

KERAJAAN MALAYSIA

MAJLIS SUKAN NEGARA

DOKUMEN SEBUT HARGA

**DOKUMEN PANGGILAN SEBUTHARGA RASMI BAGI
KERJA-KERJA MEMBEKAL, MEMBINA BUMBUNG DAN
MENARA LATIHAN SERTA KERJA BERKAITAN DI
LAPANG SASAR MEMANAH KOMPLEKS SUKAN MSN
NILAI, NEGERI SEMBILAN UNTUK UNTUK
MAJLIS SUKAN NEGARA MALAYSIA**

NO. SEBUT HARGA :



**KETUA PENGARAH
MAJLIS SUKAN NEGARA MALAYSIA
KOMPLEKS SUKAN NEGARA
BUKIT JALIL, SRI PETALING
57000 KUALA LUMPUR**

**DOKUMEN PANGGILAN SEBUTHARGA RASMI BAGI KERJA-KERJA MEMBEKAL,
MEMBINA BUMBUNG DAN MENARA LATIHAN SERTA KERJA BERKAITAN DI
LAPANG SASAR MEMANAH KOMPLEKS SUKAN MSN NILAI, NEGERI SEMBILAN
UNTUK MAJLIS SUKAN NEGARA MALAYSIA**

ISI KANDUNGAN

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No. Tawaran Sebutharga : _____
Nama Tawaran Sebutharga : _____

Tarikh Tutup : _____
Cadangan Tempoh Siap/Penyerahan : - : _____

BAHAWASANYA, saya mengaku bahawa butir-butir dan keterangan yang diberikan di bawah ini mengenai perniagaan/syarikat saya adalah betul dan benar, maka Kerajaan boleh mengambil apa-apa tindakan terhadap saya di bawah apa-apa undang-undang yang berkuatkuasa

1. **Maklumat Penyebutharga**

a) Nama Penyebutharga : _____
b) Nama Syarikat : _____
c) Alamat Syarikat / Penyebutharga : _____

d) Email (Wajib diisi) : _____
e) No. H/P : _____

2. **No. Pendaftaran Syarikat dengan Suruhanjaya Syarikat Malaysia (SSM) dan Kementerian Kewangan Malaysia (MOF)**

(Sila lampirkan Sijil)

3. **Taraf Syarikat** : Bumiputra / Bukan Bumiputra / Sendirian Berhad /Berhad/ Perkongsian/
Milikan Tunggal

4. **Jenis Perniagaan** : _____

5. **Bilangan Pekerja** : _____

a) Pengurusan

b) Profesional

c) Teknikal

d) Sokongan

6. **Maklumat Pemilik dan Pengurusan Syarikat**

a) Ahli-ahli Lembaga Pengarah

Nama	Jawatan	Peratus Pegangan Saham (%)

b) Ahli-ahli Pengurusan dan Profesional

Kategori Jawatan	Bilangan Pekerja
JUMLAH	

7. Kedudukan Modal

(a) Modal Dibenarkan :

(b) Modal Dibayar :

(sila lampirkan satu (1) salinan BAKI penyata akaun bank syarikat yang terkini)

(c) Kedudukan Saham Dalam Peratus

(i) Bumiputra : %
(ii) Bukan Bumiputra : %
(iii) Modal Asing (Foreign Investment) : %
(iv) Dalam Negeri : %

8. Pengalaman Dalam Bekalan/Perkhidmatan/Kerja Yang Berkaitan

Sila Senaraikan jenis bekalan/perkhidmatan/kerja dalam tempoh **tiga (3) tahun** terkini. (Jika ruang tidak mencukupi, sila sertakan lampiran).

Jenis Bekalan/ Perkhidmatan/Kerja	Nama Kerajaan/ Swasta	Nilai	Tempat	Tempoh/One Off

Saya akui bahawa butir-butir di atas adalah betul dan benar:

Tandatangan
Nama Penyebutharga
Jawatan
Tarikh

Borang Tawaran Harga dan Borang Maklumat Penyebutharga perlu cop syarikat dan ditandatangani oleh pihak syarikat.

Borang ini **WAJIB** diisi dengan **LENGKAP** dan sebarang kegagalan pengisian maklumat boleh menyebabkan tawaran sebutharga terbatal

NOTA: Dokumen yang telah lengkap hendaklah di klip atau tebuk lubang 2 sahaja (JANGAN GUNA BINDING/PELEKAT)



MAJLIS SUKAN NEGARA MALAYSIA

Ke Arah Kecemerlangan Sukan

SURAT AKUAN PEMBIDA

Saya, No. Kad Pengenalan yang mewakili (Nama Syarikat: nombor Pendaftaran dengan ini mengisytiharkan bahawa saya atau mana-mana individu yang mewakili syarikat ini tidak akan menawar atau memberi **rasuah** kepada mana-mana individu dalam atau mana-mana individu lain, sebagai sogokan untuk dipilih dalam tender/sebutharga* seperti di atas. Bersama ini dilampirkan Surat Perwakilan Kuasa bagi saya mewakili syarikat seperti tercatat untuk membuat pengisytiharan ini.

2. Sekiranya saya, atau mana-mana individu yang mewakili syarikat ini didapati cuba menawar atau memberi **rasuah** kepada mana-mana individu dalam atau mana-mana individu lain sebagai sogokan untuk dipilih dalam tender/sebutharga* seperti di atas, maka saya sebagai wakil syarikat bersetuju tindakan-tindakan berikut diambil:

Penarikan balik tawaran kontrak bagi tender/sebutharga* di atas; atau
Penamatan kontrak bagi tender/sebutharga* di atas; dan
Lain-lain tindakan tatatertib mengikut peraturan perolehan kerajaan yang berkuatkuasa.

3. Sekiranya terdapat mana-mana individu cuba meminta **rasuah** daripada saya atau mana-mana individu yang berkaitan dengan syarikat ini sebagai sogokan untuk dipilih dalam tender/sebutharga* seperti di atas, maka saya berjanji akan dengan segera melaporkan perbuatan tersebut kepada Suruhanjaya Pencegahan Rasuah Malaysia (SPRM) atau balai polis yang berhampiran.

Yang Benar

.....
Nama :
No. K/p:
Cop syarikat:

Catatan: i) *Potong mana yang tidak berkenaan.
ii) Surat akuan ini hendaklah dikemukakan bersama Surat Perwakilan Kuasa

SENARAI SEMAKAN

SENARAI SEMAK

Sila Tandakan ☒ bagi Dokumen-dokumen yang disertakan.

Bil	Perkara/ Dokumen	Untuk di tanda oleh Syarikat	Untuk di tanda oleh Jawatankuasa Pembuka Sebut Harga
1	Salinan Sijil Perolehan Kerja Kerajaan (SPKK)		
2	Salinan Perakuan Pendaftaran Kontraktor (PPK)		
3	Salinan Sijil Taraf Bumiputera (STB) - PKK		
4	Salinan Penyata Akaun Bank (3 Bulan) Terkini Yang Disahkan Oleh Pihak Bank		
5	Salinan Sijil Pematuhan Cukai (TCC)		
6	Borang Sebut Harga telah diisi dengan lengkap (termasuk nilai tawaran dan tempoh siap) dan ditandatangani oleh Penama seperti tertera dalam Sijil Pendaftaran dari CIDB/PKK (BSH/1)		
7	Ringkasan Sebut Harga telah diisi dengan lengkap (RSH/1)		
8	Senarai Kerja 5 tahun yang telah disiapkan (BRG-D/1)		
9	Senarai Kakitangan Teknikal (BRG-E/1)		
10	Senarai Keempunyaan Loji dan Peralatan Utama (BRG-F/1)		
11	Prestasi Kerja Semasa (BRG-G/GA/GA1)		
12	Senarai Sub-Kontraktor Pakar (BRG-H/1-2)		
13	Profil Syarikat (Lengkap dan Sempurna)		
14	Surat Akuan Pembida (Lampiran A1)		
15	Maklumat Penyebutharga		
16	Addenda Sebutharga (jika berkaitan)		
17	Lain-lain sekiranya ada:		

PENGESAHAN OLEH SYARIKAT

Dengan ini saya mengesahkan bahawa saya telah membaca dan memahami semua syarat-syarat dan terma yang dinyatakan di dalam dokumen sebut harga. Semua maklumat yang dikemukakan adalah benar.

Tandatangan:

Nama:

Jawatan:

Tarikh:

UNTUK KEGUNAAN MAJLIS SUKAN NEGARA

Jawatankuasa Pembuka Sebut Harga mengesahkan penerimaan dokumen bertanda kecuali bagi perkara bil.....(jika ada).

Tandatangan:

Nama:

Jawatan:

Tarikh:

Tandatangan:

Nama:

Jawatan:

Tarikh:

ARAHAN KEPADA PENYEBUTHARGA

ARAHAN KEPADA PENYEBUT HARGA

1. HAK KERAJAAN UNTUK MENERIMA / MENOLAK SEBUT HARGA

Kerajaan adalah tidak terikat untuk menerima sebut harga yang terendah atau mana-mana sebut harga atau memberi apa-apa sebab di atas penolakan sesuatu sebut harga. Keputusan Jawatankuasa Sebut Harga adalah muktamad.

2. CARA-CARA MELENGKAPKAN DOKUMEN SEBUT HARGA

2.1. Penyediaan Sebut Harga

Kontraktor adalah dikehendaki mengisi dengan dakwat segala maklumat berikut dengan sepenuhnya:-

- (a) Harga dan tandatangan Kontraktor di Ringkasan Sebut Harga,
- (b) Harga, tempoh dan tandatangan dalam Borang Sebut Harga,
- (c) Senarai Kerja Dalam Tangan,
- (d) Senarai Kerja Pengalaman 5 Tahun,
- (e) Senarai Kakitangan Teknikal,
- (f) Senarai Loji dan Peralatan Utama,
- (g) Jadual Kadar Harga (jika ada),
- (h) Butir-butir Spesifikasi (jika ada),
- (i) Surat Akuan Pembida.
- (j) Jika berlaku kesilapan dalam mengisi maklumat-maklumat di atas Penyebut Harga hendaklah menandatangani ringkas semua pembetulan.
- (k) Kegagalan mengisi/menandatangani Borang Sebut Harga akan mengakibatkan Sebut Harga ditolak.
- (l) Sekiranya terdapat percanggahan di antara maklumat yang dinyatakan dalam Ringkasan Sebut Harga dan Borang Sebut Harga, maklumat di dalam Borang Sebut Harga diberi keutamaan.
- (m) Sekiranya Penyebut Harga didapati memberikan maklumat palsu atau sengaja menyorok atau tidak memberikan mana-mana maklumat yang memberikan kesan negatif terhadap keupayaannya, Sebut Harganya akan ditolak dan tindakan tatatertib akan diperakukan terhadapnya.

2.2. Dokumen-dokumen lain yang mesti dikemukakan **(Dokumen Wajib/Sokongan)**

- (a) Salinan Sijil Perolehan Kerja Kerajaan (SPKK)
- (b) Salinan Sijil Perakuan Pendaftaran Kontraktor (PPK)
- (c) Salinan Sijil Taraf Bumiputera (PKK)
- (d) Senarai sub-kontraktor pakar (jika berkaitan)

2.3. Penyerahan Dokumen Sebut Harga

- (a) Dokumen Sebut Harga yang telah diisi dengan lengkap hendaklah dimasukkan ke dalam sampul surat berlakri yang dicatatkan dengan bilangan Sebut Harga serta tajuk sebut harga dan hendaklah dimasukkan ke dalam peti sebut harga pada masa dan tempat yang ditetapkan dalam Notis Sebut Harga.
- (b) Jika Dokumen Sebut Harga tidak diserahkan dengan tangan, Penyebut Harga hendaklah menghantar Dokumen tersebut secara pos berdaftar supaya tiba pada atau sebelum masa dan di tempat yang ditetapkan seperti berikut :

**Lobi (Aras Bawah),
Majlis Sukan Negara Malaysia,
Kompleks Sukan Bukit Jalil,
Seri Petaling,
57000 Kuala Lumpur**

sebelum jam 12.00 tengahari

- (c) Sebut Harga yang diserahkan selepas masa yang ditetapkan, berbangkit atas sebarang sebab, tidak akan dipertimbangkan.

2.4. Penjelasan Lanjut

Sekiranya terdapat maklumat dalam Dokumen Sebut Harga yang tidak jelas atau bercanggah, Penyebut Harga boleh menghubungi pejabat yang menjual/mengeluarkan Dokumen Sebut Harga untuk penjelasan lanjut.

2.5. Tandatangan Oleh Penyebutharga

Sebutharga hendaklah ditandatangani oleh pegawai yang ditauliahkan oleh syarikat seperti penama yang dinyatakan dalam Sijil Perolehan Kerja Kerajaan (SPKK) yang dikeluarkan oleh CIDB, Pusat Khidmat Kontraktor (PKK) atau PUKONSA/ UPKJ yang mana berkenaan.

3. TEMPOH SIAP KERJA

Kerja ini hendaklah disiapkan dalam tempoh tidak melebihi **12 Minggu**. Mana penyebut harga yang menawarkan tempoh siap kerja melebihi tempoh siap kerja maksimum yang ditetapkan tidak akan dipertimbangkan.

4. BAYARAN DOKUMEN SEBUT HARGA

* Dokumen Sebut Harga ini adalah **PERCUMA** atau;

~~* Dokumen Sebut Harga ini dijual dengan harga RM..... (Ringgit Malaysia :
..... sahaja)~~

Note

* Potong tidak berkenaan

5. PERBELANJAAN PENYEDIAAN SEBUT HARGA

Semua Perbelanjaan bagi penyediaan sebut harga ini hendaklah ditanggung oleh Penyebut Harga sendiri.

6. TEMPOH SAH SEBUT HARGA

Sebut Harga ini sah selama sembilan puluh (90) hari dari tarikh tutup sebut harga. Penyebut harga tidak boleh menarik balik sebut harganya sebelum tamat tempoh sah sebut harga. Tindakan tatatertib akan diambil sekiranya penyebut harga menarik balik sebut harganya sebelum tamat sah sebut harga. Laporan mengenai penarikan balik Sebut Harga oleh penyebut harga akan dikemukakan kepada CIDB/BPKU untuk tindakan.

7. PELAKSANAAN INTEGRITY PACT DALAM PEROLEHAN KERAJAAN

Penyebut harga wajib mengemukakan **Surat Akuan Pembida** bersama-sama dengan Dokumen Sebutharga di mana penyebut harga berwaad untuk tidak akan menawarkan atau memberi rasuah kepada mana-mana individu lain sebagai sogokan untuk dipilih dalam sebut harga tersebut. Surat Akuan Pembida ini hendaklah dilengkapkan dan ditandatangani oleh Pegawai Syarikat yang ditauliahkan.

Surat Akuan Pembida tersebut adalah menjadi salah satu dokumen mandatori dalam penilaian sebut harga peringkat pertama. Sekiranya penyebut harga gagal mengemukakan **Surat Akuan Pembida** yang telah dilengkapkan dan ditandatangani, penyebut harga tersebut akan dinilai sebagai gagal dalam penilaian peringkat pertama (gagal kriteria mandatori sebut harga) dan penilaian seterusnya tidak akan dilaksanakan.

Penyebut harga yang berjaya wajib mengemukakan **Surat Akuan Pembida Berjaya** beserta dengan Borang Perjanjian Inden Kerja/Surat Setuju Terima yang telah ditandatangani di mana ia berwaad tidak akan memberi rasuah sebagai ganjaran kerana mendapatkan kontrak. Surat Akuan ini akan menjadi sebahagian daripada Kontrak.

Pemalsuan maklumat dokumen dan rekod untuk mengaburi penilaian perolehan adalah kesalahan jenayah dan boleh disabitkan di bawah Kanun Keseksaan (Akta 574).

8. DASAR CUKAI JUALAN DAN CUKAI PERKHIDMATAN (CJCP)

Kerajaan memutuskan untuk melaksanakan Cukai Jualan dan Cukai Perkhidmatan (CJCP) bagi menggantikan Cukai Barang dan Perkhidmatan (GST) mulai 1 September 2018 berdasarkan Akta Cukai Jualan 2018 [Akta 806] dan Akta Cukai Perkhidmatan 2018 [Akta 807].

Akta Cukai Jualan 2018 [Akta 806] dan Akta Cukai Perkhidmatan 2018 [Akta 807] telah berkuat kuasa mulai 1 September 2018. Selaras dengan peruntukan dalam Akta tersebut, perolehan kerja pembinaan tidak dikenakan Cukai Perkhidmatan. Bagi perolehan kerja lain antaranya pengurusan fasiliti dan lain-lain, Agensi Kerajaan hendaklah merujuk kepada Jadual Pertama di bawah Peraturan Cukai Perkhidmatan 2018 dan peraturan semasa yang berkuat kuasa.

Agensi Kerajaan hendaklah menggunakan anggaran jabatan tanpa kenaan CJCP untuk menentukan kaedah perolehan.

Bagi pengeluaran Surat Setuju Terima (SST), Agensi hendaklah merujuk kepada 1PP/PK4.2 atau pekeliling berkaitan SST yang berkuat kuasa.

