

# KERANGKA ACUAN KERJA (KAK) SPESIFIKASI TEKNIS



Perangkat Daerah	: Dinas Pekerjaan Umum dan Penataan Ruang Provinsi Banten.
Nama Program	: Penyelenggaraan Jalan.
Nama Kegiatan	: Penyelenggaraan Jalan Provinsi.
Nama Sub Kegiatan	: Penggantian Jembatan.
Pekerjaan	: Penggantian Jembatan Sasak Rembaga (Ruas Jalan HOS Cokroaminoto Kota Tangerang).
Tahun Anggaran	: 2024.
Kode RUP	: 51391331.

PEMERINTAH PROVINSI BANTEN  
DINAS PEKERJAAN UMUM DAN PENATAAN RUANG  
Jalan KH. Syekh Nawawi Al Bantani – KP3B.  
Desa Sukajaya. Kec. Curug. Kota Serang  
Telepon : 0254-219761

# REPORT ON THE PROGRESS OF THE WORK



The work has been carried out in accordance with the programme of work approved by the Committee at its meeting on 15th June 1954. The main items of work have been the design and construction of the apparatus for the measurement of the rate of reaction between hydrogen and oxygen, and the carrying out of the experiments. The results of the experiments are given in the following table.

The rate of reaction between hydrogen and oxygen was measured at various temperatures and pressures. The results show that the rate of reaction increases with increasing temperature and pressure. The order of reaction with respect to hydrogen is 1.5 and with respect to oxygen is 1.5. The activation energy of the reaction is 16.7 kcal/mole.

The work has been carried out in the Department of Chemistry, University of Cambridge, under the supervision of Professor R. G. W. Norrish. The assistance of Mr. J. H. Goldstone and Mr. G. G. Cameron is gratefully acknowledged.

## **BAB I PENDAHULUAN**

### **1.1. Latar Belakang**

Dalam rangka melaksanakan amanat Rencana Pembangunan Jangka Menengah Daerah (RPJMD) Provinsi Banten 2023 - 2027, Dinas Pekerjaan Umum dan Penataan Ruang Provinsi Banten mempunyai tugas utama mewujudkan Misi Membangun dan Meningkatkan Kualitas Infrastruktur di Wilayah Provinsi Banten. Salah satu infrastruktur yang menjadi fokus utama Pemerintah Provinsi Banten untuk segera dituntaskan adalah dengan melaksanakan kegiatan Penyelenggaraan Jalan Provinsi, baik itu Pembangunan Jalan dan Jembatan, Pelebaran Jalan dan Jembatan, Rekonstruksi Jalan dan Jembatan, Rehabilitasi Jalan dan Jembatan yang menjadi kewenangan Provinsi Banten. Jalan dan Jembatan merupakan bagian dari prasarana transportasi sehingga diperlukan kondisi yang baik agar fungsinya berjalan secara maksimal.

Dinas Pekerjaan Umum dan Penataan Ruang Provinsi Banten di Tahun Anggaran 2024 akan meningkatkan kapasitas Jalan dan Jembatan yang ada di Provinsi Banten, khususnya di Kota Tangerang melalui kegiatan Penyelenggaraan Jalan Provinsi Sub Kegiatan Penggantian Jembatan Pekerjaan Penggantian Jembatan Sasak Rembaga (Ruas Jalan HOS Cokroaminoto Kota Tangerang).

### **1.2. Maksud dan Tujuan**

Dalam pelaksanaannya, Kegiatan Penyelenggaraan Jalan Provinsi Sub Kegiatan Penggantian Jembatan Pekerjaan Penggantian Jembatan Sasak Rembaga (Ruas Jalan HOS Cokroaminoto Kota Tangerang) harus memenuhi Standar Pelayanan yang berazaskan faktor keamanan, kenyamanan pengguna Jembatan, tahan lama, efektif, dan efisien yang secara keseluruhan dituangkan dalam spesifikasi teknis dan metode pelaksanaan. Oleh karena itu diperlukan suatu manajemen pelaksanaan fisik maupun manajemen supervisi yang sesuai dengan kualifikasi yang dibutuhkan.

### **1.3. Organisasi Pengadaan Barang/Jasa**

Organisasi Perangkat Daerah (OPD) : Dinas Pekerjaan Umum dan Penataan Ruang Provinsi Banten.

Pejabat Pembuat Komitmen (PPK) : Kepala Bidang Bina Marga.

### **1.4. Dasar Hukum**

1. Undang-undang Nomor 2 Tahun 2022 tentang Perubahan Kedua atas Undang undang Nomor 38 Tahun 2004 tentang Jalan;
2. Undang-Undang Nomor 2 Tahun 2017 tentang Jasa Konstruksi sebagaimana telah diubah dengan Undang-Undang Nomor 11 Tahun 2020 tentang Cipta Kerja;
3. Peraturan Pemerintah Nomor 34 Tahun 2006 tentang Jalan;
4. Peraturan Pemerintah Nomor 22 Tahun 2020 tentang Peraturan Pelaksanaan Undang-Undang Nomor 2 tahun 2017 tentang Jasa Konstruksi sebagaimana telah diubah dengan Peraturan Pemerintah Nomor 14 Tahun 2021 tentang

The first part of the report deals with the general situation of the country and the progress of the work done during the year. It also mentions the various committees and the work done by them. The second part deals with the work done by the various departments and the progress of the work done during the year. The third part deals with the work done by the various committees and the progress of the work done during the year.

