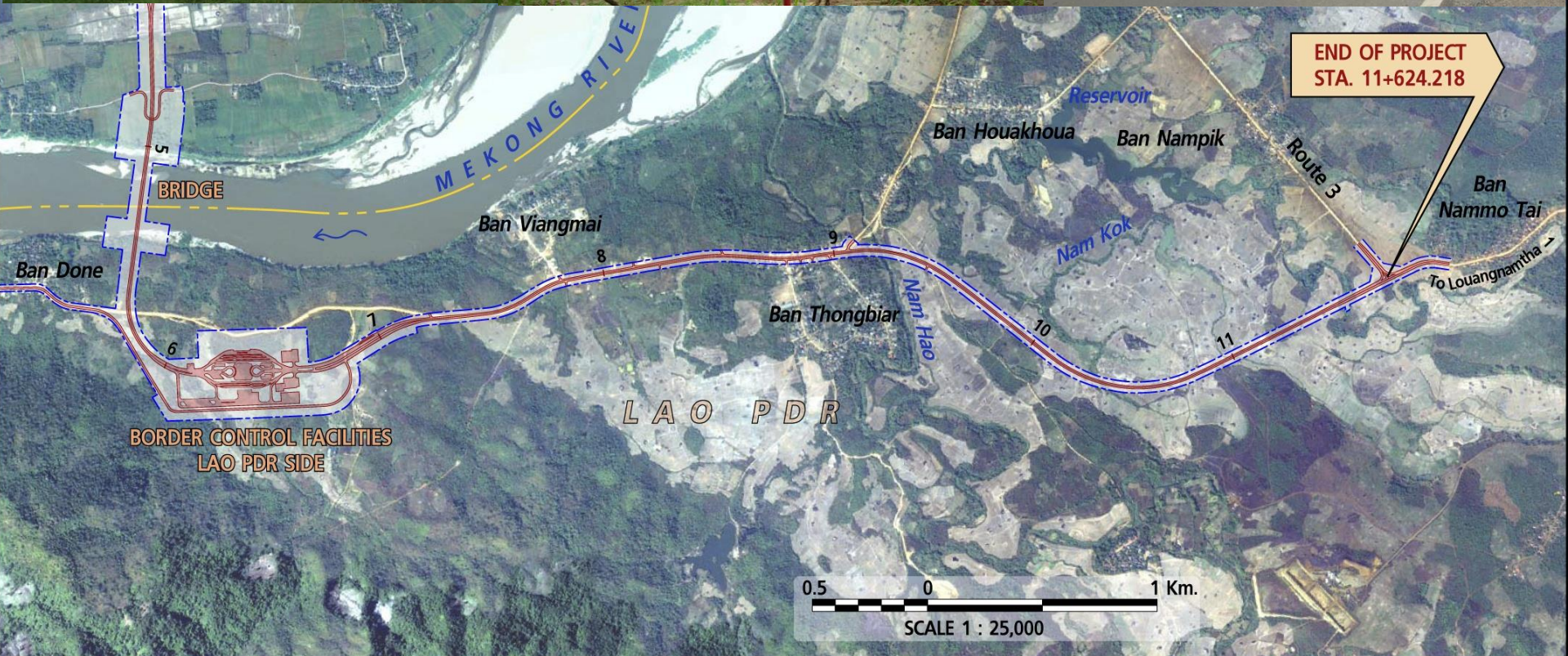
was selected and agreed among
Thailand, Lao PDR, PRC and ADB
on 23 June 2005



Project Alignment on Thailand Side

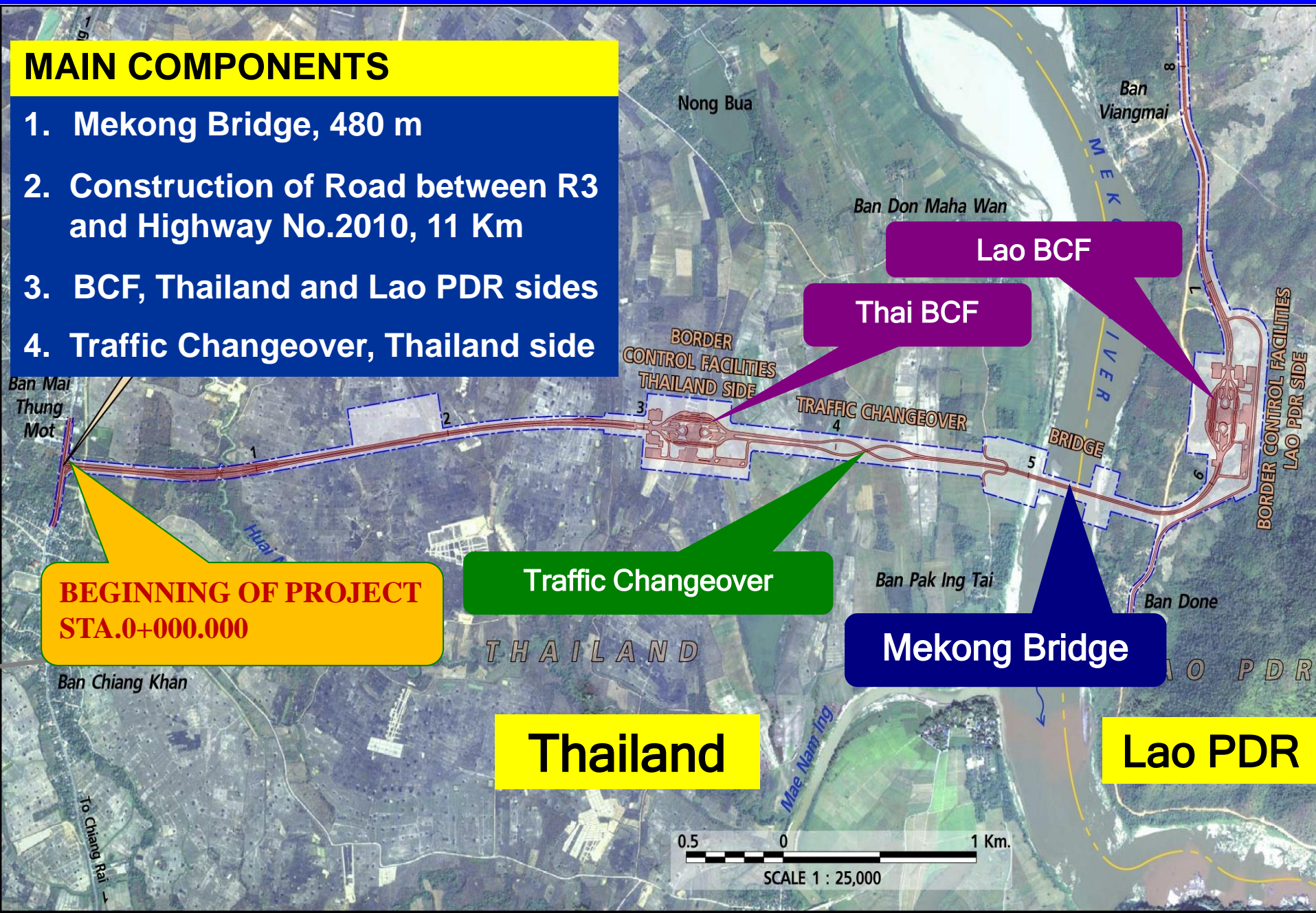


Project Alignment on Lao PDR Side



MAIN COMPONENTS

1. Mekong Bridge, 480 m
2. Construction of Road between R3 and Highway No.2010, 11 Km
3. BCF, Thailand and Lao PDR sides
4. Traffic Changeover, Thailand side



