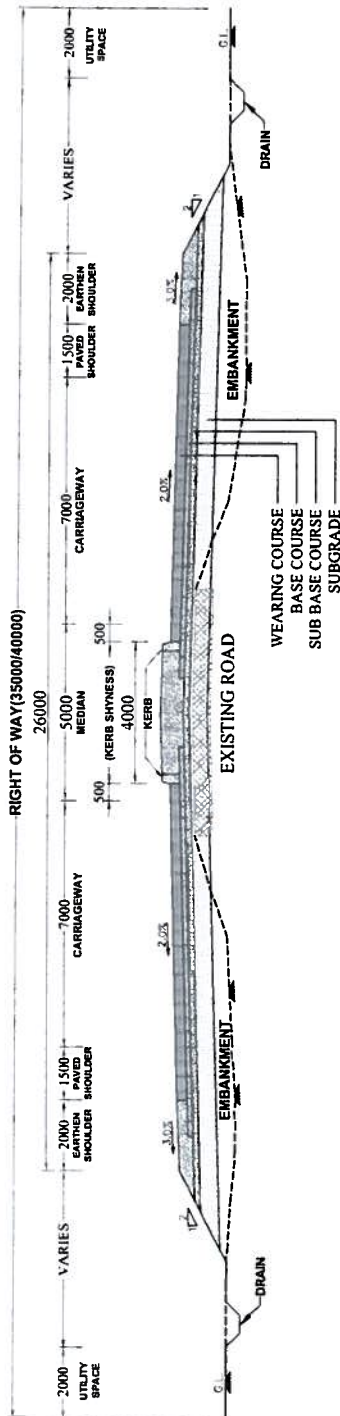
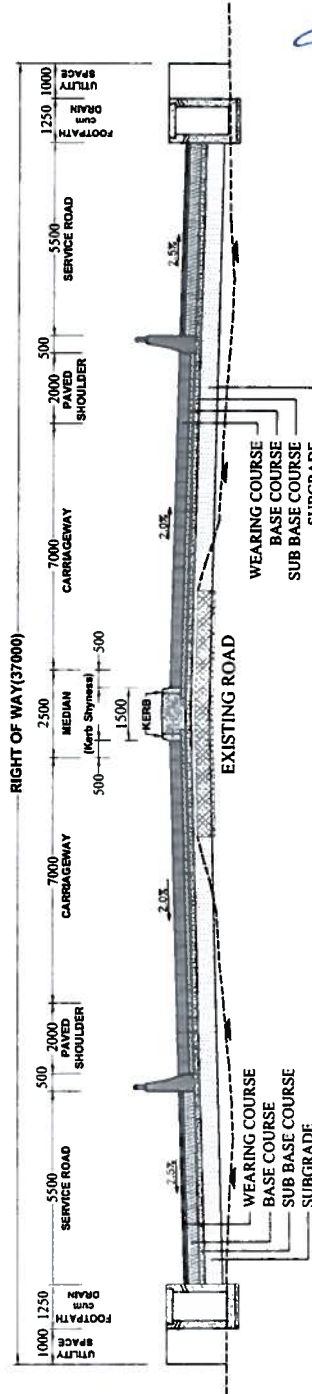




TYPICAL CROSS SECTION : TYPE - IA

Concentric Widening of Existing 2 Lane Road to 4 Lane with Paved Shoulder & 5.0m. Median in Open / Rural Stretches

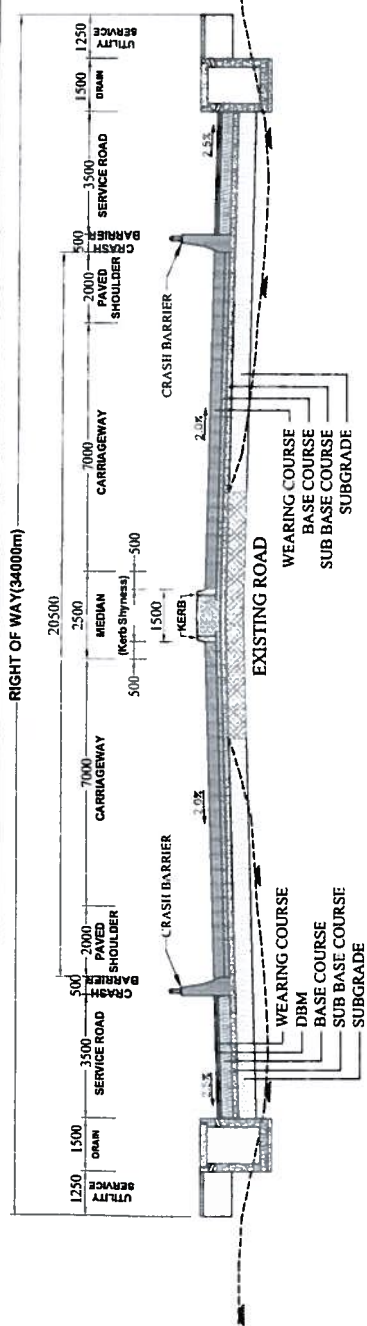


TYPICAL CROSS SECTION : TYPE - IIA

Concentric Widening of Existing 2 Lane Road to 4 Lane with 5.5m. Service Road & RCC Drain on Both Side in Built-up Stretches Along Existing Road

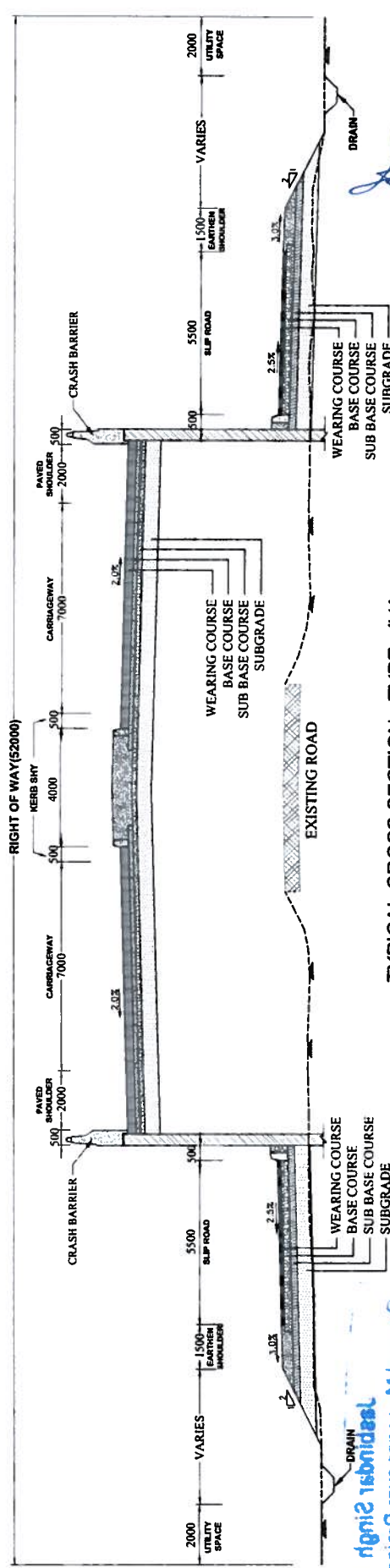
Jaabindar Singh
General Manager cum Project Director
National Highway Authority of India, PUA-Allahabad
(Ministry of Road Transport & Highways, Govt. Of India)

