

Proceedings
of
The 16th Symposium on Developments
in Prestressed Concrete

Contents

Invited Lecture

I	Prestressed Concrete Technology under Comprehensive Evaluation Bidding Systems	Kazuhiro NISHIKAWA	————— (1)
II	Risk Management for Quality and Performance of Concrete Structures	Yasuhiko YAMAMOTO	————— (9)
◇ (1)	Experimental study on structural characteristic of Hybrid Truss Girder Bridge with steel-concrete composite upper slab	Yuji SATO Shinichi HINO Kohei YAMAGUCHI Masatoshi TACHIKAKE	————— 1
◇ (2)	Development of the new type of web structure using Ultra High Strength Fiber Reinforced Concrete	Kenichi KATA Kazukiyo TAMAKI Naoki NAGAMOTO Akio KASUGA	————— 7
(3)	Development of new method for jointless PC viaduct using ECC joint	Masaru FUJISHIRO Kumiko SUDA Yosifumi NAGATA Akio YAMACHI	————— 11
(4)	Study on Structural Characteristic of Barrier-Free Stress-Ribbon Bridge with External Tendons	Taku YOSHIKAWA Tutomu MACHI Meguru TSUNOMOTO	————— 15
◇ (5)	Study of cross section for the cable-styed bridge and the extradossed bridge	Junji OGATA Hisanori OTSUKA Xu CHEN	————— 19
◇ (6)	A Study on the Calculation of Confinement Reinforcement for Displacement Based Design	Hiroshi AKIYAMA Saiji FUKADA Yasuo KAJIKAWA Kazuyuki MIZUTORI	————— 25
◇ (7)	Collision between girder and abutment, account for the deformation of abutment.	Kenji KOSA Masahiro MIYAZONO Tomohisa HAMAMOTO Takehiro IMAMURA	————— 31
(8)	Construction of Koromogawa Bridge	Hiroo KUDOH Shinichi SUZUKI Seiji IKENO Toshirou SASAKI	————— 37

(9) Construction of Prestressed Concrete Corrugated Steel Web Box Girder Bridge with Massive Concrete Member and Steep Vertical Grade	Yoshimasa KASHIMURA Shigeo ONODERA Akihiro OOHUSA Shingo SASAKI	----- 41
(10) The Construction of Composite Slab-Girder Bridge with U-shaped Section - The Superstructure of Enshou Railway Bridge -	Akiyoshi HASEGAWA Hidekazu OHSAWA Osamu SHIMOOHSAKO Mitsuaki JIN	----- 45
(11) Construction of Oigawa Aqueduct	Takayuki IWAKI Syuuichi KAWAHIGASHI Masaru NIHONBASHI Toshiaki KATO	----- 49
(12) construction of a Utype component bridge having span 55.2m	Naohiro TANADA Gaku MAEZAWA Takeshi OISHI Daisuke KOUZUKI	----- 53
(13) Plan and Construction of Sakawagawa No.1 Bridge with Incremental Launching Method	Katsuhiko MIZUNO Satoshi MIURA Yuji ASANO Takahiko KITAGAWA	----- 57
(14) Design and Construction of Sagami-Jukando,Sagamihara I.C. Viaduct	Hiroki SHIMADA Kinya KOFUJI Hirayoshi IMAI Yusuke ROYAMA	----- 61
◇(15) Development of Nickel-coated Carbon Fiber Sheet Anode for Cathodic Protection of Concrete Structures	Toshiaki KOBAYASHI Masayuki NAKAMURA Kazuhiro IKAWA Masahiko HOSHINO	----- 65
(16) Construction Report of MISAKI Bridge ro pier repairing using Cathodic Protection.	Hideo WAKISAKA Masayuki NAKAMAURA Katsutoshi ANAYAMA Toshiaki KOBAYASHI	----- 71
(17) Application of The conductive painting method to Funatooshi-bridge	Masatoshi KAIHARA Hirotsugu YAMAMOTO Kozo KITAYAMA	----- 75
(18) An investigation and repair construction report of the SINSUKUTA bridge whose cathodic protection was constructed 15 years ago.	Takashi SHINOHARA Takashi IZUMI Osamu OOSHIRO Takao UCHIHARA	----- 79
◇(19) Effectiveness of Prestressed Concrete with BFS on Deterioration of ASR	Masaki MINODA Takahiro MATSUYAMA Ryutaro FURUKAWA Kazuyuki TORII	----- 83