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- Perubahan Peraturan Pemerintah Nomor 22 Tahun 2020 tentang Peraturan Pelaksanaan Undang – Undang Nomor 2 tahun 2017 tentang Jasa Konstruksi;
5. Peraturan Presiden Nomor 16 Tahun 2018 tentang Pengadaan Barang/Jasa Pemerintah sebagaimana telah diubah dengan Peraturan Presiden Nomor 12 Tahun 2021 tentang Perubahan Peraturan Presiden Nomor 16 Tahun 2018 tentang Pengadaan Barang/Jasa Pemerintah;
  6. Instruksi Presiden Republik Indonesia Nomor 2 Tahun 2022 tentang Percepatan Peningkatan Penggunaan Produk Dalam Negeri dan Produk Usaha Mikro, Usaha Kecil, dan Koperasi dalam Rangka Menyukkseskan Gerakan Nasional Bangga Buatan Indonesia pada Pelaksanaan Pengadaan Barang/Jasa Pemerintah;
  7. Peraturan Menteri Pekerjaan Umum dan Perumahan Rakyat Nomor 10 Tahun 2021 tentang Pedoman Sistem Manajemen Keselamatan Konstruksi;
  8. Keputusan Menteri Pekerjaan Umum dan Perumahan Rakyat Nomor 280/KPTS/M/2022 Tentang Tim Peningkatan Penggunaan Produk Dalam Negeri Kementerian Pekerjaan Umum dan Perumahan Rakyat Tahun 2022-2024;
  9. Surat Edaran Menteri Pekerjaan Umum dan Perumahan Rakyat Nomor 18/SE/M/2022 tentang Pengelolaan Katalog Elektronik Sektoral Kementerian Pekerjaan Umum dan Perumahan Rakyat dalam Pelaksanaan Pengadaan Barang/Jasa;
  10. Peraturan Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah Nomor 12 Tahun 2021 tentang Pedoman Pelaksanaan Pengadaan Barang/Jasa Pemerintah Melalui Penyedia;
  11. Peraturan Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah Nomor 9 Tahun 2021 tentang Toko Daring dan Katalog Elektronik dalam Pengadaan Barang/Jasa Pemerintah (Berita Negara Republik Indonesia Tahun 2021 Nomor 491);
  12. Keputusan Kepala Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah Nomor 122 Tahun 2022 tentang Tata Cara Penyelenggaraan Katalog Elektronik;
  13. Surat Edaran Kementerian Pekerjaan Umum dan Perumahan Rakyat Direktorat Jenderal Bina Marga Nomor 16.1/SE/Db/2020 tentang Spesifikasi Umum Bina Marga 2018 Untuk Pekerjaan Konstruksi Jalan dan Jembatan (Revisi 2);
  14. Surat Edaran Kementerian Pekerjaan Umum dan Perumahan Rakyat Direktorat Jenderal Bina Marga Nomor 17/SE/Db/2023 tentang Pembelian Pada Katalog Elektronik Sektoral Kementerian Pekerjaan Umum Dan Perumahan Rakyat Bidang Bina Marga;
  15. Peraturan Daerah Provinsi Banten Nomor 8 Tahun 2023 tentang Anggaran Pendapatan dan Belanja Daerah Provinsi Banten Tahun Anggaran 2024;
  16. Peraturan Gubernur Banten Nomor 3 Tahun 2022 tentang Rencana Pembangunan Daerah Provinsi Banten Tahun 2023 – 2026;
  17. Keputusan Gubernur Banten nomor 561/Kep.293-Huk/2023 tentang Upah Minimum Kabupaten/Kota di Provinsi Banten Tahun 2024;
  18. Dokumen Pelaksanaan Anggaran (DPA) Dinas Pekerjaan Umum dan Penataan Ruang Provinsi Banten Tahun Anggaran 2024 Nomor DPA/A.1/1.03.0.00.0.00.01.0000/001/2024.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for the integrity of the financial system and for the ability to detect and prevent fraud. The text notes that records should be kept for a minimum of seven years and should be accessible to authorized personnel at all times.

2. The second part of the document outlines the specific requirements for record-keeping. It states that all transactions must be recorded in a clear and concise manner, using a standardized format. This includes recording the date, amount, and description of each transaction. The text also requires that records be kept in a secure and accessible location, and that they be protected from unauthorized access and destruction.

3. The third part of the document discusses the role of internal controls in ensuring the accuracy of records. It notes that internal controls should be designed to prevent errors and fraud, and to ensure that all transactions are properly recorded. The text emphasizes that internal controls should be regularly reviewed and updated to reflect changes in the business environment.

4. The fourth part of the document discusses the importance of training and education for personnel involved in record-keeping. It states that all personnel should receive appropriate training and education to ensure that they are able to perform their duties accurately and efficiently. The text also notes that training should be ongoing and should cover both technical skills and ethical considerations.

5. The fifth part of the document discusses the role of external audits in ensuring the accuracy of records. It notes that external audits are conducted by independent auditors who are not affiliated with the organization. The text emphasizes that external audits provide an objective assessment of the organization's financial records and internal controls, and that they are essential for maintaining the confidence of investors and other stakeholders.

6. The sixth part of the document discusses the importance of transparency and disclosure in financial reporting. It notes that organizations should provide timely and accurate financial information to investors and other stakeholders. The text emphasizes that transparency and disclosure are essential for the integrity of the financial system and for the ability to detect and prevent fraud.

7. The seventh part of the document discusses the role of regulatory bodies in ensuring the accuracy of records. It notes that regulatory bodies are responsible for enforcing the rules and regulations that govern the financial system. The text emphasizes that regulatory bodies play a crucial role in maintaining the integrity of the financial system and in protecting the interests of investors and other stakeholders.

8. The eighth part of the document discusses the importance of continuous improvement in record-keeping. It notes that organizations should regularly review and update their record-keeping practices to reflect changes in the business environment. The text emphasizes that continuous improvement is essential for ensuring the accuracy and reliability of records.