SAI Consulting Engineers Pvt. Ltd. CONSULTANT		SAI ENGINEERS PVT. LTD. 100-101, Convent Compound, Convent Road, Convent, Allahabad, U.P.		PROJECT : CONSULTANCY SERVICES FOR Preparation of Feasibility Report for Four Lanes with Paved Shoulders from Allahabad to Rampur Section of NH-91 Through Public Private Partnership on Design Build, Finance Operate and Transfer Basis		NATIONAL HIGHWAYS AUTHORITY OF INDIA (Ministry of Road Transport & Highways, Government of India)		DATE : 06/09/2016 BY : [Signature] FOR : [Signature]	
DRAWN BY : D.M.L. CHECKED BY : P.S. APPROVED BY : S.C. ISSUED BY : R.C.	IN : 07/07/2016 DRAFT FEASIBILITY STUDY REPORT REV : 1 DATE : 07/07/2016 DESCRIPTION :	TYPICAL CROSS SECTION (TYPE - IA & IIB)	DRG NO : SAI - 2845HDF-SPTCS/01	REVISION : PA	NOT TO SCALE	NOT TO SCALE	NOT TO SCALE	NOT TO SCALE	NOT TO SCALE



TYPICAL CROSS SECTION : TYPE - IIIA

Concentric Widening of Existing 2 Lane Road to 4 Lane with 3.5m. Service Road & RCC Drain on Both Side in Built-up Stretches Along Existing Road



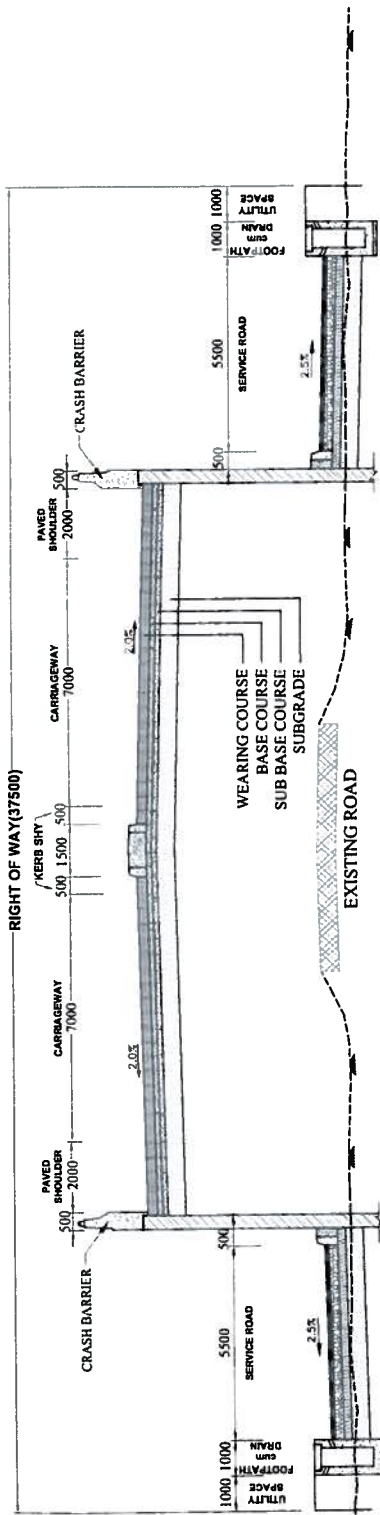
TYPICAL CROSS SECTION : TYPE - IVA

Concentric Widening of Existing 2 Lane Road to 4 Lane with 5.5m. Slip Road on Both Side without Drain in the Approach of VUP

Jasbindar Singh
General Manager cum Project Director
National Highway Authority of India, PH-140001
(Ministry of Road Transport & Highways, Govt. of India)

