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|  | TOLL JAKARTA CIKAMPEK 2 SELATAN |  Certificate No.ID03/00281 |
| | Paket-3 : Ruas Taman Mekar - Sadang (Sta.34+150-Sta.62+000) | |
| PROSEDUR ROCKFILL PADA PEKERJAAN TIMBUNAN BADAN JALAN | | |

TABLE OF CONTENTS

- 1. PURPOSE**
- 2. SCOPE**
- 3. DEFINITIONS**
- 4. REFERENCES**
- 5. RESPONSIBILITIES**
- 6. PROCEDURE**
- 7. QUALITY CONTROL/ INSPECTION**
- 8. SAFETY PRECUATIONS**
- 9. ATTACHMENTS**
 - 9.1 Rockfill system for embankment**
 - 9.2 Organization chart**
 - 9.3 JSA**

| Date | Document No. | Rev. | Page |
|-------------|--------------|------|-------------|
| 05-FEB-2020 | CS-QC-MS-02 | 0 | Page 1 of 8 |

| | | |
|---|--|--|
|  | TOLL JAKARTA CIKAMPEK 2 SELATAN |  Certificate No.ID03/00281 |
| | Paket-3 : Ruas Taman Mekar - Sadang (Sta.34+150-Sta.62+000) | |
| PROSEDUR ROCKFILL PADA PEKERJAAN TIMBUNAN BADAN JALAN | | |

1. TUJUAN

Tujuan prosedur ini dibuat adalah untuk melengkapi pelaksanaan pekerjaan yang tercantum didalam Spesifikasi Umum Bab S4.06 (3)(f) perihal timbunan dengan batu, serta untuk melengkapi material rockfill tersebut dengan parameter-parameter teknis sehingga pekerjaan dilapangan dapat dilakukan dengan benar.

2. RUANG LINGKUP

Pekerjaan rockfill ini dilakukan pada bagian mainroad yang berdekatan dengan sungai dan untuk pekerjaan lereng timbunan tidak termasuk didalam ruang lingkup pembahasan.

3. DEFINISI

| | |
|----------|--|
| Rockfill | : Timbunan dengan batu. |
| RFI | : Request for Inspection |
| AFC | : Approved for Construction |
| WKTIP | : Waskita Karya Typical Inspection Plan |
| WKEP | : Waskita Karya Engineering Procedure |
| WKIC | : Waskita Karya Inspection Checklist |
| WKTR | : Waskita Karya Test Report |
| WKMSS | : Waskita Karya Material System Specifications |
| MSDS | : Material Safety Data Sheet |

| Date | Document No. | Rev. | Page |
|-------------|--------------|------|-------------|
| 05-FEB-2020 | CS-QC-MS-02 | 0 | Page 2 of 8 |

| | | |
|---|--|--|
|  | TOLL JAKARTA CIKAMPEK 2 SELATAN |  Certificate No.ID03/00281 |
| | Paket-3 : Ruas Taman Mekar - Sadang (Sta.34+150-Sta.62+000) | |
| PROSEDUR ROCKFILL PADA PEKERJAAN TIMBUNAN BADAN JALAN | | |

4. REFERENCE

- S4.06 (3)(f) : Timbunan dengan Batu
- EM_1110-1-1804 : Engineering & Design - Geotechnical Investigation
- CONSTR MANUAL M 41-0110 : Rock embankment
- SOIL & ROCK CONSTR MAT : Table 12.1 Typical properties of embankment dam rockfill

5. RESPONSIBILITIES

Rockfill Supervisor:

Ensure full compliance by all rockfill supervisor, foreman, operator, surveyor and labor regarding execution of the work In accordance with Waskita Karya project requirement and specifications. Confirm the availability of material, tool, equipment and required personnel who carry out the work. Conduct brief meeting with all the involved personnel in painting.

Quality Control Inspector

Monitor daily rockfill activities and conduct inspections in accordance with approved project WKTIP and associated documents. Prepare daily documentation and final acceptance documents when required. Maintain close relationship with customer representative.

Safety Supervisor

Check the work areas for any unsafe conditions. Ensure that all safety requirements have been adequately addressed and work shall be carried out in accordance with Waskita Karya project safety procedures.

| Date | Document No. | Rev. | Page |
|-------------|--------------|------|-------------|
| 05-FEB-2020 | CS-QC-MS-02 | 0 | Page 3 of 8 |

| | | |
|---|--|--|
|  | TOLL JAKARTA CIKAMPEK 2 SELATAN |  Certificate No.ID03/00281 |
| | Paket-3 : Ruas Taman Mekar - Sadang (Sta.34+150-Sta.62+000) | |
| PROSEDUR ROCKFILL PADA PEKERJAAN TIMBUNAN BADAN JALAN | | |

Engineering Department

Prepare method of statement in accordance with project specifications and submit to Cipta Strada for review and approval. Provide AFC drawings, material specification and other related document require on rockfill job.