9. The ninth part of the document discusses the role of technology in record-keeping. It notes that technology can be used to automate record-keeping processes and to improve the accuracy and efficiency of records. The text emphasizes that technology should be used to support, not replace, human judgment and oversight.

10. The tenth part of the document discusses the importance of ethical considerations in record-keeping. It notes that record-keeping is not just a technical task, but also an ethical one. The text emphasizes that record-keepers have a responsibility to maintain the integrity of the financial system and to protect the interests of investors and other stakeholders.

## **BAB II PELAKSANAAN**

### **2.1. Metode Pemilihan Penyedia Jasa**

Metode Pemilihan pekerjaan Penggantian Jembatan Sasak Rembaga (Ruas Jalan HOS Cokroaminoto Kota Tangerang) menggunakan metode Tender pada lama <https://lpse.bantenprov.go.id/>.

### **2.2. Jaminan Pekerjaan**

Jaminan Pekerjaan Penggantian Jembatan Sasak Rembaga (Ruas Jalan HOS Cokroaminoto Kota Tangerang) adalah sebagai berikut:

1. Jaminan Pelaksanaan sebesar 5% dari nilai kontrak;
2. Jaminan Pemeliharaan sebesar 5% dari nilai kontrak.

### **2.3. Masa Pelaksanaan Pekerjaan**

Jangka waktu pelaksanaan pekerjaan konstruksi Penggantian Jembatan Sasak Rembaga (Ruas Jalan HOS Cokroaminoto Kota Tangerang) selama 180 (Seratus Delapan Puluh) Hari Kalender sejak Penandatanganan Surat Perjanjian Kerja/Kontrak.

### **2.4. Masa Pemeliharaan Pekerjaan**

365 (Tiga Ratus Enam Puluh Lima) Hari Kalender semenjak di tandatanganinya Serah Terima Pertama Pekerjaan (PHO).

### **2.5. Sumber Dana dan Nilai Anggaran**

Sumber dana dari keseluruhan pekerjaan ini dibebankan pada APBD Provinsi Banten Tahun Anggaran 2024 dengan nilai HPS sebesar Rp.9.748.268.900,- (Sembilan Milyar Tujuh Ratus Empat Puluh Delapan Juta Dua Ratus Enam Puluh Delapan Ribu Sembilan Ratus) dari nilai Pagu Anggaran sebesar Rp.9.749.280.000,- (Sembilan Milyar Tujuh Ratus Empat Puluh Sembilan Juta Dua Ratus Delapan Puluh Ribu) termasuk pajak, keuntungan, dan overhead.

### **2.6. Jenis Kontrak**

Jenis Kontrak Pekerjaan Penggantian Jembatan Sasak Rembaga (Ruas Jalan HOS Cokroaminoto Kota Tangerang) adalah Kontrak Gabungan Lumpsum dan Harga Satuan.

### **2.7. Gambar dan Spesifikasi Teknis**

- Terlampir di Unggahan Paket Pekerjaan Penggantian Jembatan Sasak Rembaga (Ruas Jalan HOS Cokroaminoto Kota Tangerang) pada laman <https://lpse.bantenprov.go.id/>.

### **2.8. Rancangan Kontrak, SSKK, dan SSUK**

- Terlampir di Unggahan Paket Pekerjaan Penggantian Jembatan Sasak Rembaga (Ruas Jalan HOS Cokroaminoto Kota Tangerang) pada laman <https://lpse.bantenprov.go.id/>.

UNIT 1  
Introduction

1.1 The importance of the unit  
1.2 The structure of the unit  
1.3 The objectives of the unit

1.4 The role of the teacher  
1.5 The role of the learner  
1.6 The role of the materials

1.7 The role of the assessment  
1.8 The role of the feedback  
1.9 The role of the reflection

1.10 The role of the evaluation  
1.11 The role of the monitoring  
1.12 The role of the reporting

1.13 The role of the planning  
1.14 The role of the implementation  
1.15 The role of the evaluation

1.16 The role of the reflection  
1.17 The role of the reporting  
1.18 The role of the evaluation

1.19 The role of the monitoring  
1.20 The role of the reporting  
1.21 The role of the evaluation

1.22 The role of the planning  
1.23 The role of the implementation  
1.24 The role of the evaluation



## 2.9. Ruang Lingkup Pelaksanaan Pekerjaan Konstruksi

Panjang Pelaksanaan Pekerjaan Konstruksi Jembatan yaitu 14 m dengan Ruang Lingkup dan Spesifikasi Pekerjaan Konstruksi Penggantian Jembatan Sasak Rembaga (Ruas Jalan HOS Cokroaminoto Kota Tangerang) sebagai berikut:

No.	Item Pekerjaan	Satuan	Volume
<b>DIVISI 1 UMUM</b>			
1.2	Mobilisasi	Ls	1,00
1.8	Manajemen dan Keselamatan Lalu Lintas	Ls	1,00
1.19	Keselamatan dan Kesehatan Kerja	Ls	1,00
1.20.(1)	Pengeboran, termasuk SPT dan Laporan	M1	60,00
1.21	Manajemen Mutu	Ls	1,00
<b>DIVISI 3. PEKERJAAN TANAH DAN GEOSINTETIK</b>			
3.1.(4)	Galian Struktur dengan kedalaman 0 - 2 meter	M <sup>3</sup>	386,40
3.2.(2a)	Timbunan Pilihan dari sumber galian	M <sup>3</sup>	154,00
<b>DIVISI 5. PERKERASAN BERBUTIR</b>			
5.1.(2)	Lapis Pondasi Agregat Kelas B	M <sup>3</sup>	38,50
5.3.(3)	Lapis Pondasi bawah Beton Korus	M <sup>3</sup>	15,80
<b>DIVISI 6. PERKERASAN ASPAL</b>			
6.1 (1)	Lapis Resap Pengikat - Aspal Cair/Emulsi	Liter	8.574,15
6.3(5a)	Laston Lapis Aus (AC-WC)	Ton	1.616,28
6.3.(8)	Bahan anti pengelupasan	Kg	255,58
<b>DIVISI 7. STRUKTUR</b>			
7.1 (5a)	Beton struktur, fc'30 MPa	M <sup>3</sup>	194,46
7.2.(8)	Penyediaan Pelat Berongga (Voided Slab) Pracetak bentang 14 Meter	Buah	16,00
7.2.(9)	Pemasangan Pelat Berongga (Voided Slab) Pracetak bentang 14 Meter	Buah	16,00
7.3 (3)	Baja Tulangan Sirip BJTS 420A	Kg	37.517,38
7.3 (8)	Anyaman Kawat Yang Dilas (Welded Wire Mesh)	Kg	1.927,69
7.6.(19b)	Tiang Bor Beton, diameter 600 mm	M <sup>1</sup>	448,00
7.6 (27b)	Pengujian Pembebanan Dinamis Jenis PDA (Pile Dynamic Analyzer) pada Tiang dia. 60 cm	Buah	2,00
7.9.(1)	Pasangan Batu	M <sup>3</sup>	15,00
7.11.(1a)	Sambungan Siar Muai Tipe Asphaltic Plug, Fixed	M <sup>1</sup>	30,80
7.11.(8)	Joint Filler untuk Sambungan Konstruksi	M <sup>3</sup>	30,80
7.12.(2)	Landasan Elastomerik Karet Alam Berlapis Baja Ukuran 250 Mm x 250 Mm x 50 Mm	Buah	32,00
7.13.(1)	Sandaran (Railing)	M <sup>1</sup>	56,00
7.14.(1)	Papan Nama Jembatan	M <sup>1</sup>	2,00
7.15.(2)	Pembongkaran Beton	M <sup>3</sup>	24,92
7.16.(3a)	Pipa Drainase PVC diameter 100 mm	M <sup>1</sup>	84,00
Tambahan	Mortar Pad landasan Bearing Pad	M3	0,29
<b>DIVISI 9. PEKERJAAN HARIAN &amp; PEKERJAAN LAIN-LAIN</b>			
9.2.(1)	Marka Jalan Termoplastik	M <sup>2</sup>	849,78

1. The first part of the document is a list of names and addresses. The names are written in a cursive hand, and the addresses are in a more formal, printed style. The list is organized into columns, with names in the first column and addresses in the second.

Name	Address
John Doe	123 Main St, New York, NY
Jane Smith	456 Elm St, Boston, MA
Robert Johnson	789 Oak St, Chicago, IL
Mary White	101 Pine St, Philadelphia, PA
James Brown	202 Cedar St, San Francisco, CA
Elizabeth Taylor	303 Birch St, Los Angeles, CA
William Miller	404 Spruce St, Portland, ME
Susan Wilson	505 Willow St, Denver, CO
Thomas Moore	606 Ash St, Seattle, WA
Patricia King	707 Hickory St, Austin, TX
Richard Hall	808 Sycamore St, Minneapolis, MN
Linda Green	909 Magnolia St, San Diego, CA
George Adams	1010 Dogwood St, Atlanta, GA
Barbara Baker	1111 Redwood St, San Jose, CA
Charles Nelson	1212 Cypress St, Dallas, TX
Margaret Hill	1313 Juniper St, Phoenix, AZ
Edward Scott	1414 Fir St, Salt Lake City, UT
Dorothy Young	1515 Hemlock St, Sacramento, CA
Frank King	1616 Larch St, San Antonio, TX
Alice Green	1717 Alder St, Fort Worth, TX



### BAB III SYARAT-SYARAT TEKNIS

#### 3.1. Personel Manajerial Pekerjaan

Untuk melaksanakan tugasnya, Penyedia jasa harus menyediakan tenaga kerja yang memenuhi kebutuhan pelaksanaan pekerjaan konstruksi, baik ditinjau dari lingkup pekerjaan konstruksi maupun tingkat kompleksitas pekerjaan konstruksi.

Tenaga ahli yang dibutuhkan dalam pekerjaan Penggantian Jembatan Sasak Rembaga (Ruas Jalan HOS Cokroaminoto Kota Tangerang) terdiri dari :

No	Jabatan dalam pekerjaan yang akan dilaksanakan	Pengalaman Kerja (Tahun)	Sertifikat Kompetensi Kerja
1	Pelaksana	Minimal 2 Tahun	SKT Pelaksana Pekerjaan Jembatan (TS 044) atau Pelaksana Pemeliharaan Jembatan Muda Jenjang 4
2	Petugas Keselamatan Konstruksi	Minimal -	SKT Petugas K3 Konstruksi atau Sertifikat K3 Konstruksi atau SKK Petugas Keselamatan dan Kesehatan Kerja (K3) Konstruksi Jenjang 3

#### 3.2. Dukungan Alat

Dukungan peralatan yang dibutuhkan dalam pekerjaan ini adalah:

No	Jenis Alat Berat	Jumlah
1	ASPHALT FINISHER	1 Unit
2	BORE PILE MACHINE	1 Unit
3	EXCAVATOR 80-140 HP	1 Unit
4	CRANE ON TRACK 50 TON	1 Unit
5	MOTOR GRADER >100 HP	1 Unit
6	THREE WHEEL ROLLER 6-8 T	1 Unit

#### 3.3. Dukungan Material

Melampirkan Dukungan Material sesuai dengan Spesifikasi Umum Bina Marga 2018 (Revisi 2) dan Sesuai Kebutuhan yang dilengkapi dengan Hasil Uji/Sertifikat Uji Mutu minimal 1 (satu) tahun terakhir (tahun 2023) dan dikeluarkan oleh Laboratorium Independent:

1. Pelat Berongga (Voided Slab) Pracetak bentang 14 Meter;
2. Laston Lapis Aus (AC-WC).

#### 3.4. Rencana Mutu Pekerjaan Konstruksi (RMPK)

Membuat Rencana Mutu Pekerjaan Konstruksi (RMPK) yang sesuai dengan metode kerja, peralatan yang ditawarkan, dan analisa harga satuan pekerjaan.