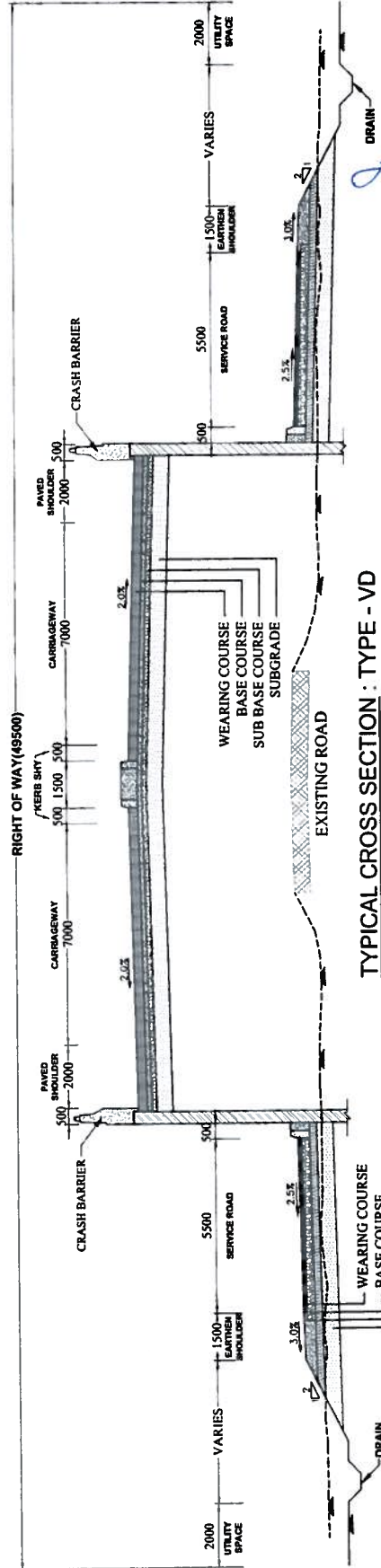
NOTE :- All Dimensions in mm

	CLIENT NATIONAL HIGHWAYS AUTHORITY OF INDIA (Ministry of Road Shipping Transport & Highways, Government of India)	PROJECT CONSULTANCY SERVICES FOR Preparation of Feasibility Report for Four Laning with Paved Shoulders from Aligarh to Kanpur Section of NH-91 Through Public Private Partnership on Design Build, Finance, Operate and Transfer Basis.	CONSULTANT SAI BY SAI GROUP 401/201, Convent Compound, Aligarh	SAI Consulting Engineers Pvt. Ltd. 401/201, Convent Compound, Aligarh		PROJECT NO: 28454-HDFSR/TCS/02		REVISION: PA	
KEY PLAN		CONSULTANT		PROJECT		CONSULTANT		PROJECT NO: 28454-HDFSR/TCS/02	
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KEY PLAN		CONSULTANT							



TYPICAL CROSS SECTION : TYPE - VC

Concentric Widening of Existing 2 Lane Road to 4 Lane with 5.5m. Service Road with RCC Drain on Both Side in the Approaches of LVUP In the Built-up Location



TYPICAL CROSS SECTION : TYPE - VD

Concentric Widening of Existing 2 Lane Road to 4 Lane with 5.5m. Service Road and Earthen shoulder Both Side in the Approaches of LVUP In the Rural Stretches

Jasbindar Singh

General Manager cum Project Director
National Highway Authority of India, Pili-Aligarh

(Ministry of Road Transport & Highways, Government of India)

DRG NO :
SAI - 2845HDFSR7CS04
(REVISION PA)

NOT TO SCALE

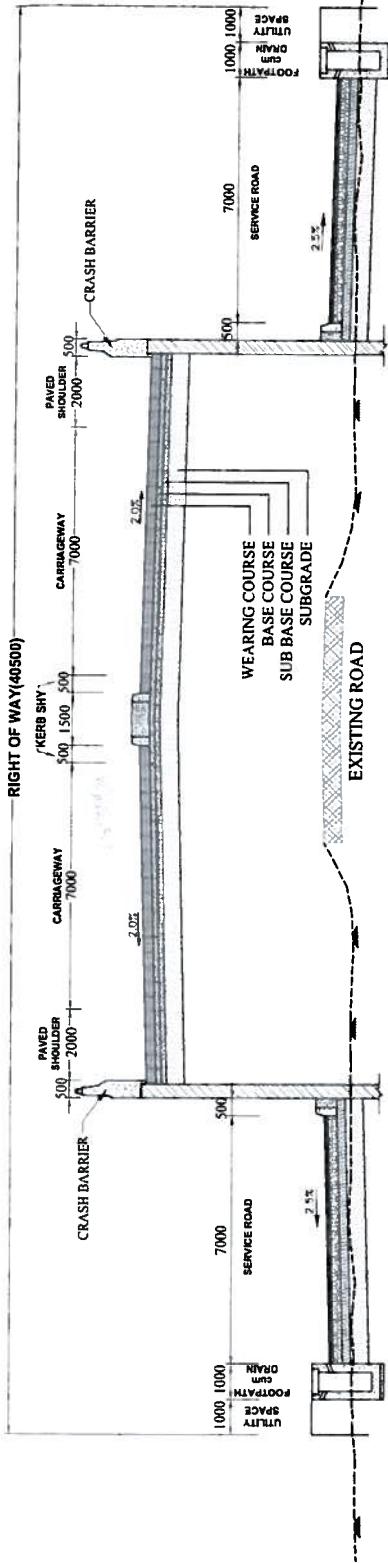
CONSULTANT
SAI Consulting Engineers Pvt. Ltd.
SAI GROUP
IN 100% Government Ownership

PROJECT:
CONSULTANCY SERVICES
FOR
Preparation of Feasibility Report for Four Laning with Paved Shoulders from Aligarh to Kharar Section of NH-91 Through Public-Private Partnership on Design Build, Finance, Operate and Transfer Basis.

CLIENT
NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways, Government of India)

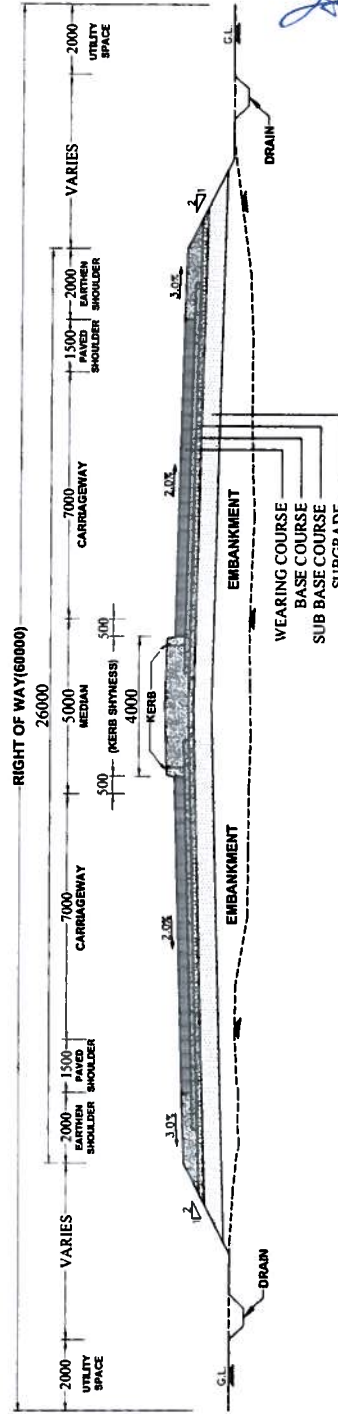
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NOTE: All Dimensions in mm 1:500 to 1:1000
1:500 to 1:1000
1:500 to 1:1000
1:500 to 1:1000



TYPICAL CROSS SECTION : TYPE - VIA

Concentric Widening of Existing 2 Lane Road to 4 Lane with 7.0m. Service Road with RCC Drain on Both Side in the Approaches of VUP in the Built-up Location