Bagi memastikan urusan perolehan dan pembayaran dapat dilaksanakan dengan lancar selaras dengan perkembangan dan peraturan terkini, satu panduan perlu disediakan.

9. PERINGATAN MENGENAI KESALAHAN RASUAH

Semua Penyebut Harga adalah diingatkan supaya tidak terlibat dalam aktiviti jenayah rasuah berkaitan dengan perolehan ini. Sehubungan dengan itu, para Penyebut Harga diberi peringatan berikut:

- 9.1 Sebarang perbuatan atau percubaan rasuah untuk menawar atau memberi, meminta atau menerima apa-apa suapan secara rasuah kepada dan daripada mana-mana orang berkaitan perolehan ini merupakan satu kesalahan jenayah di bawah Akta Suruhanjaya Pencegahan Rasuah Malaysia 2009 (Akta 694).
- 9.2 Sekiranya mana-mana pihak ada menawar atau memberi apa-apa suapan kepada mana-mana anggota perkhidmatan awam, maka pihak yang ditawarkan atau diberi suapan dikehendaki membuat aduan dengan segera ke pejabat Suruhanjaya Pencegahan Rasuah atau balai polis yang berhampiran. Kegagalan berbuat demikian adalah merupakan suatu kesalahan di bawah Akta Suruhanjaya Pencegahan Rasuah Malaysia 2009 (Akta 694).
- 9.3 Tanpa prejudis kepada tindakan-tindakan lain, tindakan tatatertib terhadap anggota perkhidmatan awam dan menyenaraihitamkan Kontraktor boleh diambil sekiranya pihak-pihak terlibat dengan kesalahan rasuah di bawah Akta Suruhanjaya Pencegahan Rasuah Malaysia 2009 (Akta 694).
- 9.4 Mana-mana Kontraktor yang membuat tuntutan bayaran berkaitan perolehan ini walaupun tiada kerja dibuat mengikut spesifikasi yang ditetapkan dan mana-mana anggota perkhidmatan awam yang mengesahkan tuntutan berkenaan adalah melakukan kesalahan di bawah Akta Suruhanjaya Pencegahan Rasuah Malaysia 2009 (Akta 694).

10. PEMATUHAN AKTA 342 DAN NORMA BAHARU DALAM SEKTOR PEMBINAAN DAN DALAM MENANGANI EPIDEMIK DAN PANDEMIK COVID 19

- 10.1 Penyebutharga yang berjaya dikehendaki mematuhi Akta Pencegahan dan Pengawalan Penyakit Berjangkit 1988 (Akta 342) dan semua Garis Panduan dan Prosedur Operasi Piawai yang berkaitan dalam menangani Epidemik dan Pandemik seperti wabak Covid 19 yang dikeluarkan oleh Kementerian Kesihatan Malaysia, CIDB dan Jabatan Kerja Raya Malaysia.
- 10.2 Penyebutharga dikehendaki mengambilkira dalam harga tawaran untuk pematuhan perkara 60.1.
- 10.3 Kegagalan mematuhi Akta, Garis Panduan dan Prosedur Operasi Piawai yang telah ditetapkan menyebabkan tindakan boleh di ambil oleh agensi agensi yang berkenaan dan sebarang tuntutan akibat tindakan ini tidak akan dipertimbangkan

11. ADDENDA SEBUTHARGA

- 11.1 Sebelum tarikh akhir bagi penyerahan sebutharga, Jabatan/Agensi boleh mengeluarkan Addenda Sebutharga untuk menerangkan, membetulkan, mengurangkan atau membuat tambahan mana-mana bahagian Kandungan dokumen sebutharga. Semua Addenda Sebutharga akan dikeluarkan secara rasmi kepada semua penyebutharga melalui Jabatan/Agensi yang memanggil sebutharga.
- 11.2 Setiap Addenda Sebutharga yang dikeluarkan akan diedarkan kepada semua penyebutharga dan akan menjadi sebahagian daripada dokumen sebutharga. Penerimaan setiap Addenda Sebutharga hendaklah diakui melalui Borang Bukti Penerimaan yang disertakan bersama-sama Addenda Sebutharga. Borang Bukti Penerimaan bagi Addenda Sebutharga yang terlibat hendaklah dikembalikan bersama-sama dengan dokumen sebutharga bagi tujuan penilaian dan tindakan selanjutnya. Ianya menjadi sebahagian daripada syarat wajib dalam proses penilaian sebutharga yang dilakukan. Kegagalan berbuat demikian boleh menyebabkan sebutharga berkenaan ditolak.
- 11.3 Penyebutharga hendaklah juga mengesahkan penerimaan semua Addenda Sebutharga yang dikeluarkan dalam Senarai Semakan Mengemukakan Sebutharga. Kegagalan berbuat demikian boleh menyebabkan sebutharga berkenaan ditolak. Semua Addenda Sebutharga yang dikeluarkan adalah menjadi sebahagian dari Kontrak.
- 11.4 Penyebutharga hendaklah mengambil tindakan sewajarnya terhadap apa-apa maklumat atau arahan yang dinyatakan dalam Addenda Sebutharga.

12. HARGA INDIKATIF JABATAN

- 12.1 Harga Indikatif Jabatan bagi sebutharga ini adalah Ringgit Malaysia : **(LIMA RATUS RIBU SAHAJA (RM500,000.00))**
- 12.2 Harga Indikatif Jabatan ini merupakan suatu anggaran sahaja dan amaun tersebut tidak mengikat Kerajaan atau mana-mana pihak lain juga bagi maksud mengelakkan kekeliruan yang mungkin berbangkit.
- 12.3 Pihak Kerajaan tidak menjamin bahawa syarikat akan dipilih atau boleh menyiapkan kerja dengan bersandarkan Harga Indikatif Jabatan.

SURAT AKUAN PEMBIDA

SURAT AKUAN PEMBIDA

Bagi

**DOKUMEN PANGGILAN SEBUTHARGA RASMI BAGI KERJA-KERJA
MEMBEKAL, MEMBINA BUMBUNG DAN MENARA LATIHAN SERTA KERJA
BERKAITAN DI LAPANG SASAR MEMANAH KOMPLEKS SUKAN MSN NILAI,
NEGERI SEMBILAN UNTUK MAJLIS SUKAN NEGARA MALAYSIA**

NO SEBUTHARGA :

Saya, nombor K.P.....yang mewakili
.....nombor

Pendaftaran.....atau mana-mana individu yang mewakili syarikat ini tidak akan menawarkan atau memberi rasuah kepada mana-mana individu dalam **MAJLIS SUKAN NEGARA** atau mana-mana individu lain, sebagai sokongan untuk dipilih dalam Sebut Harga seperti di atas. Bersama-sama ini dilampirkan Surat Perwakilan Kuasa bagi saya mewakili syarikat seperti tercatat di atas untuk membuat pengisytiharan ini.

2. Sekiranya saya atau mana-mana individu yang mewakili syarikat ini didapati bersalah menawarkan atau memberi rasuah kepada mana-mana individu dalam **MAJLIS SUKAN NEGARA** atau mana-mana individu lain sebagai sogokan untuk dipilih dalam Sebut Harga seperti di atas, maka saya sebagai wakil syarikat bersetuju tindakan-tindakan berikut diambil:

- 2.1 Penarikan balik tawaran kontrak bagi Sebut Harga di atas ; atau
- 2.2 Penamatan kontrak bagi Sebut Harga di atas;
- 2.3 Disabitkan dibawah Kanun Keseksaan (Akta 574); dan
- 2.4 Tindakan tatatertib lain mengikut peraturan perolehan Kerajaan.

3. Sekiranya terdapat mana-mana individu cuba meminta rasuah daripada saya atau mana-mana individu yang berkaitan dengan syarikat ini sebagai sogokan untuk dipilih dalam Sebut Harga seperti di atas, maka saya berjanji akan dengan segera melaporkan perbuatan tersebut kepada pejabat Suruhanjaya Pencegahan Rasuah Malaysia (SPRM) atau balai polis yang berhampiran.

Yang Benar,

.....

Nama :

No.K.P :

Cop Syarikat :

Catatan: * Potong mana yang tidak berkaitan

SAP/1

SYARAT² SEBUT HARGA

SYARAT-SYARAT SEBUT HARGA

1. PEMERIKSAAN TAPAK BINA

Kontraktor disifatkan telah memeriksa dan meneliti tapak bina dan sekitarnya, bentuk dan jenis tapak bina, takat dan jenis kerja, bahan dan barang yang perlu bagi menyiapkan kerja, cara-cara perhubungan dan laluan masuk ke tapak bina dan hendaklah mendapatkan sendiri segala maklumat yang perlu tentang risiko, luar jangkaan dan segala hal-keadaan yang mempengaruhi dan menjejaskan sebut harganya. Sebarang tuntutan yang timbul akibat daripada kegagalan Kontraktor mematuhi kehendak ini tidak akan dipertimbangkan.

2. INSURANS

- 2.1. Kontraktor hendaklah atas nama bersama Kerajaan dan Kontraktor mengambil Insurans Liabiliti Awam dan Insurans Kerja (sekiranya dinyatakan di dalam Butir-butir Ringkasan Sebut Harga) bagi tempoh pelaksanaan Kerja termasuk tempoh kecacatan dan ditambah tiga (3) bulan dan empat belas (14) hari. Kontraktor hendaklah juga mengemukakan Nombor Kod Pendaftaran dengan PERKESO.
- 2.2. Kontraktor hendaklah mengemukakan kepada Pegawai Inden semua polisi insurans dan Nombor Kod Pendaftaran dengan PERKESO yang tersebut di atas sebelum memulakan Kerja. Bagaimanapun untuk tujuan memulakan Kerja sahaja Nota-nota Perlindungan dan resit-resit bayaran premium adalah mencukupi. Sekiranya Kontraktor gagal mengemukakan semua polisi insurans selepas tempoh sah nota-nota perlindungan, tanpa sebarang sebab yang munasabah, Pegawai Inden berhak mengambil tindakan.

3. BON PELAKSANAAN

Bon Pelaksanaan dikecualikan bagi perolehan yang bernilai sehingga **RM200,000.00.**

4. PERATURAN PERLAKSANAAN KERJA

- 4.1. Kerja-kerja yang dilaksanakan hendaklah mematuhi Spesifikasi, pelan-pelan, butir-butir kerja dalam Ringkasan Sebut Harga dan Syarat-syarat yang dinyatakan dalam Dokumen Sebut Harga ini dan Pegawai Inden atau Wakilnya.

-
- 4.2. Kerja-kerja elektrik yang dilaksanakan di samping mematuhi kehendak di perenggan 4.1 di atas, hendaklah juga mematuhi semua peraturan dan pekeliling, undang-undang dan undang-undang kecil yang diluluskan oleh:

- 4.2.1. Suruhanjaya Tenaga
- 4.2.2. Jabatan Keselamatan Pekerjaan dan Kesihatan (JKKP)
- 4.2.3. Pemegang Lesen dan Pihak Berkuasa Bekalan Elektrik
- 4.2.4. Jabatan Bomba dan Penyelamat
- 4.2.5. Pihak Berkuasa Tempatan
- 4.2.6. Suruhanjaya Pengurusan Air Negara (SPAN)

5. KEGAGALAN KONTRAKTOR MEMULAKAN KERJA

Sekiranya Kontraktor gagal memulakan kerja selepas tujuh (7) hari dari tarikh akhir tempoh mula kerja yang dinyatakan dalam Inden, tanpa sebab-sebab yang munasabah, Inden akan dibatalkan oleh Pegawai Inden dan tindakan tatatertib akan diambil terhadap kontraktor.

6. SUB-SEWA DAN MENYERAH HAK KERJA

Kontraktor tidak dibenarkan mengsub-sewakan Kerja kepada Kontraktor-kontraktor lain. Kontraktor tidak boleh menyerahkan hak apa-apa faedah di bawah Inden ini tanpa terlebih dahulu mendapatkan persetujuan bertulis daripada Pegawai Inden.

7. PENOLAKAN BAHAN, BARANG DAN MUTU HASIL KERJA OLEH PEGAWAI INDEN

- 7.1. Pegawai Inden atau Wakilnya berhak menolak bahan, barang dan mutu hasil kerja dari jenis piawaian yang tidak menepati seperti diperihalkan dalam spesifikasi. Kontraktor hendaklah, apabila diminta oleh Pegawai Inden, memberi kepadanya baucar-baucar dan/ atau perakuan ujian pengilang untuk membuktikan bahawa bahan-bahan dan barang-barang itu mematuhi spesifikasi. Bahan, barang dan kerja-kerja yang ditolak hendaklah diganti dan sebarang kos tambahan yang terlibat hendaklah ditanggung oleh Kontraktor sendiri.
- 7.2. Kontraktor hendaklah dengan sepenuhnya atas perbelanjaan sendiri menyediakan sampel bahan dan barang-barang untuk ujian.
- 7.3. Tiada penggantian untuk peralatan, bahan dan cara kerja yang telah ditentukan di dalam spesifikasi atau ditawarkan dan telah diterima, dibenarkan kecuali mendapat persetujuan daripada Pegawai Inden secara bertulis.

8. RINGKASAN SEBUT HARGA

- 8.1. Ringkasan Sebut Harga hendaklah menjadi sebahagian daripada Borang Sebut Harga ini dan hendaklah menjadi asas Jumlah Harga Sebut Harga.
- 8.2. Harga-harga dalam Ringkasan Sebut Harga hendaklah mengambil kira semua kos termasuk kos pengangkutan, cukai, duti, levi, bayaran dan caj-caj lain yang perlu dan berkaitan bagi penyiapan Kerja dengan sepenuhnya.
- 8.3. Tiada sebarang tuntutan akan dilayan bagi pelarasan harga akibat daripada perubahan kos buruh, bahan-bahan dan semua duti dan cukai kerajaan, sama ada dalam tempoh sah sebut harga atau dalam tempoh Kerja.
- 8.4. Harga-harga dalam ringkasan Sebut Harga yang dikemukakan oleh Kontraktor hendaklah tertakluk kepada persetujuan sebelumnya Itu daripada Pegawai Inden tentang kemunasabahannya. Persetujuan sebelumnya itu dan apa-apa pelarasan kemudiannya kepada harga-harga dalam Ringkasan Sebut Harga hendaklah dibuat sebelum Inden Kerajaan dikeluarkan.
- 8.5. Apa-apa pelarasan harga dalam Ringkasan Sebut Harga menurut perenggan 8.4 tersebut di atas dan apa-apa kesilapan hisab dalam Ringkasan Sebut Harga hendaklah dilaraskan dan diperbetulkan sebelum Inden Kerajaan dikeluarkan. Jumlah amaun yang dilaraskan hendaklah sama dengan amaun jumlah harga pukal dalam Borang Sebut Harga. Amaun jumlah harga pukal dalam Borang Sebut Harga hendaklah tidak berubah.
- 8.6. **Sekiranya sebut harga berasaskan senarai kuantiti sementara, pengukuran semula hendaklah dibuat dan harga sebut harga diselaraskan.**

9. PERCANGGAHAN DAN KECUKUPAN DOKUMEN SEBUT HARGA

- 9.1. Borang Perjanjian Inden Kerja, Surat Akuan Pembida Berjaya yang ditandatangani oleh Kontraktor dan Dokumen Sebut Harga hendaklah disifatkan menjadi dan dibaca serta ditafsirkan sebagai sebahagian daripada Kontrak ini.
- 9.2. Dokumen Sebut Harga adalah dikira sebagai saling jelas-menjelas antara satu sama lain. Kontraktor hendaklah mengadakan segala yang perlu untuk melaksanakan kerja dengan sewajarnya sehinggalah siap mengikut tujuan dan maksud sebenar. Dokumen Sebut Harga pada keseluruhannya sama ada atau tidak tujuan dan maksud itu hendaklah difahamkan dengan munasabahannya dari Dokumen Sebut Harga itu.

-
- 9.3. Jika Kontraktor mendapati apa-apa percanggahan dalam Dokumen Sebut Harga dia hendaklah merujuk kepada Pegawai Inden untuk mendapatkan keputusan.

10. KEGAGALAN KONTRAKTOR MENYIAPKAN KERJA DAN PENAMATAN PERLANTIKAN KONTRAKTOR

Pegawai inden berhak membatalkan Inden sekiranya Kontraktor berada dalam keadaan berikut dan setelah menerima surat amaran daripada Pegawai Inden:

- (a) Kontraktor masih gagal menyiapkan Kerja dalam tempoh masa yang telah ditetapkan;
- (b) Kemajuan Kerja terlalu lembap di mana Kontraktor didapati gagal menjalankan kerja dengan tekun dan teratur tanpa apa-apa sebab yang munasabah
- (c) Penggantungan pelaksanaan seluruh atau sebahagian Kerja, tanpa apa-apa sebab yang munasabah;
- (d) Tidak mematuhi arahan Pegawai Inden tanpa apa-apa alasan yang munasabah;
- (e) Pegawai Inden berhak membatalkan Inden sekiranya Kontraktor diisytiharkan bankrap oleh pihak yang sah.