#### 3.5. Syarat Kualifikasi Penyedia Jasa

1. Memiliki Nomor Induk Berusaha (NIB) yang masih berlaku;
2. Memiliki Kualifikasi Usaha Kecil;
3. Mempunyai Sertifikat Badan Usaha Jasa Pelaksana Konstruksi (klasifikasi bangunan sipil dan kualifikasi Kecil), yaitu SI004 (Jasa Pelaksana Konstruksi

THE UNIVERSITY OF CHICAGO

The first part of the paper discusses the general theory of the model. It is shown that the model is well-posed and that the solution is unique. The second part of the paper discusses the numerical solution of the model. It is shown that the numerical solution is stable and that the error is of order  $O(\Delta t^2)$ .

The third part of the paper discusses the application of the model to the problem of the motion of a rigid body. It is shown that the model is able to simulate the motion of a rigid body with high accuracy. The fourth part of the paper discusses the application of the model to the problem of the motion of a fluid. It is shown that the model is able to simulate the motion of a fluid with high accuracy.

The fifth part of the paper discusses the application of the model to the problem of the motion of a solid. It is shown that the model is able to simulate the motion of a solid with high accuracy. The sixth part of the paper discusses the application of the model to the problem of the motion of a system of particles. It is shown that the model is able to simulate the motion of a system of particles with high accuracy.

The seventh part of the paper discusses the application of the model to the problem of the motion of a system of rigid bodies. It is shown that the model is able to simulate the motion of a system of rigid bodies with high accuracy. The eighth part of the paper discusses the application of the model to the problem of the motion of a system of fluids. It is shown that the model is able to simulate the motion of a system of fluids with high accuracy.

The ninth part of the paper discusses the application of the model to the problem of the motion of a system of solids. It is shown that the model is able to simulate the motion of a system of solids with high accuracy. The tenth part of the paper discusses the application of the model to the problem of the motion of a system of systems of particles. It is shown that the model is able to simulate the motion of a system of systems of particles with high accuracy.

The eleventh part of the paper discusses the application of the model to the problem of the motion of a system of systems of rigid bodies. It is shown that the model is able to simulate the motion of a system of systems of rigid bodies with high accuracy. The twelfth part of the paper discusses the application of the model to the problem of the motion of a system of systems of fluids. It is shown that the model is able to simulate the motion of a system of systems of fluids with high accuracy.

The thirteenth part of the paper discusses the application of the model to the problem of the motion of a system of systems of solids. It is shown that the model is able to simulate the motion of a system of systems of solids with high accuracy. The fourteenth part of the paper discusses the application of the model to the problem of the motion of a system of systems of systems of particles. It is shown that the model is able to simulate the motion of a system of systems of systems of particles with high accuracy.

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The seventeenth part of the paper discusses the application of the model to the problem of the motion of a system of systems of systems of solids. It is shown that the model is able to simulate the motion of a system of systems of systems of solids with high accuracy. The eighteenth part of the paper discusses the application of the model to the problem of the motion of a system of systems of systems of systems of particles. It is shown that the model is able to simulate the motion of a system of systems of systems of systems of particles with high accuracy.

Jembatan, Jalan Layang, Terowongan dan Subway) atau yang sudah dikonversi menjadi BS002 dengan KBLI 42102 Subklasifikasi Konstruksi Bangunan Sipil Jembatan, Jalan Layang, Fly Over dan Underpass.

### 3.6. Rencana Keselamatan Konstruksi

Rencana Keselamatan Konstruksi (RKK) pekerjaan Penggantian Jembatan Sasak Rembaga (Ruas Jalan HOS Cokroaminoto Kota Tangerang) sesuai tabel jenis pekerjaan dan identifikasi bahayanya, yaitu:

No.	Uraian Pekerjaan	Identifikasi Bahaya	Tingkat Resiko
1	Pelat Berongga (Voided Slab) Pracetak bentang 14 Meter	<ul style="list-style-type: none"> <li>• Tertabrak alat berat</li> <li>• Tertimpa material</li> <li>• Kecelakaan lalu lintas</li> <li>• Tertabrak kendaraan</li> </ul>	<ul style="list-style-type: none"> <li>• 6</li> <li>• 8</li> <li>• 6</li> <li>• 6</li> </ul>

- Peserta menyampaikan rencana keselamatan konstruksi sesuai tabel jenis pekerjaan dan identifikasi bahayanya.

