

**CHAPTER TWELVE : COMPLETION PROCEDURE****CONTENTS**

- 12.01 Completion Programme**
- 12.02 Pre-Completion Checks**
- 1.2.03 Qualification For Completion**
- 12.04 Handover**
- 12.05 Certification of Works Completion**
- 12.06 Defects Maintenance Period (Maintenance Period)**
- 12.07 Certification of Maintenance Completion**
- 12.08 Preparation of Completion Reports**
- 12.09 Other Reports Required**
- 12.10 Mandatory Completion Duties**

**2.01 Completion Programme.**

The supervision team's involvement in the final stages of the contract-can be regarded as fitting into the following programme.

- a) Pre-completion checks.
- b) Qualification for Completion. c) Handover.
- d) Certification of Completion.\*
- e) Defects Liabilities (Maintenance) Period.\*
- f) Certification of Maintenance Completion.\*
- g) Preparation of Completion Reports. Required action under each of these headings is dealt with in the following sections of this chapter.

**12.02 Pre-Completion Checks**

As construction work approaches full. completion, the contractor will apply to the

Engineer to issue a Certificate under the terms of the Conditions of Contract (Clause 39 of Form 203A or Clause 48 of the 203 CEWI, FIDIC and I.C.B. "Conditions" \*). The first step for the Resident Engineer in response to the application is to inform the Engineer and then to arrange for a full inspection of the works as they stand. The preparation of a list of deficiencies should follow compiled in two sections:

- (i) Outstanding Work,
- (ii) Defects.

When the complete list is available copies are to be passed to the Engineer and the contractor. The Resident Engineer must then review its contents and recommend to the Engineer either:

- a) that the works are sufficiently and satisfactorily completed to warrant the preparation of the certificate, or
- b) that further completion or remedial work is required.

The Engineer's decision on this point is to be notified to the contractor in writing. If it is decided that the Certificate can be issued, before proceeding further, an undertaking must be obtained from the contractor that he will attend to all required outstanding and remedial work during the Defects Liability Period (Maintenance Period).

*\* The Form 203A Conditions of Contract use the terms Certificate of Practical Completion, Defects Maintenance Period and Certificate of Completion of Making Good Defects, Forms 203 CEW1 and the FIDIC Conditions of contract use the terms Completion Certificate, Maintenance Period and Maintenance Certificate. The I.C.B. "Conditions" use the terms Certificate of Completion, Period of Maintenance and Maintenance Certificate.*

**12.03 Qualification For Completion**

In coming to a decision as to whether the project is ready for its Certificate of Practical

Completion or Completion Certificate the following points should be considered.

- a) It is not necessary for every last nut and bolt to be in place but the project should be in a suitable state for occupation by the government and use by the public at large, without inconvenience or hazard.
- b) Generally speaking:
  - (i) all side ditches and cross highway pipes must be complete but the non-completion of some chambers and covers is acceptable;
  - (ii) all carriageway pavement and shoulder work should be complete except for very minor isolated areas at bridges, culverts etc., or where remedial work is required;
  - (iii) all elements of major structures and large culverts should be complete;
  - (iv) guardrails on high embankments or at other hazard points and bridge parapets must be complete;
  - (v) road marking should be complete except for very minor items;
  - (vi) if included in the contract the more important advance and direction signs and all warning signs, without exception, must be erected.
- (c) The value of completed work should be at least 95% of the estimated final Contract Sum.
- (d) once the Certificate has been issued no Liquidated Damages can be levied against the contractor for non completion of any part of the works. In the case of contracts governed by the Form 203A Conditions of contract there is no retention money to be released on completion but the 203 CEWI and I.C.B. Conditions provide for a retention on interim certificates half of which is released on certified completion.\*
- (e) Because, as noted in (d), the contractor has been relieved of some of the onerous conditions and because the remaining payment values are small it is sometimes very difficult to get the contractor to take the completion of outstanding or remedial work seriously. For this reason, staff must guard against agreeing that

completion has been achieved if small but important items of work are outstanding-particularly if they are covered by items that the contractor may regard as loss-making.