**BEGINNING OF PROJECT
STA.0+000.000**

Traffic Changeover

Lao BCF

Thai BCF

Mekong Bridge

Thailand

Lao PDR

Mekong Bridge

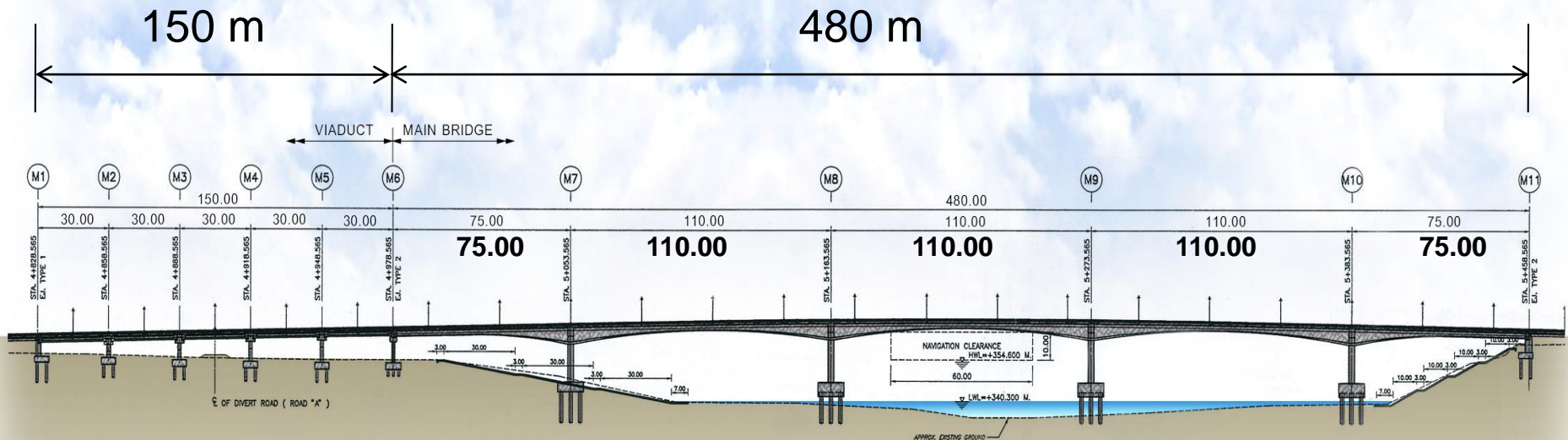
11

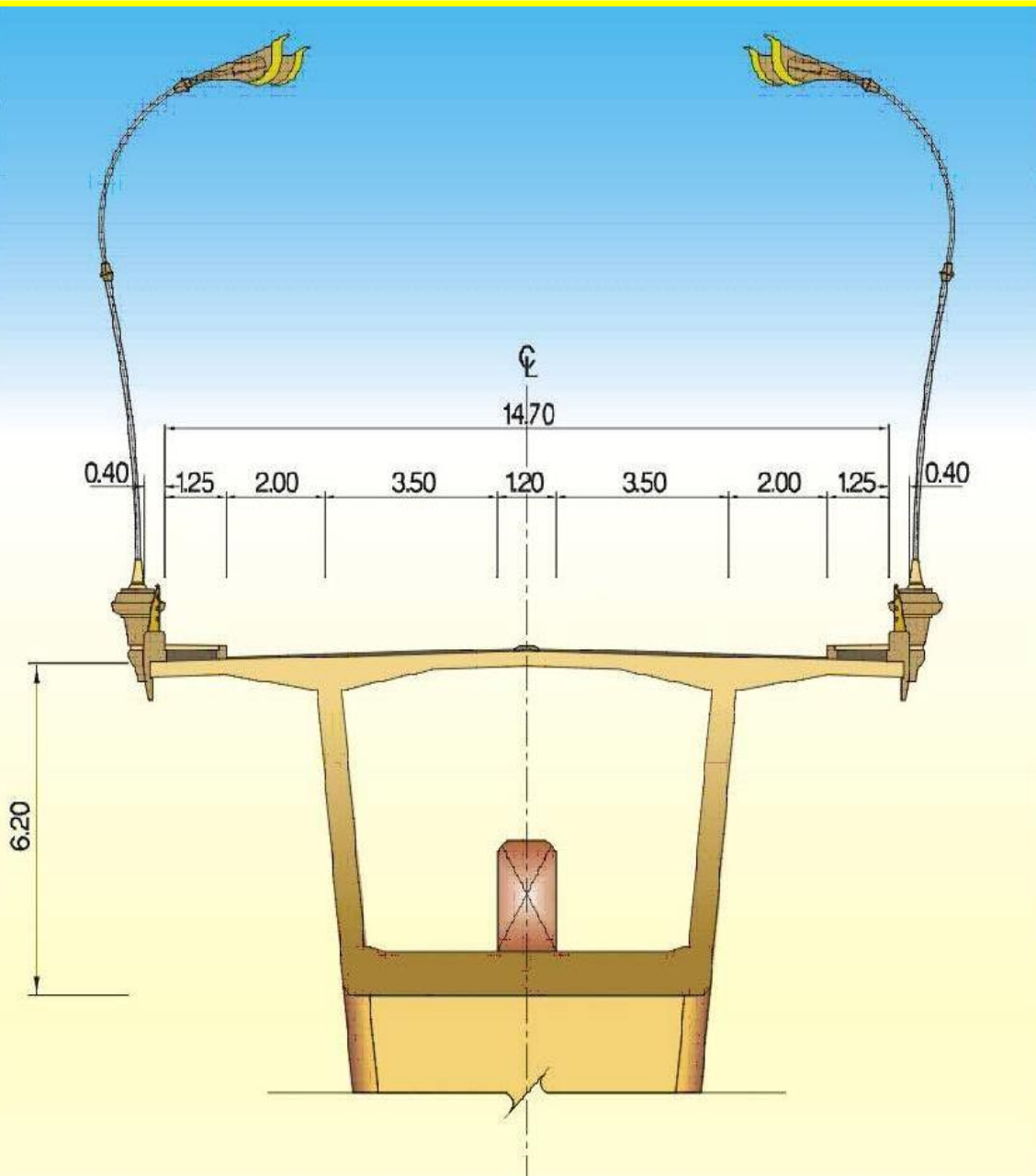
(14.7 m.width - 2 carriageways)

River bridge = 480 m.

Thai approach bridge = 150 m.

Total length = 630 m.





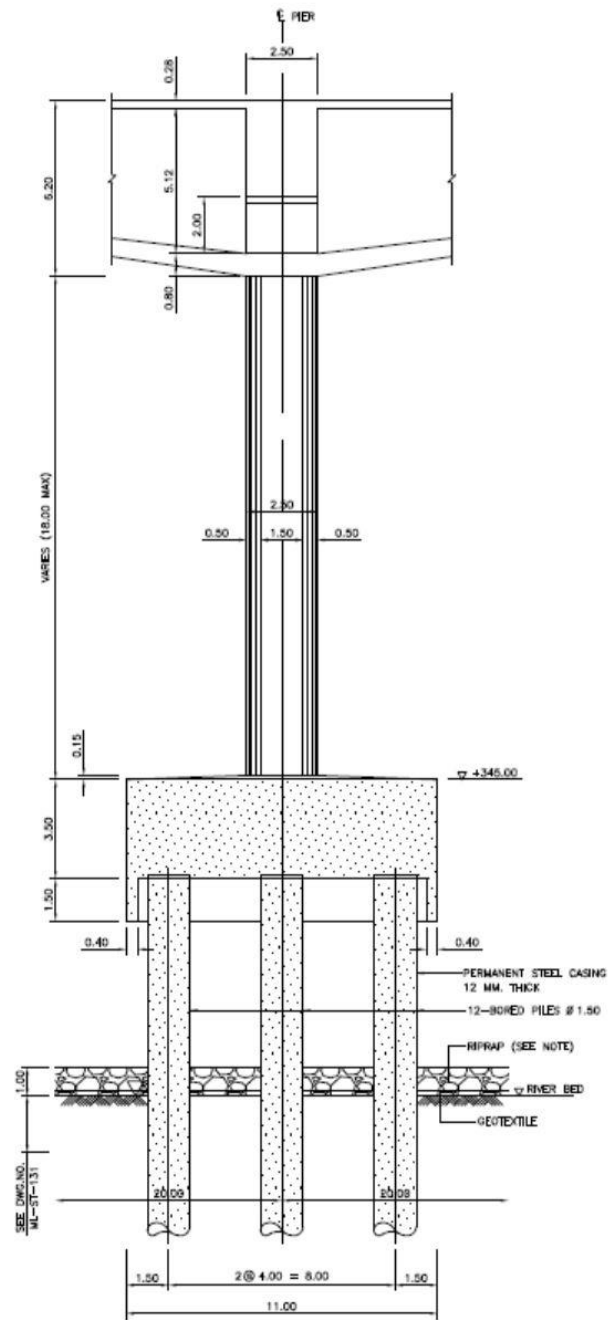
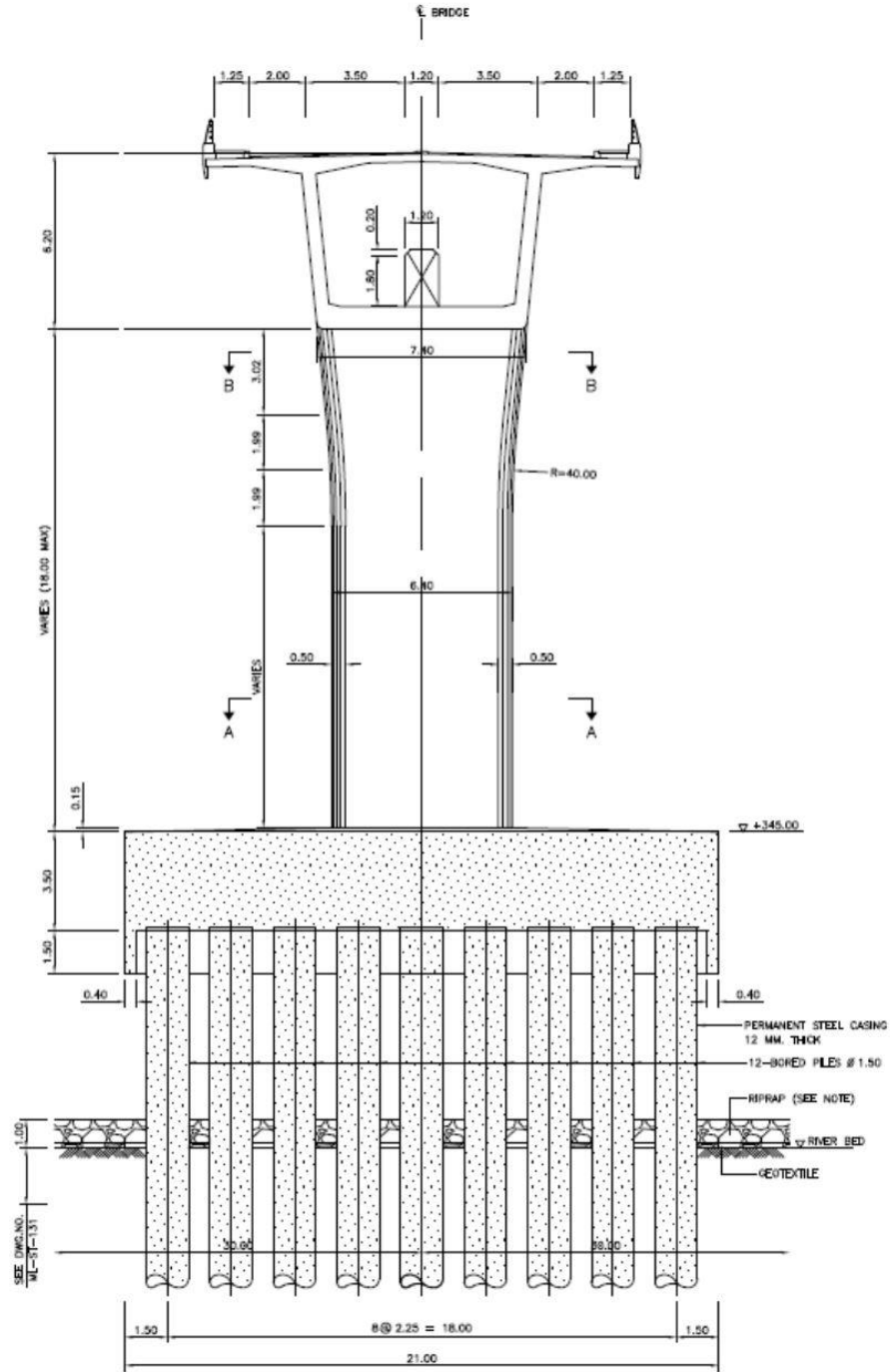
Carriageway :
2x3.50 m. width