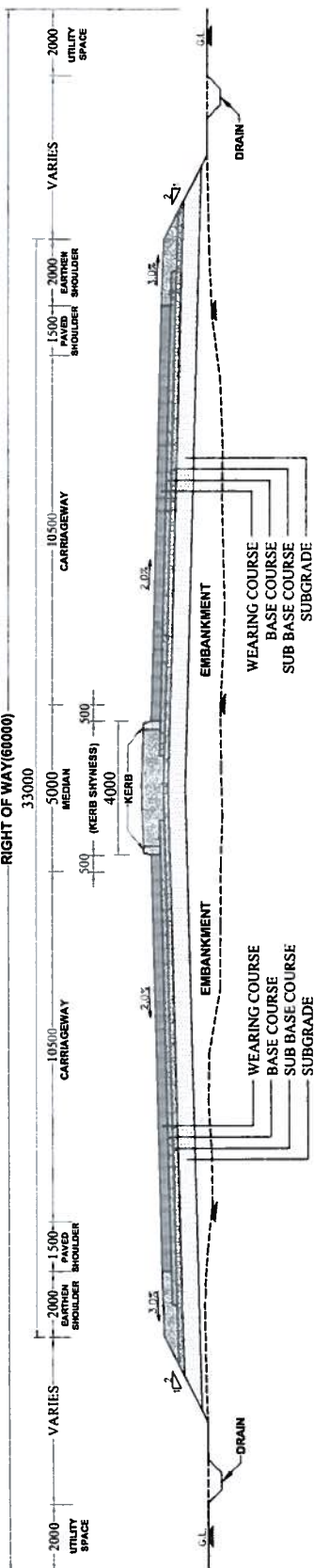
TYPICAL CROSS SECTION : TYPE - VIAA

Construction of New 4 Lane with Paved Shoulder & 5.0m. Median in Bypass / Realignment Stretches

Jasbindar Singh
General Manager cum Project Director
National Highway Authority of India, PIU-Aligarh
(Ministry of Road Transport & Highways, Govt. Of India)

	CLIENT NATIONAL HIGHWAYS AUTHORITY OF INDIA (Ministry of Road Transport & Highways, Government of India)	PROJECT CONSULTANCY SERVICES FOR Preparation of Feasibility Report for Four Lining with Paved Shoulders from Aligarh to Kharpur Section of NH-91 Through Public Private Partnership on Design Build, Finance Operate and Transfer Basis	CONSULTANT SAI Consulting Engineers Pvt. Ltd. A-11000, Gurgaon	DESIGNED BY D.A.U.	CHECKED BY P.S.	APPROVED BY S.K.	DATE	REV	DATE	DESCRIPTION	NOT TO SCALE	TYPICAL CROSS SECTION (TYPE - VA & VB)	ORG NO SAI - 2845HDFSRCTCS/05	REVISION : PA
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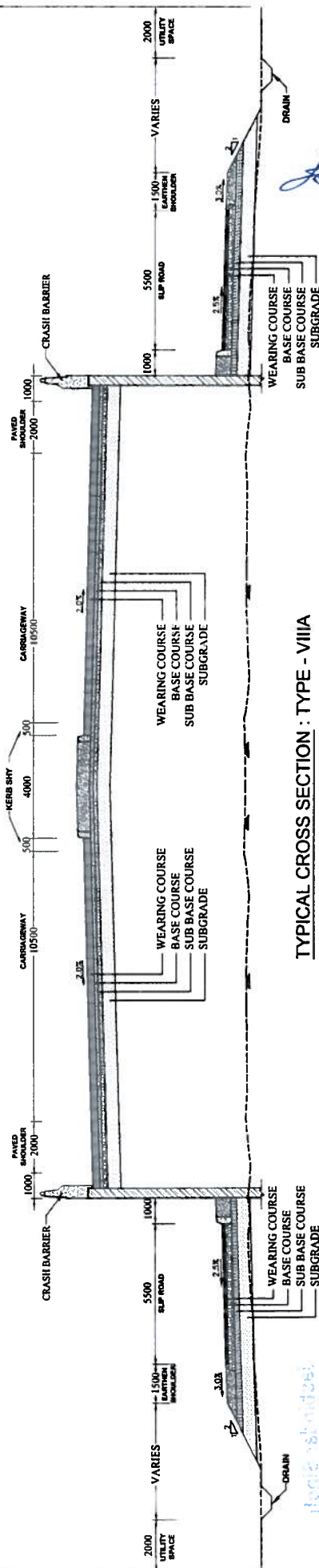
RIGHT OF WAY(60000)



TYPICAL CROSS SECTION : TYPE - VIIB

Construction of New 6 Lane with Paved Shoulder & 5.0m. Median in Bypass / Realignment Stretches

RIGHT OF WAY(60000)



TYPICAL CROSS SECTION : TYPE - VIIIA

Construction of New 6 Lane with 5.5m. Slip Road on Both Side in the Approaches of VUP in Bypass / Realignment Stretches

NOTE :- All Dimensions in mm

KEY PLAN



CLIENT:

NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Shipping Transport & Highways, Government of India)

PROJECT

CONSULTANCY SERVICES

FOR
Preparation of Feasibility Report for Four Lining with Paved Shoulders from Aligarh to Kanpur Section of NH-91 Through Public Private Partnership on Design Build Finance Operate and Transfer Basis.

CONSULTANT

SAI Consulting Engineers Pvt. Ltd.

SAI Consulting Engineers Pvt. Ltd.

REV

DATE

DESCRIPTION

CHKD BY

APPROVED BY

ISSUED BY

SCALE

NOT TO SCALE

ORG NO

SAI - 2845/HDFSR/TCS/06

REVISION

PA

Jasbinder Singh

General Manager cum Project Director

National Highway Authority of India, PULB

Ministry of Road Shipping Transport & Highways, Govt. of India

TYPICAL CROSS SECTION

(TYPE - VC & VA)