◇ (20) Applicability evaluation of amount of residual expansion in boring core pulled out from ASR structure	Masatsugu MIURA Kenji KOUSA Yoshio HISARI Yasushi KAWASHIMA	87
(21) A Report about a Long-Term Measurement and a Loading Test of PC members with Alkali-Silica Reaction	Satoshi HORIKAWA Kazutoshi OKUYAMA Takashi OOKUBO Toshiya IHAYA	93
(22) Overview of Warumi Bridge	Susumu KAJIKAWA Norihide SAKUMOTO Kiyohiko KOMESU Hiroshi AKIYAMA	97
(23) Design and Construction of Open Floor Type PRC Through Girder Bridge - Daiichi-Yoshinogawa Bridge -	Shinichi IBUKI Noboru IZAI Koichi GOTO Hiromichi SUGAWARA	101
(24) Design and Construction of Abutless cantilever girder type three spans PC rahmen bridge.	Kazuo SAKAGUCHI Takahiro MATSUDA Hiroyuki GOTHO Akinori KATAGIRI	105
(25) Design and Construction of Baba Bridge - 45m span precast hollow slab -	Kenichi SAITO Masaya NAKANO Hi KUME	109
(26) Design and Construction Nakasindenn Brige	Tatsuto HORIUCHI Takanori ICHIOKA Norio TEZUKA Nobuo KATOU	113
(27) Design and execution report of MINABE viaduct	Shinki KISHIMOTO Haruyuki CHIKAMI Syunji HANABATA Atsusi NAGANO	117
(28) Design and Construction of Hamakita Viaduct	Akiharu ISHII Takeshi TOKUNOU Ryosuke ANDO Kenichi NAKATSUMI	121
(29) Design of Murara Bridge	Masayuki IZAWA Masaki GOTOU Takeshi KATO Naoki YOSHIHARA	125
◇ (30) Experimental Study on Crack Spacing and Crack Width of Prestressed Reinforced Beams. Subjected to Bending Moment	Hisashi AOYAMA Hiroshi WATANABE Hirohisa KOGA Yuichi KITANO	129

◇ (31) Fundamental Study on Remaining Crack Width of Prestressed Reinforced Beams under Designed Bending Moment	Yuuki TAKEUCHI Hiroshi WATANABE Hirohisa KOGA Yuichi KITANO	----- 135
◇ (32) Flexural Behavior of Partially Prestressed Concrete Beams with Different Diameters Reinforcing Bar as Tension Reinforcements	Chun-he LI Yukikazu TSUJI Kenichiro NAKARAI Hirohisa ARUGA	----- 141
◇ (33) Shear Behavior of Externally Prestressed Concrete T-Beams using Super Lightweight Concrete and its Finite Element Analysis	Atsushi IGUCHI Yoshiaki YAGINUMA	----- 147
(34) Structural Characteristic of lightweight Slab using TrussRB	Hirofumi KUROKAWA Ryota USHIO Yoshinori TANIGUCHI	----- 153
◇ (35) Experimental study on pretensioning method using prestressing steel of big diameter and anchor	Hiroshi TACHIBANA Kengo HARA Mikio KODAMA Tomonori HORII	----- 157
◇ (36) Development of the concrete which utilized an abolished roof tile	Kunihiko TOGAWA Yoshinori TANIGUCHI	----- 163
(37) Shrinkage Properties of Concrete Using Expansive Admixture and Shrinkage Reducing Agent	Hideaki TANIGUCHI Hiroshi ASAI Masanori HIGUCHI Hiroshi MIKAMI	----- 167
(38) Study on durability of the existing PRC bridge	Yuichiro KOGA Takashi TAMAKOSHI Toshiaki NANAZAWA Mari ISHIO	----- 171
◇ (39) Study on the removing cross-section of PC girder to damage salt attack	Yuichi KITANO Hiroshi WATANABE Yuzuru HAMADA Sadaaki NAKAMURA	----- 175
◇ (40) Development of a New Monitoring Sensor for Corrosion of Steel	Kyoji NIITANI Toshiaki KOBAYASHI	----- 179
(41) The Characteristics of Concrete produced by Normal-Ecocement	Michikazu TAWARA Chengning WU	----- 183
----- ◇ (42) One measures that aimed at durability improvement of a pre-cast segment bridge to be able to put in Okinawa	Yoshikazu HENZAN Koichiro ONZUKA Katsumi JYONO	----- 187
(43) Wheel Running Tests for Precast Prestressed Concrete Slab using New RC Joints	Satoshi OOTANI Hiroyuki ABE Masayuki NAKAMURA Kengo HARA	----- 191