Median : 1.20 m. width

Shoulder width:
2.00 m. both sides

Sidewalk:
1.25 m. both sides

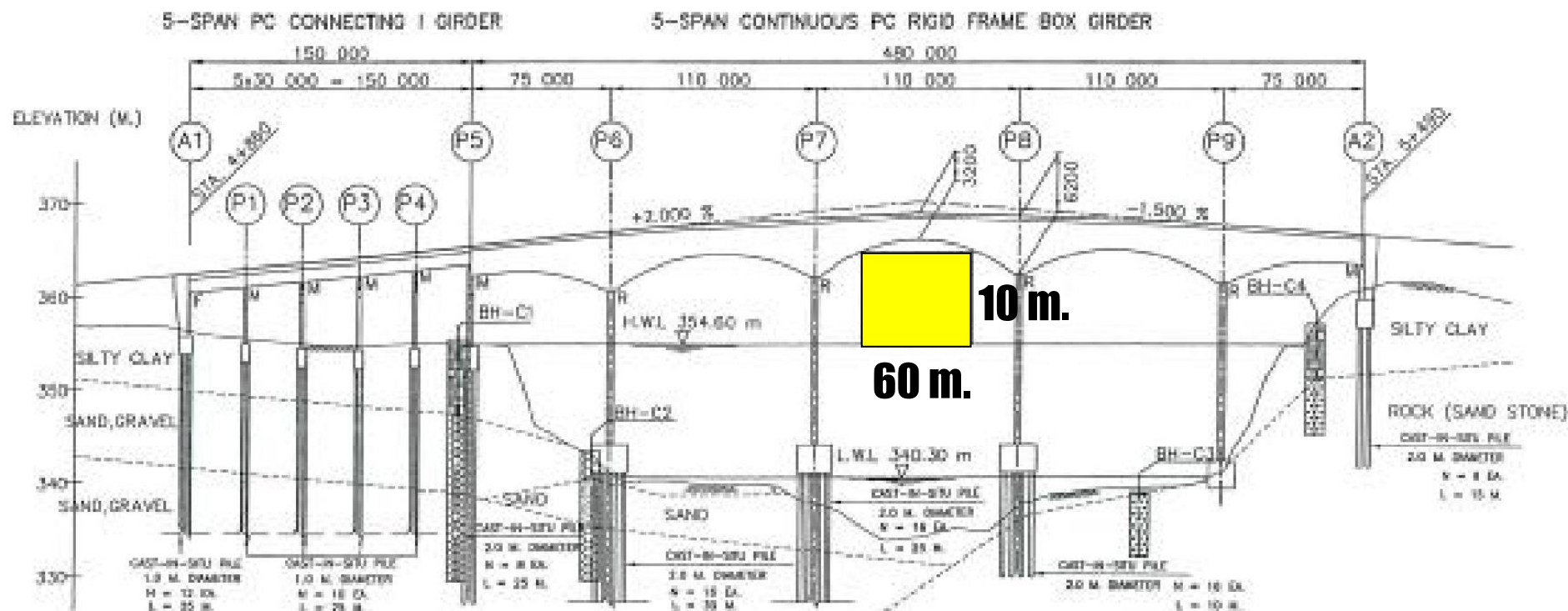
Total width = 14.70 m.



