INNOVATION IN PRECAST CONCRETE BRIDGES

PROF. MAHESH TANDON
MANAGING DIRECTOR, TANDON CONSULTANTS PVT LTD
DISTINGUISHED VISITING PROFESSOR IIT GANDHINAGAR

PRESIDENT-INDIAN SOCIETY OF WIND ENGINEERING
PRESIDENT-INDIAN ASSOCIATION OF STRUCTURAL ENGINEERS

KUALA LUMPUR-PUTRA JAYA HIGHWAY: PACKAGE 5 (RAMP 4)

IAHE WORLD BANK

20 FEB 15
APPRAOCH STRUCTURE OF SIGNATURE BRIDGES AT WAZIRABAD, NEW DELHI
Precast Segmental Viaducts with **Ribs**
(First Time in India)

*First Time in India:*
Precast Segmental Superstructure INTEGRAL TO PIER
BARAPULLA ELEVATED ROAD

TRADITIONAL BOX GIRDER SEGMENTS OF FULL ROADWAY WIDTH
BARAPULIA ELEVATED CORRIDOR: LAYOUT AND COMPLETED STRUCTURE
ELEVATED ROAD ABOVE BARAPULLA STREAM  2*4.5= 9km
CASTING-STACKING YARD
TRANSPORTATION OF BIG SEGMENTS OF MAJOR CROSSING
SEGMENTATION TECHNIQUE

BARARULLA ELEVATED CORRIDOR
SPECIAL CROSSINGS: SEGMENT ERECTION

CONSTRUCTION STAGE - 4

CONSTRUCTION STAGE - 5

CONSTRUCTION STAGE - 6
THE RAILWAY CROSSING UNDER CONSTRUCTION
OPERATION MIDNIGHT: 2 hrs, alternate days
LALA LAJPAT RAI CROSSING
NO DISTURBANCE TO TRAFFIC
LLR: SIMULTANEOUS PROGRESS OF BOTH CARRIAGEWAYS
BANGALORE ELECTRONIC CITY EXPRESSWAY

TRADITIONAL BOX GIRDER SEGMENTS OF FULL ROADWAY WIDTH
FIG 1 BANGALORE HO SUR EXPRESSWAY
Precast segment transported by low bedded trailer to site.
BANGALORE ELECTRONIC CITY X'WAY: SEGMENT ARRIVAL AT SITE
PRECAST SEGMENTS SUSPENDED FROM MAIN TRUSS DURING ERECTION
GENERAL VIEW OF PRECAST SEGMENTAL CONSTRUCTION WITH OVERHEAD LAUNCHING TRUSS
MUMBAI AMBEDKAR ROAD FLYOVERS
BOX GIRDER SEGMENTS OF HALF ROADWAY WIDTH
FINISHED FLYOVER
PILING IN DIFFICULT CONDITIONS CREATED BY OLD WATER MAINS
AMBEDKAR ROAD FLYOVER, MUMBAI, AFTER COMPLETION
READY FOR MATCH CASTING
MATCH-CASTING IN PROGRESS
CASTING YARD MOULDS WITH ADJUSTABLE BED
PREPARATION FOR LAST SPAN ERECTION
PRECAST SEGMENTAL FLYOVERS FOR DELHI GOVT ERECTION OF FOUR INDEPENDENT SUB-BRIDGES IN PROGRESS
STRESSING

DELHI FLYOVERS:
CONSTRUCTION METHODOLOGY
SECTION OF HALF DECK FOR 45m SPAN

COHIN PORT CONNECTIVITY BRIDGE

FULL GIRDERS DIFFICULT TO ERECT

GIRDERS CAN BE TRANSPORTED ONLY BY BARGE
HANGING GIRDER OF GURGAON: NEARING COMPLETION
VIEW OF CASTING YARD SHOWING STORAGE OF GIRDER SEGMENTS
85t PLATE GIRDERs USED FOR SEGMENT ASSEMBLY
80t BARGE MOUNTED CRANE ERECTING THE GIRDER SEGMENTS
SEGMENTS PLACED WITH GAPS ON ASSEMBLY GIRDER
TOTAL WT 150t
SEGMENT SPlicing AND DIAPHRAGM STUBS
FULL SPAN PRECAST CONSTRUCTION
BOX GIRDER LAUNCHING

JURL(E18 BRIDGE): FULLSPAN LAUNCHING
JAMMU UDHAMPUR RAIL LINK - VIADUCT E18

Showing Launching Girders, Lifting Portals and Positioned PSC Box Girders
JURL: VIADUCT E18
LIFTING OF PSC GIRDER IN ORDER TO MOVE LAUNCHING GIRDER FORWARD
JURL(E18 BRIDGE): FULLSPAN LAUNCHING
BRIDGE NO. 228

DFCC

04/03/2013
DFCC: SEQUENCE OF ERECTION
FULL SPAN PRECAST U GIRDER FOR EACH TRACK
PRECAST SEGMENTAL U GIRDER FOR TWO TRACKS

Simple spans from 17m to 34m
THANK YOU