(44) The high durability pre-tension PC bridge that aimed at the maintenance free lance	Yoshihisa ATA Yuuji TAKEDA Hiroshi NOGUCHI Akira SEKINE	----- 195
(45) Design of Precast PC Deck Slab of the Piled Pier Structure (Tokyo International Airport Runway-D)	Masami KOSHIISHI Hiroya FUKUMOTO Hiroyo MINAMI Kentaro NANGO	----- 199
(46) Tokyo International Airport Runway D - Experimental study on structural performance of precast concrete slab of piled elevated platform	Toshimichi ICHINOMIYA Takatoshi NOGUCHI Masamitsu UEHARA Yohei TAIRA	----- 203
(47) Design and Loading tests for UFC slab - Tokyo International Airport Runway D -	Norio WATANABE Takatoshi NOGUCHI Kaori SHIMO Akio OTAKE	----- 207
(48) Element experiment of girder joint in Tokyo International Airport(Haneda) GSE bridge	Hiroyuki MUSHA Yasuo TAKEDA Tatsuhiko SUZUKI Norjo WATANABE	----- 211
(49) Monitoring of Pre-tension Web PC Box Girder Bridge	Asami IWASAKI Takeshi KOUSA Hideji HOSHIMURA Tadahiko TUTUMI	----- 215
(50) Design and construction of Kawahirabashitoriai Bridge	Hiroyuki SUZUKI Yoshikazu YANO Naoto OONISHI Tomoaki YOSHIMURA	----- 219
(51) Design and Construction Method for Widening of Bridge Slab in Nakanogo Bridge	Yasuhiro KYODA Koji OSADA Kineo OKADO Takeshi YUGE	----- 223
◇(52) Seismic Behavior of Precast Prestressed Frames with Corrugated Steel Plate Damper	Yukako ICHIOKA Susumu KONO Fumio WATANABE Yoshihiro OHTA	----- 227
◇(53) Experimental Study on Relations between Load Deformation Characteristics and Damages of Concrete Flexural Members	Yumiko YOSHIDA Tadashi NAKATSUKA Hideaki TATSUMI	----- 233
◇(54) Cracking Behavior of Prestressed Reinforced Concrete Beams using Highstrength	Duck Kee LEE Takuma NISHI Yoshiteru OHNO Takao NAKAGAWA	----- 239

◇ (55) Seismic Retrofit of RC Buildings by Prestressed Precast Brace System with CFT member and FRC member	Mamoru ODA Susumu KONO Fumio WATANABE	----- 245
◇ (56) Study on Bond Characteristic of Prestressing Strand in Concrete	Kazuya MORITA Ichizo KISIMOTO Yositeru OONO	----- 251
(57) Construction of Dome Type Precast PC Tank (a water tank for agriculture)	Masaru MORI Toshihiro YAMANAKA	----- 257
(58) Design and Construction of a Rectangular Water Tank using Precast Concrete	Hiroyuki UCHIBORI Seijirou UCHIDA Kenji FUJISAKA Kazunori SHIBATA	----- 261
(59) Study of the Application of Unify Base slab and Wall Model in Large Prestressed Concrete Tank	Masaru SUZUKI Shigemasa KATADA Tomoki ITO Masayasu ADACHI	----- 265
(60) Application of new Strengthening Technology with Tensioned CFRP Plates	Terumitsu TAKAHASHI Takeshi OHSHIRO Akitaka TAKEBUCHI Kazuteru MORIKITA	----- 269
(61) Strengthening of Rc Slab by Aramid Fiber Sheet Grid Pattern	Hiroaki NAGAI Naofumi ANDO Norimiti NAKAJIMA Masato KANAYAMA	----- 273
(62) Replacing Construction of Deck Slab using Precast PC Slab -Chuo Expressway Ozawagawa Bridge-	Hideyuki SATOHO Akitaka TAKEUCHI Masaki OTSUJI Kazuyuki JYODAI	----- 277
(63) Report on repair work of Atago Bridge	Masahiro GOTO Kazuhiro ISHIKAWA Yasuhiko AKASAKA	----- 281
(64) Report of exchange support work by MAC system	Takaharu NISHIDA Yasuyuki KATSUYA Yuuji MIYAHARA	----- 285
(65) Report of Reinforcement Work of Yaihara-Bashi Bridge on Route9	Noriyuki SHIINA Junya KONISHI Mutsumi KOBAYASHI Ryu KOU	----- 289
(66) Reinforcement Design of a PC Rigid Frame Bridge with Central Hinge for HATIMANTAI Bridge	Daisuke TAKEMURA Masayuki WATANABE Kenji ABE Taisuke UESUGI	----- 293