Design HWL (m.) : **354.60 m.**

Return Period : **100 years**

Navigation Clearance : **W 60 x H 10 m.**



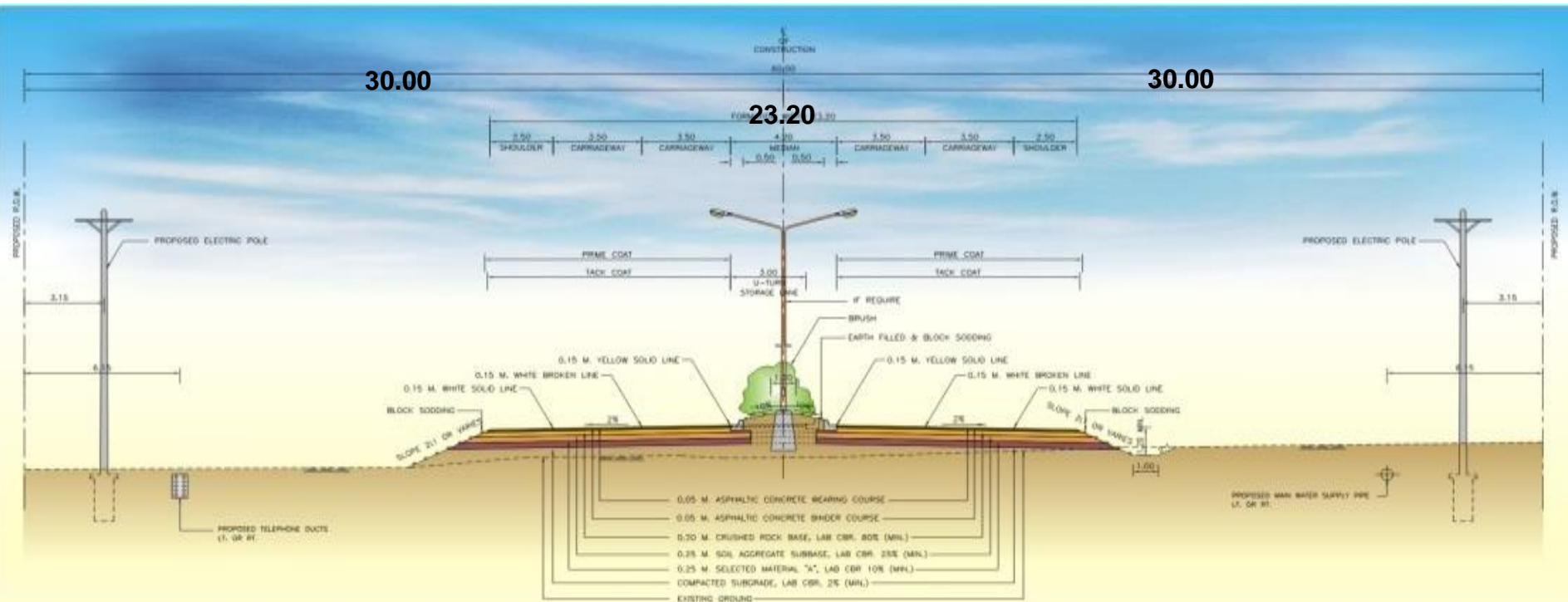
Navigation Clearance

Typical Road Cross-section, Thailand side

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Road Section, Thailand Side

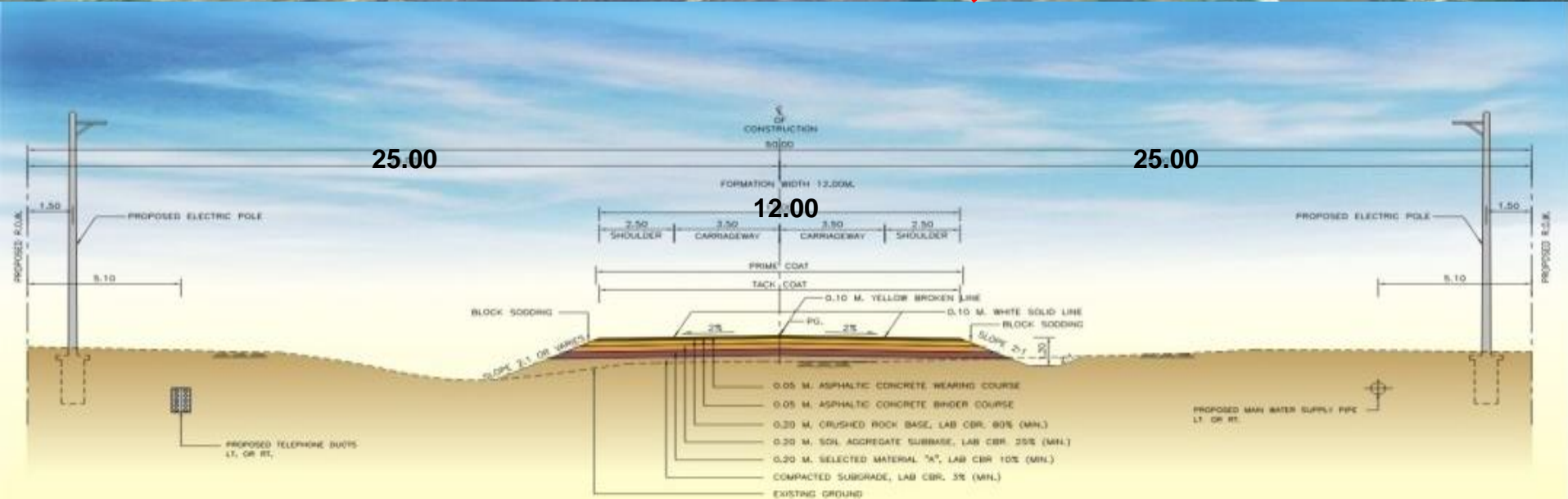
Road: 4 lanes, 3 Kms lengthh.



Typical Road Cross-section, Lao PDR side

Road Section, Lao PDR Side

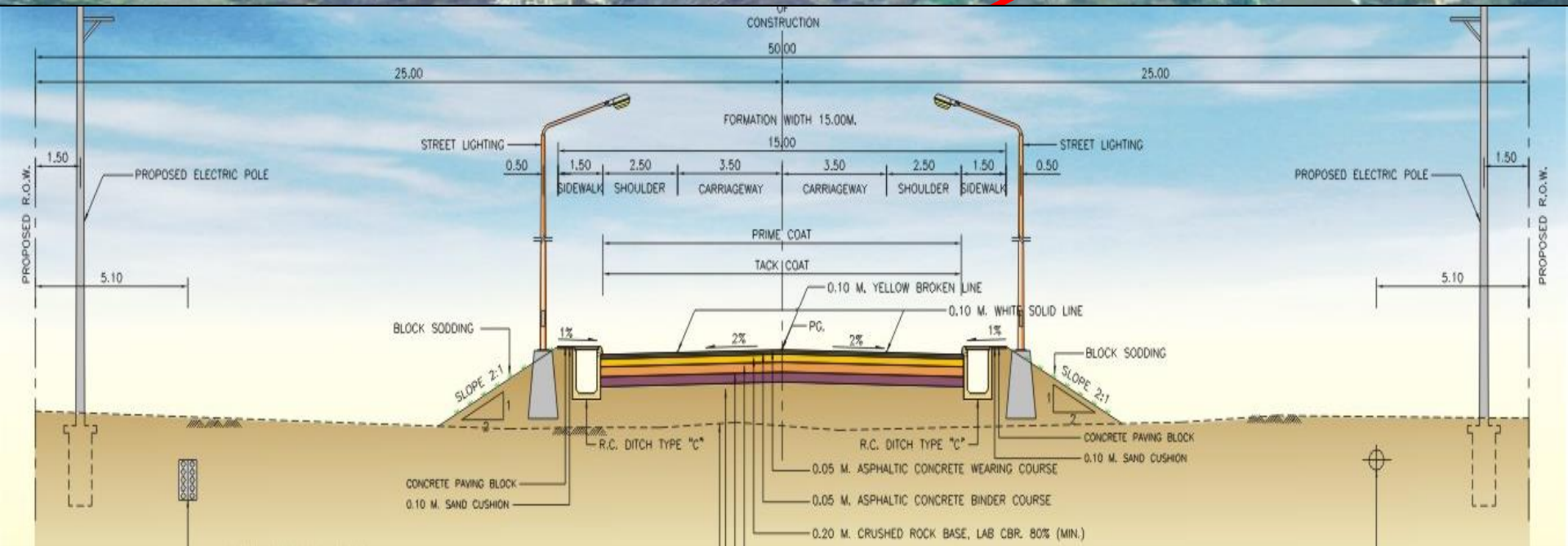
Road: 2 lanes, 6 Kms.



Typical Road Cross-section, Lao PDR side

Road Section, Lao PDR Side
(In Urban Area)

Road: 2 lanes



BCF Building - Thailand side



Border Control Facilities Building

Check & Toll Fee Building

Common Control Area Office

X-Ray Canopy

Bus Inspection Canopy

Check Point Booth

Checking Office Building

Power House & Pump House

Border Pass & Labor Control Office

BCF Building - Lao PDR side



Common Control Area Office

X-Ray Canopy

Border Control Facilities Building

Checking Office Building

Booth

- **Check Point**
- **Immigration & Custom**

Public toilet

Traffic Changeover, Thailand Side

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PROJECT IMPLEMENTATION

Project Management Unit

- **Thailand:** **Ministry of Transport
Department of Highways**
- **Lao PDR:** **Ministry of Public Works
and Transports
Department of Roads**

Management Committees

- **Two levels of Committees (Thailand and Lao PDR)**
 - **Project Coordinating Committee (PCC)**
 - **Project Management Committee (PMC)**

Consultants and Contractors

Consultants

Asian Engineering Consultants Corp., Ltd. (Thailand)
Xi'an Fangzhou Engineering Consulting Co., Ltd. (PRC)
Lao Transport Engineering Consultant (Lao PDR)

Contractors

China Railway No.5 Engineering Group Co., Ltd
in joint venture with
Krung Thon Engineers Co., Ltd

Project Budget

	Lao PDR	Thailand	Total (USD)
Construction Cost			
Amount	21,576,258.015	21,576,258.015	43,152,516.030
V.A.T. 7%		1,662,806.100	1,662,806.100
Total	21,576,258.015	23,239,064.115	44,815,322.130
Consultancy Services			
Amount	1,227,230.000	1,227,230.000	2,454,460.000
V.A.T. 7%		85,906.100	85,906.100
Total	1,227,230.000	1,313,136.100	2,540,366.100
TOTAL	22,803,488.015	24,552,200.215	47,355,688.230