6. PROCEDURE

6.1 General requirement

- 6.1.1 Ensure that rockfill material had tested at the laboratory and result of the test in accordance to the specification SOIL AND ROCK CONSTRUCTION MATERIALS Table 12.1 Typical properties of embankment dam rockfill
- 6.1.2 Client's source of quarry, index properties data sheet for rockfill are always available on site.
- 6.1.3 Prepared surfaces and subgrade areas are cleaned of any contaminants by air blowing with clean dry air.
- 6.1.4 Highway rockfill is open-graded, consisting mainly of fragments between 100 mm and 500 mm
- 6.1.5 The highway equivalent is specified in terms of grading and intact rock strength (minimum PLSI 1 MPa, roughly corresponding to a UCS of 20 MPa)
- 6.1.6 The largest particle permitted is 500 mm, in 750 mm lifts
- 6.1.7 Rockfill layers must be separated from earthfill by transition zones 0.5 m thick, and no rockfill is allowed within 1 m of the embankment top
- 6.1.8 The transition zones are finer rockfill (150 mm maximum) in thinner lifts (250mm)

| Date | Document No. | Rev. | Page |
|-------------|--------------|------|-------------|
| 05-FEB-2020 | CS-QC-MS-02 | 0 | Page 4 of 8 |



TOLL JAKARTA CIKAMPEK 2 SELATAN

Paket-3 : Ruas Taman Mekar - Sadang
(Sta.34+150-Sta.62+000)



Certificate No.ID03/00281

PROSEDUR ROCKFILL PADA PEKERJAAN TIMBUNAN BADAN JALAN

6.2 Stockpile

- 6.2.1 Stockpiles shall be constructed in conformity with the provisions of the Standard Specifications.
- 6.2.2 The area upon which the material is to be stockpiled is prepared carefully by removing all vegetation and constructing a uniform, flat ground surface.
- 6.2.3 Preparation of a good base for the stockpile will minimize wastage of material, and will prevent contamination of the material when removing it from the stockpile.

6.3 Provide scaffolding and man lift for elevated areas if required.

6.4 Pre inspections to evaluate rockfill system, type of damages, surface contaminations and applicable repair rockfill system shall be done as per Waskita Karya Applicable Standard and Procedures.

6.5 Grade control for rockfill material

- 6.5.1 The finish required on roadway subgrades shall ensure a final grade in as close conformity to the planned grade and crosssection as is practicable, consistent with the type of material being placed.
- 6.5.2 Subgrade blue tops shall be set 0.05 foot below subgrade elevation and be accurate to + or - 0.01 foot.
- 6.5.3 The finished subgrade surface shall not deviate from the plan subgrade elevation by more than +0.00 to -0.05 foot.

6.6 Inspection of rockfill thicknesses

- 6.6.1 Where excessively rocky materials are being placed, deviations in excess of the above may be accepted where, in the opinion of the Engineer, closer conformance

| Date | Document No. | Rev. | Page |
|-------------|--------------|------|-------------|
| 05-FEB-2020 | CS-QC-MS-02 | 0 | Page 5 of 8 |

| | | |
|---|--|--|
|  | TOLL JAKARTA CIKAMPEK 2 SELATAN |  Certificate No.ID03/00281 |
| | Paket-3 : Ruas Taman Mekar - Sadang (Sta.34+150-Sta.62+000) | |
| PROSEDUR ROCKFILL PADA PEKERJAAN TIMBUNAN BADAN JALAN | | |

cannot be achieved by normal procedures and with a reasonable amount of effort and care on the part of the Contractor.

- 6.6.2 Conformance to grade shall be checked by rod and level, straight-edging, or other appropriate engineering method as selected by the Engineer.

7. QUALITY CONTROL/INSPECTION

Requirement for quality and acceptance criteria shall confirm to Construction Manual M 41-01.10

8. SAFETY PRECAUTION:

- 8.1 Stake out the safety signage for unloading and loading rockfill by heavy equipment and all heavy equipment movement signage.
- 8.2 Wear full body harness when working at heights.
- 8.3 The personnel shall wear breathing apparatus when carrying out unloading of rockfill material and spraying activities.
- 8.4 Secured tools while working at height.
- 8.5 Adequate PPE provide according from MSDS.
- 8.6 Other safety requirements shall conform to Construction Safety Manual Handbook
- 8.7 A Job safety Analysis as attached will be implemented during works.