- (f) The issuing of the Certificate of Practical Completion or Completion Certificate does not constitute contractual approval for the items of work indicated to be complete - final approval rests with the issuing of the Certificate of Making Good Defects or Maintenance Certificate. However, an element of implied acceptance cannot be entirely avoided and it is clearly embarrassing to identify, at the end of the Defects Maintenance Period or Maintenance Period, deficiencies which could have been pointed out earlier. Accordingly, Resident Engineers should ensure that their staff carry out the completion inspection and listing of work conscientiously.

It is to be noted that the Contractor can ask for a Certificate to be issued for part of the Works. In the case of Form 203A contracts a Certificate of Partial Completion can be issued for part of the works occupied by the Government - see Clause 42(a) & (b). For Form 203 CEWI, FIDIC and I.C.B. contracts a Sectional Certificate of Completion can be issued providing the terms of Clause 48(2) and/or (3) have been met. The procedure for sectional completion is similar to that described in this chapter for whole completion.

*\* In the case of FIDIC contracts any arrangements for the holding and release of retention are given in the Part II "Conditions".*

#### **12.04 Handover**

Before the Certificate of Practical Completion or Completion Certificate is issued it is normal to arrange for acceptance of the project to be signified by the maintaining authority, which may be the Jabatan Kerja Raya. Alternatively, it may be some other central or local government authority. For this purpose a joint site inspection is arranged

with the contractor, the Engineer and officers of the maintaining authority at which the latter have the opportunity to draw attention to any items they consider to be incomplete or unacceptable. If the Engineer agrees that the items are properly subject to rectification under the contract he will include them in his list of deficiencies prepared for the contractor. However, it should be stressed that the exercise is concerned with work already covered by contract instructions and, although most contractors will be flexible about undertaking a small amount of additional construction, this is not the stage at which major extra works should be introduced.

### **12.05 Preparation of the Certificate Of Practical Completion or Completion Certificate**

When the Engineer is satisfied that a suitable state of completion has been achieved and has obtained the contractor's undertaking to complete the outstanding and remedial works, the Certificate of Practical Completion or Completion Certificate should be prepared. Form JKR 2035 Pin 2/83 is used for the purpose and should carry an annex listing the more important deficiencies to be attended to by the Contractor. A copy of an issued Certificate is given in Figure 12A. Clause 48 (1) of the Form 203 CEWI, FIDIC and I.C.B. Conditions of Contract requires that the Certificate be issued within 21 days of the contractor's notice requesting it or within 21 days of his making good any defects required by the Engineer for "substantial completion". There is no such stipulation in the Form 203A "Conditions"

### **12.06 Defects Maintenance Period (Maintenance Period)**

The contract does not end with the Certificate of Practical Completion or Completion Certificate and some members of the supervision team are usually retained to oversee work executed during the Defects Liability or Maintenance Period, which start on the date of the Certificate. At that time, the Resident Engineer or other officer assigned with continuing site responsibility for the contract

should agree with the contractor the programme for the Period and what resources of plant and labour etc. will be required. He will then assess his own supervision staffing requirements and agree with his superior in the Department what provision is to be made.

Arrangements also need to be made with the contractor for continuing the services of accommodation,, transportation and labour support, scaling these down to a suitable level.

The contractor's programme of maintenance should be based on dealing with the list of deficiencies appended to the Certificate of Practical Completion or completion Certificate. However, the list must be progressively updated throughout the period by the supervision staff who should be constantly on the lookout for any additional defects and evidence of potential failure.

It should be stressed that the contractor's works obligation during the period is for defects and noncompletions only - it does not extend to routine or "wear and tear" maintenance unless otherwise stated in the specification.

### **12.07 Certification of Completion of Maintenance.**

The Certificate of Completion of Making Good Defects or Maintenance Certificate, unlike the Certificate of Practical completion or Completion Certificate, does signify ultimate acceptance of the works. It is, therefore, of the greatest importance that any defects remaining toward the end of the Defects Liability or Maintenance Period are identified and put right before the Certificate is issued. The work of compiling a final list of deficiencies should start approximately two months before the nominal end of the Period.

When all remedial and outstanding work has been completed to the satisfaction of the Engineer the Certificate of Making Good Defects or Maintenance Certificate is to be prepared on form JKR 203Y / 82. An example of an issued certificate is given in Figure 12B. In the case of the Form 203A Conditions of Contract the procedures for

dealing with defects and issuing the Certificate of Making Good Defects are set out in Clause 45.