11. ~~BAYARAN PENDAHULUAN~~

~~Bayaran pendahuluan dibenarkan bagi kontrak yang bernilai melebihi RM 200,000.00 hingga RM 500,000.00~~

12. BAYARAN INTERIM/ KEMAJUAN

Pegawai Inden dibenarkan membuat bayaran interim sehingga kerja-kerja siap dilaksanakan.

13. KERJA PERUBAHAN

- 13.1. Pegawai Inden boleh menurut budi bicaranya mengeluarkan arahan-arahan yang berkehendakkan sesuatu perubahan kerja dengan secara bertulis. Tiada apa-apa perubahan yang dikeluarkan oleh Pegawai Inden atau yang disahkan kemudian oleh Pegawai Inden boleh membatalkan Sebut Harga ini.
- 13.2. Semua kerja perubahan dan/ atau tambahan yang diluluskan oleh Pegawai Inden akan diukur atau dinilai dengan menggunakan kadar harga yang ada dalam Senarai Kuantiti/ Ringkasan Sebut Harga. Jika tidak terdapat sebarang kadar harga yang bersesuaian, kadar harga yang dipersetujui oleh Pegawai Inden dan Kontraktor hendaklah digunakan.

14. PENGUKURAN KUANTITI SEMENTARA

Setelah kerja-kerja yang melibatkan Kuantiti Sementara disiapkan di tapak, pengukuran semula kuantiti hendaklah dibuat secara bersama.

15. LANJUTAN MASA

Pelanjutan masa adalah tertakluk kepada Jawatankuasa Sebut Harga terlebih dahulu.

16. TEMPOH TANGGUNGAN KECACATAN (DLP)

- 16.1. Tempoh Tanggungan Kecacatan bagi sebut harga hendaklah sekurang-kurangnya enam (6) bulan dari tarikh kerja diperakukan siap. Bagi kerja-kerja mekanikal dan elektrik di mana tempoh waranti ke atas alat-alat dan loji-loji adalah dua belas (12) bulan dan dalam kes-kes tertentu oleh sebab jenis dan kerumitan kerja, tempoh tanggungan kecacatan yang lebih lama daripada enam bulan (6) boleh dikenakan.
- 16.2. Kontraktor dipertanggungjawabkan untuk membaiki kecacatan, ketidaksempurnaan, kekecutan atau apa-apa jua kerosakan lain seperti yang mungkin kelihatan dan yang disebabkan oleh bahan atau barang atau mutu hasil kerja yang tidak menepati sebut harga ini apabila diarahkan oleh Pegawai Inden dan dalam masa yang berpatutan. Kontraktor hendaklah membaiki kecacatan, ketidaksempurnaan, kekecutan atau apa-apa jua kerosakan lain atas Kos Kontraktor sendiri.

-
- 16.3. Sekiranya Kontraktor gagal memperbaiki kecacatan, ketidaksempurnaan, kekecutan atau apa-apa jua kerosakan lain seperti yang diarahkan, Pegawai Inden berhak memotong kos memperbaiki dari baki wang yang akan dibayar kepada kontraktor atau, jika baki itu tiada mencukupi, mengeluarkan surat pengesyoran kepada Lembaga Pembangunan Industri Pembinaan Malaysia (CIDB) dan Pusat Khidmat Kontraktor (PKK) untuk menggantungkan pendaftaran Kontraktor, dan menghantar salinan-salinan tersebut kepada Pengarah Kerja Raya Negeri/ Ketua Jabatan, Bahagian Pembangunan Bumiputera, Kementerian Kerja Raya dan Lembaga Pembangunan Industri Pembinaan. Bagi Kerja-kerja elektrik/ mekanikal, salinan surat hendaklah dihantar kepada Pengarah Cawangan Kerja Elektrikal/ Pengarah Cawangan Kerja Mekanikal.
- 16.4. Tempoh tanggungan liabiliti kecacatan (DLP) sepertimana yang dinyatakan pada Surat Irian kepada Inden Kerajaan/Surat Setuju Terima iaitu bermula dari tarikh diambil milik dan penyerahan projek.

17. PERATURAN MEMBAYAR SELEPAS SIAP

Bayaran sepenuhnya hanya akan dibayar setelah kontraktor menyiapkan kerja dengan sempurna dan Perakuan Siap Kerja dikeluarkan. Walaubagaimanapun Pegawai Inden hendaklah membuat potongan atau menahan sejumlah amaun dari wang yang akan dibayar kepada Kontraktor sebagai kos untuk memperbaiki apa-apa kecacatan yang tidak dapat dibaiki oleh Kontraktor di dalam tempoh tanggungan kecacatan. Kontraktor hendaklah mengembalikan Inden Kerajaan (Pelaksanaan Kerja) dan Inden Kerajaan (Penyiapan Kerja) sepertimana yang telah ditetapkan dalam Pekeliling Perbendaharaan Malaysia (PK 4.2) kepada Pegawai Inden.

18. PERAKUAN SIAP KERJA

Pegawai Inden hendaklah mengeluarkan Perakuan Siap Kerja sebaik sahaja kerja disiapkan dengan sempurna dan memuaskan sejajar dengan syarat-syarat Dalam Dokumen Sebut Harga. Tempoh Tanggungan Kecacatan bermula daripada tarikh siap kerja.

19. PERAKUAN SIAP MEMPERBAIKI KECACATAN

Pegawai Inden hendaklah mengeluarkan Perakuan Siap Memperbaiki Kecacatan sebaik sahaja kontraktor telah memperbaiki kecacatan, ketidaksempurnaan, kekecutan atau apa-apa jua kerosakan lain.

20. PEMATUHAN KEPADA UNDANG-UNDANG OLEH KONTRAKTOR

Kontraktor hendaklah mematuhi segala kehendak Undang-undang Kecil dan Undang-undang Berkanun dalam Malaysia semasa pelaksanaan Kerja. Kontraktor tidak berhak menuntut sebarang kos dan bayaran tambahan kerana pematuhannya dengan syarat-syarat ini.

21. PENAMATAN BERSABIT RASUAH, AKTIVITI MENYALAHAI UNDANG-UNDANG ATAU AKTIVITI HARAM

Tanpa menjejaskan apa-apa hak Kerajaan yang lain, jika kontraktor, personel, kakitangan atau pekerjanya disabitkan bersalah oleh mahkamah kerana rasuah atau aktiviti menyalahi undang-undang atau aktiviti haram yang berkait dengan Perjanjian/ Kontrak ini atau mana-mana perjanjian lain yang Kontraktor mungkin ada dengan Kerajaan, Kerajaan berhak untuk menamatkan Perjanjian / Kontrak ini pada bila-bila masa, dengan memberi notis bertulis dengan segera yang membawa maksud sedemikian kepada Kontraktor.

Setelah penamatan tersebut, Kerajaan berhak terhadap semua kerugian, kos, ganti rugi dan perbelanjaan (termasuk apa-apa kos dan perbelanjaan sampingan) yang ditanggung oleh Kerajaan yang timbul daripada penamatan tersebut.

Bagi mengelakkan keraguan, kedua-dua pihak Kerajaan dan Kontraktor bersetuju bahawa Kontraktor tidak layak terhadap sebarang bentuk kerugian termasuk kehilangan keuntungan, ganti rugi, tuntutan atau apa sekalipun setelah penamatan Kontrak ini.

22. PERAKUAN KERJA TIDAK SIAP

Pegawai Inden hendaklah mengeluarkan Perakuan Kerja Tidak Siap apabila penyediaan Kerja didapati telah terlambat dan sebab kelambatan tidak melayakkan Kontraktor mendapat lanjutan masa, maka kerugian atau ganti rugi yang dialami oleh Kerajaan akibat daripada kelambatan tersebut adalah ditanggung oleh Kontraktor. Kerugian atau ganti rugi yang dialami oleh Kerajaan akan diperolehi semula daripada Kontraktor melalui Ganti Rugi Tertentu dan Ditetapkan.

23. KENAAN DENDA/TOLAKAN/ *LIQUIDATED AND ASCERTAINED DAMAGE* (LAD) BAGI SEBUT HARGA KERJA

Kelewatan dalam menyiapkan projek boleh menyebabkan peningkatan kos projek. Jika syarikat gagal memenuhi obligasi kontrak, denda/ganti rugi hendaklah dituntut daripada syarikat. Jika syarikat gagal membayarnya, denda/ganti rugi hendaklah dituntut daripada bayaran kemajuan atau daripada sebarang baki bayaran yang syarikat berhak menerima.

*** Pengenalan LAD boleh ditetapkan berdasarkan formula seperti berikut :**

$$\text{LAD} = \frac{\text{Base Landing Rate (BLR)}}{100} \times \frac{\text{Harga Kontrak}}{365 \text{ (hari)}}$$

* '*Prime Rate*' yang dikeluarkan oleh mana-mana bank perdagangan

BORANG SEBUT HARGA

BORANG SEBUTHARGA

Sebutharga Bil :

BAHAGIAN KEWANGAN

MAJLIS SUKAN NEGARA

KOMPLEKS SUKAN BUKIT JALIL

SERI PETALING

57000 KUALA LUMPUR

MALAYSIA

Tuan,

Sebut Harga untuk :-

DOKUMEN PANGGILAN SEBUTHARGA RASMI BAGI KERJA-KERJA MEMBEKAL, MEMBINA BUMBUNG DAN MENARA LATIHAN SERTA KERJA BERKAITAN DI LAPANG SASAR MEMANAH KOMPLEKS SUKAN MSN NILAI, NEGERI SEMBILAN UNTUK MAJLIS SUKAN NEGARA MALAYSIA

Di bawah dan tertakluk kepada Arahan Kepada Penyebut Harga, Syarat-syarat Sebutharga untuk kerja, Spesifikasi Kerja dan Lukisan, saya yang bertandatangan di bawah ini adalah dengan ini menawarkan untuk melaksanakan dan menyiapkan kerja-kerja tersebut bagi jumlah harga pukal sebanyak Ringgit Malaysia:

.....
.....(RM)

2. Saya bersetuju menyiapkan kerja-kerja ini dalam masa
minggu dari tarikh mula kerja seperti yang ditetapkan di bawah Perenggan 2 Borang Perjanjian Inden Kerajaan.

Bertarikh pada haribulan 20.....

.....
(Tandatangan Kontraktor)

.....
(Tandatangan Saksi)

Nama Penuh :

Nama Penuh :

No. K/P :

No. K/P :

Alamat :

Alamat :

.....

.....

Atas sifat :

.....
Meteri atau Cap Kontraktor

SENARAI KUANTITI

RINGKASAN SEBUTHARGA

BIL	SPESIFIKASI KERJA	JUMLAH	
		RM	SEN
1.	KERJA-KERJA MEMBEKAL, MEMBINA BUMBUNG DAN MENARA LATIHAN SERTA KERJA BERKAITAN DI LAPANG SASAR MEMANAH KOMPLEKS SUKAN MSN NILAI, NEGERI SEMBILAN UNTUK MAJLIS SUKAN NEGARA MALAYSIA		
	1.KERJA-KERJA AWALAN		
	2. KERJA-KERJA UBAHSUAI TEMPAT MEMANAH		
	3. KERJA-KERJA MEMBEKAL DAN MEMBINA PENTAS MEMANAH		
	4. KERJA-KERJA ELEKTRIKAL DALAMAN		
	JUMLAH		
Ringgit Malaysia :			

Tandatangan Penyebutharga

Tandatangan Saksi

Nama Penyebutharga

Nama Saksi

No. K/P Penyebutharga

No. K/P Saksi

Jawatan

Jawatan

Cop Syarikat

Alamat:

Alamat:

Telephone :

Facsimile :

E-Mail :

Tarikh :

Telephone :

Facsimile :

E-Mail :

Tarikh :

PERHATIAN :

Sebarang pertanyaan boleh dimajukan kepada ;

MUHAMAD FAEZAL MD NOH

(Bahagian Fasiliti Sukan)

Tel : 03-89929600/89929837

Fax : 03-90583380

Nota :

1. Kontraktor dinasihatkan melihat sendiri tapak cadangan untuk mengetahui selok-belok kerja.
2. Harga tawaran sah selama 3 bulan dari tarikh tutup panggilan sebutharga dibuat.
3. Bersama-sama ini juga sila lampirkan profile syarikat untuk rujukan.
4. Majlis tidak terikat dengan mana-mana sebutharga yang terendah.

.....
(Tandatangan Kontraktor)

Nama : _____
Cop/Alamat : _____

No. Tel. : _____
No. Fax. : _____

**KERJA-KERJA MEMBEKAL, MEMBINA BUMBUNG DAN MENARA LATIHAN SERTA KERJA BERKAITAN DI LAPANG SASAR
MEMANAH KOMPLEKS SUKAN MSN NILAI, NEGERI SEMBILAN UNTUK MAJLIS SUKAN NEGARA MALAYSIA**

BILL NO: 1 - KERJA-KERJA AWALAN

Bil.	Butiran Kerja	unit	Kuantiti	Kadar	Amaun(RM)
	<u>KERJA-KERJA AWALAN</u>				
A	Kerja-kerja permulaan (Preliminaries) mengikut spesifikasi am, spesifikasi tambahan termasuk Insurans Tanggungan Awam, Insurans Kerja, Insurans Pampasan Kerja dengan membayar premium atau nombor pendaftaran PERKESO bagi semua pekerja	pukal	pukal		
B	Menyediakan pekerja, peralatan keselamatan dan kebersihan semasa kerja-kerja sedang dijalankan seperti tali-tali halangan, kon, tanda amaran dan tali merah-putih sehingga kerja-kerja disiapkan mengikut arahan Pegawai Penguasa.	pukal	pukal		
C	Menyediakan laporan foto kemajuan kerja (sebelum, semasa dan selepas) sebanyak dua (2) set berwarna pada setiap tuntutan bayaran (Hard copy & soft copy – dalam thumb drive).	pukal	pukal		
D	Mengadakan dan menyediakan tong sampah mudah alih menggunakan lori mengikut kesesuaian tapak bagi menampung kapasiti sampah agar kebersihan tapak adalah sentiasa terjamin . Sampah sarap ini perlu dibawa keluar daripada tapak bina yang diluluskan oleh pihak berkuasa tempatan apabila penuh atau di atas arahan Pegawai Penguasa.	pukal	pukal		
E	Pihak kontraktor mestilah memindahkan segala peralatan sedia ada ke kawasan yang sesuai dan memindahkan semula termasuk kemasan ke tempat yang diarahkan oleh pihak MSNM	pukal	pukal		
F	Kerja kerja pengukuran dan seting out.	pukal	pukal		
G	Melantik kontraktor yang berdaftar untuk melaksanakan kerja-kerja siasatan tanah (S.I) pengesyuran asas serta laporan penyediaan (10 point)	pukal	pukal		
H	Penyediaan lukisan terbina (As Built drawing) dan lukisan kerja (shop drawing). Nota* semua kos penyediaan tersebut adalah di bawah tanggungjawab kontraktor. Menyediakan 2 set salinan hardcopy dan 1 salinan softcopy lukisan as built untuk keseluruhan kerja sebagaimana diarahkan Pegawai Penguasa	pukal	pukal		
J	Mengemukakan sampel-sampel bahan untuk kelulusan sebelum pemasangan tapak	pukal	pukal		
K	Melantik Perunding bertauliah bagi penyediaan rekabentuk struktur, lukisan-lukisan pembinaan dan cadangan rekabentuk (skop Perunding sehingga penyediaan Dokumen Tender namun perunding akan membantu sebarang pertanyaan yang berkaitan secara 'Home Support'). dan verifikasi rekabentuk di tapak bina secara berkala	pukal	pukal		
JUMLAH DIBAWA KE RINGKASAN HARGA					

**KERJA-KERJA MEMBEKAL, MEMBINA BUMBUNG DAN MENARA LATIHAN SERTA KERJA BERKAITAN DI LAPANG
SASAR MEMANAH KOMPLEKS SUKAN MSN NILAI, NEGERI SEMBILAN UNTUK MAJLIS SUKAN NEGARA MALAYSIA**

BILL NO: 2 - KERJA KERJA UBAHSUAI TEMPAT MEMANAH

Bil.	Butiran Kerja	unit	Kuantiti	Kadar	Amaun(RM)
	Semua kuantiti adalah sementara.(All Provisional)				
	Nota Umum:				
1	Pihak Kontraktor dikehendaki untuk melawat tapak, memeriksa premis sedia ada dan memastikan kerja-kerja yang akan dilaksanakan mengikut spesifikasi dan aturan yang telah diarahkan. Tiada tuntutan untuk bayaran tambahan dalam hubungan ini yang akan dilayan. Harga kontraktor akan dianggap termasuk semua perkara yang diperlukan untuk melaksanakan sehingga siap kerja-kerja terbabit.				
2	Kerja-kerja di tapak secara umumnya perlu dijalankan dengan meminimumkan mengganggu kawasan bersempadanan atau berjiranan dan orang awam. Keselamatan berhampiran kawasan kerja atau kawasan berjiranan dan orang awam adalah sangat penting sepanjang melaksanakan kerja dan semua langkah-langkah keselamatan perlu diambil. Pihak kontraktor akan dipertanggungjawabkan atas kegagalan berbuat demikian dan sebarang tuntutan atau siri tuntutan-tuntutan kepada kerajaan yang mungkin timbul ketika melaksanakan kerja adalah dibawah tanggungjawab pihak kontraktor				
3	Semua bahan-bahan terpakai dan bahan-bahan kasar akibat daripada kerja-kerja yang dilakukan dan perubahan yang dijalankan adalah akan menjadi tanggungjawab Pihak Kontraktor yang perlu membuang sama ada di dalam kawasan tapak atau keluar daripada kawasan tapak.				
4	Pihak kontraktor adalah dipertanggungjawabkan dengan kos sendiri untuk membaiki atau menggantikan sebarang barangan lengkap yang dalam pada pendapat Arkitek / Pegawai Penguasa telah rosak akibat kecuaihan pihak kontraktor dalam penjagaan kerja-kerja seperti membuang, mengendalikan dan melindungi barangan atau kawasan terbabit.				
5	Pihak Kontraktor perlu mengambil kira langkah-langkah keselamatan dan kerja-kerja sokongan sementara yang perlu dilakukan mengikut garis panduan dan akta JKKP dan JAS sebelum menjalankan kerja-kerja binaan.				
Jumlah Kerja - Kerja dibawa kehadiran.					