CHKD BY

APPROVED BY

ISSUED BY

SCALE

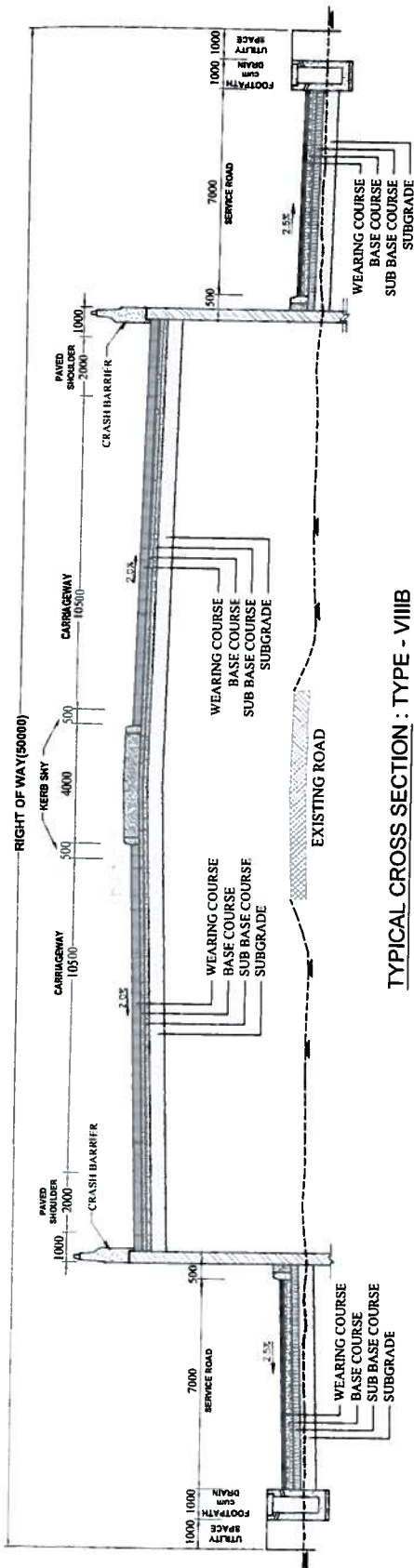
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SAI - 2845/HDFSR/TCS/06

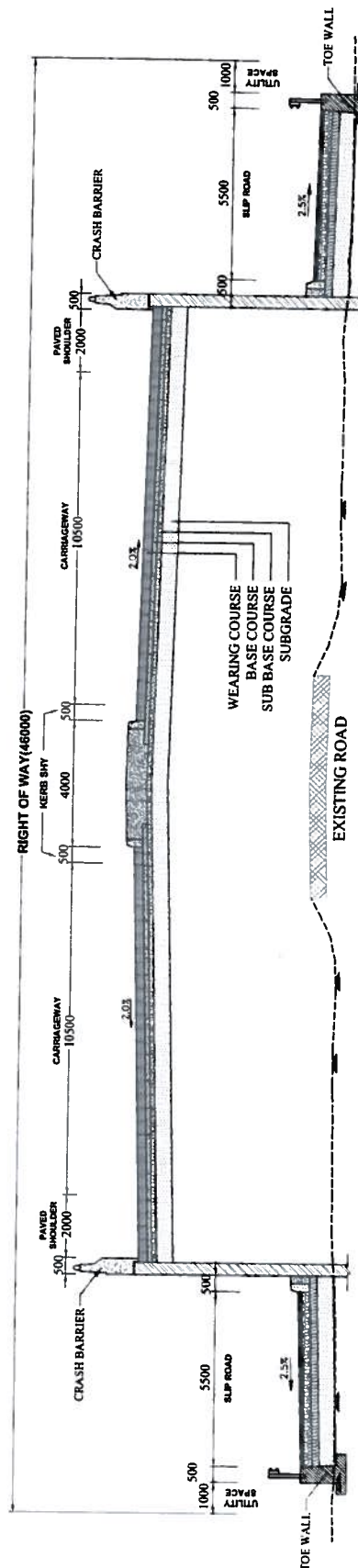
REVISION

PA



TYPICAL CROSS SECTION : TYPE - VIII B

Concentric Widening of Existing 2 Lane Road to 6 Lane with 7.0m. Service Road on Both Side in the Approaches of VUP Along Existing Road in Built-up Stretches



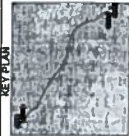
TYPICAL CROSS SECTION : TYPE - VIII C

Concentric Widening of Existing 2 Lane Road to 6 Lane with 5.50m. Slip Road on Both Side with Toe Wall in the Approaches of VUP along Existing Road in Rural Stretches

Jasbinder Singh
General Manager cum Project Director
National Highway Authority of India, PII-Airport
(Ministry of Road Transport & Highways, Govt. Of India)

NOTE :- All Dimensions in mm

KEY PLAN



CLIENT

NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Transport & Highways, Government of India)

PROJECT

CONSULTANCY SERVICES

FOR
Preparation of Feasibility Report for Four Laning with Paved Shoulders
from Aligarh to Kanpur Section of NH-91 Through Public Private
Partnership on Design Build, Finance Operate and Transfer Basis.

CONSULTANT

SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company

PA 10.07.2016 DRAFT FEASIBILITY STUDY REPORT
DATE 10.07.2016
DRAWN BY : D.M.L.
CHECKED BY : P.S.
APPROVED BY : S.C.
DESIGNED BY : R.C.

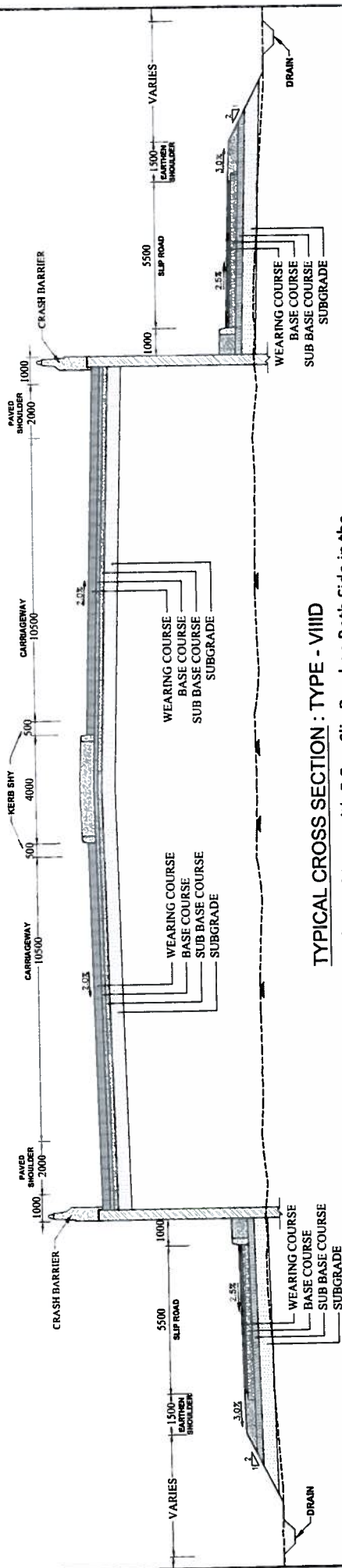
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(TYPE - VC & VIA)