9. ATTACHMENT:

- 9.1 Rockfill system for embankment
- 9.2 Organization chart

| Date | Document No. | Rev. | Page |
|-------------|---------------------|-------------|-------------|
| 05-FEB-2020 | CS-QC-MS-02 | 0 | Page 6 of 8 |



TOLL JAKARTA CIKAMPEK 2 SELATAN

Paket-3 : Ruas Taman Mekar - Sadang
(Sta.34+150-Sta.62+000)



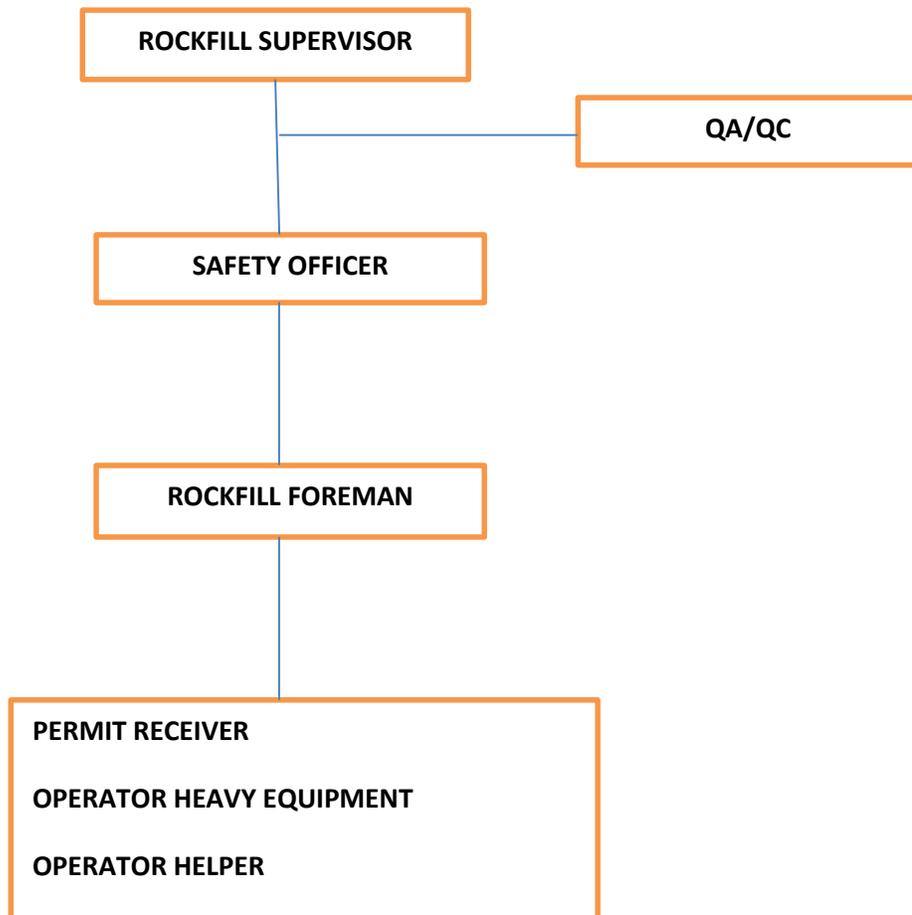
Certificate No.ID03/00281

PROSEDUR ROCKFILL PADA PEKERJAAN TIMBUNAN BADAN JALAN

9.3 JSA

Attachment -9.2

ORGANIZATION CHART



| Date | Document No. | Rev. | Page |
|-------------|--------------|------|-------------|
| 05-FEB-2020 | CS-QC-MS-02 | 0 | Page 7 of 8 |



TOLL JAKARTA CIKAMPEK 2 SELATAN

Paket-3 : Ruas Taman Mekar - Sadang
(Sta.34+150-Sta.62+000)



Certificate No.ID03/00281

PROSEDUR ROCKFILL PADA PEKERJAAN TIMBUNAN BADAN JALAN

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|-----------------------|--|
| PROJECT | PACKAGE-3 : RUAS TAMAN MEKAR - SADANG |
| CONTRACT NO. | |
| BI NO. | |
| JOB ORDER NO. | |
| CLIENT | JASAMARGA JAKARTA CIKAMPEK SELATAN |
| CONTRACTOR | WASKITA KARYA |
| SUB-CONTRACTOR | |

METHOD OF STATEMENT FOR

PROSEDUR ROCKFILL PADA PEKERJAAN TIMBUNAN BADAN JALAN

DOCUMENT NO.: CS - QC - MS - 01

| Rev. | Date | Description | Prepared By | Reviewed By | Approved By | Approved By |
|------|-------------|---------------------|-------------|-------------|-------------|-------------|
| 0 | 06 feb 2020 | Issued for Approval | | | | |

| Date | Document No. | Rev. | Page |
|-------------|--------------|------|-------------|
| 05-FEB-2020 | CS-QC-MS-02 | 0 | Page 8 of 8 |