

Proceedings of The 26th Symposium on Development in Prestressed Concrete

Contents

Invited Lecture

I	Conceptual Design, the Only Procedure for Achieving Sound Engineering Proposals	Hugo Corres Peiretti	-----(1)
II	The History of PORT OF KOBE ~150th Anniversary of the PORT OF KOBE ~	MORITA Kiyoshi	----- (13)

General Paper

(1)	Construction of YOKA HIDAKA ROAD SYUKUNAMI 2 BRIDGE	KINUMOTO Jun GOTO Teruhisa SHINGU Yasuo KOUZUKI Daisuke	-----1
(2)	Construction of the Shaft Weight Top Version by the Erection Girder Method	MORISHITA Shigekazu NAKAYASU Yoshiaki MATSUI Sayaka	-----5
(3)	Construction Method for SHINDAIMA POND BRIDGE (Thrust Construction Method)	HASHICHI Tsuyoshi OGAWA Takeshi KATAOKA Tomohiro	-----9
(4)	Construction of Kamikyoshi Viaduct	KURODA Hidenori TSUTSUMITAKE Wataru IGATA Masami OKUBO Takashi	-----13
(5)	Construction of the Railway Bridge which is Restricted by the Narrow Yard Area	KUJIRA Shigeyoshi YAMAMOTO Syunya TANABE Kiyoshi SUGIURA Yoshinori	-----17
(6)	Report of Existing PC Continuous Box Girder Bridge Widening Construction	KAJIWARA Shohei ASAI Takayuki SUZUKI Yoshiaki AMAGASA Yasunobu	-----21
(7)	Construction Method in the Narrow-space and Salt Damage Countermeasure of Connection Crossbeam	ODAKA Kazuto TAKAHASHI Mitsushige KOIZUMI Shintaro	-----25
(8)	PC Box Rigid-frame Bridge Dismantling in the National Park	KATOH Tomoyasu KIKUCHI Akio ISHII Megumi	-----29

(9)	Method for Replacing TOSHITA Bridge	TSURU Kazuto UTO Chikara MIHARA Shinichi SAKAMOTO Taketoshi	-----33
(10)	Aseismic Reinforcing Work of the Bridge with Rocker Pier Damaged by the 2016 Kumamoto Earthquake	TAKAMURA Takahiro NISHIYAMA Syozo KUDO Masao KATA Kenichi	-----37
(11)	Construction of Precast Prestressed Concrete in the Super High-rise Office Building (Futako Tamagawa Rise II-a Block)	IMAMURA Masayoshi WACHI Yoshinori KOBORI Tomohisa	-----41
(12)	Production and Construction of an Office Building Member by PCaPC Method	YOSHIMURA Makoto TAKANO Masayoshi YAGINUMA Hiromi GOTOU Hiroshi	-----45
(13)	Design of PC Detention Center in the US	Hyeong Jae YOON	-----49
(14)	Design and Construction of a PC Lattice Girder to Build Large Space	FUKUDA Akiyoshi IMABAYASHI Mitsuhide IKEDA Hayato	-----53
(15)	Seismic Reinforcement Work Construction Report of a Multi-family Residence while Staying Fully	KAGEYAMA Syousuke MIWA Akihiro SAKAGUTI Masaaki HAMAMOTO Tetsuji	-----57
(16)	Seismic Reinforcement by PCa-Steel Damper Framing to High-rise Housing	KATSUKI Yasuhisa HAMAMOTO Tetsuji YAGINUMA Hiromi	-----61
(17)	A Study on the Control of Prestressing Force for Building about Friction Coefficient in Particular	YOSHINAGA Kenji	-----65
◇(18)	Prediction Accuracy of Structural Performance Evaluation Methods for Prestressed Concrete Beam Members Verified by Experimental Database	TANI Masanori TAKAHASHI Tsuyoshi SAKASHITA Masanobu	-----69
◇(19)	Evaluation of Upward Deflection Due to ASR for PC Specimen by Analytical Simulations	YANO Yusuke KOSA Kenji GODA Hiroki	-----75
◇(20)	Deformation Behavior of Prestressed Concrete Beam due to ASR Deterioration with External Water Supply on the Top Surface of the Beam	SAKAI Shun YAMAMOTO Daisuke HAMADA Hidenori SAGAWA Yasutaka	-----81
◇(21)	Fundamental Study on the Evaluation of Expansion Behavior of RC Structure due to ASR by RBSM	SUGIMOTO Keita YAMAMOTO Yoshihito MIURA Taito NAKAMURA Hikaru	-----87
◇(22)	Behavior of Chloride Ion Penetration into Concrete under Cyclic Prestressing	SAITO Junpei SHIMOBÉ Satoru	-----93