### 3.7. Pekerjaan Utama

Pekerjaan Utama pada pekerjaan Penggantian Jembatan Sasak Rembaga (Ruas Jalan HOS Cokroaminoto Kota Tangerang) adalah:

1. Pelat Berongga (Voided Slab) Pracetak bentang 14 Meter.
2. Laston Lapis Aus (AC-WC);

### 3.8. Mobilisasi & SMKK

Kebutuhan Mobilisasi pada pekerjaan Penggantian Jembatan Sasak Rembaga (Ruas Jalan HOS Cokroaminoto Kota Tangerang) adalah:

No.	Uraian	Volume	Satuan
1	Sewa Tanah	100,00	M2
<b>Kantor Lapangan dan Fasilitas</b>			
1	Base Camp	100,00	M2
2	Kantor	0,00	M2
3	Barak	0,00	M2
4	Bengkel	0,00	M2
5	Gudang, dan lain-lain	0,00	M2
<b>Mobilisasi Fasilitas Laboratorium</b>			
1	Ruang Laboratorium (sesuai Gambar)	0,00	M2
2	Soil & Aggregate Testing	1,00	Set
3	Concrete Testing		
	Slump Cone	2,00	Buah
	Cylinder/Cube Mould for Compressive Strength	6,00	Buah
	Beam Mould for Flexural Strength (RIGID)	6,00	Buah
	Crushing Machine	1,00	Buah
4	Pendukung	12,00	Kali
5	Operasional	0,00	Bulan

1. The first part of the document discusses the importance of maintaining accurate records of all transactions.

2. It then goes on to describe the various methods used to collect and analyze data, including surveys, interviews, and focus groups.

3. The next section details the results of the data collection process, highlighting key findings and trends.

4. Finally, the document concludes with a summary of the overall findings and recommendations for future research.

5. The following table provides a detailed breakdown of the data collected during the study.

6. The data shows a clear trend of increasing participation over time, with a significant increase in the final phase of the study.

7. This increase is likely due to the implementation of the new data collection methods, which have proven to be more effective than previous approaches.

8. The results also indicate that the data collection process is highly reliable and consistent across different phases of the study.

9. These findings suggest that the new data collection methods are well-suited for this type of research and should be used in future studies.

10. The data also shows that there is a strong correlation between the data collection methods and the results of the study.

11. This correlation suggests that the data collection methods are a key factor in determining the accuracy and reliability of the study's findings.

12. In conclusion, the data collection process is a critical component of any research project, and the results of this study demonstrate the effectiveness of the new methods used.

<b>Mobilisasi Personil dan Fasilitas Penunjang Lainnya</b>			
1	Personil Sesuai Struktur Organisasi	0,00	Ls
<b>Fasilitas Direksi</b>			
1	Transportasi dan Komunikasi Lapangan	1,00	Ls
2	Papan Kegiatan (Tiang Besi Plat Baja Pondasi Beton uk papan 1,2m x 0,8m tinggi tiang=1,8m)	2,00	Buah
3	Sewa Kantor Direksi	6,00	Bulan
4	Sewa Fasilitas Kantor Direksi	1,00	Set
5	Pelaporan Dokumentasi dan Asbuilt Drawing	1,00	Set
6	Sewa Kendaraan Roda 2(dua) 125 cc Tahun 2020	6,00	Bulan
7	Sewa Kendaraan Roda 4(empat) 2000 cc Tahun 2020	0,00	Bulan
8	Dokumentasi dan Video Udara ( Drone )	6,00	Kali
<b>Mobilisasi &amp; Demobilisasi</b>			
1	ASPHALT FINISHER	1,00	Unit
2	CONCRETE MIXER 0.3-0.6 M3	1,00	Unit
3	EXCAVATOR 80-140 HP	1,00	Unit
4	GENERATOR SET	1,00	Unit
5	MOTOR GRADER >100 HP	1,00	Unit
6	THREE WHEEL ROLLER 6-8 T	1,00	Unit
7	TANDEM ROLLER 6-8 T.	1,00	Unit
8	TIRE ROLLER 8-10 T.	1,00	Unit
9	VIBRATORY ROLLER 5-8 T.	1,00	Unit
10	CONCRETE VIBRATOR	1,00	Unit
11	WATER TANKER 3000-4500 L.	1,00	Unit
12	TAMPER	1,00	Unit
13	CRANE ON TRACK 50 TON	1,00	Unit
14	BORE PILE MACHINE	1,00	Unit

### 3.9. Sistem Manajemen Keselamatan Konstruksi

Sistem Manajemen Keselamatan Konstruksi (SMKK) Pekerjaan Penggantian Jembatan Sasak Rembaga (Ruas Jalan HOS Cokroaminoto Kota Tangerang) sebagai berikut:

No.	Uraian	Volume	Satuan
<b>Penyiapan Dokumen Penerapan SMKK</b>			
1	Pembuatan Dokumen RKK, RKPPL, RMLLP, RMPK	1,00	Set
2	Pembuatan Prosedur dan Instruksi Kerja	1,00	Set
3	Penyusunan Pelaporan Penerapan SMKK	1,00	Set
<b>Sosialisasi, Promosi dan Pelatihan</b>			
1	Induksi Keselamatan Konstruksi (Safety Induction)	30,00	Org
2	Pelatihan Keselamatan Konstruksi	30,00	Org
3	P3K	5,00	Org
4	Simulasi Keselamatan Konstruksi	30,00	Org
5	Spanduk (Banner)	10,00	Lbr
6	Poster / Leaflet	5,00	Lbr
7	Papan Informasi Keselamatan Konstruksi	2,00	Buah
<b>APK</b>			
1	Tali keselamatan (Life Line)	1,00	Ls
2	Penahan Jatuh (Safety Deck)	1,00	Ls
3	Pagar pengaman (Guard Railing)	1,00	Ls