The issuing of a Maintenance Certificate is dealt with in Clause 62(1) of the Form 203 CEWI, FIDIC and I.C.B. Conditions of Contract which require the Certificate to be issued within 28 days of the end of the Maintenance Period or the date of Completion of the required defects work. There is no such provision in the Form 203A "Conditions".

### 12.08 Preparation of Completion Reports

The Project Co-ordinator is required to prepare for each contract, a Road Project Report as outlined in Nota Teknik 15/87 which is reproduced as an Appendix to this chapter. Resident Engineers are normally expected to assist with the preparation of the Report, starting work on the task as soon as construction is finished and continuing throughout the Defects Liability (Maintenance) Period. The Report should be presented to the Director of Roads, JKR (after approval by the Engineer) within a few weeks of the end of the Period.

Resident Engineers who are posted away from the project before the end of the maintenance period must draft as much of the Report as is practical before leaving and hand over the draft to the in-coming incumbent, the Engineer or their Co-ordinator.

Two very important constituents of the Road Project Report are a complete list of the As Built Drawings and the detailed Final Account - matters which are dealt with in Chapters 10.13 and 7.15 respectively.

### 12.09 Other Reports Required

Further reports to be prepared at the end of the contract, which the Resident Engineer may be required to prepare or contribute to are:

- a) the Report on Contractor's Performance, and
- b) the Completion Report on Form JKR 8 Pin 6/79. Copies of blank forms for both these reports are also given as

appendices to this chapter.

### 12.10 Mandatory Completion Duties

The following activities dealt with in this chapter are mandatory for the Resident Engineer.

- (i) Conducting of pre-completion checks and listing of deficiencies.
- (ii) Preparation of Certificate of Practical Completion or Completion Certificate.
- (iii) Supervision of contractor's maintenance operations.
- (iv) Preparation of final deficiencies list.
- (v) Preparation of Certificate of Completion of Making Good Defects or Maintenance Certificate.
- (vi) Preparation of or contributions to, the three Completion Reports.

## APPENDICES TO CHAPTER TWELVE

### APPENDIX

- |        |   |
|--------|---|
| 12 (1) | Nota Teknik 15/87. Format for Road Project Report |
| 12 (2) | Report on Contractors Performance                 |
| 12 (3) | Form JKR 8 - Pin 6/79                             |

**RAHSIA****FORMAT FOR ROAD PROJEK REPORT****Preface**

This Technical Note sets Out The required format for road project reports that are to be prepared by the coordinators after the completion of a project.

while the basic format as set out should be followed at all time, variations and changes can be made wherever necessary for specific projects.

**RAHSIA****FORMAT FOR ROAD PROJECT REPORT**

1. Title Page
2. Road Project Report
  - 1.0 Introduction
  - 2.0 Construction Details
  - 3.0 Construction Cost
  - 4.0 Miscellaneous
  - 5.0 Appendix

**CAWANGAN JALAN****ROAD PROJECT REPORT****NAME OF PROJECT**

Design By : (Unit Rekabentuk / Jurutera Perunding)

Constructed By : (Name address and Class of Contractor)

Supervised By : (JKR Daerah/Jurutera Perunding)

Cost of Project :

Date of Completion :

Report Prepared By : Name and Designation

FIGURE 12A

(J.K.R. 203s—Pin. 2/83)

KERAJAAN.....MALAYSIA.....

JABATAN KERJA RAYA

PERAKUAN SIAP KERJA  
(CERTIFICATE OF PRACTICAL COMPLETION)

Rujukan.....J.D.MJG.20/2/93 (19).....

Pejabat.....Jurutera Daerah,  
Jabatan Kerja Raya Manjung,  
Bandar Baru Seri Manjung, 32000 Sitiawan.  
.....

Tarikh.....

Kepada.....Syarikat Pembangunan Keluarga Ismail,  
.....  
No. 8, Kg. Takkah,  
.....  
Assam Kumbang, Taiping.  
.....  
(Kontraktor)

Berdaftar dengan JKR dalam Kelas ".....Bx....."

Kontrak No.....PERS/Pk/9/87.....