(23)	Prediction of Complex Deterioration and Evaluation of Structural Performance about Existing PC Structures	ITO Hitoshi MIZOBUCHI Toshiaki	-----99
◇(24)	The Consideration about the Freeze-Thaw Resistance and Chloride Ion Penetration Resistance of FA Concrete	ICHIYAMA Daiki HASHIMOTO Shinichirou HIDAKA Syouta TOKUMITSU Suguru	-----103
◇(25)	Study on Freeze-Thaw Resistance of Concrete Blast-Furnace Slag Fine Aggregate	TAWARA Michikazu SUGITA Atsuhiko NIITANI Kyoji	-----109
(26)	Salt Damage Repair Work of T Girder End Cross Section Shape Changes	TAMURA Seiichi IKEDA Takeshi TSUKUMO Kei YOSHIDA Mitsuhide	-----115
(27)	Construction Report of MAKITA AREA OVERBRIDGE	SATOU Takanori MATSUDAIRA Shinji HARAKO Kazuo	-----119
◇(28)	The Effect of Prestress on the Shear Capacities of Prestressed Concrete Tapered Beams without Stirrups	KAWAHARA Takahiro NAKAMURA Takuro NIWA Junichiro	-----123
◇(29)	An Investigation on Fatigue Life Prediction for RC Slabs under Traveling Wheel-type Load Test	TAKEDA Kyoko HAMADA Natsuko SATO Yasuhiko	-----129
◇(30)	Analytical Examination on Punching Shear Behavior of PC Slab with Lightweight Aggregate and PVA Short Fibers	ITO Hajime SUZUKI Satoshi KITANO Yuichi MIWA Kenji	-----135
(31)	Application of the High Strength Lightweight Concrete on the Prestressed Concrete Structure	KODERA Kazuki MIZUKOSHI Mutsumi KAMIDA Seiya YOKOHATA Katsuhiko	-----141
◇(32)	Fatigue Life of Railway PRC Girder Considering Dynamic Response	GOTO Keiichi MINOURA Shintaro WATANABE Tsutomu UEHAN Fumiaki	-----145
◇(33)	Proposal for a Design Method of PC Road Bridges Using the Constant Shear Flow Panels	HARADA Takehiko KURIYAMA Teruo MASAKI Mamoru HOSHIKUMA Junichi	-----151
◇(34)	A Study of Applicability of Constant Shear Flow Panel Analysis for Design of a PC Road Bridge	KURIYAMA Teruo HARADA Takehiko KOUNO Haruhiko SHIRATO Masahiro	-----157
◇(35)	Fundamental Study on Numerical Stability Conditions of FEM Circulating Pipe Cooling System Analysis	ARAHATA Satoshi SAITOU Ryouichi ISHIKAWA Yasuaki	-----163