**KERJA-KERJA MEMBEKAL, MEMBINA BUMBUNG DAN MENARA LATIHAN SERTA KERJA BERKAITAN DI LAPANG
SASAR MEMANAH KOMPLEKS SUKAN MSN NILAI, NEGERI SEMBILAN UNTUK MAJLIS SUKAN NEGARA MALAYSIA**

BILL NO: 2 - KERJA KERJA UBAHSUAI TEMPAT MEMANAH

Bil.	Butiran Kerja	unit	Kuantiti	Kadar	Amaun(RM)
	Semua kuantiti adalah sementara.(All Provisional) Jumlah Kerja Kerja dari mukasurat 1				
	Nota Umum: (Sambungan)				
1	Kerja-kerja seperti membekal bahan , membekal buruh, peralatan untuk membina selaras seperti yang terdapat didalam lukisan dan senarai jadual kerja ini hendaklah termasuk kerja-kerja penyingkiran segala bahan buangan di luar tapak dan membaikpulih semua kerja-kerja atau kawasan yang terganggu dan menyiapkan kerja terbabit sehingga Arkitek / Pengawai Penguasa berpuas hati.				
2	Sebarang butiran yang tidak dihiargakan adalah dianggap termasuk di dalam harga butiran-butiran lain. Kontraktor adalah dianggap telah melawat tapak bina dan membaca Syarat-Syarat Kontrak, Spesifikasi Addenda, Spesifikasi Piawai dan lukisan-lukisan kontrak untuk memastikan sendiri kerja yang terlibat sebelum menghargakan sebutarganya kerana sebarang bayaran tambahan berhubung dengan perkara di atas tidak akan dipertimbangkan.				
A	<u>Kerja -kerja membuka dan memecah.</u>				
3	Membekal jentera, pekerja dan bahan bagi kerja kerja memecah lantai paver sedia ada untuk penyediaan kerja kerja asas pad dan membuang sisa sisa keluar dari tapakbina.	pukal	pukal		
B	<u>Kerja kerja di bawah aras kemasn lantai (WBGFL)</u>				
4	Membekal jentera, pekerja dan bahan bagi kerja kerja membina asas Pad konkrit bertetulang untuk tiang struktur termasuk kerja kerja pengalian tanah, Konkrit, Besi tetulang dan papan acuan seperti yang terdapat di dalam lukisan.				
	i- Saiz 1200mm x 1200mm x 300mm (tinggi)	Bil	20.00		
	ii- Saiz 3000mm x 1200mm x 300mm (tinggi)	Bil	8.00		
5	Membekal jentera, pekerja dan bahan bagi kerja kerja membina tiang (stump) konkrit bertetulang untuk platform termasuk kerja-kerja papan acuan seperti yang terdapat di dalam lukisan.	Bil	36.00		
6	Membekal jentera, pekerja dan bahan bagi kerja-kerja membaik pulih lantai paver sediaada, apron dan memasang lonkang perimeter baru akibat dari kerja-kerja pengorekan seperti yang terdapat di dalam lukisan.	pukal	pukal		
	<u>Jumlah Kerja - Kerja dibawa kehadapan.</u>				

**KERJA-KERJA MEMBEKAL, MEMBINA BUMBUNG DAN MENARA LATIHAN SERTA KERJA BERKAITAN DI LAPANG
SASAR MEMANAH KOMPLEKS SUKAN MSN NILAI, NEGERI SEMBILAN UNTUK MAJLIS SUKAN NEGARA MALAYSIA**

BILL NO: 2 - KERJA KERJA UBAHSUAI TEMPAT MEMANAH

Bil.	Butiran Kerja	unit	Kuantiti	Kadar	Amaun(RM)
	Semua kuantiti adalah sementara.(All Provisional) Jumlah Kerja Kerja dari mukasurat 2				
C	<u>Kerja kerja kerangka Besi (Frame)</u>				
1	Membekal jentera, pekerja dan bahan bagi kerja kerja membina tiang besi berongga 'column RHS', plat tapak besi dan bolt 'J' seperti yang terdapat di dalam lukisan.				
	i- 305mm x 305mm x 68.5kg/m Tinggi 4530mm	Bil	12.00		
	ii- 305mm x 305mm x 68.5kg/m Tinggi 4000mm	Bil	12.00		
	iii- 305mm x 305mm x 68.5kg/m Tinggi 4950mm	Bil	6.00		
	iv- 305mm x 305mm x 68.5kg/m Tinggi 4533mm	Bil	6.00		
	v- 150mm x 50mm x 2.5mm tebal RHS dengan ketinggian 3692mm	Bil	12.00		
	vi- 150mm x 50mm x 2.5mm tebal RHS dengan ketinggian 4336mm	Bil	6.00		
D	<u>Kerja kerja Kekuda Bumbung Besi</u>				
2	Membekal jentera, pekerja dan bahan bagi kerja-kerja membina sistem kekuda bumbung dari besi berongga atau 'RHS' pelbagai saiz mengikut rekabentuk dan spesifikasi pengilang untuk struktur bumbung termasuk kerja-kerja menambah 'bracket/plat' ke tiang untuk tujuan penyambungan dan memasang penutup (caping) seperti yang terdapat di dalam lukisan.				
	1157mm~500mm tinggi x 7650mm panjang (FR1)	Bil	12.00		
	i- 1000mm tinggi x 6100mm panjang (FR2)	Bil	10.00		
	ii- 524mm tinggi x 6100mm panjang (FR3)	Bil	10.00		
	iii- 785mm tinggi x 7650mm panjang (FR4)	Bil	4.00		
	iv- 2000mm~2132mm tinggi x 7650mm panjang (FR4a)	Bil	2.00		
	v- 1000mm tinggi x 15900mm panjang (FR5)	Bil	6.00		
	vi- 700mm~355mm tinggi x 6100mm panjang (T1)	Bil	3.00		
	vii- Perabung bentuk 'C' termasuk 'M.S Angle Cleat'	m	810.00		
	viii- 12mm dia 1200mm long M.S Sag Rog.	Bil	93.00		
	ix- 50mm dia Bracing Rod termasuk turnbuckle.	m	162.00		
E	<u>Kerja kerja Kemasan Bumbung</u>				
3	Membekal jentera, pekerja dan bahan bagi kerja-kerja memasang atap bumbung dari jenis kepingan logam Ajiya Mega Rib 3D PU 0.42mm TCT tebal di kecondongan 5 darjah dengan P.U insulasi termasuk bahan-bahan aksesori tambahan seperti yang terdapat di dalam lukisan.	m2	958.00		
	Jumlah Kerja - Kerja dibawa ke hadapan.				

**KERJA-KERJA MEMBEKAL, MEMBINA BUMBUNG DAN MENARA LATIHAN SERTA KERJA BERKAITAN DI LAPANG
SASAR MEMANAH KOMPLEKS SUKAN MSN NILAI, NEGERI SEMBILAN UNTUK MAJLIS SUKAN NEGARA MALAYSIA**

BILL NO: 2 - KERJA KERJA UBAHSUAI TEMPAT MEMANAH

Bil.	Butiran Kerja	unit	Kuantiti	Kadar	Amaun(RM)
	Semua kuantiti adalah sementara.(All Provisional) Jumlah Kerja Kerja dari mukasurat 3 <u>Kerja kerja Kemasan Bumbung (Sambungan)</u>				
1	Membekal jentera, pekerja dan bahan bagi kerja-kerja memasang talang air hujan dari jenis kepingan logam termasuk rangka besi dan paip salur air hujan dari talang air ke lonkang perimeter seperti yang terdapat di dalam lukisan.	m	69.00		
F	<u>Kerja - Kerja Dinding</u>				
2	Membekal jentera, pekerja dan bahan bagi kerja-kerja memasang dinding dari jenis kepingan logam Ajiya m-clad 0.42mm BMT tebal termasuk rangka besi dan bahan-bahan aksesori tambahan seperti yang terdapat di dalam lukisan.	m2	480.00		
G	<u>Kerja - Kerja Mengecat</u>				
3	Membekal jentera, pekerja dan bahan bagi kerja-kerja mengecat semua struktur besi yang dibina dengan 2 lapisan primer dan 1 lapis 'iron oxide' serta 1 lapisan cat gloss termasuk kerja penyediaan permukaan dengan 'wire blasting' sebelum kerja kerja mengecat di jalankan seperti yang diterangkan di dalam lukisan.	pukal	pukal		
JUMLAH DIBAWA KE RINGKASAN HARGA					

**KERJA-KERJA MEMBEKAL, MEMBINA BUMBUNG DAN MENARA LATIHAN SERTA KERJA BERKAITAN DI LAPANG SASAR
MEMANAH KOMPLEKS SUKAN MSN NILAI, NEGERI SEMBILAN UNTUK MAJLIS SUKAN NEGARA MALAYSIA**

BILL NO: 3 - KERJA-KERJA MEMBEKAL DAN MEMBINA PENTAS MEMANAH

Bil.	Butiran Kerja	unit	Kuantiti	Kadar	Amaun(RM)
A	<u>Semua kuantiti adalah sementara.(All Provisional)</u>				
	<u>Kerja -kerja membuka dan memecah.</u>				
1	Membekal jentera, pekerja dan bahan bagi kerja kerja memecah lantai paver sedia ada untuk penyediaan kerja kerja asas pad dan membuang sisa sisa keluar dari tapakbina.	pukal	pukal		
B	<u>Kerja kerja di bawah aras kemasn lantai (WBGFL)</u>				
2	Membekal jentera, pekerja dan bahan bagi kerja kerja membina asas Pad konkrit bertetulang untuk tiang struktur termasuk kerja kerja pengaliran tanah, Konkrit, Besi tetulang dan papan acuan seperti yang terdapat di dalam lukisan.				
	i- Saiz 1000mm x 1000mm x 300mm (tinggi)	Bil	7.00		
	ii- Saiz 1300mm x 350mm x 300mm (tinggi)	Bil	3.00		
C	<u>Kerja kerja membekal dan memasang pentas</u>				
3	Membekal jentera, pekerja dan bahan bagi Kerja-kerja membina pentas memanah dan tangga serta susur tangan daripada besi termasuk kerja kerja mengecat'seperti yang terdapat didalam lukisan.	bil	1.00		
4	Membekal jentera, pekerja dan bahan bagi Kerja-kerja membina pentas unrtuk meletakkan sasaran memanah dan tangga termasuk kerja kerja mengecat dan membekal 'Manual Pully Bar c/w accessories' seperti yang terdapat didalam lukisan dan mengikut spesifikasi pembekal.	bil	1.00		
JUMLAH DIBAWA KE RINGKASAN HARGA					

BIL NO 4 : PERKHIDMATAN ELEKTRIK DALAMAN

ITEM	PENERANGAN	UNIT	QTY	KADAR (RM)	JUMLAH (RM)
	Semua kuantiti yang diberi adalah SEMENTARA. Kuantiti sebenar yang dipasang hendaklah diukur di tapak selepas siap dan harga diselaraskan dengan sewajarnya. Membekal, memasang dan mentauliahkan yang berikut mengikut spesifikasi dan lukisan.				
1.0	<u>PAPAN SUIS/SUB SUIS UTAMA</u> <u>/PAPAN AGIHAN/PAPAN PANEL METER</u>				
1.1	Papan Agihan Baharu c/w 30A TPN MCB,MCCB, SPD dan semua yang perlu seperti yang ditunjukkan dalam lukisan dan spesifikasi (jenis pelekap dinding DB/M-metalcald)	Bil	1		
1.2	Sistem pembumian lengkap untuk semua panel papan agihan c/w lubang RC pra tuang.	Bil	1		
2.0	<u>SUBMAINS</u> Untuk menjalankan semua riser Sub-Utama daripada MSB/SB sedia ada kepada Pengedaran papan dalam batang keluli lembut dan/atau tangga termasuk kabel bumi pita kuprum berterusan, kelenjar penghadang api dan penamatan dan lain-lain mengikut lukisan dan spesifikasi.				
2.1	4 x 1C-16 sq.mm PVC/PVC+ 1C-16 sq.mm PVC, sedia ada MSB/SB kepada penamatan dan aksesori DB/M .	M	5		
3.0	<u>SUB-LITAR</u> Pendawaian dalam saluran GI Trunking/GI yang tersembunyi.(Concealed)				
3.1	Mata pencahayaan menggunakan kabel PVC 2 x 1.5 meter persegi, kabel bumi dan suis 10A.	Bil	32		
3.2	Mata pencahayaan menggunakan kabel PVC 2 x 2.5 meter persegi, kabel bumi dan suis 20A.	Bil	18		
3.3	Mata kipas dinding menggunakan kabel bumi PVC 2 x 2.5 meter persegi dan suis 10A.	Bil	26		
3.4	Mata soket suis 13A menggunakan kabel PVC 2 x 2.5 meter persegi, kabel bumi dan alur keluar soket suis 13A geng tunggal. (metalcald)	Bil	12		
4.0	<u>PEMASANGAN ELEKTRIK</u> Bekalan dan pemasangan mengikut Lukisan dan spesifikasi set lengkap termasuk semua aksesori dan lain-lain (kelulusan eMAL & SIRIM)				
4.1	2 x 20W T8 kelengkapan pengawal wayar tiub LED	Bil	32		
4.2	50W Led Lowbay pemasangan termasuk rantai, sokongan dan lain-lain.	Bil	18		
4.3	Kipas Dinding dengan Aksesori 26"	Bil	26		
4.4	Pusat suis untuk semua pendawaian dan pemasangan di atas menggunakan metalcald powder coated, oven baked termasuk suis dan semua yang diperlukan aksesori mengikut lukisan dan spesifikasi	Bil	1		
5.0	<u>LAIN-LAIN</u>				
5.1	Kerja-kerja penyambungan dari MSB sedia ada ke DB/M termasuk diubah suai dan ditambah seperti MCCB, MCB, SPD, BUSBAR dan kerja berkaitan lain seperti yang ditunjukkan dalam lukisan.	Pukal	Pukal		
5.2	Memecah, menebuk lubang di dinding, lantai, dll dan membuat baik untuk pendawaian bawah tanah baru ke laluan berbumbung.	Pukal	Pukal		
	JUMLAH DIBAWA KE HALAMAN KOLEKSI				

ITEM	PENERANGAN	UNIT	QTY	KADAR (RM)	JUMLAH (RM)
5.3	Pindahkan semua tiang lampu sedia ada ke lokasi baru termasuk kabel dan aksesori seperti yang ditunjukkan dalam lukisan.	Pukal	Pukal		
6.0	<u>PENGUJIAN DAN PENTAULIAHAN</u> Ujian, pentauliahan dan penyerahan dalam diluluskan mengikut S.O.P kerja keseluruhan pemasangan elektrik Dalam	Pukal	Pukal		
7.0	Kerja-kerja lain yang perlu tidak termasuk di atas tetapi diperlukan untuk menyiapkan projek. a. _____ b. _____ c. _____				
	JUMLAH DIBAWA KE HALAMAN KOLEKSI				

HALAMAN KOLEKSI

1.0 PERKHIDMATAN ELEKTRIK DALAMAN

ITEM	HALAMAN	JUMLAH (RM)
	<u>KOLEKSI</u> MUKA SURAT 1/1 MUKA SURAT 1/2	
	JUMLAH BESAR KE RINGKASAN HARGA	-

SPESIFIKASI



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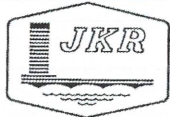
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1. General

- 1.1. This work shall consist of all the required excavation and earthworks within the limits of the Works. It shall include the removal and proper utilization and hauling, or disposal of all excavated materials, and constructing, shaping and finishing of all earthworks over the entire extent of the Works, in conformity with the Drawings and these Specifications.
- 1.2. The excavation and earthworks shall be executed in such a manner and order as approved by the S.O.. The Contractor shall be responsible for compliance with by-laws and regulations relating to earthworks.
- 1.3. Excavation in rock and/or hard material shall respectively be measured and paid for as extra over to excavation and earthworks in accordance with the Provisional B.Q.. The Contractor shall give reasonable notice to the S.O. to examine, classify the excavation and to take measurement prior to breaking up.
- 1.4. For contract based on Specifications and Drawings, unless otherwise provided in the Contract, for the purpose of pricing the excavation and earthworks, the whole excavation shall be assumed to be without rock and/or hard material as defined hereunder.
- 1.5. For contract based on Quantities, the pricing shall be in accordance with the B.Q. and deem to include all validation and quality control testing required by this specification.
- 1.6. Computation of volume of rock excavation for payment shall be based on nett volume excavated as shown on the Drawings.
- 1.7. The Contractor shall comply with all statutory requirements and regulations such as payment of royalties and environmental protection for removal of unsuitable material and borrow materials.