Year	Value	Year	Value
1970	100	1975	100
1971	105	1976	105
1972	110	1977	110
1973	115	1978	115
1974	120	1979	120
1975	125	1980	125
1976	130	1981	130
1977	135	1982	135
1978	140	1983	140
1979	145	1984	145
1980	150	1985	150
1981	155	1986	155
1982	160	1987	160
1983	165	1988	165
1984	170	1989	170
1985	175	1990	175
1986	180	1991	180
1987	185	1992	185
1988	190	1993	190
1989	195	1994	195
1990	200	1995	200
1991	205	1996	205
1992	210	1997	210
1993	215	1998	215
1994	220	1999	220
1995	225	2000	225
1996	230	2001	230
1997	235	2002	235
1998	240	2003	240
1999	245	2004	245
2000	250	2005	250
2001	255	2006	255
2002	260	2007	260
2003	265	2008	265
2004	270	2009	270
2005	275	2010	275
2006	280	2011	280
2007	285	2012	285
2008	290	2013	290
2009	295	2014	295
2010	300	2015	300
2011	305	2016	305
2012	310	2017	310
2013	315	2018	315
2014	320	2019	320
2015	325	2020	325

Table with 2 columns: Year, Value

Year	Value
1970	100
1971	105
1972	110
1973	115
1974	120
1975	125
1976	130
1977	135
1978	140
1979	145
1980	150
1981	155
1982	160
1983	165
1984	170
1985	175
1986	180
1987	185
1988	190
1989	195
1990	200
1991	205
1992	210
1993	215
1994	220
1995	225
1996	230
1997	235
1998	240
1999	245
2000	250
2001	255
2002	260
2003	265
2004	270
2005	275
2006	280
2007	285
2008	290
2009	295
2010	300
2011	305
2012	310
2013	315
2014	320
2015	325



4	Pembatas Area (Restricted Area)	.1,00	Ls
<b>APD</b>			
1	Topi Pelindung ( <i>Safety Helmet</i> )	50,00	Buah
2	Pelindung mata ( <i>Goggles, Spectacles</i> )	50,00	Pasang
3	Tameng muka ( <i>Face shield</i> )	5,00	Buah
4	Pelindung pemapasan dan mulut ( <i>Masker</i> )	8,00	Box
5	Sarung tangan ( <i>Safety gloves</i> )	50,00	Pasang
6	Sepatu keselamatan ( <i>Safety shoes</i> )	15,00	Pasang
7	Penunjang seluruh tubuh ( <i>Full bodu harness</i> )	3,00	Buah
8	Rompi keselamatan ( <i>Safety vest</i> )	15,00	Buah
<b>Personel K3 Konstruksi</b>			
1	Petugas Keselamatan Konstruksi, Petugas K3 Konstruksi	6,00	Org
<b>Fasilitas Sarana, Prasarana, dan Alat Kesehatan</b>			
1	Peralatan P3K (Kotak P3K, Tandu, Obat Luka, Perban, Dll)	1,00	Set
<b>Lain-lain Terkait Pengendalian Risiko K3</b>			
1	Alat pemadam api ringan ( <i>APAR</i> )	4,00	Buah
2	Bendera K3	2,00	Buah
3	Lampu darurat ( <i>Emergency lamp</i> )	4,00	Buah
<b>Rambu dan Perlengkapan Lalu Lintas yang Diperlukan atau Manajemen Lalu Lintas</b>			
1	Rambu Batas Kecepatan	20,00	Buah
2	Rambu Perintah Mengikuti Lajur	4,00	Buah
3	Rambu Pengarah Tikungan	3,00	Buah
4	Rambu Larangan Menyalip Kendaraan Lain	4,00	Buah
5	Rambu Peringatan dengan Kata-Kata	24,00	Buah
6	Rambu Peringatan Pekerjaan di Jalan	4,00	Buah
7	Traffic Cone	20,00	Buah
8	Pagar jaring pengaman termasuk perlengkapannya	200,00	M1
9	ralatan komunikasi dan Lainnya .....	10,00	Set
<b>Tenaga/Personil</b>			
1	Pekerja ( <i>Flagman</i> )	12,00	OB
2	Koordinator / Pengatur	6,00	OB

### 3.10. Tingkat Komponen Dalam Negeri (TKDN)

Tingkat Komponen Dalam Negeri Minimal pada Pekerjaan ini adalah 40% (empat puluh persen).

Produk yang wajib melampirkan TKDN Pada Paket pekerjaan ini antar lain :

1. Lapis Pondasi bawah Beton Kuru;
2. Lapis Resap Pengikat - Aspal Cair/Emulsi;
3. Laston Lapis Aus (AC-WC);
4. Bahan anti pengelupasan;
5. Beton struktur, fc'30 MPa;
6. Pelat Berongga (Voided Slab) Pracetak bentang 14 Meter.
7. Baja Tulangan Sirip BjTS 420A;
8. Anyaman Kawat Yang Dilas (Welded Wire Mesh).
9. Sandaran (Railing);
10. Marka Jalan Termoplastik.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice to ensure transparency and accountability.

2. The second section outlines the various methods used to collect and analyze data. It highlights the use of both qualitative and quantitative approaches to gain a comprehensive understanding of the subject matter.

3. The third part of the document focuses on the implementation of the proposed strategies. It provides a detailed timeline and identifies the key stakeholders involved in the process.

4. The final section discusses the expected outcomes and the long-term impact of the project. It concludes by reiterating the commitment to continuous improvement and the pursuit of excellence in all aspects of the organization's operations.

5. The following table provides a summary of the key findings and recommendations from the study. It is intended to serve as a reference for decision-makers and to guide future research in this area.

Category	Findings	Recommendations
Financial	Significant increase in revenue over the past year.	Implement cost-cutting measures to improve profit margins.
Operational	Streamlined processes have led to faster service times.	Invest in training for staff to maintain high service quality.
Customer Satisfaction	Positive feedback from customers regarding product quality.	Continue to offer personalized service to enhance customer loyalty.

6. In conclusion, the project has successfully achieved its primary objectives and has laid a strong foundation for future growth. The team's dedication and hard work are commendable, and the results speak for themselves.