(36)	Study on Influence of Frame Bridge with Inclined Side Column Supports Design with Base on Revision of Specifications for Highway Bridges	TAKAHASHI Akihiro ARASEKI Shoji KITAHARA Kazuhiko	-----169
(37)	Study on the Girder with a Wide Section of a Long Span PC Cable-stayed Bridge	TAKAOKA Rei UCHIBORI Hiroyuki NAGAMOTO Naoki	-----173
(38)	Development and Embodiment of the Sectional PC Pier Using the Precast Concrete Member	MAE Yoshiaki AOKI Haruko MATUMOTO Masayuki	-----177
(39)	The Structural to Planning and Design of the Yoshinogawa Bridge	YAMAGUCHI Tsunehisa WADA Yoshinori IMAMURA Takehiro MOROHASHI Akira	-----181
(40)	Design and Construction of the Diversion Underpass in the Large-scale Replacement Using Precast Members	TOMINAGA Takayuki ISOBE Ryutaro KOJIMA Naoyuki IWAKI Takayuki	-----185
(41)	The Fatigue Durability Checking Test of Joints between Precast PC Decks	NAGAO Chiaki HIROSE Takeshi	-----189
◇(42)	Development of Joint Method of PCa PC Slab	KYUTOKU Takahiro SHIJI Akio MOROHASHI Katsutoshi	-----193
◇(43)	Development of the Precast PC Slab Joint by Using Reinforcing Bar with the Expanded Diameter Head	SANGA Takashi ARIKAWA Naoki SUZUKA Yoshikazu NAKATSUMI Kenichi	-----199
(44)	Development on the Splice Joint of Precast Wall Using Reinforcing Bar with Expanded Diameter Head	FUJIOKA Taisuke UCHIBORI Hiroyuki SANGA Takashi NAGAMOTO Naoki	-----205
(45)	Construction of Geosynthetic-Reinforced Soil Integral Bridge by Application of PC Girders -Kyusyu Shinkansen (West Kyusyu Route)-	ISHII Hidekazu ISHIKAWA Taro KIKUCHI Keisuke FUKUSHIGE Takaaki	-----209
(46)	Verification of the Effects on an Automatic Prestressing System	ISHII Tsuyoshi XIN Junqing HAYAKAWA Gaku	-----213
◇(47)	The Development and the Application of Epoxy-Coated PC Strand Including Optical Fiber Gauge	OKUBO Kazumasa IMAI Michio NAKAUE Shinji HAYAKAWA Michihiro	-----217
(48)	A Study on the Tension of PC Bridge Using Polyethylene Sheath	AMAYA Kimihiko NIITANI Kyouzi KITANO Yuuichi	-----223

(49)	Bridge Surface Elevation Control Using Total Station with Automatic Tracking Function	OHNO Sunpei ISOBE Yoshitaka SUGAWARA Hiromichi	-----227
(50)	Development of Management System for Concrete Surface Finishing by Using Photograph Measurement Technology and AR Technology	ONO Kanta KAKEHASHI Takao MIKAMI Hiroshi HOSONO Hiromi	-----231
(51)	Application of Internal Fixing Method on PC T-Girder Bridge Rebuilding Works	WATANABE Hirofumi KATSUMATA Yoshio MORIISHI Yoshihisa YAMAGISHI Toshikazu	-----235
(52)	Construction of SHIOKAWA Bridge of SHIN-MEISHIN EXPRESSWAY	SIN Shigeki TANAKA Kouichi KAWANAKA Ryouichi MIYAMOTO Kenji	-----239
◇(53)	Development of Automatic Water Temperature Control System for Pipe Cooling	DAI Akiyoshi HIGUCHI Masanori HARA Katuya MURAO Mitunori	-----243
(54)	Construction of a Prestressed Concrete Composite Truss Bridge, Hakkou	OONO Tatsuya KAGOTANI Kentarou SATOU Takuya HORIUCHI Tatsuto	-----249
(55)	Instrumentation Control of a Prestressed Concrete Composite Truss Bridge, Hakkou Bridge	GOTO Tomokazu KAGOTANI Kentaro OONO Tatsuya SATO Takuya	-----253
(56)	Construction of WAKAYAMA Junction A Ramp Bridge	NISHIMAKI Shoichi FUJIMOTO Satoshi YAMAMOTO Taizo NISHIMURA Isao	-----257
(57)	Construction of the Aigawa Bridge on the Shin-Meishin Expressway	TERASHIMA Yohei MIYAUCHI Tomoaki YAMANAKA Yasushi KOBAYASHI Kuniyuki	-----261
(58)	Construction of the Arinogawa Bridge on Shin-Meishin Expressway	IWAI Toshihiro HONDA Masakazu AZETSU Nobuhiko KATO Takamasa	-----265
(59)	Construction of Shinooyama PC TANK	TAJIMA Hayato AIZAWA Syun KUBOZONO Makoto	-----269
(60)	Construction Report of Sunatani No.3 Elevated Tank	KITASE Akihira BABA Toyoharu ITO Tomoki YAMAMOTO Hisanaga	-----273