NOT TO SCALE

DRG NO :
SAI - 2845HDFSRTCS/07

REVISION : PA

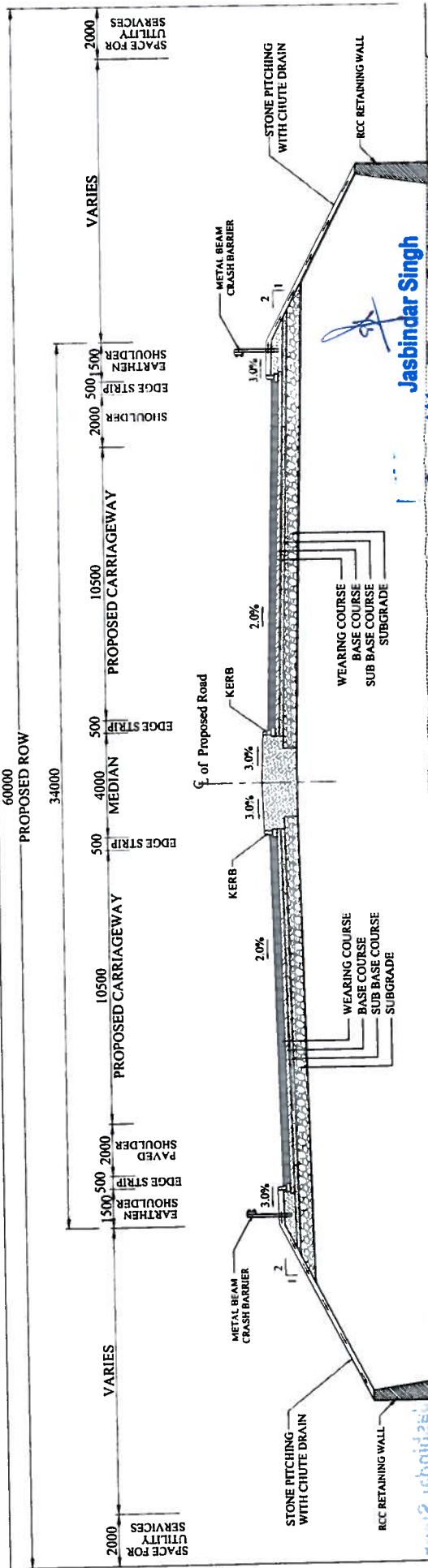
RIGHT OF WAY (60000)



TYPICAL CROSS SECTION : TYPE - VIII D
Construction of New 6 Lane with 5.5m. Slip Road on Both Side in the
Approaches of CUP in Bypass / Realignment Stretches

60000
PROPOSED ROW

34000

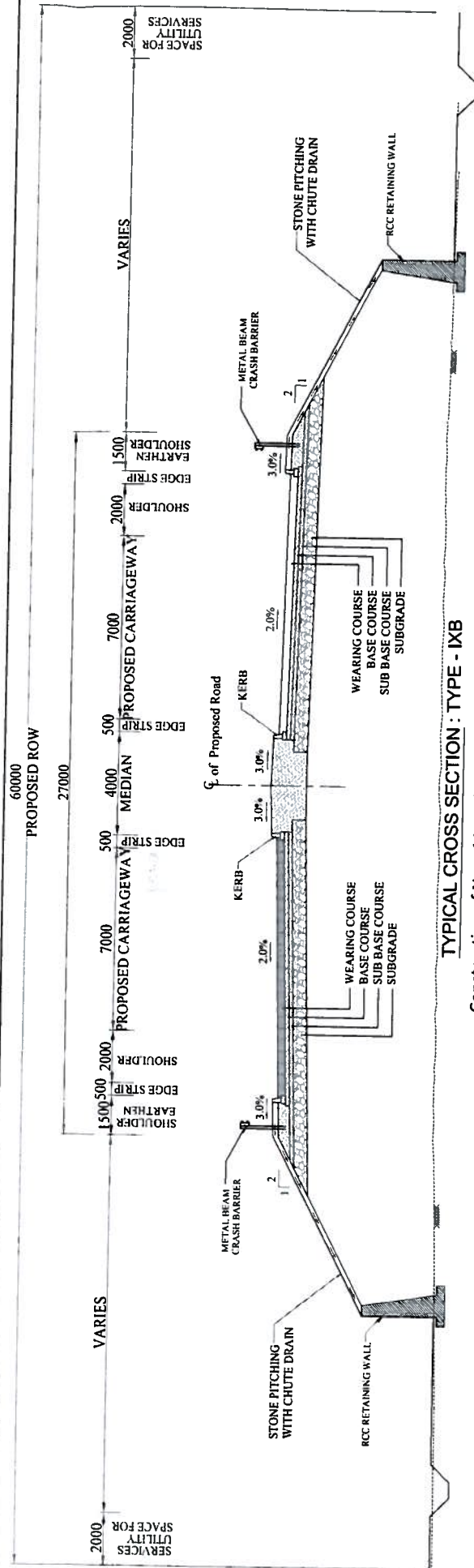


TYPICAL CROSS SECTION : TYPE - IX A

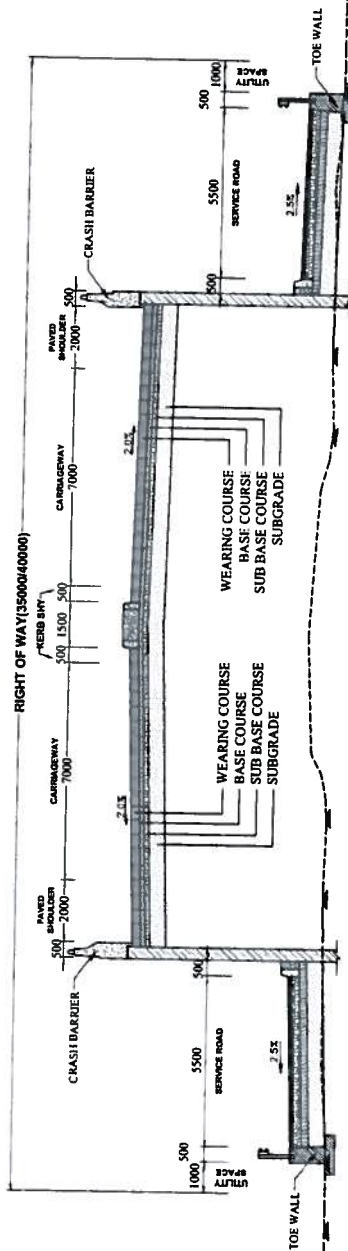
Construction of New 6 Lane in Approach of VUP in Bypass/
Realignment with Partial Retaining Wall & Embankment