Kontrak untuk.....Menaikkan Taraf Jalan Masuk Dan Jalan-Jalan  
.....  
Kampung ke FELCRA Lekir, Dinding, Perak.  
.....

Bahagian\*.....  
Sedikit\*.....

Menurut Klausula 39 Syarat-Syarat Kontrak, dan tertakluk kepada penyiapan apa-apa kerja yang  
*In accordance with Clause 39 of the Conditions of Contract and subject to the completion*  
belum disiapkan dan pembaikan apa-apa kecacatan, ketidaksempurnaan, kesusutan atau apa-apa  
*of any outstanding work and the making good of any defects, imperfections, shrinkages or any*  
kerosakan lain apajupun sebagaimana yang dikehendaki di bawah Klausula 45 Syarat-Syarat Kontrak  
*other faults whatsoever as required under Clause 45 of the Conditions of Contract*  
dan yang mungkin terzahir dalam Tempoh Tanggungan Kecacatan maka adalah dengan ini di-  
*and which may appear during the Defects Liability Period, it is hereby certified that*  
perakui bahawa seluruh Kerja-Kerja/~~Sedikit/Sedikit~~ pada Kerja-Kerja\* seperti yang tersebut di atas  
*the whole of the Works/Section of the Works\* as mentioned above*

telah siap dengan memuaskan hati pada.....7.1.89.....dan diambil milik  
*were satisfactorily completed on*.....  
*and taken into possession*

FIGURE 12A  
continued

pada..... 31.1.89 ..... dan dengan itu Tempoh Tanggungan Kecacatan untuk  
on ..... and that the said Defects Liability Period in respect of

Kerja-Kerja/~~Sekolah/Pejabat/K.R.~~\* tersebut bermula pada..... 8.1.89  
the said Works/~~Sekolah/Pejabat/K.R.~~\* began on

dan akan berakhir pada..... 7.1.90 .....  
and will end on

.....  
Pegawai Penguasa  
Superintending Officer

(Nama Penuh..... Mustapha bin Che Jusoh, PPT  
Designation

Nama Jawatan.... Jurutera Daerah,....  
Name in full Jabatan Kerja Raya Manjung.

s.k.

Ketua Setiausaha  
Kementerian Kerjaraya dan Kemudahan-Kemudahan Awam  
(U/P: Bahagian Penyertaan Bumiputra dan Kontrak)

Ketua Audit Negara  
Akauntan Perbendaharaan

Bank/Syarikat Insuran... Oversea Union Insurance (M) Sdn. Bhd.  
(yang menjamin pelaksanaan kontrak)

Pengarah PUSAKABUMI  
Jabatan Perdana Menteri  
KUALA LUMPUR

Pengarah Pengurusan  
Ibu Pejabat J.K.R.  
KUALA LUMPUR

Pengarah Cawangan..... Jalan  
Ibu Pejabat J.K.R.  
KUALA LUMPUR

Pengarah Cawangan Ukur Bahan  
Ibu Pejabat J.K.R.  
KUALA LUMPUR

Pengarah J.K.R., Negeri.... Perak Darul Ridzuan.

Jurutera Daerah/~~Projek~~ JKR Manjung...

\* Potong jika tidak berkenaan.  
(Delete if not applicable).

(JKR. 203Y/82)

MALAYSIA

KERAJAAN.....

JABATAN KERJA RAYA

PERAKUAN SIAP MEMPERBAIKI KECACATAN  
(CERTIFICATE OF COMPLETION OF MAKING GOOD DEFECTS)

Rujukan..... JKR LKTP J/2338(54)

Pejabat..... Jurutera Penguasa Kanan,

JKR UNIT FELDA, PAHANG,

28000 TEMERLUH

Tarikh.....

Kepada..... Ta Kim Soo & Sons Construction Co.,  
69 Jalan Tras,  
28700 BENTONG  
(Kontraktor)

Berdaftar dengan J.K.R. dalam Kelas ".....D....."