Details of Construction Budget

DIVISION	DESCRIPTION	Amount (USD)			WT.
		Lao PDR	Thailand	Total	
		Side	Side		
1	GENERAL	2,074,942.33	2,074,942.33	4,149,884.66	9.6%
2	EARTHWORKS	806,446.00	2,164,838.00	2,971,284.00	6.9%
3	SUBBASE AND BASE COURSES	1,059,053.00	1,107,790.00	2,166,843.00	5.0%
4	SURFACE COURSES	2,644,180.00	2,954,596.00	5,598,776.00	13.0%
5	STRUCTURES	5,550,853.97	7,233,793.87	12,784,647.84	29.6%
6	INCIDENTALS	2,218,623.32	2,825,744.04	5,044,367.36	11.7%
7	BUILDING WORKS	3,220,987.89	3,520,939.97	6,741,927.86	15.6%
8	E&M WORKS	1,765,544.61	1,814,216.70	3,579,761.31	8.3%
9	FORCE ACCOUNT WORK	57,512.00	57,512.00	115,024.00	0.3%
Total Amount (Excluding Value Added Tax)		19,398,143.12	23,754,372.91	43,152,516.03	100.0%
V.A.T. 7% for Work on Thailand Side		-	1,662,806.10	1,662,806.10	
Total Amount ,USD				44,815,322.13	
Separated equal budget of each country		21,576,258.015	21,576,258.015	43,152,516.030	
Total budget incl. V.A.T. ,USD		21,576,258.015	23,239,064.115	44,815,322.130	

STRUCTURE MAIN BRIDGE WORKS

Bridge Site

View from Thailand side

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Construction at M6



Lean Concrete completed
Preparatory work for Dynamic Pile Load Test in progress
(Schedule: 27 Dec 2011 at C4)



Construction at M7







Construction at M7 on 14 Dec 2011





Construction of Mekong Bride at M7





Pile Boring at M8











Placing bored pile at M8 on 19 Nov 2011



Construction of Mekong Bridge at M8 on 14 Dec 2011



14/12/2011

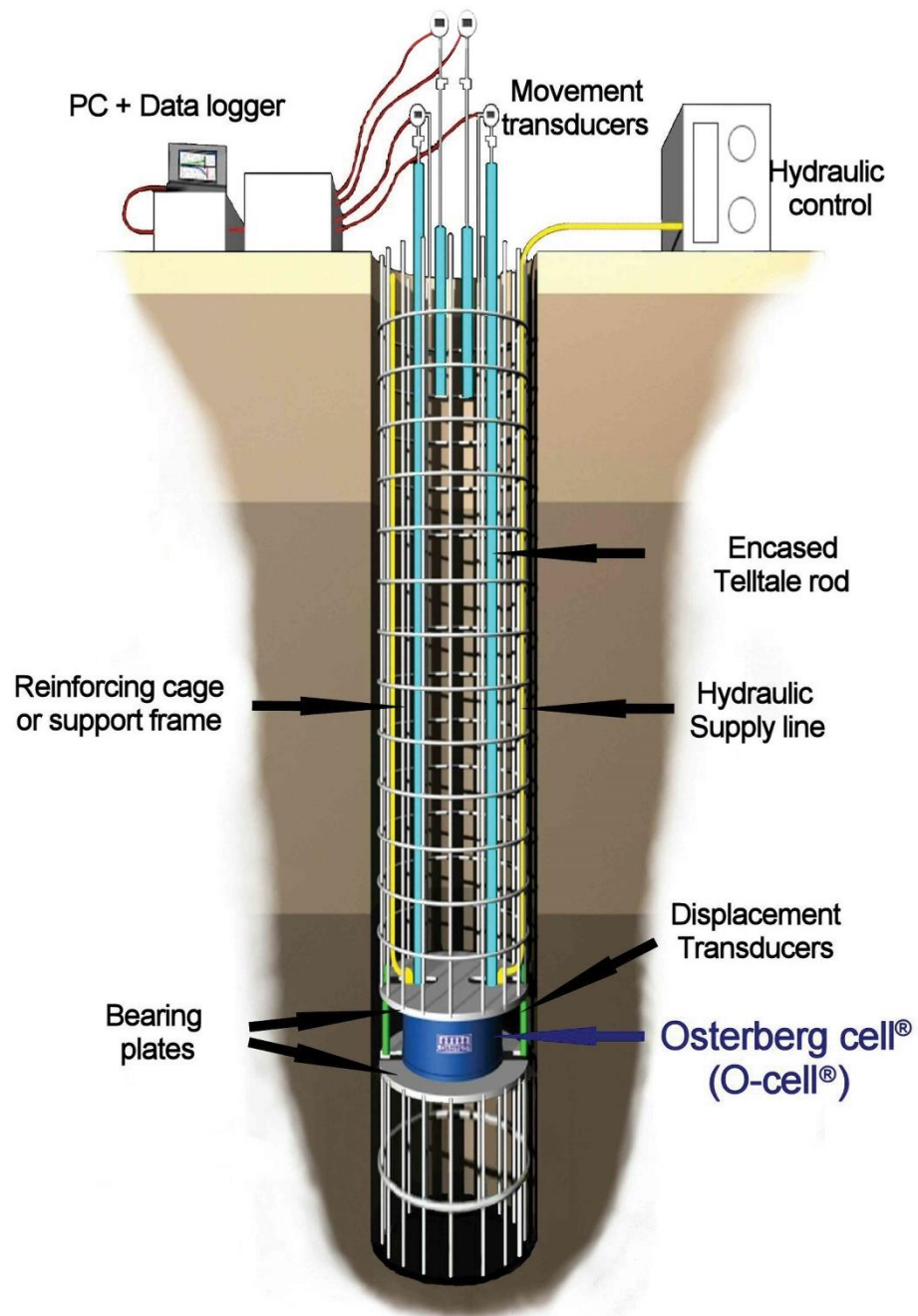
Floating Platform being installed at M9

Photo on 19 Dec 2011



Construction of Main Bridge at M9 on 10 Jan 2012







Installation of Static Load Test at Pier M10-A4 on 10 Dec 2011



Install O-Cell at M8-B2 on 9 Jan 2012









O-Cell Static Pile load test at Pier M10-A4 on 30 Dec 2011



Sonic Logging Test of Bored piles, M10 on 9 May 2011



Preparatory Work for Dynamic Pile Load Test at A3, M10 on 15 May 11



05/15/2011







Construction of Main Bridge at M8



Construction of Mekong Bridge at Pier M10 on 14 Jan 2012



14/01/2012







Construction of Mekong Bridge at Pier M10
(Pile cap completed on 13 February 2012). Column up to 9.0 m completed on 1 Mar 2012