Produk yang melampirkan TKDN melampirkan surat perjanjian penyediaan material atau Surat Perjanjian Kerjasama dengan pelaku usaha Jasa Konstruksi dengan Produsen atau Distributor Material.

### **3.11. Syarat dan Ketentuan Lainnya**

1. Calon Penyedia melakukan survey mandiri terhadap rencana lokasi;
2. Harga yang ditawarkan sudah termasuk pajak, keuntungan, dan overhead;
3. Membuat Surat Pernyataan Tidak Menuntut Ganti Rugi sesuai dengan format (terlampir);
4. Sebelum pelaksanaan fisik lapangan, pihak kontraktor terlebih dahulu harus mengajukan pengujian bahan material pekerjaan utama di laboratorium independen yang professional, selanjutnya hasil pengujian tersebut harus mendapat persetujuan direksi;
5. Penyedia bertanggung jawab atas pelaksanaan Kontrak, kualitas barang/jasa, ketepatan perhitungan jumlah atau volume, ketepatan waktu penyerahan dan ketepatan tempat penyerahan.
6. Penyedia Membuat Pakta Integritas yang berisi pernyataan :
  - a. Tidak akan melakukan praktek korupsi, kolusi, dan/atau nepotisme;
  - b. Akan melaporkan kepada PA/KPA/APIP jika mengetahui terjadinya praktik korupsi, kolusi, dan/atau nepotisme dalam proses pengadaan ini;
  - c. Akan mengikuti proses pengadaan secara bersih, transparan, dan profesional untuk memberikan hasil kerja terbaik sesuai ketentuan peraturan perundang-undangan; dan
  - d. Apabila melanggar hal-hal yang dinyatakan dalam huruf a, huruf b dan/atau huruf c maka bersedia menerima sanksi sesuai dengan peraturan perundang-undangan.

### **3.12. Keluaran/produk yang dihasilkan dari pelaksanaan pengadaan pekerjaan konstruksi :**

1. Konstruksi fisik yang sesuai dengan dokumen untuk pelaksanaan konstruksi.
2. Dokumen hasil pelaksanaan konstruksi meliputi :
  - Gambar-gambar yang sesuai dengan pelaksanaan (asbuilt drawing).
  - Kontrak kerja pelaksanaan konstruksi fisik dengan pelaksana konstruksi beserta segala perubahan / addendumnya.
  - Laporan Harian, Mingguan, Bulanan, Laporan Progres Serta laporan lainnya yang terkait dengan pekerjaan konstruksi.
  - Berita Acara Perubahan Pekerjaan, Pekerjaan tambah / kurang, serah terima, pemeriksaan Pekerjaan, dan Berita Acara lain yang berkaitan dengan pekerjaan konstruksi.
  - Foto-foto dokumentasi yang diambil pada setiap tahapan kemajuan pelaksanaan konstruksi.


Demikian spesifikasi teknik ini dibuat sebagai acuan dan pedoman dalam pelaksanaan pekerjaan, sehingga diharapkan hasil pekerjaan dapat selesai sesuai dengan apa yang diharapkan. Apabila ada pekerjaan tambahan diluar pekerjaan yang disebutkan



dalam spesifikasi teknik ini, maka spesifikasi teknik untuk pekerjaan tersebut akan ditentukan kemudian oleh direksi pekerjaan.

Serang, 03 Mei 2024

KEPALA DINAS  
PEKERJAAN UMUM DAN PENATAAN RUANG  
PROVINSI BANTEN  
Selaku Pengguna Anggaran



**ARLAN MARZAN, S.T., M.T.**  
NIP. 197910142002121004

KEPALA BIDANG BINA MARGA  
Selaku Pejabat Pembuat Komitmen,



**HERU ISWANTO, S.T.**  
NIP. 197209281998031003

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1950

**KOP PERUSAHAAN**

**SURAT PERNYATAAN TIDAK MENUNTUT GANTI RUGI**

Nomor .....

Kepada Yth:  
Pejabat Pembuat Komitmen (PPK) Bidang Bina Marga  
Dinas Pekerjaan Umum dan Penataan Ruang Provinsi Banten  
di-

**Serang**

Yang bertanda tangan dibawah ini:

Nama : .....

Alamat : .....

Jabatan : .....

dengan ini menyatakan dengan sesungguhnya bahwa:

1. Tidak akan menuntut ganti rugi dalam bentuk apapun terhadap Pejabat Pembuat Komitmen (PPK) Bidang Bina Marga, apabila terjadi Pembatalan Kontrak atau Perubahan Nilai Kontrak pada paket Pekerjaan Penggantian Jembatan Sasak Rembaga (Ruas Jalan HOS Cokroaminoto Kota Tangerang) secara sepihak oleh Pihak PPK Bidang Bina Marga yang diakibatkan oleh tidak selesainya proses pengadaan lahan pada lokasi pekerjaan Penggantian Jembatan Sasak Rembaga (Ruas Jalan HOS Cokroaminoto Kota Tangerang);
2. Tidak akan menuntut ganti rugi dalam bentuk apapun terhadap Pejabat Pembuat Komitmen (PPK) Bidang Bina Marga, apabila terjadi Pembatalan kontrak atau Perubahan Nilai Kontrak pada paket Pekerjaan Penggantian Jembatan Sasak Rembaga (Ruas Jalan HOS Cokroaminoto Kota Tangerang) yang diakibatkan adanya perubahan anggaran di Anggaran Pendapatan dan Belanja Daerah Tahun 2024 (APBD Tahun 2024).

Demikian pernyataan ini dibuat dengan sebenarnya dan untuk dipergunakan sebagai mana mestinya.

Serang, ..... 2024

Direktur PT. / CV.

Materai  
10.000

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