Kontrak No..... JKR/LKTP/PHG/JR/13/86

Kontrak untuk..... Melaksanakan kerja-kerja memperbaiki tambakan dan membina  
dan menyiapkan jalan premix di tambakan Jambatan Jengka 8, Jalan Utara  
Selatan, Jerantut, Pahang.Bahagian\*.....  
Section\*

Menurut Klausula 45 (e) Syarat-Syarat Kontrak, maka adalah dengan ini diperakui bahawa segala  
*In accordance with Clause 45 (e) of the Conditions of Contract, it is hereby certified that the*  
 kecacatan, ketidaksempurnaan, kesusutan dan apa-apa kerosakan lain apajupun terhadap Kerja-  
*defects, imperfections, shrinkages and any other faults whatsoever in respect of the Works/Section of*  
 Kerja\* yang tersebut di atas, yang dikehendaki diperbaiki di bawah Syarat-Syarat Kontrak, telah  
*the Works\* as mentioned above, which were required to be made good under the Conditions of*  
 sempurna diperbaiki pada... 11hb. Februari 1988.  
*Contract. have been completely made good on*

2. Menurut Klausula 37 (d), Syarat-Syarat Kontrak, Bon Pelaksanaan atau mana-mana bahagian  
*In accordance with Clause 37 (d) of the Conditions of Contract, the Performance Bond or*  
 darinya adalah dengan ini dilepaskan.  
*any part thereof is hereby released.*

Gerenti Bank/Insurans No..... 1886/IG/86 .....berharga MS..... 18,978.25  
*The Banker's/Insurance Guarantee No. amounting to*

yang merupakan Bon Pelaksanaan di bawah Kontrak ini adalah dengan ini dimansuhkan, tetapi  
*being the Performance Bond under this Contract is hereby cancelled, but it shall be retained*



FIGURE 12B  
continued

ianya akan disimpan di pejabat ini bagi maksud rekod. Di mana Bon Pelaksanaan adalah secara  
*in this office for record purposes. Where the Performance Bond is in cash or in the form of*  
 tunai atau dalam bentuk Deraf Bank atau Deposit Perbendaharaan, pembayaran balik hanya boleh  
*Banker's Draft or Treasury's Deposit, a refund will be made only upon the submission of the*  
 dibuat apabila resit rasmi dari Kontraktor dikembalikan ke Pejabat Pegawai Penguasa.  
*official receipt by the Contractor to the Superintending Officer's office.*

.....  
 Pegawai Penguasa  
 (Superintending Officer)

(Nama Penuh.....)  
 Name in full

Nama Jawatan.....  
 Designation

s.k. Ketua Setiausaha

Kementerian Kerjaya dan Kemudahan-Kemudahan Awam

KUALA LUMPUR

(U/P: Bahagian Penyertaan Bumiputra dan Kontrak)

Ketua Audit Negara

Akauntan Perbendaharaan

Bank/Syarikat Insurans.....Malaysia British Assurance Bhd.

(yang menjamin pelaksanaan kontrak) Wisma MBA, 33 Jalan Gereja,  
 Peti Surat 12485, 50780 Kuala Lumpur.

Pengarah Pengurusan

Ibu Pejabat J.K.R.

KUALA LUMPUR

Kerja Jalan

Pengarah Cawangan.....

Ibu Pejabat J.K.R.

KUALA LUMPUR

Pengarah Cawangan Ukur Bahan

Ibu Pejabat J.K.R.

KUALA LUMPUR

Pengarah

J.K.R. Negeri.....Jurutera Kerja Kanan (Jalan) JKR Unit Felda, Pahang Temerloh

Jurutera Daerah/Projek.....Jurutera Kerja (T/Kanan) JKR Unit Felda, Pahang,  
 28400 Bandar Pusat Jengka.

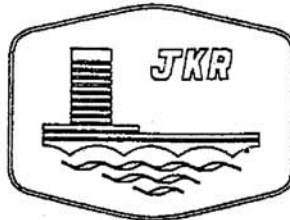
Fail Ukur Bahan.

\* Potong jika tidak berkenaan.  
 (Delete if not applicable).

L-J.P.N., Pk.