(61)	Yakabe Water Supply Ground PC Tank Roof Repair Work Construction Report	KANZAKA Masashi MORI Tomohiro YAMASAKI Yoshinobu TANAKA Hirotaka	-----277
(62)	Seismic Reinforcement and Repair Work Report of Existing PC Tank	TANAKA Satoshi OSHIMA Hidenori AKAZAWA Kazuki	-----281
◇(63)	Full-sized Test of PC Grout Using Coated PC Steel	KITANO Yuichi ICHIKAWA Sigekatsu HORI Shigenobu TURUOKA Toshiaki	-----285
◇(64)	Mix Design of the PC Grout with High Structural Viscosity	MIYAMOTO Kazuki TAKAHASHI Keisuke KAWAKANE Hajime	-----291
◇(65)	Fundamental Study on Filling Property Evaluation of PC Grout in a Duct Using MPS Method	NAKAMURA Toshiyuki HASHIMOTO Shinichiro CHIDA Tomohiro YOSHIMURA Toru	-----297
(66)	Grout Filling Investigation Using the Removal Bridge Built in the 1960s and the 2000s	KOSED0 Hiroki ADACHI Kenta MATSUKAWA Yoshitaka	-----303
(67)	Experimental Study of the Filling Characteristics in Prestressed Concrete Grout of Old Specifications	HANZAWA Kosuke KABA Kazuya MITAKE Yuzuru AOKI Satoshi	-----307
◇(68)	Study on the Basic Properties of the Regrout Material of PC Bridges	HAGIWARA Naoki HIROSE Takeshi NAKAMURA Hiroaki WATANABE Shinya	-----311
◇(69)	Potencial and Polarization Resistance of PC Wires on Existing Post-tension Type PC Bridges Repaired by Re-grouting Method Using LiNO ₂ -containg Solution	KAMOTANI Tomoshige ISHII Kouji MORIKAWA Hidenori	-----317
◇(70)	Fundamental Experiment on Re-injection Repair Using Vaporizing Rust Inhibitor	SHIOI Kenta KITANO Yuichi	-----323
◇(71)	Influence of Mixing Method of the Time for PC Grout Production on Fresh and Curing Properties	AZUMA Yosuke ISHII Tomohiro	-----327
◇(72)	Sustainability Evaluation of Low-carbon PC Grout	KAWANO Kyosei MATSUKA Takeju IKESUE Keitarou TOMIZAWA Satoshi	-----333
(73)	Structural Performance Test for Prestressed High Strength Concrete Bridges	NAKAI Seiki SAKIYAMA Yoshiyuki	-----339