2. Soil Investigation Report

A soil investigation report shall be made available (if any) at the S.O.'s office for the Contractor information. The Contractor shall study the soil investigation report in detail and make his own interpretation of the information provided and make due allowance for the effect of site conditions on his construction operations. No responsibility is assumed by the S.O. for any opinion given in the soil investigation report.

3. Site Clearing, Grubbing and Stripping Topsoil

This work shall consist of clearing, grubbing and stripping topsoil in the areas within the limits of Works designated hereunder and/or shown on the Drawings and/or directed by the S.O., and of clearing only in other areas designated hereunder and/or shown on the Drawings and/or directed by the S.O., all as specified herein and as required by the S.O.. The work shall also include the demolition and disposal of structures in the said areas, except where otherwise provided for in the Contract, as specified herein and as required by the S.O..

3.1. Site clearing

- 3.1.1. Clearing shall consist of cutting and/or taking down, removal and disposal of everything above ground level, including objects such as walls, fences, drains and other obstructions, except such trees, vegetation, structures or parts of structures and other things which are designated in the Contract



SECTION B: EXCAVATION AND EARTHWORKS

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to remain, to be protect as satisfied under SECTION R: LANDSCAPING AND TURFING. The material to be cleared shall include but not necessarily be limited to trees, stumps (parts above ground), logs, brushwood, undergrowth, long grasses, crops, loose vegetable matter and structures (except those structures whose removal or clearance is otherwise provided for in the Contract). Clearing shall also include levelling of obsolete dikes, terraces, ditches, et cetera, unless otherwise directed by the S.O..

- 3.1.2. All holes and cavities in the ground surface after clearing, grubbing and stripping topsoil shall be filled with materials similar to the adjacent ground, and such fill shall be compacted to a dry density as specified by sub-section 8.4.3., with the agreement of the S.O.. This work shall be considered incidental to the work of clearing, grubbing and stripping topsoil, and shall not be measured for payment.

3.2. Grubbing

Grubbing shall consist of removal and disposal of surface vegetation, bases of stumps, roots, underground parts of structures, and other obstructions to a depth of at least 500mm below ground level, with the agreement of the S.O..

3.3. Stripping topsoil

- 3.3.1. Stripping topsoil shall consist of the removal of topsoil to an average depth of at least 100mm below ground level, and its stockpiling for use in the Works, and/or its disposal, as directed by the S.O..

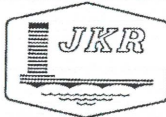
- 3.3.2. Topsoil to be stockpiled for the Works shall be sufficiently fertile to promote and support the growth of vegetation, and shall be taken from such areas where clearing, grubbing and stripping topsoil is required as approved or directed by the S.O.. Before stockpiling, topsoil shall be separated from objectionable materials such as combustible material including all timber (except timber to be salvaged or used), all brushwood, stumps, roots, vegetation from clearing, grubbing and stripping topsoil (including the demolition of structures), with the agreement of the S.O.. The Contractor shall arrange for stockpile sites either within or outside the site, at his own expense, and with the agreement of the S.O. or as required by the relevant laws and regulations.

3.4. Disposal

All materials resulting from site clearing, grubbing and stripping topsoil shall be removed and disposed of as approved by the S.O. in accordance with *Environmental Quality Act 1974 (Act 127)* and *Solid Waste and Public Cleansing Management Act 2007 (Act 672)*.

4. Timber

- 4.1. The ownership of timber is vested in the Government. Saleable timber shall be trimmed and stacked in accordance with the requirements of the appropriate Government agency, in accessible places within the site as approved or directed by the S.O..
- 4.2. The Contractor shall have the right to use unsaleable timber (or saleable timber when permission is granted in writing by the appropriate Government agency or

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authority) for his own purposes in connection with the Contract, always provided that he shall comply with the requirements of the S.O..

5. Demolition of Existing Structures

- 5.1. Major structures are those which cannot practicably be cleared by bulldozer and/or hydraulic excavator, whose demolition requires pneumatic tools, explosives and/or other specialized equipment. A brief description of each major structure (if any) and depth to which extent it shall be demolished is given in the B.Q..
- 5.2. All fences, buildings, structures, and encumbrances of any character within the limits of the limits of the Works, except those to be removed by others or designated to remain, shall be demolished and removed by the Contractor.
- 5.3. Materials designated in the Contract or directed by the S.O. to be salvaged, shall be carefully removed and stored, and shall be the property of the Government.

6. Relocation of Existing Utilities and Services

- 6.1. The Contractor's attention is specially drawn to his responsibilities under the Clause headed 'Damage to Property' of the Condition of Contract.
- 6.2. Before commencing on any excavation, the Contractor or his representative shall accompany the S.O. on a site inspection to identify the presence of underground cables, water or other service pipes at or in the vicinity of such excavation. Thereafter, the Contractor shall carry out the excavation work in a manner and sequence as approved by the S.O..
- 6.3. If during excavation, the Contractor's workmen uncover any cables, water or other service pipes, work shall be stopped immediately and shall not be again started until the matter has been reported to the S.O. who will notify the appropriate local authority, and subsequently issue whatever directions he deemed appropriate.

7. Excavation Works

7.1. General Requirements

- 7.1.1. The work shall include the excavation of all types of material, backfilling, compaction, forming embankments and slopes, et cetera, as is necessary for the completion of the works up to the formation levels, in accordance with the lines, grades, dimensions, shapes and typical cross-sections shown on the Drawings and to the approval of the S.O..
- 7.1.2. The Contractor shall provide where necessary temporary water courses, ditches, drains, pumping or other means of maintaining the earthworks free from water. Such provision shall include carrying out the work of forming the cuttings and embankments in such a manner that their surfaces have at all times a sufficient gradient to enable them to shed water and prevent water ponding.
- 7.1.3. In pumping water out from excavation and in the lowering of water table the Contractor shall pay due regard to the stability and settlement of all structures.



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- 7.1.4. Adequate means for trapping silt shall be provided on all temporary drainage systems. Similar arrangements shall be made for all earthworks including excavation whether for pile trenches, foundations or cuttings.
- 7.1.5. Should the surface of completed areas be damaged by erosion or by any other causes, the Contractor shall at his own cost make good such areas to the approval of the S.O..
- 7.1.6. The Contractor shall exercise care in preventing wastage of suitable material needed for embankment or fill construction.

7.2. Definitions

7.2.1. Formation level

Formation level means the final earthwork level after cutting or filling.

7.2.2. Common excavation

Common excavation shall mean excavation in any materials which are not rock or hard materials as defined in sub-section 7.2.5. and sub-section 7.2.6..

7.2.3. Unsuitable materials

7.2.3.1. Unsuitable materials shall include:

- (i) Running silt, peat, logs, stumps, roots, grass and other vegetable matter, perishable or toxic material, slurry or mud; or
- (ii) Organic clay and organic silt; or
- (iii) Any material
 - a) Which is susceptible to spontaneous combustion; or
 - b) Which is clay having a liquid limit exceeding 80% and/or a plasticity index exceeding 55%; or
 - c) Which has a loss of weight greater than 2.5% on ignition.

7.2.3.2. Materials that are soft or unstable merely because they are too wet or too dry for effective compaction shall not be classified as unsuitable, unless otherwise classified by the S.O..

7.2.4. Suitable materials

7.2.4.1. Suitable materials shall mean those materials other than the unsuitable materials defined in sub-section 7.2.3..

7.2.4.2. General fill shall generally comprise of suitable materials made up of either cohesive soil or cohesion less soil or mixture of both. The classification of cohesive and cohesion less soil shall be based on Soil Classification System set out in the latest MS 1056: *Method of Test for Soil for Civil Engineering Purpose*.

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7.2.4.3. Special fill shall comprise of material, which would otherwise be classified as general fill, but which contains durable well-graded natural sand and gravel or crushed rock, other than argillaceous rock (e.g. mudstone, shale), or durable clean crushed demolition rubble of similar particle size and free from any contaminants.

7.2.5. Hard Mass

7.2.5.1. This shall mean any cemented sediments, rock mass and highly fractured rock mass which can be excavated using an excavator with minimum weight of 41.4 tonnes and nett horsepower rating of 321 brake horsepower with production rate not exceeding 50m³/hour. All machineries shall be in good condition and operated by skilled personnel approved by S.O.

7.2.5.2. Hard mass shall exclude individual masses less than 0.5m³.

7.2.6. Rock mass

7.2.6.1. Rock mass shall mean masses found in ledges or masses which can be excavated using the following machinery with production rate not exceeding 20m³/hour:

(i) Track-type tractor (dozer)

Machinery with minimum weight of 37 tonnes and nett horsepower rating of 303 brake horsepower or more. The tractor unit is to be in good condition and operated by skilled personnel in the use of ripping equipment; and

(ii) Ripping unit

The ripper to be attached to the above-mentioned tractor shall have a minimum penetration force of 120kN. The ripper shall have a single shank in good working condition with sharpened cutting point.

7.2.6.2. Boulders or detached pieces shall only be regarded as rock if they individually exceed 0.5m³. For boulders or detached pieces individually measuring less than 0.5m³, it shall be considered as common excavation. For determination of the volume of individual boulder, diameters of the boulder in three (3) orthogonal directions shall be taken. The average of the three (3) diameters shall be used to calculate the volume of boulder. Records of measurements and photographs shall be taken and kept supporting the calculation of the volume of boulder.

7.2.7. Confirmation of Common Excavation/Hard Mass or Rock Mass Excavation

7.2.7.1. Confirmation of common excavation/hard mass excavation or rock mass excavation shall be carried out with direct method and indirect method as specified below. Both criteria shall be fulfilled in order for the material to be classified as hard mass or rock mass. Confirmation test shall be carried out again when in S.O.'s opinion the materials are different from those excavated from the trial excavation before.

(i) Direct Method

Trial excavation shall be carried out using the machineries as specified in sub-sections 7.2.5. and 7.2.6. to confirm the materials excavated is categorized under common excavation/ hard mass excavation based on its hourly production rate. The trial excavation shall be carried out on a flat platform as define in sub-section 8.3. in order to develop the rated horsepower at maximum efficiency.

In the event where the Contractor unable to provide the machineries as stated in sub-sections 7.2.5. and 7.2.6., the Contractor shall propose machineries to be used at site for the confirmation purpose subjected to approval by the S.O.. The equivalent production rate of the machineries are shown in **Table B1 & B2** for evaluation purposes.

The ripper unit shall be used in excavation of hard mass and rock mass only and shall not be used in common excavation.

(ii) Indirect Method

Point load test shall be carried out on excavated material for this purpose. Minimum ten (10) samples from the excavated material resulted from trial excavation as in direct method (i) above shall be tested and the results interpretation are shown in **Table B3**. Sample to be tested shall have size not less than 30mm and not more than 85mm with the preferred dimension about 50mm according to ASTM D5731.

The provision of point load test equipment at site for the above-mentioned testing shall be at Contractor's own cost and time. The point load test equipment shall be calibrated and a valid calibration certificate shall made available to the S.O. upon requested.

7.3. Dimensional Tolerances

Slopes in cutting shall be trimmed mechanically to neat and even surfaces which shall have gradients not steeper than that shown on the Drawings. Widths of excavations shall not exceed the dimensions shown on the Drawings by more than 300mm with encumbrance free to complete the Work, unless otherwise approved by the S.O..

7.4. Separation and Stockpiling of Suitable Material

Where excavation reveals a combination of suitable and unsuitable materials, the Contractor shall, wherever the S.O. considers it practicable, carry out the excavation in such a manner that the suitable materials are excavated separately for use in the Works without contamination by the unsuitable materials.

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7.5. Removal of Excavated Material from Site

- 7.5.1. Trial pit shall be carried out prior to removal of material to be excavated to confirm water table and depth of excavation.
- 7.5.2. No excavated material shall be removed from the Site except on the direction or with the approval of the S.O.. Should the Contractor be permitted to remove suitable materials from the Site to suit his operational procedure, then he shall make good any consequent deficit of fill material arising there from, at his own expense. Unless designated dump sites have been shown on the Drawings, the Contractor shall dispose of surplus suitable material at his own dump areas outside the Site as approved by the S.O..

7.6. Removal of Unsuitable Material

- 7.6.1. Trial pit/ hand auger/JKR Probe shall be carried out prior to removal of material to be excavated to confirm water table and depth of excavation.
- 7.6.2. Unsuitable material shall be excavated to such depth and over such area as shown on the Drawings and/or directed by the S.O. and be transported and disposed of in an approved manner. Unless approval of the S.O. to dump and spread the unsuitable material within the Site is obtained, the Contractor shall be responsible for providing his own dump site for such unsuitable material. Voids created due to removal of unsuitable material shall be backfilled with suitable material compacted to a dry density as specified in sub-section 8.4.3. or that specified for the respective part earthworks or as directed by the S.O..

7.7. Replacement of Excavated Material under Standing Water

Where it is decided by the S.O. that replacement of excavated material shall be done under standing water, voids created due to removal of excavated material shall be backfilled with hard clean crushed rock, natural gravel or sand having grading within the respective limits specified in **Table B4**.

7.8. Sides of Excavation

The Contractor shall ensure that at all times, the sides of the excavation are maintained in a safe and stable condition and shall be responsible for the adequate provision of all shoring and strutting including sheet piling required for this purpose. All temporary works shall comply with the requirements of *BS 5975 Code of Practice for Temporary Works Procedures and The Permissible Stress Design of Falsework*.

7.9. Widening Cuts

- 7.9.1. The S.O. may instruct the Contractor or the Contractor himself may elect to obtain material for the Works by widening cuts. In the latter case, the Contractor shall first request permission in writing from the S.O..
- 7.9.2. Widening of cuts shall not be permitted beyond the limits of the road reserve.
- 7.9.3. Any additional costs and time incurred that resulted from widening cuts shall be borne by the Contractor.

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7.10. Excavation of Rock

- 7.10.1. Rock excavation shall be carried out by methods appropriate to site requirements as approved by the S.O..
- 7.10.2. Where the excavation is too hard to be performed by digging, dozing, scraping, ripping, splitting, breaking, jack picking or other such methods, the Contractor may make a written request to the S.O. for permission to blast. Such permission will be granted only if the S.O. is satisfied that all reasonable measures have been tried to carry out the excavation by methods other than blasting.
- 7.10.3. Where explosives are used, the Contractor shall provide a method statement and shall comply fully with requirements of these Specifications, or any direction, order, requirement or instruction given by the PDRM or any other authority competent to do so under any written law. The Contractor shall comply to the safety and hazard requirements as specify in Occupational Safety and Health Act (OSHA) and any misconduct and the use of excessive explosive shall be the responsibility of the Contractor.
- 7.10.4. All material from rock excavations shall be used as far as is practicable in the Works.
- 7.10.5. Where the rock is of satisfactory quality, the Contractor may elect to crush and screen it to produce aggregates required for concrete, road base, sub-base, or other purposes with the prior approval of the S.O.. Excavated rock needed for earthwork construction which the Contractor elects so to use for producing aggregate materials shall be replaced at the Contractor's own expense by borrow materials of satisfactory quality from alternative locations approved by the S.O..
- 7.10.6. Otherwise, excavated rock shall be used in the construction of embankment and fill, to the fullest practical extent, in either of the two (2) following ways:
 - 7.10.6.1. Excavated rock shall be broken down to a maximum particle size of 300mm and used as rock fill as described in sub-section 8.6..
 - 7.10.6.2. Excavated rock shall be broken down to a maximum particle size of 150mm, blended with suitable earth fill material in a proportion not exceeding 1 rock to 1 earth, and used as common fill.
- 7.10.7. The Contractor may only waste excavated rock with the approval of the S.O.. Excavated rock needed for earthwork construction which the Contractor elects to waste shall be replaced at the Contractor's own expense by borrow materials of satisfactory quality from alternative locations approved by the S.O..

7.11. Storage and Handling of Explosives

The storage and handling of explosive shall be adhered to all Authorities' requirement. The prevention of any unauthorised issue or improper use of any explosive brought on the Works shall be the responsibility of the Contractor and only experienced and qualified personnel shall be employed to handle explosives for the purpose of the Works.