Jasbindar Singh
General Manager cum Project Director
National Highway Authority of India, P.U.-Aligarh
(Ministry of Road Transport & Highways, Govt. Of India)

DATE: 08/09/2016 - 3:03pm PATH: D:\Highway\NH-91\Aligarh-Kanpur (TPO245)\03-08-2016\TYPICAL CROSS SECTION\PKG-3\TCS - RWAL - PKG-3.dwg	PROJECT: CONSULTANCY SERVICES FOR Preparation of Feasibility Report for Four Lanes with Paved Shoulders from Aligarh to Kanpur Section of NH-91 Through Public Private Partnership on Design Build, Finance, Operate and Transfer Basis.	CLIENT: NATIONAL HIGHWAYS AUTHORITY OF INDIA (Ministry of Road Transport & Highways, Government of India)	KEY PLAN	CONSULTANT: SAI Consulting Engineers Pvt. Ltd. (A 100% Indian Group)				REVISION: PA			
				PROJECT: CONSULTANCY SERVICES FOR Preparation of Feasibility Report for Four Lanes with Paved Shoulders from Aligarh to Kanpur Section of NH-91 Through Public Private Partnership on Design Build, Finance, Operate and Transfer Basis.				REVISION: PA			
NOT TO SCALE				DRAWN BY: DALL				TYPICAL CROSS SECTION (TYPE - VC & VIA)			
CHECKED BY: P.S.				APPROVED BY: S.A.				ORG NO: SAI-2845H/DFSR/TCS/08			
REV: DATE: DESCRIPTION				REV: DATE: DESCRIPTION				REV: DATE: DESCRIPTION			



TYPICAL CROSS SECTION : TYPE - IXB
Construction of New 4 Lane in Approach of ROB in Bypass/
Realignment with Partial Retaining Wall & Embankment

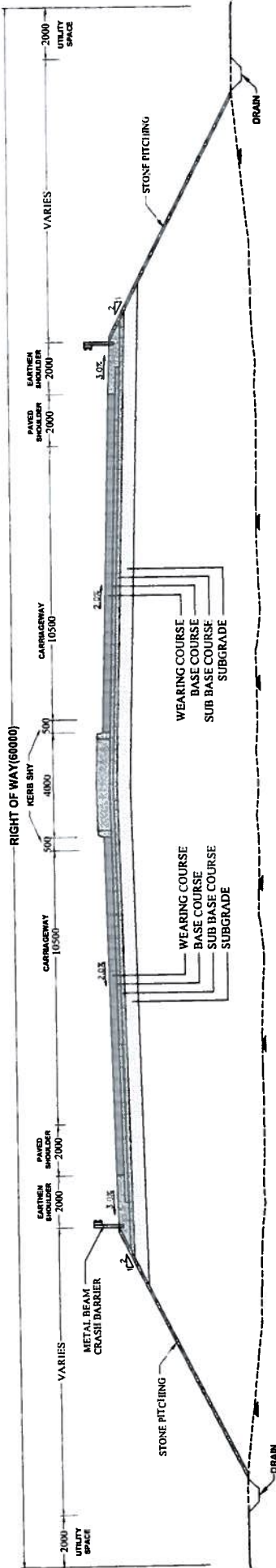


TYPICAL CROSS SECTION : TYPE - XA

**Construction of New 4 Lane with 5.50m. Service Road on Both Side
with Toe Wall in Approach of VUP in Bypass**

Jasbinder Singh
General Manager cum Project Director
National Highway Authority of India, PILA-141001
(Ministry of Road Transport & Highways, Govt. Of India)

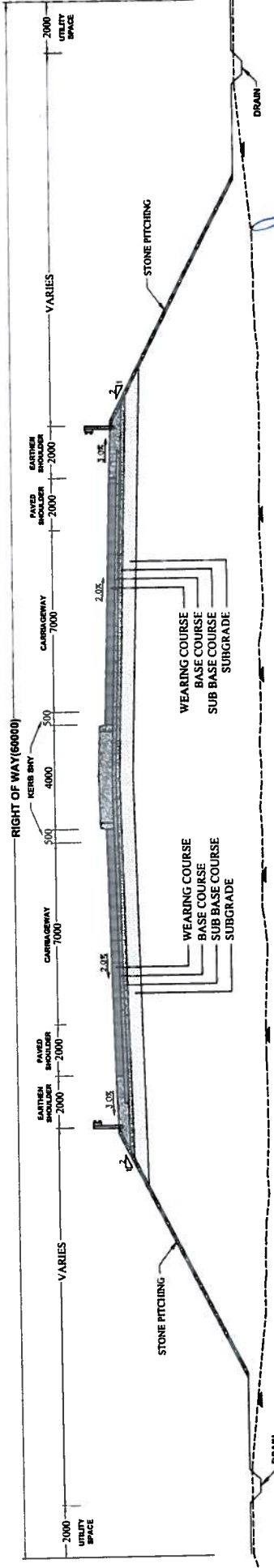
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TYPICAL CROSS SECTION : TYPE - XIA

Construction of New 6 Lane in Approach of CUP/LVUP in Bypass/Realignment Stretches

NOTE:-
STONE PITCHING & MCB HEIGHT > 3.0m.