(74)	Experimental Study on Applicability of Rehabilitation Method Using Screw Type Anchorage PC Tendon for Reinforced Concrete Beams with Shear Failure	SHIBAYAMA Atsushi	-----343
◇(75)	Ultimate Deformation Capacity of Unbonded Post-tensioning Monostrand Anchorages under Monotonic and High-amplitude Cyclic Loading	Luis A. BEDRIÑANA Kaiwei ZHANG OSHIMA Katsuhito NISHIYAMA Minehiro	-----347
◇(76)	Intrinsic Restoration Capability of Prestressed Concrete Structures	IKEDA Shoji KUROSAWA Ryohei HIRAI Kei YAMAGUCHI Takahiro	-----353
◇(77)	Shear Behavior of RC Beams Wound with Continuous Fiber Rope at Shear Span and Covered with Sprayed Mortar	Javkhlan TUVSHINJARGAL SEKIJIMA Kenzo IZUMO Junichi	-----359
◇(78)	Analytical Study on Flexural Behavior of PC Beams with Ruptured PC Tendons	TOKUTA Yumi MUTSUYOSHI Hiroshi YOKOTA Toshihiro	-----365
◇(79)	The Mechanical Behavior of PC Girders with Corroded PC Tendons	YOKOTA Toshihiro Isuru WJAYAWARDANE MUTSUYOSHI Hiroshi	-----371
◇(80)	Study and Experiment on Education of Prestressed Structure	SEKI Fumio	-----375
(81)	Slab Replacement Work Design and Construction of Hokuriku Expressway Hayatsukigawa Bridge	IWASE Yuji YAMADA Minoru HONSHO Masaki IMAI Hirayoshi	-----379
(82)	Construction Report of Chugoku Expressway Suganogawa River Bridge Concrete Slab Replacement	MATSUNAGA Toru IWATANI Yuta NAGAHISA Naoki IIDA Taiki	-----383
(83)	Replacement of Steel Girder Bridge Slab and Main Girder Reinforcement with External Cable	NAGATANI Toshihiko TAJIRI Takeharu YOKOTA Tatsuki IKEGAMI Kotaro	-----387
(84)	Replacement of Concrete Slab at Yaka Viaduct No.1 (Up Line) and Matsuda Bridge (Down Line)	FUKANOKI Hirofumi SAMESHIMA Chikara KINOSHITA Yukinori WAKISAKA Hideo	-----391
(85)	Replacement of Bridge Slab for Enhancing High Durability of Chugoku Expressway Shimokumatanikawa Bridge	NAKAJIMA Daiki HONJO Kiyoshi YAMASHITA Yasutaka NAKATSUMI Kenichi	-----395
(86)	Design of Slab Replacement of Tomei Expressway Mochimune Viaduct (Down Line)	YOSHIMATSU Hidekazu SATO Tetsuya KURATA Tomokazu KOMATSU Kazuaki	-----399

(87)	Construction of Slab Replacement of Tomei Expressway Mochimune Viaduct (Down Line)	KITAGAWA Manabu SANADA Osamu KURATA Tomokazu YAMAGISHI Toshikazu	-----403
(88)	Replacement of Concrete Slab of Kin Bridge (Down Line) and 2 Other Bridges	FUJIKAWA Ryuta SAMESHIMA Chikara KINOSHITA Yukinori KUDO Shinichi	-----407
(89)	Replacement of RC Slab at Chugoku Expressway Michitani Bridge No.2 under Open Traffic Condition by High Durable PCaPC Slab	HONJO Kiyoshi YAMASHITA Yasutaka KIRIKAWA Kiyoshi YAMAMURA Satoshi	-----411
(90)	Replacement of RC Slab at Michitani Bridge No.2 under Open Traffic Condition	mitsuda Yasuteru IDE Shohichi OHbayashi Atsuhiko TANAKA Hironori	-----415
(91)	Effort of Building Efficiency of Stationary Scaffolding at Namaegawa Bridge	IGARI Shinnosuke NOJIMA Syouji NAKASHIMA Kiyotaka IMAI Yohei	-----419
(92)	Construction Report of ONAHAMA MARINE BRIDGE	YOSHIDA Naoki YOSHIURA Nobuaki ICHIKAWA Eitoku	-----423
(93)	Construction of ASARIGAWA BRIDGE on Hokkaido Odan Expressway	FUJIOKA Atsushi YOKOYAMA Takashi MATSUMOTO Tomoya KANAMORI Shinichi	-----427
(94)	Construction Report of ISOMO River Bridge on the Ban-etsu Expressway	YAMAZAKI Kazuhiro NOGUCHI Hiroshi SASAKI Ryouta	-----431
(95)	Construction of 2 Spans Continuous Rigid Frame Bridge with Unbalanced Spans, Katsuragawa Bridge, Otsuki Bypass	SATO Chizuru ICHII Takashi YAWAKA Mikihiko AKIYAMA Hiroshi	-----435
(96)	Construction of Kitabessho Viaduct on Kihokunishi Road	TOMONARI Hiroki KIMURA Nobuo OYAMA Takashi TOMITA Takashi	-----439
(97)	The Construction of Extradosed Bridge with Long Span over the Railway	SHINJO Kohei FUKAZAWA Toshimasa MAEHARA Naoki KIKUYAMA Tomohiro	-----443
(98)	Construction of Sasanagare Bridge (Tentative Name) of Hakodate New Outside Ring Road	KUDO Youji TANADA Naohiro SAITO Tsuyoki	-----447