12/9A

NOTA TEKNIK 15/87



# JABATAN KERJA RAYA

FORMAT FOR ROAD PROJECT REPORT

UNIT REKABENTUK JALAN  
CAWANGAN JALAN  
IBU PEJABAT J.K.R.  
KUALA LUMPUR

APP 12/1

## 1.0 INTRODUCTION

This is to introduce the project constructed. Details should include the following:

- 1.1 Scope of Works
  - Describe generally the scope of works involved such as the nature of the project, class and length of road involved, number of structures and facilities provided etc.
- 1.2 Feasibility Study
  - Give brief details of the feasibility study if any such as date of study, name of consultant etc.
- 1.3 Detailed Engineering
  - Give brief details of the design such as standard adopted and other special design features together with the name of designer.
- 1.4 Source of Funding
  - State the source of funding for the project e.g World Bank, ADB, Federal Government etc. The Head and Subhead and the Plan Period (e.g.) FMP) is also to be stated.
- 1.5 Contract Details
  - Give details of the contract such as name, number, class and address of the Contractor, date of possession of site, original and final contract sum etc.
- 1.6 Supervision
  - Give name and address of the resident 'supervisory staff.

## 2.0 Construction Details

This section is intended to provide a detailed account of the overall construction of the project. The details should include the highlights of the construction of the items concerned; the problem encountered during construction; and the solutions adopted to over-

come them. Problems arising from deficiencies in the specifications should especially be highlight.

### 2.1 Earthworks

Stating the earthworks carried out, its quantities etc.

### 2.2 Pavement

Stating the construction of the pavement

### 2.3 Structures

Describes the various structures constructed such as bridges, retaining walls, pedestrian crossing etc.

### 2.4 Drainage

Describes the various drainage structures and types of drains and culverts including any subsoil drainage and erosion control measures used.

### 2.5 Relocation of Services

Describes the various types of service involved, difficulties encountered during construction and its effect on the progress of work.

### 2.6 Intersections/Interchanges

Describes the major intersection/interchange including details of traffic signal design used.

### 2.7 Others

Other matter encounter during construction e.g. traffic control, river diversions, land problem etc.

## 3.0 Contruction Cost

This section should summaries the contruction cost of the major elements as set out in Sumarry of Tender. It should also highlight the areas of Variation Orders.

## 4.0 Miscellaneous

Any other details deemed relevent should be recorded here.

## 5.0 Appendix

The appendix should include the following :-

- a) location and site plan of the project list
- b) as-built plan / profile drawings
- c) photographs of instruction aspects of the construction.
- d) other plans etc. as required.
- e) as completed detailed abstract
- f) list of related file numbers

**LAPORAN PERLAKSANAAN PEMBORONG  
(CONTRACTOR'S PERFORMANCE)**

BIL	KRITERIA	Terbaik 90% ke atas	Baik 75% - 89%	Sederhana 50% - 74%	Tidak Memuaskan 50% ke bawah
1	Pengurusan Tapak Bina (Site Organisation)				
2	Pentadbiran (Administration)				
3	Perancangan / Kemajuan (Programming / Progress)				
4	Mutu Kerangka (Structure Quality)				
5	Mutu Kerja-kerja Kemudahan (Services Quality)				
6	Mutu Kemasan (Finishes Quality)				
7	Mutu Kerja-kerja Luar (External works Quality)				
8	Pengawasan Kontraktor-kontraktor Kecil/ Pembekal Yang Dinama (Control of Nominated Sub-Contractors/				

**SOKONGAN (RECOMMENDATION)**

## APPENDIX 12 (3)

(J.K.R. 8—Pin. 6/79)

## KERAJAAN MALAYSIA

## JABATAN KERJA RAYA

Daerah.....

## LAPORAN DI ATAS KONTRAK YANG SUDAH SIAP

Kepala Perbelanjaan.....

Pecahan Kepala.....

1. Nama pekerjaan
2. Bil., tarikh dan harga dalam anggaran
3. Harga kontrak
4. Jumlah wang yang telah dibelanja
5. Baki
6. Tarikh siap dalam kontrak
7. Ditempohkan kepada
8. Tarikh pekerjaan itu siap
9. Cara-cara kerja yang telah diselenggarakan dan juga jika kerja itu disudahkan mengikut peraturan-peraturan dalam anggaran: (Apa-apa cacat dan pindaan daripada anggaran hendaklah disebutkan dengan halusi).
10. Nama Pemborong, alamat dan kelasnya.

.....  
*Pegawai Penjaga Kerja*.....  
*Jurutera Kerja*

Tarikh.....

L—JPN, Pk.

App 12/9