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7.12. Blasting

- 7.12.1. Explosives shall be used in the quantities and manner recommended by the manufacturers and blasting specialist. Blasting shall be restricted to such periods as the S.O. may prescribe and to comply with all authority's requirement. If, in the opinion of the S.O., blasting would be dangerous to persons or properties or to any finished work, or is being carried on in a reckless manner, he may prohibit it, and order the rock to be excavated by other means. Such authorisation shall not in any way relieve the Contractor of his liabilities under the Conditions of Contract.
- 7.12.2. All necessary precautions shall be taken to avoid overbreak. As the excavation approaches its final lines face, blasting with pre-splitting technique shall be carried out to reduce blast damage and create reasonably even finished surface.

7.13. Safety Measures

- 7.13.1. When blasting is carried out close to properties or roads, safety rules complying to all authorities' requirements shall be strictly adhered to. Where necessary or as directed by the S.O., heavy mesh blasting mats or any other controlled materials shall be used to ensure that no damage is caused to persons or properties on or off Site. Special care shall be taken on highly weathered rock mass and sensitive ground. Plaster shooting will not be permitted within 400m of any building or structure. The Contractor shall keep records of the nearby existing properties and provide sufficient monitoring instrumentation before any blasting commence. Any damage caused by blasting shall be borne by the Contractor.
- 7.13.2. If traffic on any road or railway has to be interrupted for blasting operations, the Contractor shall obtain approval of his schedule for such interruption from the appropriate authorities and shall prove to the S.O. that he has obtained it, prior to the interruption.
- 7.13.3. When blasting is carried out with close proximity to sensitive structures and environmental sensitive areas, thresholds and criteria of vibration, air blast, dust, fly rock and other blasting impact shall be established for monitoring purpose.

7.14. Insecure Material

The cut slopes shall be cleared of all rock fragments which move when pried with a crowbar. The Contractor shall excavate any insecure material to an approved depth and build up the resulting spaces with Grade 15P/20 concrete or masonry using rock similar to the adjoining natural rock so as to ensure a solid face.

8. Filling Works

8.1. Material

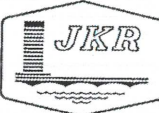
- 8.1.1. Fill materials to form formation level shall be of suitable material obtained from excavation in cuttings. Where the quantity of such materials is inadequate, the Contractor shall obtain suitable materials from the designated borrow pits or from his own borrow pits which have been approved by the S.O..



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- 8.1.2. The fill material shall be free from roots, grass, other vegetable material, clay lump or material of particles size larger than 150mm.
- 8.1.3. Unless otherwise directed by the S.O., the following tests shall be carried out for every 1,500m³ of fill material to be placed at Site:
- (i) Atterberg limits
 - (ii) Gradation analysis
 - (iii) M.S 1056 Compaction Test (4.5 kg rammer method)
- 8.1.4. Sand shall not be used as fill materials at outer edges of the embankment.
- 8.2. Borrow Pits
- 8.2.1. The Contractor shall be responsible for locating borrow pits. Designated borrow pits shown on the Drawings only indicate to the Contractor potential areas for borrow. Whether the Contractor obtains materials from the designated or his own borrow pit, it shall be his responsibility to ascertain the suitability of the pit with respect to the quantity and quality of the materials, which shall be subjected to the approval of the S.O..
- 8.2.2. The Contractor shall keep the borrow pits free from water ponding and the excavation neat and tidy. The contractor shall make sure the sidewall of the borrow pits is stable, protect the slope surface by turfing and shall carry out other necessary erosion and environmental protection measures following the agreed method statement or as instructed by the S.O..
- 8.3. Placement of Fill Materials
- 8.3.1. All fill materials shall be deposited in layers and brought up at a uniform rate so that all parts of the Site reach the designed level at the same time. The loose depth for each layer of fill shall be determined from the trial compaction. Each layer shall extend over the full width of the fill area and shall be compacted in accordance with the requirements of sub-section 8.4.. Each compacted layer shall be maintained at all times with a sufficiently even surface of longitudinal and cross slope in order to maintain the stability and drain away the surface water.
- 8.3.2. Where embankment is to be constructed on ground with a cross slope flatter than 1 (vertical) to 10 (horizontal) but steeper than 1 (vertical) to 30 (horizontal), the foundation material, except where this is rock, shall be scarified to a depth of 100mm, blended with embankment fill material and compacted as described in sub-section 8.4..
- 8.3.3. Where embankment is to be constructed against existing embankment or on ground with a cross-slope steeper than 1 (vertical) to 10 (horizontal), the foundation shall be excavated in all materials (including hard rock) to form benches with horizontal and vertical faces from which construction of the embankment shall proceed. The benches shall be contiguous beneath the full width of the embankment and shall be of a suitable width to accommodate construction equipment such as motor-graders, trucks, rollers, et cetera. Scarifying of the horizontal and vertical faces of the benches shall not normally be required, and the material excavated in forming the benches may normally be used as fill in the embankment as approved by the S.O..

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8.4. Compaction

8.4.1. General

8.4.1.1. All materials used in embankments and as fill elsewhere shall be compacted as soon as practicable after being placed and spread. Compaction shall be undertaken to the requirements of this section by plant approved by the S.O.. All compaction requirements shall be controlled by means of field density measurement.

8.4.1.2. For compaction of embankment slope, the Contractor may either extend each compacted layer beyond the design slope surface by at least 600mm then trim back to the required slope angle, or he may employ an agreed tow type roller to compact the sloping surface.

8.4.2. Compaction trials

8.4.2.1. The latest *MS 1056* Compaction Test (4.5kg rammer method) shall be used in determining the moisture versus density relation of soil.

8.4.2.2. The Contractor shall submit to the S.O. for his agreement the proposed method of compaction for each main type of material to be used in the embankment. This shall include the type of compaction plant for each type of material and the number of passes in relation to the loose depth of material to achieve desired compaction. The maximum loose thickness for fill shall generally be limited to 400mm unless trial compaction shows compliance with larger loose thickness and with the approval from the S.O.. The Contractor shall carry out field compaction trials, supplemented by any necessary laboratory investigations, as required by the S.O.. This shall be done by using the procedures proposed by the Contractor for earthworks and shall demonstrate to the S.O. that all the specified requirements regarding compaction can be achieved. Compaction trials with the main types of material likely to be encountered shall be completed before the works with the corresponding materials will be allowed to commence. Each trial area shall be not smaller than 8m x 15m.

8.4.2.3. For earthwork compaction of less than 100m³, trial compaction can be waived with approval from the S.O., but field density testing as per sub-section 8.4.4. is remained necessary as and when instructed by the S.O..

8.4.3. Degree of compaction

The whole of the fill area shall be compacted in layers until no visible track line and to not less than 90% (for cohesive material) or 95% (for cohesion less material) of the maximum dry density (MDD) determined in the latest *MS 1056* Compaction Test (4.5kg-rammer method), unless otherwise as shown on the Drawings.

8.4.4. Field density testing

Field density tests on each layer of compacted earth fill shall be carried out using the sand replacement method in accordance with the latest *MS*



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1056 or by using other means of testing of comparable accuracy approved by the S.O..

8.4.5. Moisture control

8.4.5.1. Each layer of earth fill shall be processed as necessary to bring its moisture content to a uniform level throughout the material, suitable for compaction. The optimum moisture content (OMC) as determined by the latest *MS 1056* Compaction Test (4.5kg rammer method) shall be used as a guide in determining the proper range of moisture content, preferably on the wet side, at which each soil type shall be compacted. Water shall be added in fine spray for consistent moisture absorption in the fill, or the material aerated and dried to adjust the soil to the proper range of moisture content to obtain the required density. Dry sand or cement or mixture of sand and cement can be added for the same purpose upon approval by the S.O.. A satisfactory method and sufficient equipment as approved by the S.O. shall be used for the furnishing and handling of water.

8.4.5.2. If the natural water content of suitable material is too high for the proper compaction to be carried out, the Contractor can either bring down the moisture content by aeration or drying or alternatively replace it with suitable materials of compactable moisture range at his own cost.

8.4.6. Air voids

To reduce potential of collapse compression of unsaturated cohesive fill due to wetting, the moisture content range at fill placement shall be controlled to achieve a compacted fill with allowable air void content not exceeding 5%.

8.5. Frequency of Control Tests

8.5.1. For fill/ imported material, control test shall include a series of test as per Sub-section 8.1.3.

8.5.2. For compacted material, control test shall consist of one field density test which evenly allocated to each compacted layer of the entire compacted fill.

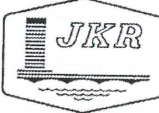
8.5.3. The frequency of control tests shall be in accordance with **Table B5**.

8.5.4. The control tests shall be evenly allocated to each compacted layer of the entire compacted fill.

8.5.5. If certain test methods are used for the reasons of speed and economy, calibration between such tests and the master test method as per latest *MS 1056* shall be carried out at the interval of every 100 tests subject to the S.O. agreement. The calibration is material specific and shall be performed for each material type. The non-master test method with variation of more than $\pm 5\%$ shall be rejected.

8.6. Rock Fill Embankment

8.6.1. Rock used in rock fill embankments shall be of maximum particle size of 300mm so that it can be deposited in horizontal layers, each not exceeding 500mm in compacted depth and extending over the full width of the

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embankment except for any specified external cover to slopes or new formation level. The materials shall be spread and levelled by a crawler tractor weighing not less than 15 tonnes. Each layer shall consist of reasonably well graded rock and all large voids with averaging dimension of exceeding 150mm shall be filled with broken fragments before the next layer is placed. The top surface and side slopes of embankments so formed shall be thoroughly blinded with approved fine graded material to seal the surface.

8.6.2. There shall be a transition layer between rock fill and earth fill or the top 300mm of subgrade of at least 300mm compacted thickness. This shall consist of uniformly graded crushed rock between 6mm and 150mm as approved by the S.O..

8.6.3. Each layer of rock used as rock fill in embankments shall be systematically compacted by at least 12 passes of a vibrating roller with a static load per 25mm width of roll of at least 45kg or a grid roller with load per 25mm width of roll of at least 200kg or other approved plant.

8.7. Filling on Soft Ground

8.7.1. Foundation treatment

8.7.1.1. Where soft ground under embankment is to be treated as shown on the Drawings or as directed by the S.O., the foundation soil shall be improved as specified in SECTION V: GROUND IMPROVEMENT.

8.7.1.2. The first layer of fill materials shall be deposited over the full width of the embankment and berms in thicknesses not more than 500mm or as approved by the S.O. to sufficiently support earthwork machineries.

8.7.1.3. If fill materials are required to be placed under standing water, hard clean crushed rock, natural gravel or sand having grading within the respective limits specified in **Table B4** shall be used to backfill the embankment not less than 300mm above the standing water to receive compacted suitable fill thereafter.

8.7.2. Surcharge and staged construction

Where indicated in the Contract or directed by the S.O., the embankment shall be built to different heights in stages with or without surcharge and with allowance for consolidation time periods in between stages, all in accordance with the Contract. Where surcharge is specified, the work shall be carried as specified in SECTION V: GROUND IMPROVEMENT WORKS. The Contractor shall be responsible for the provision of surcharge material and the removal and disposal of excess material on completion of consolidation or when directed by the S.O..

8.7.3. Geotechnical instrumentations

8.7.3.1. Geotechnical instruments shall be provided and installed by the Contractor in the positions as shown on the Drawings or as directed by the S.O. for the purpose of measuring intended reading at specified location(s) during and after the construction period. The details of geotechnical instruments shall be as shown on the Drawings and the Contractor shall be responsible



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for supplying, installing and maintaining the functionality of the geotechnical instruments as the work proceeds.

8.7.3.2. Geotechnical instrumentation works shall also comply to SECTION V: GROUND IMPROVEMENT WORKS.

8.7.4. Monitoring records

8.7.4.1. All monitoring works and records taken shall comply to SECTION V: GROUND IMPROVEMENT WORKS.

8.7.4.2. Joint recording of geotechnical instruments reading shall be conducted as specified. The monitoring records shall be submitted to the S.O. on an approved printed form to be supplied by the Contractor. Softcopy of monitoring records shall be submitted together with the hard copy records.

8.7.4.3. For the measurement of the volume that has settled below the original level of the foundation of the embankment, the measured settlement of each settlement gauge shall be used for volume computation following the method shown on the Drawings.

9. Protection and Maintenance for Erosion Control

9.1. The Contractor shall be fully responsible to repair/ remedy any slope erosion, slip or tension cracks (if any and due to whatever causes) at his own cost if the requirements are not fully complied with. The method and procedure of remedy/ stabilization plus necessary stability analysis shall be prepared and endorsed by Professional Engineer with full design verification and justifications.

9.2. Where turfing is required for earthworks protection, it shall be planted immediately after cutting or filling as specified under SECTION R: LANDSCAPING AND TURFING.

9.3. Where hydroseeding is required for earthworks protection, it shall be carried out immediately after cutting or filling as specified under SECTION W: HYDROSEEDING.

9.3.1. All grass shall be regularly watered until the vegetation is satisfactorily established to the requirements of these Specifications. Any dead grass shall be replaced at the Contractor's own expense.

9.4. Creepers

9.4.1. Where creepers are introduced on gunited slopes, rocks or unsuitable materials, species shall be of Malaysian origin such as *ficus pumila*, *centrosema pubescens*, or to the agreement of the S.O..

9.4.2. The Contractor shall submit to the S.O. for his consideration and approval, at least four (4) weeks in advance of the proposed work, full details of his proposed method of planting the creepers. The information submitted shall include, but not limited to, a full description of the following aspects of the work:



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- 9.4.2.1. The preparation of the areas to be planted with creepers, including the amount of topsoil if appropriate to be used and its method of application;
- 9.4.2.2. The details and results of investigations to determine which types of creepers are compatible with the soil in the areas to be planted;
- 9.4.2.3. The types of creepers to be used, and the function, root and growth characteristics of each type;
- 9.4.2.4. The composition of fertilizer to be used at the time of planting the creepers and its rate of application;
- 9.4.2.5. The composition of fertilizer to be used after planting, the times of application and the rate of application;
- 9.4.2.6. The amounts of lime or other chemicals (if any) to be applied to improve the soil before, during and/or after planting;
- 9.4.2.7. the cultivation and after care of the areas, including rates and frequencies of watering, fertilizing and general maintenance for at least one (1) year after planting;
- 9.4.2.8. the time after planting required for establishing permanent, dense growth of creepers, which will require minimal maintenance;
- 9.4.2.9. Guarantees the success of the creepers planting work.
- 9.4.3. All creepers shall be regularly watered until the vegetation is satisfactorily established to the requirements of these Specifications. Any dead creepers shall be replaced at the Contractor's own expense.
- 9.5. Temporary Slope Protection
 - 9.5.1. Should the Contractor be unable to turf/hydroseed the exposed slopes within one (1) weeks after cutting/filling works temporary protection measures such as covering with tarpaulin sheet or artificial cover to control erosion shall be taken.

Table B1. Equivalent Production Rate of **Hard Mass** Based On Types of Excavators

Excavator Series	Weight (tonnes)	Engine Horsepower (HP)	Factor compared with 41.4 tonnes (Excavator Series 400)
150	15.4	99	0.33
200	21.2	170	0.58
250	27	188	0.63
300	31	242	0.67
350	36	271	0.75
400	41.4	321	1.0

Table B2. Equivalent Production Rate of Rock Mass Based On types of Track-Types Tractors With Ripping Equipment (bulldozer ripper)

Dozer	Flywheel power (kW)	Operating weight (tonne)	Factor compared with 37 tonnes (Bulldozer Ripper)	Equivalent Production Rate for Rock Mass (m ³ /hr)
D6, D7	200-240	20-25	0.54	11.0
D8	303	37	1.0	20.0
D9	405	48	1.3	26.0

Note: If the contractor elects to use machinery larger than as specified above, it should be considered equivalent to the specified capacity for the purpose of approval.

Table B3. Category Of Excavation Based On Corrected Point Load Test Index $I_{s(50)}$

Type of excavation	Corrected point load test index $I_{s(50)} \geq 2\text{MPa}$
Common Excavation	Not applicable (no solid sample can be tested)
Hard Mass	< 80% of the samples
Rock Mass	$\geq 80\%$ of the samples

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Table B4. Grading Limits of Materials for Replacement of Excavated Material

B.S. Sieve Size	% Passing by Weight
Crushed Rock or Gravel	
63.0 mm	100
37.5 mm	85 – 100
20.0 mm	0 – 20
10.0 mm	0 – 5
Sand	
10.0 mm	100
5.0 mm	90 – 100
1.18 mm	45 – 80
300 µm	10 – 30
150 µm	2 – 10

Table B5. Frequency of Control Test for Earth Embankment

Type of Material	Frequency of Test
Fill/ Imported material	1 test per 1500m ³
Compacted material	1 test per 500m ²

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1. General

This section provides the generally applicable requirements for steel and metal for the construction of structures, building components and related works. All materials shall conform to the relevant Malaysian or British or European Standards.