(99)	Construction of Kagamisugawa Bridge	SUMOTO Koota HIROHATA Kengo NISHI Masahiro HIRABAE Sinji	-----451
(100)	Construction Report of AONOTAKIGAWA-Bridge	MATSUMOTO Norihito KIKUCHI Masanori YAMANAKA Shuichiro	-----455
◇(101)	Influence of Applying Age on Concrete Performance Applied of the Silane Type Surface Penetrants	KOMATSU Momoko KONDOU Takuya YAMADA Yuzi KAWANISI Yusuke	-----459
(102)	The Study of Cracking Resistance for Rapid Hardening Flyash Concrete	KAWAGUCHI Chihiro KITANO Yuichi SHIINA Eijiro YOSHIMURA Takashi	-----465
◇(103)	Study on Application of Ultra High Strength Fiber Reinforced Concrete to Upgrading Method of Bridge Decks	YANAI Shuji WATANABE Yuji MAKITA Tohru KITAGAWA Hirokazu	-----469
(104)	Retrofit Design of 3-Span Continuous Hinged Rigid Frame Bridge with Prestressed Concrete Box Girder	OTAKI Nami MURAOKA Shiro NAGATANI Toshihiko KOHARA Junichi	-----475
(105)	Repair of Initial Defects on Prestressed Concrete Member	NOJIMA Shoji WATANABE Shinya	-----479
(106)	Repair Method of a Protective Pipe of an Oblique Cable at Sankaku Bridge	YAMADA Takashi TAKENOI Isamu AOSHIMA Yusuke	-----483
◇(107)	Experimental Study on Water Leakage of Streaming Down Grouting Hose's Surface and its Repair Method	TOKUMITSU Suguru OKADA Shigeyuki TANAKA Hironori TANI Shintarou	-----487
(108)	Middle Span Structural Modification of Tomei Expressway Yuiko Bridge	SHIMIZU Koichiro HUJISHIMA Yuta MOTOYAMA Kenichi KATO Shuichi	-----493
(109)	Reinforcement of the Prestressed Concrete Continuous Composite Girder Bridge with the External Cables - Chuo Expressway Sawasokogawa Bridge -	TAKECHI Tsutomu TAJIRI Takeharu HAGIWARA Motoki YOSHIKAWA Taku	-----497
◇(110)	Mechanical Properties of the Volume Expansive Strain of Expansive Concrete	LI Chunhe TSUJI Yukikazu SUHARA Kentaro	-----501

◇(111)	Material Properties of High Strength Concrete for Low Height Girder Bridges Made of Precast Pre-stressed Concrete	SHIINO Aoi SAKURADA Michihiro KOMURA Yutaka YAMAMURA Satoshi	-----507
◇(112)	Simplification of the Wet Curing of the Concrete Using the Ground Granulated Blast Furnace Slag by the Self-curing Method	NAKASE Hirokazu OYAMADA Tetsuya SUZUKI Masahiro ENDO Toshiyuki	-----513
(113)	Shear Carrying Capacity of RC Beam Containing a High Proportion of Ground Granulated Blast-furnace Slag	KONO Katsuya YASUDA Eiki MORI Kanako TADA Katsuhiko	-----519
◇(114)	Experimental Study on Application of Fly Ash Concrete to Structure in Hokuriku	KASAKURA Ryota WATANABE Ken OKAMOTO Masaru ISHII Hidekazu	-----523
(115)	Study on Practical Use of Prestressed High Strength Concrete Girders Containing Fly Ash	KAWAKANE Hajime SHIMONO Seiya NAKATA Yoshinori	-----529
(116)	Application to Pretensioned PC Girder of Fly Ash Concrete with Replacement Ratio of 25%	ISHII Tomohiro AZUMA Yosuke KOBAYASHI Toshiaki WU Chengning	-----533
(117)	Strength Development of Cast-in-place Fly Ash Concrete for PC Bridge	SASAKI Wataru KOKUZAWA Masahiro DAI Akiyoshi TANIGUCHI Hideaki	-----537
(118)	Permeability of Chloride Ion and Effect of Curing Period for Fly-ash Concrete	SUZUKI Tatsuyuki TANAKA Minoru IWAKI Ichiro MAESHIMA Takuya	-----541
(119)	Time Dependence Behavior of Precast-prestressed Concrete Members Using Carbon-free Fly Ash	MITO Kensuke KITANO Yuichi	-----545
◇(120)	A Study for Durability, on the Precast PC Bridge Deck in Deicing Salt	KATOU Takuya IWAKI Ichirou TOGAWA Kunihiro TAKAHASHI Isao	-----549
(121)	Experimental Study on the Fatigue Durability of Ultra High Durable Deck Slab	FUKUDA Masato ASHIDUKA Kenichiro KARINO Takeshi SANGA Takashi	-----555
(122)	The Applicability Evaluation of PVA Fiber Mixed-lightweight Concrete for Renewal of RC Slab by Precast PC Slab	SUZUKI Satoshi KITANO Yuichi MITO Kensuke ITO Hajime	-----559