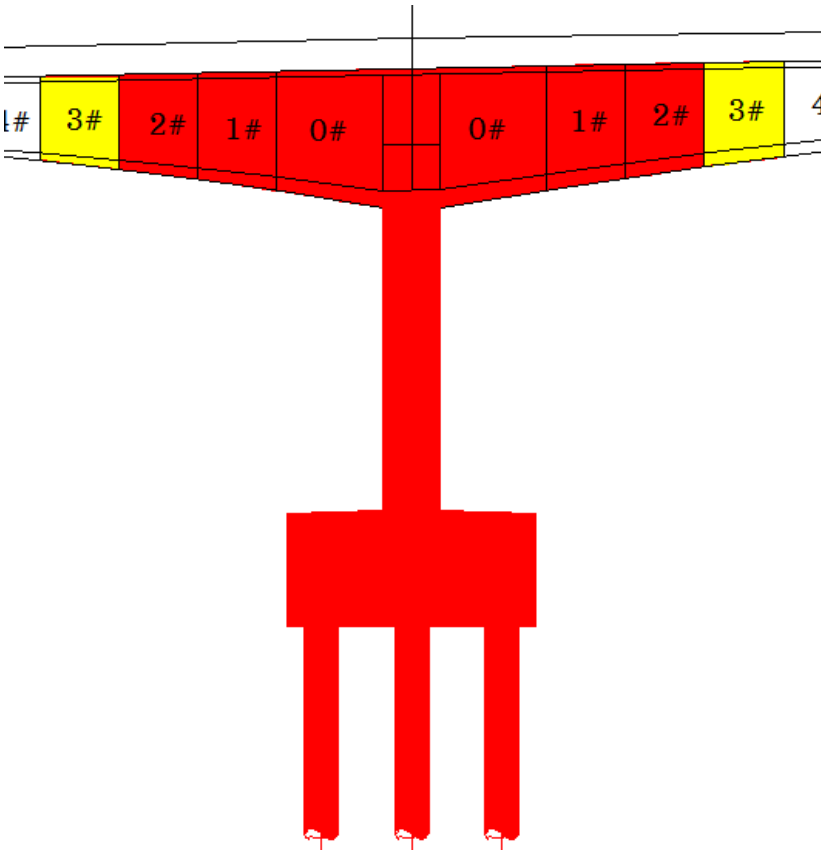


热烈欢迎领导莅临项目检查指导工作



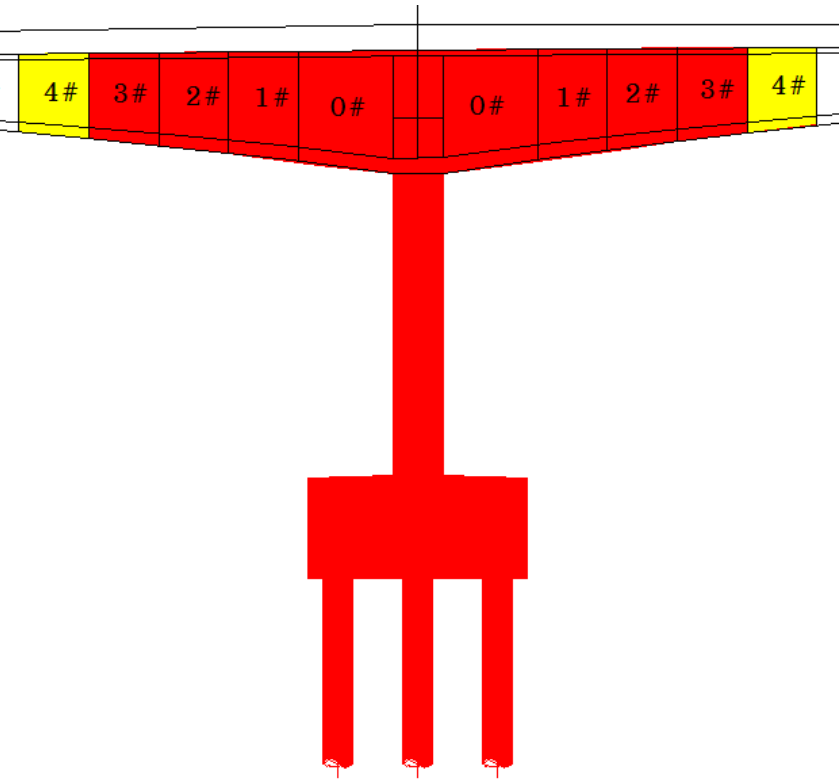
Construction of Main Bridge at M7

Segment No.2 casted on 1 Jul 12



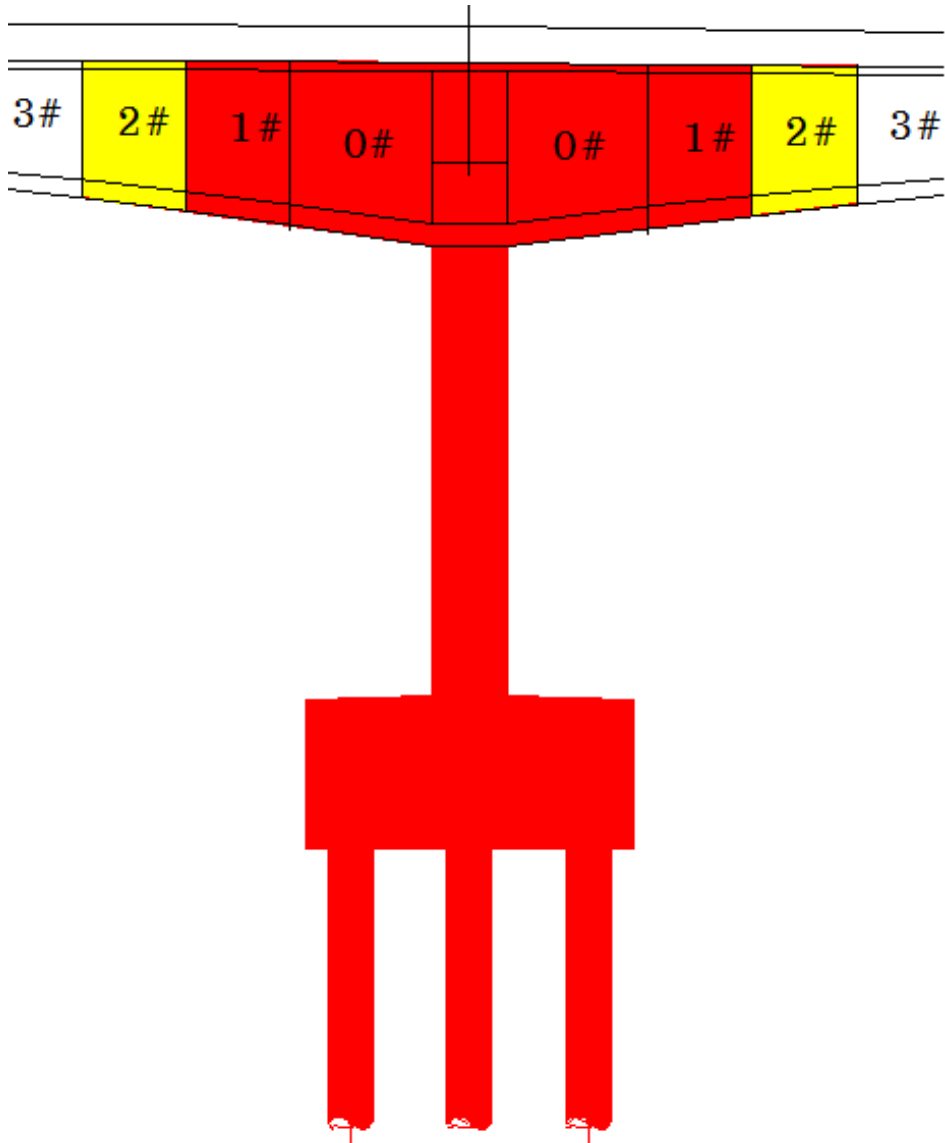
Construction of Main Bridge at M8

Segment No.3 casted on 6 Jul 2012



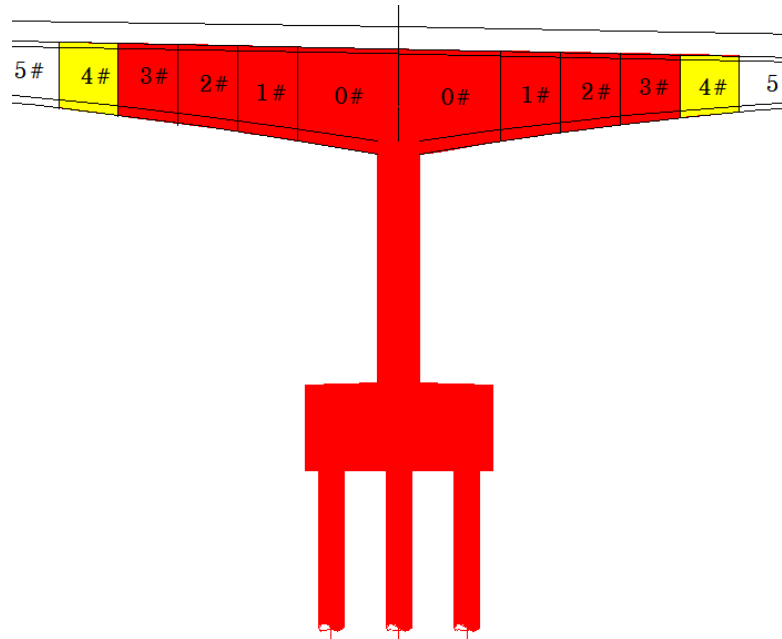
Construction of Main Bridge at M9

Segment No.2 casted on 5 Jul 12

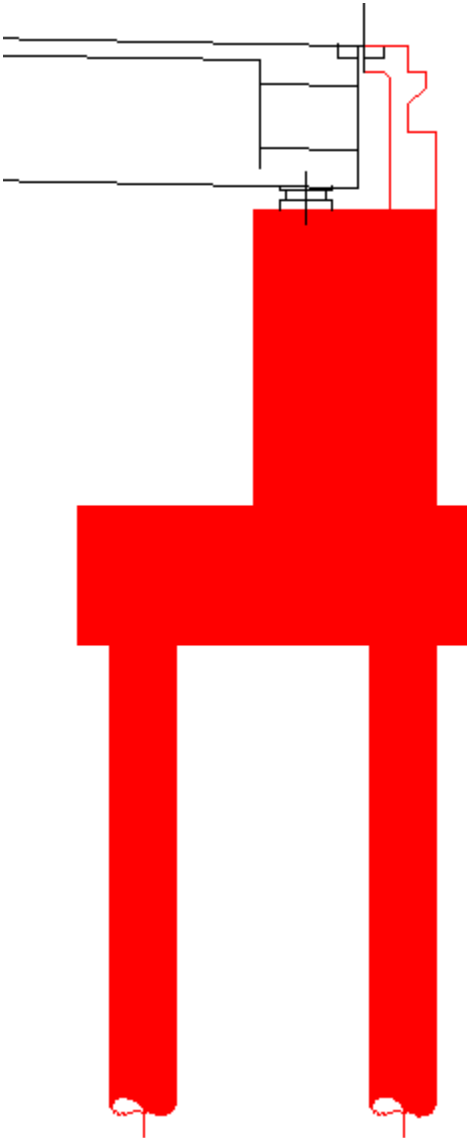


Construction of Mekong Bridge at Pier M10

Segment No.3 completed on 3 July 2012



Casting of pile cap completed at M11. No activities









Main Bridge, View from Thailand side



Main Bridge, View from Lao PDR side



Main Bridge, View from Thailand side