2. Hot Rolled Structural Steelworks

2.1. All hot rolled structural steelworks design, materials, drawings, workmanship, protective treatment, fire protection, Quality Assurance and Quality Control shall be in accordance with the *Specification for Structural Steelworks No. JKR 20601-0191-12*.

2.2. Quality Assurance and Quality Control (QA & QC)

The Contractor shall submit a Quality Assurance and Quality Control programme as specified in the *Specification for Structural Steelworks* as in sub-section 2.1..

2.3. Drawings and Design Calculations

2.3.1. The Drawings to be submitted by the Contractor based on construction drawings are as follows:

- 2.3.1.1. Fabrication drawings;
 - Shop drawings;
 - Erection drawings;

2.3.1.2. As-built drawings.

2.3.2. In the event that the Contractor is required to provide the design, he shall prepare Drawings with details in accordance with *MS EN 1993* or other relevant standards. The Drawings and design calculations shall be certified by a Professional Engineer. He shall also prepare Drawings and arrangements of temporary steelworks for the different stages of construction in compliance with the requirements specified in the *Specification for Structural Steelworks* as in sub-section 2.1..

2.4. Records

2.4.1. The Contractor shall submit to the S.O., document and records which shall include but not limited to:

- 2.4.1.1. Drawings as in sub-section 2.3. and documentation register;
- 2.4.1.2. Mill certificates for materials and certification for consumables;
- 2.4.1.3. Calibration of equipment;
- 2.4.1.4. Weld procedures, concessions et cetera;
- 2.4.1.5. Inspection and laboratory test reports;
- 2.4.1.6. Delivery schedules and method statements for fabrication and installation;
- 2.4.1.7. Surveys and final inspection results.
- 2.4.1.8. Completion of erection and hand over certification.

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2.5. Installation of Long Span Steel Trusses

The S.O. shall ensure that the installation of long span trusses more than 20m clear span is in accordance to the checklist of requirement and condition in **Appendix J/1**.

3. Prefabricated Cold Formed Steel Roof Trusses

3.1. All prefabricated components shall be manufactured only by reputable licensed truss suppliers listed in *J-TRUSS system online (Application and Approval of Truss System Provider)* and approved by the S.O.. This supplier duly termed as 'System Provider' is responsible for the analysis, design, detailing, drawing, manufacture, material, handling and erection of the roof members, and their ancillary fixing components. The full requirement is outlined in the *Specification for Prefabricated Cold Formed Steel Roof Trusses (JKR 20601-0186-11)*.

3.2. System Provider

The System Provider (S.P) is a supplier of a proprietary roof truss system appointed by the Contractor and approved by the S.O, which employs Quality Assurance procedures in the design, detailing, connection, bracing, erection criteria and manufacture of truss components for the structural roof truss system.

3.3. Duties of Professional Engineer

3.3.1. The S.P. shall appoint a Professional Engineer (P.E.) whose duties shall include the followings:

3.3.1.1. Preparation of roof truss analysis and design;

3.3.1.2. Preparation of drawings;

3.3.1.3. Design changes in every stage of work;

3.3.1.4. Certification for completion of roof truss installation;

3.3.1.5. Final certification for roof truss installation prior to issuance of Certificate of Practical Completion for the whole Works to the Contractor.

3.4. Fabricator

All trusses shall only be assembled by licensed fabricators approved by the S.P. and registered with CIDB. A copy of CIDB registration certificate shall be submitted to the S.O. for verification.

3.5. Installer

All installation works shall be executed and supervised by qualified personnel with valid certificate issued by CIDB. The S.O. shall verify the identification and qualification of the installer prior to the installation.

3.6. General Truss Limitation

3.6.1. Prior to any prefabricated cold formed roof trusses works, the following general limitation shall be applied:

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- 3.6.1.1. Maximum unsupported truss span 13 m with permitted deviation of $\pm 0.05\text{m}$.
- 3.6.1.2. Maximum truss spacing of 1.2m with permitted deviation of $\pm 0.025\text{ m}$.
- 3.6.1.3. The minimum basic wind speed shall be 35m/s. However, the minimum basic wind speed shall be increased to 41m/s for lightweight roof covering.
- 3.6.1.4. Minimum base steel thickness for main truss member shall be:
 - a) 1mm for unsymmetrical section or open cross section;
 - b) 0.6mm for symmetrical machine-manufactured box or closed cross section.
- 3.6.1.5. Minimum base steel thickness for other truss element shall be:
 - a) 0.5mm for batten or purlin;
 - b) 1.2mm for wall plate;
 - c) 1mm for all bracings.

3.7. Analysis, Design Report and Drawings Submission

- 3.7.1. The S.P. through the Contractor shall propose to the S.O. for his approval a roof truss system which is safe, functional and conforming to design standard. Submission of proposal shall include truss analysis, design report, and construction drawings. The truss analysis shall indicate all loads, load combinations, connections criteria, bracings and tie-down of the truss. Design output of the truss members, battens, connections, tie-down and wall plates, anchors, bracings, truss accessories, splicing and stiffeners where related to the analysis shall be included in the design report. Refer to **Appendix 3** of *JKR 20601-0186-11*.
- 3.7.2. All details in the construction drawings shall be sufficient to enable checking against the analysis and design report, including specifying and providing the truss layout and configuration, steel grades, section properties of members, length of members in each truss configuration, properties of truss accessories, specification of corrosion protection, specification of fastener and anchor, tie-down and anchoring details and all types of connection details including the connection of all attachments to the trusses.
- 3.7.3. Technical specifications or mill certificates for base steel, fastener and anchor shall also be included in the submission. Verification test certificate from an approved accredited laboratory on the technical parameter specified in the technical specifications or mill certificates shall be submitted upon request by the S.O..

3.8. Warranty

- 3.8.1. When a prefabricated cold formed steel roof truss system is used, the Contractor shall submit to the S.O. a warranty from the S.P. with the following provisions:
 - 3.8.1.1. The products used are genuine and free from manufacturing defects;



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- 3.8.1.2. The prefabricated cold formed steel roof truss system is installed in accordance with the S.P.'s instructions, guidance and specifications that will deliver the specified level of performance;
- 3.8.1.3. The warranty certificate shall cover a period of ten (10) years from the date of Certificate of Practical Completion against any defect or failure due to the installation and workmanship by the S.P.'s registered panel installer.

4. Metal Frames for Doors and Windows

4.1. Steel Frames

- 4.1.1. The Contractor shall supply, assemble and fix steel frames for doors and windows as shown on the Drawings. The steel frames shall comply with *BS 6510*, and shall be from an approved source and shop-primed with two coats of red lead oxide or other approved rust resisting primer.
- 4.1.2. The steel frames shall be manufactured from sections rolled from good commercial grade galvanized mild steel in single sections, mechanically straightened with all corners pre-cut with a 45 degrees mitre joint giving a snug and accurate fit, fully electrically welded, and carefully ground and cleaned, or shall be mechanically jointed by an approved method.
- 4.1.3. All screws, nuts, bolts and washers shall be of stainless steel.
- 4.1.4. Steel frames shall be painted as specified in SECTION O: PAINTING.

4.2. Aluminium Frames

- 4.2.1. The Contractor shall supply, assemble and fix aluminium frames for doors and windows as shown on the Drawings. Unless otherwise specified, all aluminium frames for windows shall be fabricated from sections extruded from aluminium alloy conforming to *MS 832*. All aluminium frames for glass sliding doors shall be fabricated from sections extruded from aluminium alloy and in compliance with *MS 1017*.
- 4.2.2. Unless otherwise shown on the Drawings or described in the Bills of Quantities, aluminium surfaces shall be natural anodised finish, free from alloy defects, dye marks, scratches and other surface blemishes in accordance with *BS 3987* with an anodic coating of 15µ minimum thickness complying with *BS EN 12373-1*.
- 4.2.3. All coloured anodized finish to aluminium exposed surfaces shall be subject to the S.O.'s approval.
- 4.2.4. All aluminium extrusion or sheet exposed surfaces after anodizing and after colouring, if required by the S.O., shall be sealed, and the adequacy of the sealing shall be given special emphasis.
- 4.2.5. All fasteners such as bolts and screws shall be of stainless steel type A2-70 (minimum) in compliance with *ISO 3506* or other suitable materials as specified in the Drawings. Rivets shall be stainless steel or aluminium alloy appropriate to the applications.

- 4.2.6. Extruded aluminium framing members shall be fabricated from designated alloys complying with *MS 2289*. Ancillary members such as sills, couplings and the like formed from sheet materials, they shall be fabricated from designated alloys complying with *MS 2040*.
- 4.2.7. Where friction stays and hinges are fastened onto the framing section, the portion that receives the fastener shall not be less than 2.5mm thick.
- 4.3. Frames for Adjustable Louvre Windows
- 4.3.1. The Contractor shall supply, assemble and fix frames for adjustable louver windows as shown on the Drawings in compliance with *MS 1057*.
- 4.3.2. Unless otherwise specified, the frames shall be of approved manufacture. The frames shall be supplied complete with weather seal and non-ferrous bearings, spring clips, locking device and weather stripping with all necessary spacing pieces. The frames, coupling mullions and spacer brackets shall be minimum 1.2mm thick (18 SWG) or otherwise specified cold-rolled steel strip galvanised with hot-dipped process. Unless otherwise specified on the Drawings, the clips and pivots to receive the louvres shall be of durable nylon material and sample submitted shall be to S.O.'s approval.
- 4.3.3. The operating rods shall be 2.13mm thick (14 SWG). The handle and lock shall be 2.642mm thick (12 SWG) steel.
- 4.3.4. Unless otherwise specified, the finish shall be anodized coating of 15 μ (average) minimum complying with *BS EN 12373-1*.
- 4.4. Accessories
- 4.4.1. Accessories for each steel or aluminium frame for doors and windows shall be supplied complete with:
- 4.4.1.1. Sufficient number of built-in stainless steel hinges as per Schedule of Ironmongery under SECTION H: TIMBER, JOINERY AND IRONMONGERY;
- 4.4.1.2. Two (2) rubber buffers per closing jamb, to reduce noise and vibration;
- 4.4.1.3. Welded mortar guard; Adjustable stainless steel striker plate with a gently curved lead-in edge; Removable spreader bars, to ensure a perfect square during transportation and installation; and
- 4.4.1.4. Minimum of eight (8) pieces of 4mm brick ties, to ensure a tight permanent fit.
- 4.5. Samples
- Samples of steel or aluminium sections with complete accessories for the doors and windows, together with complete set of shop drawings of all works shall be submitted to the S.O.'s for approval prior to the commencement of any work.

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4.6. Installation

- 4.6.1. Unless otherwise specified or shown on the Drawings, all types of window and door frames shall be fixed or installed using the sub-frame method in accordance with the manufacturer's recommendation and to the S.O.'s approval.
- 4.6.2. All joints on the window and door frames shall be sealed using polyurethane (PU) type joint sealant.
- 4.6.3. Where buildings are located near to the coastal area, the bolts, nuts and screws used shall be of stainless steel unless otherwise specified.
- 4.6.4. Unless otherwise specified in the Drawings, the adjustable louvre side frames shall fix to the aluminium frames and shall be installed using the sub-frame method in accordance with the manufacturer's recommendation and to the S.O.'s approval.

5. Collapsible Gates, Roller Shutters and Et Cetera

The Contractor shall provide and fix approved collapsible steel gates, folding shutters, roller shutters and et cetera complete with all necessary accessories as approved by the S.O. to the sizes and positions as shown on the Drawings. Unless otherwise specified in the Drawings, they shall be galvanised and fixed in accordance with the manufacturer's instructions.

6. Sundries

- 6.1. Unless otherwise specified in the Drawings, mild steel shall be used for balustrades to staircases, verandahs, balconies, et cetera and shall be fixed as shown on the Drawings.
- 6.2. All iron and steel for the sundries shall be of the quality approved by the S.O.. Screws and bolts shall have washers where appropriate. Hooks for carrying ceiling fans shall be formed from 13mm diameter mild steel rods bolted to timber ceiling members or ragged into concrete.
- 6.3. Welded mesh, expanded metal, aluminium sheets et cetera shall be provided and fixed as shown on the Drawings.
- 6.4. Mild steel grilles, drain cover gratings shall be provided and fixed as shown on the Drawings. Unless otherwise stated, all steelworks shall be joined by continuous welding.
- 6.5. Ant caps shall be of 16 gauge galvanised iron sheets formed to shape as shown on the Drawing. The caps shall be fixed between concrete stumps/brick piers or walls and timber posts or plates as required. The caps shall project 60mm and inclined at 45° from the surface.

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APPENDIX J/1

CHECKLIST
FOR THE INSTALLATION OF LONG SPAN STEEL TRUSSES
 (For Trusses exceeding 20m in Clear Span)

This checklist is to provide assistance to the S.O./Supervising Engineer prior to the commencement of any installation of long span steel roof trusses. Please tick and indicate whether all the items / conditions have been adhered fully.

No	ITEM	Compliance (√)
A	DOCUMENTATIONS	
A1	Approved Structural Drawings by the Designer	
A1.1	For JKR's in house design, the drawings must be approved and signed by the HODT.	
A1.2	For design by Consultants, all drawings must be approved and endorsed by the submitting Professional Engineer.	
A2	Shop drawings for erection purposes <i>issued</i> by the Steel Installer	
A2.1	The Professional Engineer (PE) appointed by the Steel Installer must ensure that, these shop drawings are in accordance to the design and any assumptions made for the design. Any additional joints/splicing and any other deviations required for the purpose of erections must be accompanied by the calculations and approved by this Professional Engineer.	
A2.2	Quality Assurance documentations for the fabrication of steel members must be approved by the PE appointed by the Steel Installer.	
A2.3	Competency certification from approved establishment for all erection supervisors and installers.	

B.	METHODOLOGY	
B1	The Contractor shall prepare and submit the Method Statement to the S.O. for approval at least three (3) weeks prior to the erection commencement. A copy of the Method Statement must be submitted to the Designer's office for verification.	
B2	The Method Statement with the concurrence of the Designer shall be approved by the S.O.. (Item 12.4, Section A, <i>Standard Specification of Building Works, 2014</i>)	
B3	The Method Statement shall among others include the following:	
B3.1	Pre-erection survey and formal acceptance of site	
B3.2	Phased component delivery (if any)	
B3.3	Safety and environmental controls	
B3.4	Operative certification	
B3.5	Plant and equipment certification	
B3.6	Detailed Sequencing of Installation, and showing the movements of any plant/machinery required for the installation. The installation sequencing must be divided into several major/critical stages for the purpose of verification.	
B3.7	Quality Assurance documentations required for the installation	
B4	Erection must adhere fully to the Method Statement. Each stages of erection must be verified and approved by the Supervising Engineer or the S.O..	

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C.	SAFETY	
C1	All internal or external temporary bracings required for the installation must be designed and approved by the P.E. appointed by the Steel Installer.	
C2	All temporary bracings must be shown in the Shop Drawings.	
C3	The Contractor shall prepare plan showing width and level of access, level of prepared working area for site traffic and plant movements, and areas available for temporary storage.	
C4	Unless required and approved by the S.O. otherwise, all welding works shall to be done at ground level.	
D	CERTIFICATION OF COMPLETION	
D1	The Contractor shall certify that he/she has made all the necessary inspections to ensure all steelworks and the corresponding connections has been erected and constructed in accordance with the work's drawings, specification and contract requirements.	

Saya telah menyemak dan bersetuju

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(Cop & Tandatangan oleh S.O./Wakil S.O.)

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1. General

- 1.1. All paints to be used shall be those supplied by approved manufacturers. The quality of paints shall comply with MS 125 in respect of oil/enamel paints and MS 134 in respect of emulsion paints/acrylic paint.
- 1.2. Prior to commencing painting work, the Contractor shall submit the following to the S.O.:
 - 1.2.1. Name of the paint manufacturer and the manufacturer's certification that the paint conform to the relevant standard as specified in sub-section 1.1 hereof together with the proof that such certification have been verified by tests carried out by SIRIM or ISO in the last three (3) years.
 - 1.2.2. The performance warranty by the manufacturer to the Government on the performance of the paint against any peeling, cracking, fungus/ algae growth and discoloration which may arise during a period of five (5) years or more from the date of practical completion due to insufficiency in material or workmanship. The terms of the performance warranty shall be as stipulated in APPENDIX O/1 and as approved by the S.O..
 - 1.2.3. Name of the painting applicator as approved by the paint manufacturer including written evidence of the current approval.
 - 1.2.4. A copy of the method statement including procedure for the painting works in accordance with these specification and manufacturer's instructions.
- 1.3. All paints shall be delivered to the Site in the manufacturer's original sealed containers unopened and shall be used strictly in accordance with the manufacturer's instructions.
- 1.4. Paints shall not be adulterated and any paint that has deteriorated shall not be used and shall be removed from the Site forthwith.
- 1.5. Unless otherwise specified in the Drawings, the types of paints to be used for the work on exposed surfaces shall be as stated in the 'Schedule of Paint Finish' attached hereinafter.
- 1.6. The colours and tints of paints shall be selected by the S.O. and the priming, undercoats and finishing coats shall be of approved differing tints and shall be obtained from the same manufacturer.
- 1.7. No painting shall be done under conditions which may jeopardize the quality of finish paintwork.
- 1.8. During painting, care shall be taken to prevent stain or damage to other works.
- 1.9. Surfaces to be painted shall be dry, free from dirt, oil, grease, old loose paint and other deleterious matter. All cracks shall be raked out and stopped and all holes and dents shall be filled.
- 1.10. Unless otherwise specified in the manufacturer's instructions, each coat of paint applied on timber or metal surfaces shall be allowed to dry and subsequently rubbed down lightly with sandpaper before the next coat is applied. Any dirt or dust shall be removed from preceding coats immediately before proceeding with application of the next coat.