◇(123)	Fatigue Durability of Precast PC Slab Using Lightweight Concrete of Class-2	KOBAYASHI Shu NAKAMURA Sadaaki SATOHO Hideyuki MATSUI Shigeyuki	-----563
◇(124)	Study on Fatigue Durability of UFC Deck Corresponding to Replacement of Existing Deck	KOSAKA Takashi KANAJI Hidesada ICHINOMIYA Toshimichi FUJISHIRO Masaru	-----569
◇(125)	A Study on the Connection between the UFC Slab and Steel Girders	YOKOTA Yuki KANAJI Hidesada KOSAKA Takashi ICHINOMIYA Toshimichi	-----575
◇(126)	Confirm the Influence of Membrane Curing Agent on Durability and Waterproofness of Slab Concrete	KOKUZAWA Masahiro DAI Akiyosi ONO Kanta HIGUCHI Masanori	-----581
(127)	Flexural Behavior of Loop Splice Joint for Influence of Loop Diameter	TAKEYAMA Tadaomi SASAKI Wataru SHINOZAKI Hiroo UCHIDA Yuichi	-----587
(128)	Construction of Precast PC Slabs on Rampway of Shield Tunnel -Baba Entrance/Exit D Ramp Tunnel-	UMEMOTO Yohei SATO Hideya SHIODE Kenji MUTO Keisuke	-----591
(129)	Crack Control Measure of 3-Span Continuous of PRC Box Girder Bridge	NAKAMORI Takeo KUDOU Shinichirou IMASHIOYA Masaru YOSHIKAWA Masahito	-----595
(130)	Construction for Steel-Concrete Composite Box-Girder Bridge	WATANABE Akira MIYAGUNI Yukito YAMAUE Toshiaki MIHO Yuji	-----599
(131)	Crack Control Measure of Portal Rigid - Frame Bridge - DAIBUKOUYA IC Bridge -	TAKAI Yuki KAWAKANE Hajime MIYAKE Hironori	-----603
(132)	Construction of KATSURAZAWA DAM BRIDGE NO.8 in Severe Winter	NAKASHIMA Yuzuru MUROYA Hiroyuki FUJII Akira SAITOU Yutaka	-----607
(133)	Construction of NATSUI Viaduct in Route NO.45	GOMI Takashi MIYATA Satoshi	-----611
(134)	Design and Construction of Shinmeishin Expressway Yawata Junction L Ramp NO.2 Bridge	SAKAI Kazumasa SATO Seiji SAKAGUTI Hiroshi KURATOMI Yoshirou	-----615