M6

Progress Photographs, M6-M7

M7

75.00

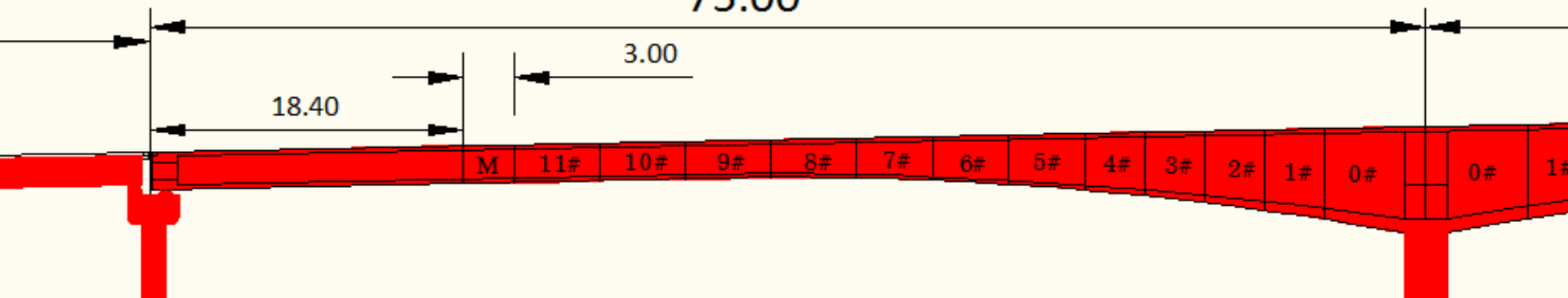
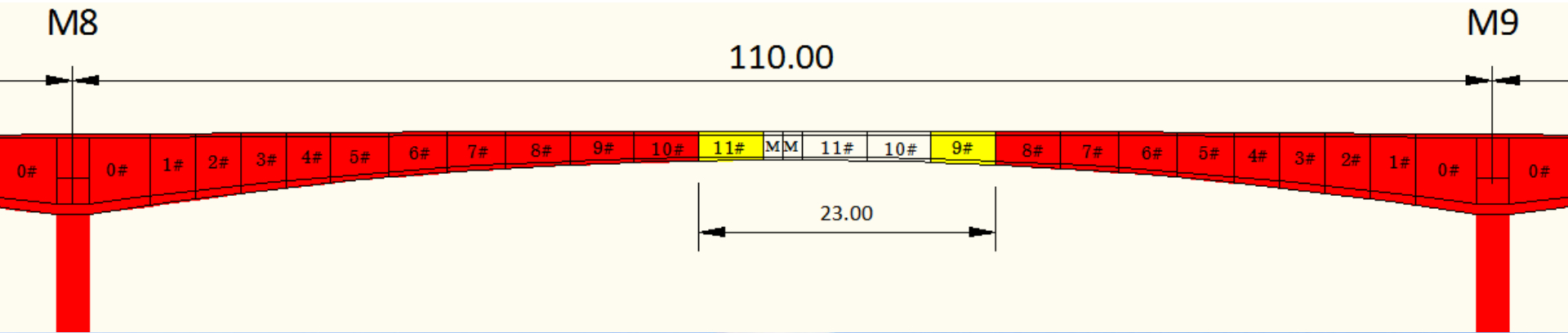


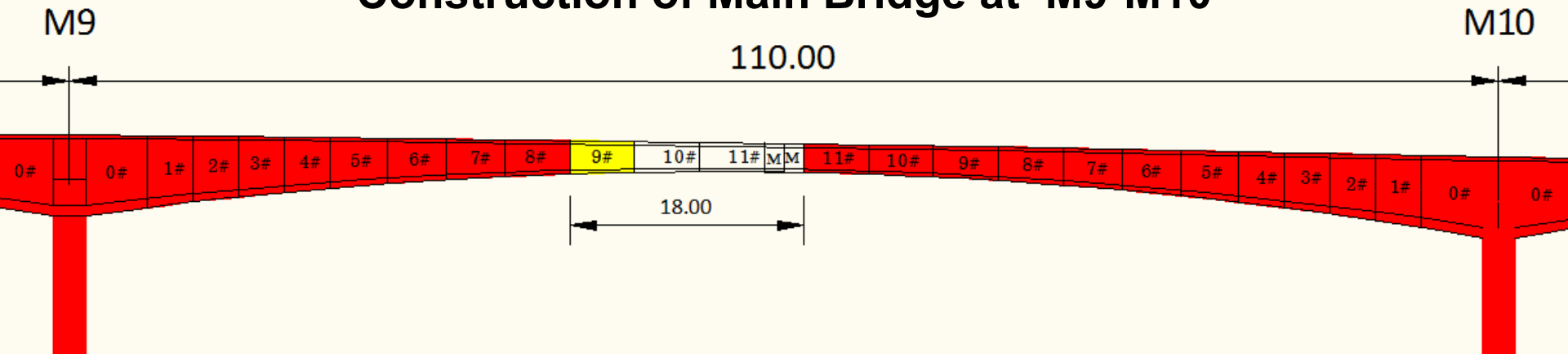
Diagram illustrating the cross-section of a bridge deck. The total span is 110.00m. The deck is divided into segments numbered 0# to 11# on both sides of the centerline. A central segment is highlighted in yellow and labeled 'MM'. A dimension of 8.00m is shown for the central segment.



Construction of Main Bridge at M8-M9



Construction of Main Bridge at M9-M10



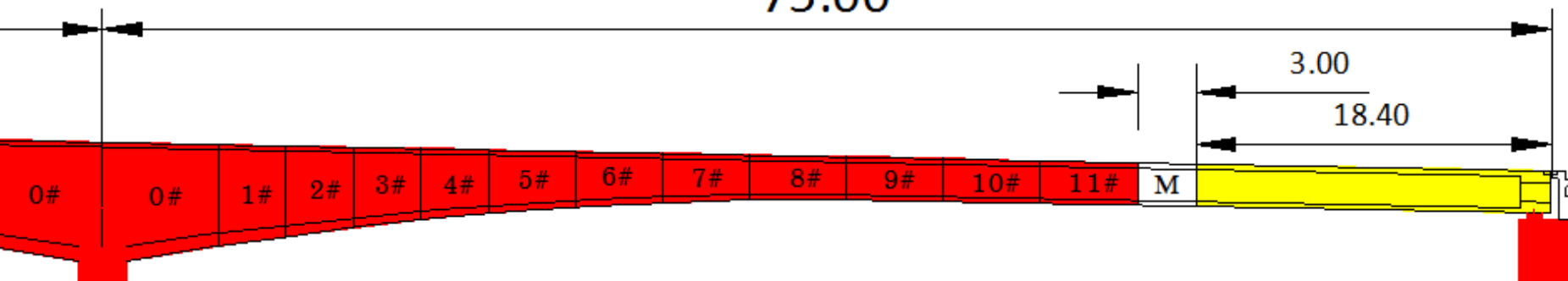
Construction of Main Bridge at M10-M11

Footings for falsework for side span started.