◇ (67) A Study on PC Box Girder Bridges using Steel Corrugate Web combined with High Strength Concrete	Hideaki SAKAI Seichi KUSANO Masafumi TAKEZAWA	----- 297
(68) Design and Construction of Bungotsukumi Bridge	Toru YOSHIMURA Katsuaki TANAKA Yoshihiro FUJIKI Masatomo ISHIDA	----- 303
(69) Deflection Control of Yayoi Bridge	Shunsuke MINODA Kiyo TAKANO Hisashi KAKINOHANA Hidekazu YOSHIMATSU	----- 307
(70) Influence by a Temperature effect of PC Box girder with Corrugated Steel Web -The NEW TOMEI Expressway Akabutigawa Bridge	Atsushi ITO Keiiti AOKI Naoki HAGIWARA Takeshi HIROSE	----- 311
(71) Design and Construction of MIYAGASHIMA Viaduct	Masayoshi SATO Yoshimichi ITO Ayuko MISE Kentarou NISHIZAWA	----- 315
(72) The Cantilever Erection Method using Corrugated Steel Web as Erection Girder-The NEW TOMEI Expressway Akabutigawa Bridge	Naoki HAGIWARA Keiiti AOKI Yoshihiko TAIRA Atsushi ITO	----- 319
(73) Construction of Sugitanigawa Bridge -New PC Corrugated Steel Web Box Girder Bridge using Precast PC-	Hidetoshi TAKAFUCHI Toyohide OKUZUMI Masao TOHMA Kazuki SUGIURA	----- 323
(74) Design of New PC Corrugated Steel Web Box Girder Bridge using Precast PC Panels -New Meishin Expressway Sugitanigawa Bridge-	Hitoshi KOBAYASHI Kenichiro ASHIZUKA Akira TAKAHASHI Syunji HATANAKA	----- 327
(75) Repair work in RC Pier of KASHIMA Bridge by PC Confined Method and Carbon Fiber Sheet	Kunihiro ISHIDA Akira IWATA	----- 331
(76) Construction of Low-rise Noise Barrier with Acoustic panel	Toshihiro IWAI Yasushi FUJIOKA Kunihiro ISHIDA	----- 335
(77) A Measurement Report of NAGASE-OHASHI Bridge	Takaaki UMEDA Shinichi TORAMOTO Wataru TSUTSUMITAKE Takashi OOKUBO	----- 339
(78) Construction Method above the Side Span Pier of Girder in Bai Chay Bridge	Masamichi YOSHINO Koji HAYASHI Kazuteru TSUCHIDA Naoki NAGAMOTO	----- 343

(79) Installation of Stay Cables with Isotension System	Naoki NAGAMOTO Kouji HAYASHI Kazuteru TSUCHIDA	----- 347
(80) Detensioning Device for Large Capacity Tendon	Hidekatsu ITAYA Kouji WATANABE Ryosuke KUROWA Shutarou UCHIYAMA	----- 351
(81) Vibration test of Ohmi Odori Bridge(Rittoh Bridge)	Tetsuo HASHINO Kenichiron ASHIZUKA Akira TAKAHASHI Takashi SUDA	----- 355
◇(82) Shear Transfer Strength of the Joint of Precast Members with Ultra High Strength Fiber Reinforced Concrete	Yohei TAIRA Toshimich ICHINOMIYA Noriaki MATSUBARA Yuij WATANABE	----- 359
(83) Fatigue Experiments of Prestressed Concrete Beam made with High Strength Fiber Reinforced Mortar	Michihiro SAKURADA Hiroaki OHYMA Kunihiro ISHIDA Sumio HAMADA	----- 363
(84) Construction of Post-tensioning Girder made from Ultra High Strength Fiber Reinforced Mortar .	Hironori TANAKA Kazunori UCHIDA Kunihiro ISHIDA	----- 367
(85) Design and Construction of Mikaneike Bridge-2-span continuous Bridge made by Ultra High Strength Fiber Reinforced Concrete(Ductal)-	Hidehiko INAHARA Takeru YAMASHITA Hiroyuki MUSYA Takeshi YAMANOI	----- 371
(86) Construction of a PC Through Girder Type Pedestrian Bridge using Ultra High Strength Fiber Reinforced Concrete (ductal)	Manabu HOSOTANI Hiroyuki MUSYA Atushi MIZUTANI Tetsuo NISHIURA	----- 375
(87) Execution of Toyota pedestrian bridge	Kunihiro OSHIMA Minoru NAKASHIMA Kouzi TANAKA Hidehiko INAHARA	----- 379
(88) Manufacture of a PC Through Girder Type Pedestrian Bridge using Ultra High Strength Fiber Reinforced Concrete	Akira MIYAJIMA Yasuo HIRAI Takahiro MATSUYAMA Michihiro GOTO	----- 383
(89) Construction of a PC Through Girder Type Pedestrian Bridge using Ultra High Strength Fiber Reinforced Concrete	Katsuhiko YOKOHATA Yasuo HIRAI Keiji FUKUSHIMA Gunsei SHIN	----- 387