(135)	Design and Build of the Cantilever Box Girder Bridge Having a Radius of Horizontal Curvature that Equals 60m - OCHIAI Bridge -	SAKURAI Yoshiyuki IWASE Hitoshi MORITA Kouji NAKAGAWA Fumiharu	-----619
(136)	Construction Report of Shinmeishin Expressway Youbaisan Viaduct	OYAGI Ryo KOYANAGI Kimiharu KUSUMURA Yukimasa KATA Kenichi	-----623
(137)	Originality of Post-Tensioned Wide-Deck Bridge Constructed by Cantilever Method	SAKAI Daisuke URAO Kenichi AKIYAMA Kiyoshi ONABE Takumi	-----627
(138)	Design and Construction of SHIOKAWA Bridge (Up-Track) of Shinmeishin Expressway	KAWANAKA Ryoichi SHIMIZU Hiroshi TAGUCHI Yasuo MIYAMOTO Kenji	-----631
(139)	Investigation of UngROUTED Tendon Ducts in Existing PC Bridge by SIBIE Method	NAGAOKA Satoru YAMADA Masahiko OONO Masayuki OHTSU Masayasu	-----635
(140)	Investigation and Design for Large Scale Repair Work of Prestressed Concrete Girder Bridge on Hanshin Expressway	SATOHO Hideyuki HORIAKA Yoshinori SATOH Akinori NISHIGUCHI Hiroyuki	-----639
◇(141)	NDT Method for Detecting Un-grouted Sheaths of PC Bridges by Means of Interference between Surface Wave and Reflected Wave	YAMASHITA Kentaro TEZUKA Masamichi	-----643
(142)	The Construction about the Detection System for Bending Cracks of Railway Prestressed Concrete Beams with Electro-conductive Paint	NAGASAKA Ryosuke NIHEI Tatsuya OKAMOTO Masaru	-----647
◇(143)	Proposal of the New Bridge Maintenance Technique Utilizing ICT	TAMAKI Kazukiyo SUGITANI Shinji SUGANUMA Hisatada MORIKAWA Hidenori	-----651
◇(144)	A Study on Behavior before Flexural Cracking of Corroded Post Tensioning PC Beam	NAKATANI Akito KONNDOU Takuya YOKOI Katunori NISHI Hiroshi	-----657
◇(145)	The Feasibility Study of Embedded Wire Sensor for Corrosion Monitoring of Concrete	Rahmita Sari Rafdinal AOYAMA Toshiyuki ISHII Kouji TORII Kazuyuki	-----663
(146)	The Damage of Rigid Frame Bridge with Hinge in the Middle of Span	YOKOKAWA Keisuke KOBAYASHI Katsuya IMAMURA Akihisa	-----667

(147)	Washing Effect and Change in Concrete Surface Property of Takimi Bridge under High Humidity Environment	HAMANO Hokuto SEKI Fumio	-----671
(148)	Design Report on PC Extradosed Bridge with Corrugated Steel Web in Consideration of Shortened Construction Processes	FUJITA Tomotaka KOMURA Yutaka KOUDA Maki MIYANAGA Kenichi	-----675
(149)	Design Report on Diaphragm for Anchorage of Stay Cables in PC Extradosed Bridge with Corrugated Steel Web	KOUDA Maki KOMURA Yutaka FUJITA Tomotaka MIYANAGA Kenichi	-----679
◇(150)	Proposal of Reasonable Variable Wheel Load Coefficients and Distributed Coefficients for Design of Pre-Stressed Concrete Sleeper	WATANABE Tsutomu MATSUOKA Kodai MINOURA Shintaro INOUE Hiromi	-----683
(151)	Design of Cross Beam Located between Box Girder and Slab Girder of PRC Continuous Girder Bridge	NAGAO Kenji GOTOU Syungo YATOU Syougo YOSHIDA Tomohiro	-----689
(152)	Design of Komono Viaduct No.2 (3-span Continuous Extradosed Bridge)	NAKAMURA Yuuichirou MIKI Junichi YAMASAKI Tetsuya MIYABE Mitsutaka	-----693
◇(153)	Study on the Design of a 800m Span Extradosed and Suspension Hybrid Bridge	Salpisoth HENG UCHIBORI Hiroyuki NAGAMOTO Naoki KASUGA Akio	-----697
(154)	Design of ASAKAYAMA Viaduct	HYOUDOU Tomoaki SUGIMOTO Kazuyoshi ANDOU Ken HIROSE Hiroyuki	-----703
(155)	Design of KURUTANI Bridge	HAYAKAWA Satoshi NISHINAGA Takuji SUMIDA Toshiya HANADA Hiroki	-----707
(156)	Design of the Anchor Structure for Stay-Cable in the Large Extradosed Bridge as a Single-Plane with the Wide Width	HOSOTANI Manabu OSHIRO Takeshi MAEHARA Naoki MIZUTANI Masaki	-----711