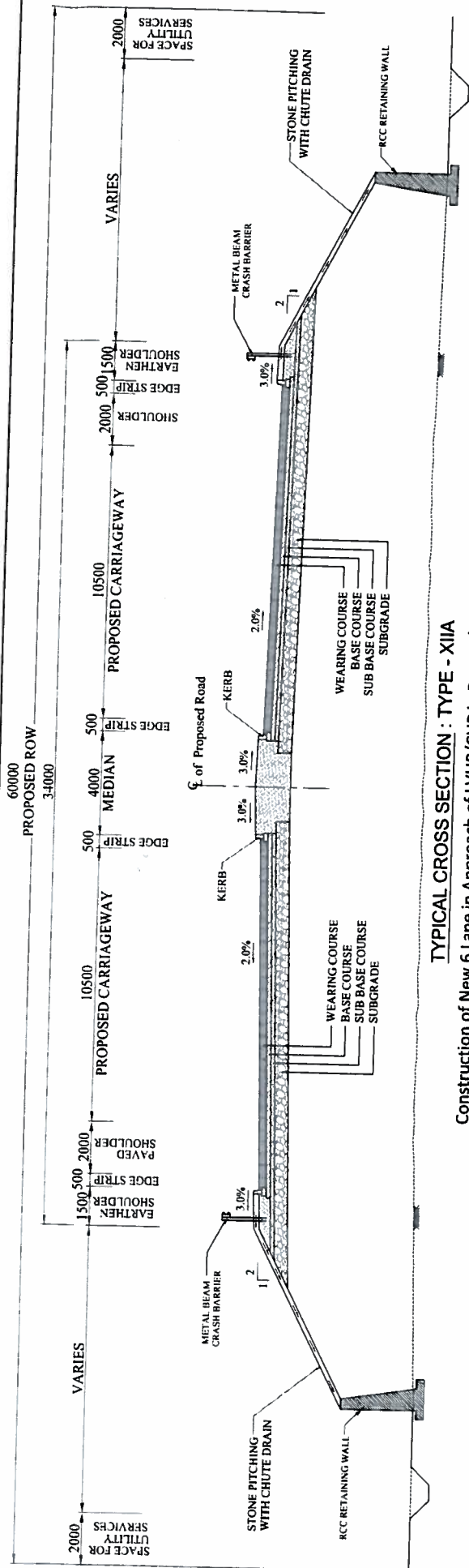
TYPICAL CROSS SECTION : TYPE - XIB

Construction of New 4 Lane in Approach of LVUP in Bypass/Realignment Stretches

NOTE:-
STONE PITCHING & MCB HEIGHT > 3.0m.

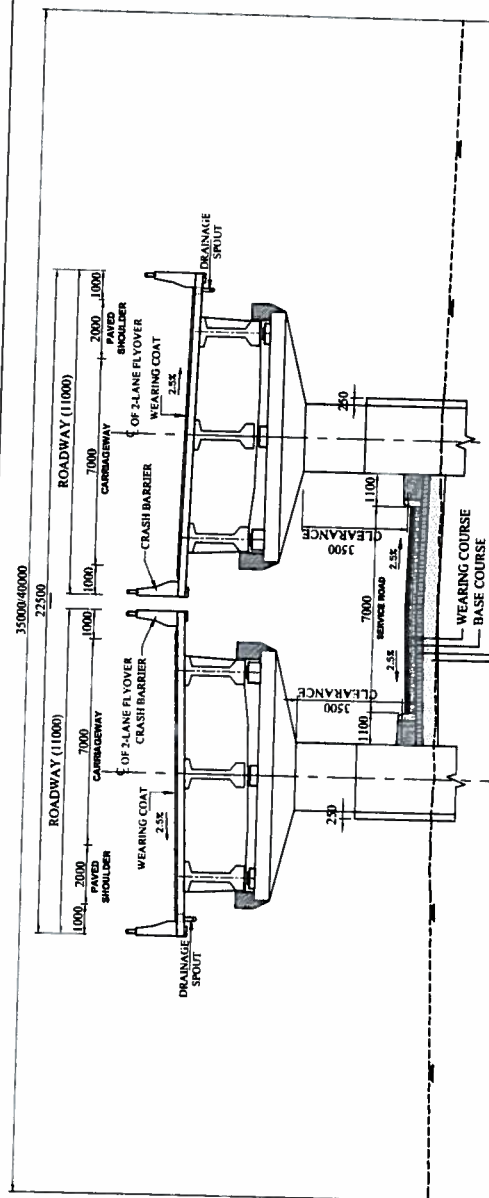
Jasbirinder Singh
General Manager cum Project Director
National Highway Authority of India, PIU-Aligarh
(Ministry of Road Transport & Highways, Govt. Of India)

SAI CONSULTING SAI Consulting Engineers Pvt. Ltd. ESTD 1982		PROJECT : CONSULTANCY SERVICES FOR Preparation of Feasibility Report for Four Lining with Paved Shoulders from Aligarh to Kanpur Section of NH-91 Through Public Private Partnership on Design Build, Finance, Operate and Transfer Basis.		CLIENT : NATIONAL HIGHWAYS AUTHORITY OF INDIA (Ministry of Road Transport & Highways, Government of India)	
DRAWN BY : B.A.U. CHECKED BY : P.S. APPROVED BY : S.K. ISSUED BY : R.C.	DATE : 10/07/2016 DRAFT FEASIBILITY STUDY REPORT SHEET NO : 10/07/2016	NOT TO SCALE	ORG NO : SAI-2845H/DFSR/TCS/10 REVISION : PA	TYPICAL CROSS SECTION (TYPE - VC & VIA)	



TYPICAL CROSS SECTION : TYPE - XIIIA

Construction of New 6 Lane in Approach of LVUP/CUP in Bypass/Realignment Stretches with Partial Retaining Wall and Embankment



— SUBGRADE

TYPICAL CROSS SECTION : TYPE - XIIIA

CONSTRUCTION: TYPE - AIIIA
Construction of New 4 Lane Viaduct with 7.00m Service Road
Under Viaduct Along Existing Road

Jasbinder Singh

General Manager cum Project Director
National Highway Authority of India, Pili-Aligarh
(Ministry of Road Transport & Highways, Govt. Of India)

NOTE :- All Dimensions in mm



CLIENT

NATIONAL HIGHWAYS AUTHORITY OF INDIA
(Ministry of Road Shipping Transport & Highways, Government of India)

PROJECT :

CONSULTANCY SERVICES

FOR
Preparation of Feasibility Report for Four Lining with Paved Shoulders
from Aligarh to Kanpur Section of NH-91 Through Public Private
Partnership on Design Build, Finance, Operate and Transfer Basis.

SAI
SYSTEM GROUP

**SAI Consulting
Engineers Pvt. Ltd.**

11

REV	DATE	DESCRIPTION
01	30.07.2016	DRAFT FEASIBILITY STUDY REPORT

TYPICAL CROSS SECTION
(TYPE - VC & VIA)

NOT TO SCALE

DRG. NO.:
SAL-2845HDEB70011

General Manager and Project Director
James R. Smith