M10

M11

75.00



1) Progress Status (main bridge superstructure and viaduct)

Main Bridge, View from Thailand side



Main Bridge, View from Lao PDR side



M6

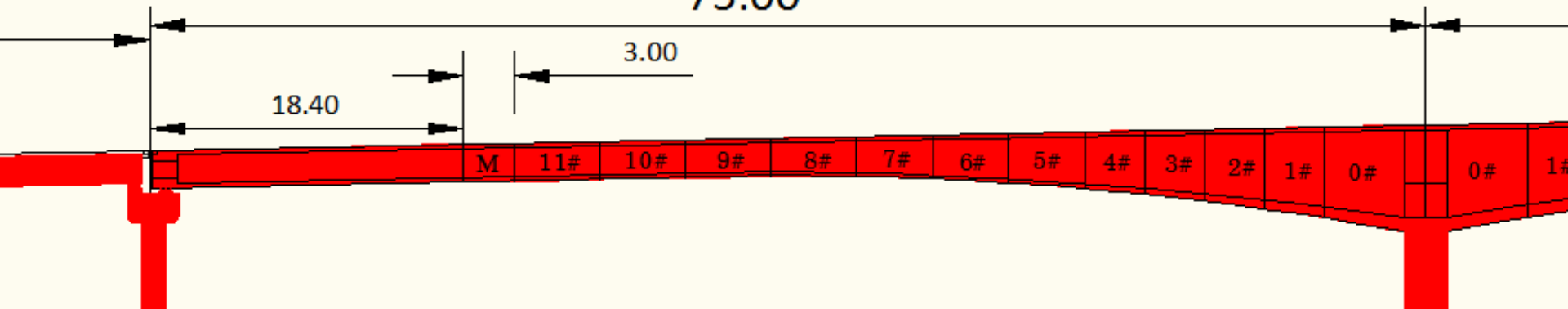
Progress Photographs, M6-M7

M7

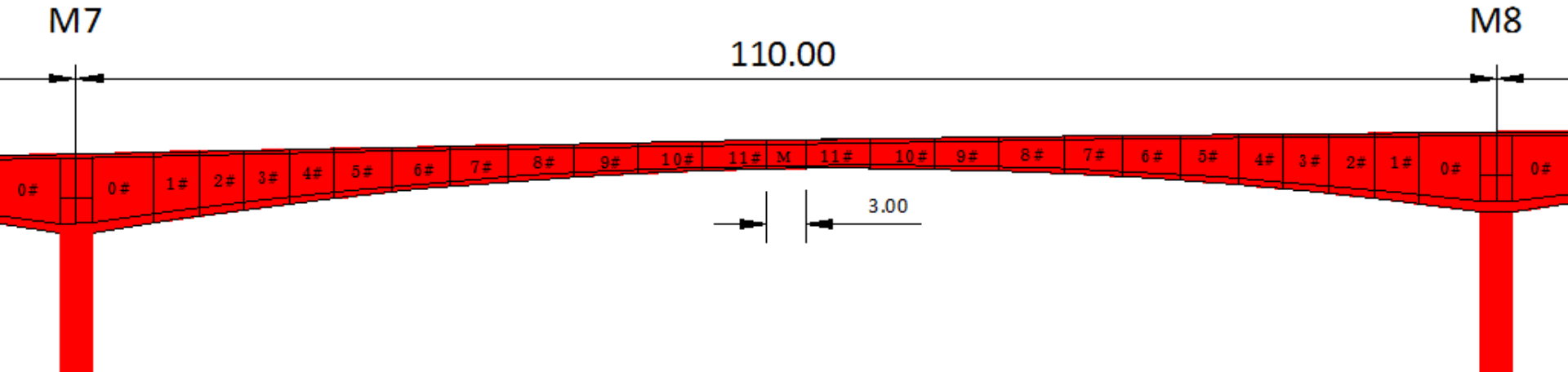
75.00

18.40

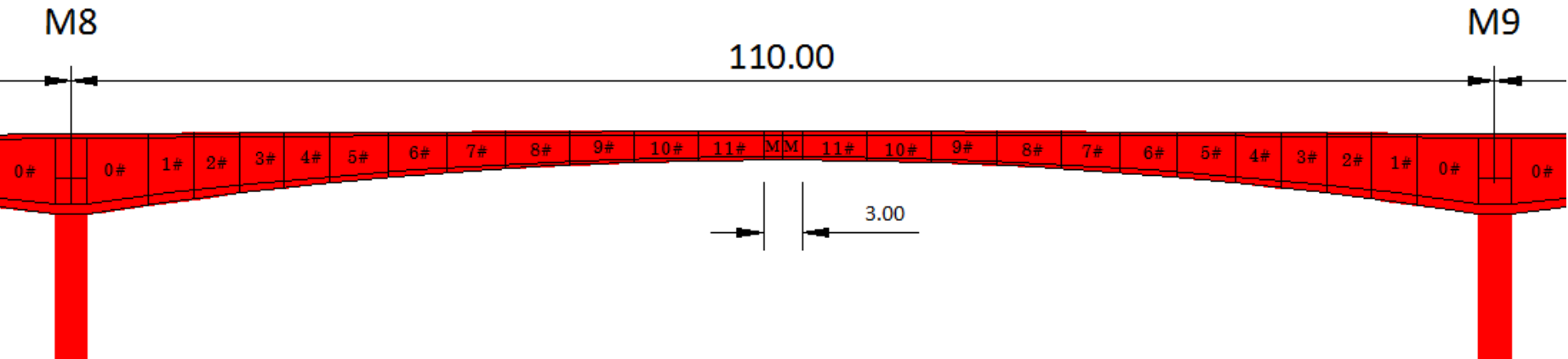
3.00



Construction of Main Bridge at M7-M8



Construction of Main Bridge at M8-M9





STRUCTURE

VIADUCT

5 Spans@30.0 m = 150 m (Thailand Side)

FOOTING AT M3

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FOOTING AND COLUMN AT M4

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FOOTING AND COLUMN AT M5

97



FOOTING AT M2

98



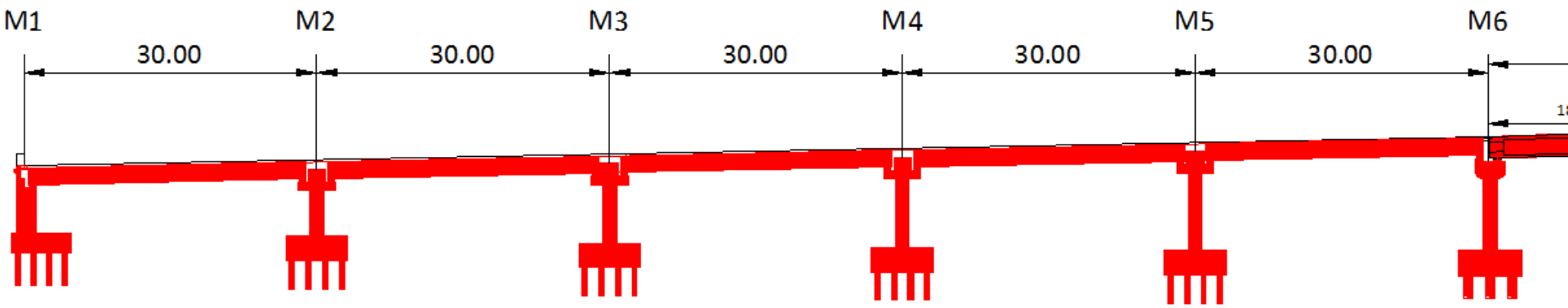
M1, M2, M3, M4 and M5 Footings and column completed



M2, M3, M4 and M5 on 1 March 2012
Footings and column completed
Cross beam at M4 and M5 completed

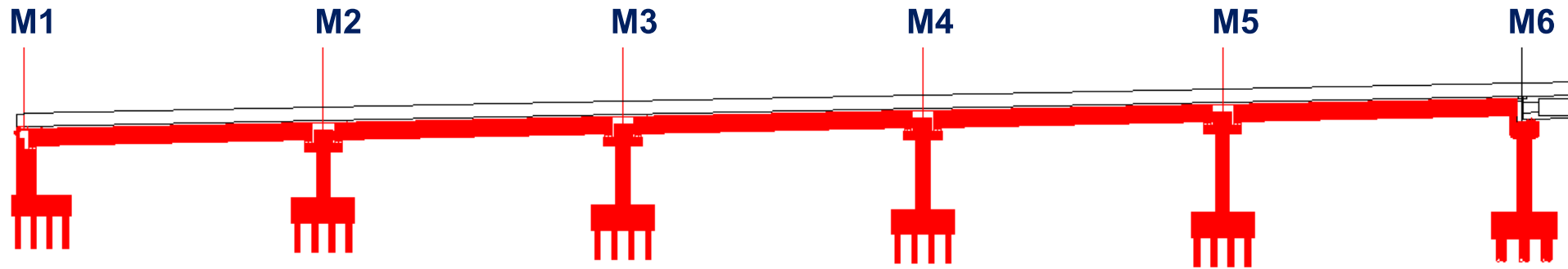


Status of Progress of Viaduct



Note: Installation of girders, 35 No completed on 10 August 2012

Status of Progress



Note: Installation of girders, 35 No completed on 10 August 2012

Status of Progress of Viaduct



Note: Installation of girders, 35 No completed on 10 August 2012. Deck slab completed.

End of Presentation

Thank You

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