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- 1.11. All priming to shop fabricated components shall be done at shop.
- 1.12. All prime surfaces shall be inspected and approved by the S.O. before commencement of painting works.
- 1.13. Finish surfaces shall be uniform in finish and colour and be free from brush marks or other defects.
- 1.14. Sample areas showing all tints of paints to be used shall be prepared by the Contractor as and when required by the S.O..

2. Painting to Timber Work

2.1. Painting to New Timber Work

- 2.1.1. Unless otherwise as shown on the Drawings, all exposed wood surfaces of timber shall be painted as specified hereinafter.
- 2.1.2. Before painting to new timber work, all knots shall be covered with knotting and all nail holes, cracks, et cetera shall be stopped with white lead and putty (1:3) and shall be primed with aluminium wood primer well brushed in.
- 2.1.3. Unless otherwise specified, the prepared surface shall be painted with one undercoat (alkyd undercoat) and shall be finished with two coats of premium semi-gloss fungus resisting alkyd paint or three (3) coats UV protection, low odour alkyd wood finish.
- 2.1.4. Timber decks shall be applied with three coats of scratch resistant, UV protection, fast drying urethane alkyd wood finish. Each preceding coat shall be allowed to dry thoroughly and rubbed down lightly with fine sand paper and thoroughly cleaned before applying the next coat.
- 2.1.5. All timber surfaces abutting concrete or brickwork shall be primed before fixing or assembling.
- 2.1.6. All ironmongeries except hinges shall be removed before painting begins and shall be carefully re-fixed.

2.2. Repainting Existing Timber Work

Where repainting to existing timber work is specified, the following procedure shall be adhered to. If the surface is intact, it shall be rubbed down with fine sand paper to the approval of the S.O.. Then one coat of undercoat shall be applied followed by two (2) coats of gloss enamel paint unless otherwise specified. Where cracking and flaking have occurred, the entire existing paint shall be removed by burning off or by use of paint remover as approved by the S.O.. The surfaces shall then be thoroughly cleaned and shall be applied with minimum one coat aluminium wood primer followed by one (1) undercoat and unless otherwise specified in the Drawings, shall be finished with two (2) coats of gloss enamel paint.

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3. Painting to Metal Work

3.1. Painting New Steel and Ironwork

The areas to be painted shall be cleaned down and be free from rust, scale, oil, grease, dirt and dust. One (1) coat of approved metallic primer shall be applied followed by one (1) coat of premium alkyd undercoat unless specified and shall be finished with two (2) finishing coats of gloss/semi-gloss fungus resisting alkyd paint.

Soil and vent pipes shall be primed as above and given two (2) coats of approved bituminous paint.

3.2. Repainting Existing Steel and Ironwork

3.2.1. Where repainting to existing steel or ironwork is stated in the Drawings, the following procedure shall be adhered to. Where a firm surface exists, it shall be scuffed with fine sand paper to the approval of the S.O. and spot primed if necessary, before the application of by one (1) coat of premium alkyd undercoat unless specified and shall be finished with two (2) finishing coats of gloss/semi-gloss fungus resisting alkyd or gloss enamel paint.

3.2.2. If the old paint is in a bad, deteriorated condition the whole paint shall be removed by the use of approved paint remover or by scraping as approved by the S.O.. The surface shall be thoroughly cleaned and shall be applied with one coat approved metallic primer, by one (1) coat of premium alkyd undercoat unless specified and shall be finished with two (2) finishing coats of gloss/semi-gloss fungus resisting alkyd or gloss enamel paint.

3.3. Painting New Galvanized Ironwork

Where painting to new galvanized ironwork is specified, the surfaces shall be applied with one coat of approved self-etching quick drying metallic primer unless otherwise specified and shall be finished with two finishing coats of gloss/semi-gloss fungus resisting alkyd paint or gloss enamel paint.

3.4. Repainting Existing Galvanized Ironwork

3.4.1. Where repainting to existing galvanized ironwork is specified, the following procedure shall be adhered to. If the surface is not corroded, it shall be slightly sanded and all dirt's, oil, and grease removed by washing with an approved solvent and applied with one (1) coat of approved metallic primer unless otherwise specified, shall be finished with two (2) finishing coats of gloss/semi-gloss fungus resisting alkyd paint or gloss enamel paint. If the surface has corroded, the whole paint shall be removed by the use of approved paint remover or by scraping as approved by S.O..

3.4.2. When the surface is completely clean, it shall be applied with one coat approved metallic primer, unless otherwise specified, shall be finished with two finishing coats of gloss/semi-gloss fungus resisting alkyd paint or gloss enamel paint.

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4. Painting to Masonry Work

4.1. Painting New Plastered/Masonry Surfaces

- 4.1.1. The new plastered or masonry surfaces shall be allowed to dry completely and shall be cleaned down to remove dust, dirt, plaster splashes, and the like. In case of old unpainted walls, all fungus, mosses, lichens and vegetative growth shall also be removed.
- 4.1.2. The cleaned surfaces of the external walls shall be applied with one coat of approved alkaline resisting primer and unless otherwise specified in the Drawings, followed with two (2) coats of ultra-violet (UV) weather resistant emulsion paint.
- 4.1.3. The external wall surfaces shall be applied with one (1) coat of approved alkaline resisting primer, unless otherwise stated in the Drawings, followed with two (2) coats of 100% acrylic with heat reflective and UV protected, and temperature reduction weather resistant acrylic emulsion paint for Green Ratings Certification as approved by the S.O..
- 4.1.4. The internal wall surfaces shall be applied with one (1) coat of approved modified acrylic sealer, and unless otherwise as shown on the Drawings, followed with two (2) coats of low VOC acrylic paint.

4.2. Repainting Existing Plastered or Masonry Surfaces

- 4.2.1. Where repainting to existing plastered or the masonry surface is specified, the following procedure shall be adhered to. All existing paint shall be removed by scraping and the surface shall be washed with high pressure water jet (for Non-Conservation Projects). All cracks and other imperfections shall be made good and the surface should be allowed to dry completely.
- 4.2.2. The surface shall then be applied with two (2) coats of any other type of water base emulsion paint as described hereinbefore for Painting New Plastered/Masonry Surfaces and as approved by the S.O..
- 4.2.3. However, for buildings which fall under heritage status, repainting works shall refer to *Garis panduan Pemuliharaan Bangunan Warisan 2016* (or latest version).

4.3. Textured Wall

- 4.3.1. Natural Spray Granite textured wall shall be applied with one (1) coat of approved alkaline resisting acrylic primer, unless otherwise stated in the Drawings, followed with two (2) layers natural fine stone and ceramic chips texture with high build acrylic resin and two (2) clear finish coats.
- 4.3.2. Spray Tile textured wall shall be applied with one (1) coat of approved alkaline resisting acrylic primer, unless otherwise specified in the Drawings, followed with one (1) coat of spray tiles texture and two (2) coats of pure acrylic based premium weather paint.

5. Treatment to Fair Face Surfaces

Surfaces that are to be left bare such as fair-face brickwork, fair-face concrete or stones and the like shall be thoroughly clean, dry and free from grease, dust and loose or flaking

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materials. The surfaces shall then be treated with an approved colourless silicon-based water repellent liquid applied in accordance with the manufacturer's instructions. The solution shall be applied in two (2) coats over the entire area and crevices by brushing.

6. Epoxy Coatings

Epoxy coatings shall be applied with one (1) coat of approved penetrative epoxy sealer, followed with two (2) coats epoxy topcoat.

7. Silicone Paint

Silicone paint for external walls and ceiling shall be applied with one (1) coat of Pigmented Water Base Penetration Water Repellent and two (2) finishing coats of Breathable Silicone Paint of approved colour applied strictly in accordance with manufacturer's instruction.

8. Painting on Floor Surfaces

- 8.1. Painting on concrete drive way shall be applied with one (1) coat of floor primer at 100 µm DFT, followed by one (1) coat of floor glass flake at 300 µm DFT or floor non-slip aggregate (fine/medium) and followed with two (2) coats of floor polyurethane (PU) topcoat at 50 µm DFT per coat.
- 8.2. Painting on car park parking bay floors shall be applied with one (1) coat of floor primer at 100 µm DFT, then followed with two (2) coats of floor polyurethane (PU) topcoat at 50 µm DFT per coat.
- 8.3. Painting on TNB sub-station internal floors shall be applied with one (1) coat of approved two-pack epoxy sealer, followed with two (2) coats of two pack epoxy floor coating at 50 µm DFT per coat, unless otherwise stated in the drawings.

9. Painting to Timber-based Products

9.1. Chipboard Surfaces

- 9.1.1. Before painting, all nail holes, crevices and the like shall be stopped with white lead and putty (1:3). The surface shall then be smoothened by rubbing down with fine sand paper and finally cleaned to remove dust. Where the board is to be finished with enamel paint, one (1) undercoat and two (2) finishing coats of gloss enamel paint shall be applied. If the board is to be finished with emulsion paint, one (1) undercoat and two (2) coats of emulsion paint shall be applied.
- 9.1.2. Where repainting to existing enamel paint finished chipboard is required, the following procedure shall be adhered to. If the paintwork is still intact, it shall be rubbed down with fine sand paper to the approval of the S.O.. Then one (1) coat of undercoat shall be applied followed by one (1) coat of gloss enamel paint.
- 9.1.3. Where cracking and flaking has occurred, the entire existing paint shall be removed by burning off, as approved by the S.O.. The surfaces shall then thoroughly clean and shall be applied with one (1) undercoat and finished with two (2) coats of gloss enamel paint.



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9.1.4. Where repainting to existing emulsion paint finished chipboard is required, the surface shall then be thoroughly cleaned and applied with two (2) coats of emulsion paint.

9.2. Hardboard Surfaces

Before painting to hardboard, all nail holes, crevices and the like shall be filled with approved putty. The surface shall then be applied with one (1) undercoat and two (2) coats of emulsion paint unless otherwise specified.

9.3. Wood Cement Board Surfaces

Before painting to wood cement board, all nail holes, crevices and the like shall be filled with approved filling compound of alkali resistant type. The surface shall then be lightly sanded, and any dust should be removed from the surface with a piece of clean, coarse cloth. The surface shall then be applied with one (1) undercoat and two (2) coats of emulsion paint unless otherwise specified.

10. Painting to Gypsum Board and The Like

10.1. Before painting the surfaces shall be clean and free from dirt. The surfaces shall then be applied with one (1) undercoat and two (2) coats of emulsion paint. Similar procedure shall be followed where repainting to existing painted surfaces is required.

11. Painting to Laboratory Bench Tops

11.1. Timber tops of benches in laboratories that are required to be painted shall be prepared as described hereinbefore for timber work. The surfaces shall then be applied with one (1) coat aluminum wood primer followed by one (1) coat approved chemical resistant primer and finished with two (2) coats of approved chemical resistant gloss enamel paint in accordance with manufacturer's instructions.

11.2. Where repainting to existing timber tops laboratory benches is required, the surfaces shall be rubbed down lightly with fine sand paper. The surfaces shall then be thoroughly cleaned and shall be applied with one (1) coat of approved chemical resistant primer followed by one (1) coat of approved chemical resistant gloss enamel paint.

12. Varnishing

12.1. Varnishing to New Timberwork

12.1.1. The surfaces to be varnished shall be smoothened with fine sand paper and all crevices, holes and the like, if any, shall be filled with approved whiting. It shall be clean, dry, free from dust, dirt and wax before the application of varnish. Unless otherwise approved by the S.O., the surfaces shall be applied with three (3) coats of approved UV protection, low odour alkyd wood finish or varnishing mixture used strictly in accordance with the manufacturer's instructions.

12.1.2. Where non patented products are allowed to be used, the varnishing mixture shall consist of methylated spirit, shellac and approved stain



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forming the first coat followed by one (1) coat of an approved mixture consisting of thinner and lacquer. The mixtures shall be of uniform consistency throughout. Unless otherwise specified in the Drawings, the finish shall be gloss and as approved by the S.O..

12.1.3. Timber deck surfaces shall be applied with three (3) coats of approved scratch resistant, UV protection, fast drying low odour urethane alkyl wood finish.

12.2. Re-varnishing To Existing Timberwork

Where re-varnishing to timberwork is specified in the Drawings or described in the B.Q., the surface shall first be thoroughly scuffed to remove the existing varnish. The surface shall then be smoothed with fine sand paper, cleaned, dried and free from dust, dirt and wax. It shall then be varnished as described hereinbefore for new timberwork.

13. Painting Works for Buildings in Coastal Areas.

13.1. External walls shall be applied with one (1) coat of approved pliolite based alkaline resisting primer sealer, unless otherwise specified in the Drawings, followed with two (2) coats of elastomeric weather resistant paint of approved colour applied strictly in accordance to manufacturer's instruction.

13.2. Unless otherwise specified in the Drawings, the internal walls shall be applied with one (1) coat of approved water based alkaline resisting acrylic wall sealer, followed with two (2) coats of low volatile organic compounds (VOCs), alkylphenoethoxylate (APEO) free, formaldehyde free acrylic premium emulsion paint of approved colour applied strictly in accordance to manufacturer's instruction.

13.3. Mild steel shall be applied with one (1) coat of zinc rich epoxy, one (1) coat of surface tolerance epoxy mastic and followed with two (2) coats of polyurethane topcoat.

13.4. Galvanized steel shall be applied with one (1) coat of surface tolerance epoxy mastic and followed with two (2) coats of polyurethane topcoat.

13.5. Roofing sheet coatings for marine environment shall refer to SECTION G: ROOFING.

13.6. Coatings of fasteners used shall comply with AS 3566 Class 4 and be certified as such by the supplier of fasteners and as approved by the S.O..

14. Painting Works to Clinical Areas (Hygienic Areas)

14.1. All external walls shall be applied with one (1) coat of approved siloxane primer sealer, unless otherwise stated in the Drawings, followed with two (2) coats of silicone emulsion water repellent paint applied strictly in accordance to manufacturer's instruction.

14.2. Internal walls shall be applied with one (1) coat of approved ultra-low VOCs alkaline resisting primer sealer, followed with two (2) coats of anti-bacteria, anti-fungus, low VOCs, 100% APEO free, formaldehyde free acrylic premium emulsion paint.



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- 14.3. Internal walls (clinical areas) shall be applied with one (1) coat of approved ultra-low VOCs epoxy primer sealer, followed with two (2) coats of anti-bacteria, anti-fungus, low VOCs, 100% APEO free, formaldehyde free epoxy paint.
- 14.4. Internal walls (clinical areas with 24 Hours Air-Conditioning) shall be applied with one (1) coat of approved ultra-low VOCs acrylic water-based primer sealer, followed with two (2) coats of anti-bacteria, anti-fungus, low VOCs, 100% APEO free, formaldehyde free Polyurethane paint.
- 14.5. Painting to Health Facility (Ministry of Health) Buildings shall also adhere to *Garis Panduan Skema Warna Luaran Bangunan Fasiliti Kesihatan KKM*.

15. Completion of Painting Works

On completion of paintwork, all paint marks inadvertently left on glass, floors, tiles and other surfaces shall be removed. Any stain or marking on finished paintwork shall be removed and touched up to the approval of the S.O..

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APPENDIX O/1

PAINT PERFORMANCE WARRANTY (SPECIMEN)

1. Coverage of Performance Warranty

We the paint Manufacturer hereby warrants that for a period of **five (5) years** from the date of Practical Completion, the paint system shall not be affected by the following defects:

- (i) **Peeling**
This condition is manifested when the paint film peels away or detaches from the substrate.
- (ii) **Cracking**
This condition is manifested by any visible cracking on the paint film other than that caused by plastering cracks and structural defects.
- (iii) **Fungus/Algae Growth**
This condition is established when there is a growth of micro-organisms on the surface of the paint films which would result in the marring of the appearance of the paint film through discoloration.
- (iv) **Discoloration**
This condition occurs when the coating loses its original colour in patches and excessive discoloration appears.



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2. Procedure for Claims

- (i) Any defect claims shall be made in writing and delivered by post or by hand to the Manufacturer.
- (ii) A technical team from the Manufacturer will be dispatched to evaluate the nature of the claim. Should our findings conclude the defects as within the scope of warranty, then the Manufacturer shall make good such defects.
- (iii) Should the Manufacturer's technical team conclude that the defects falls outside the scope of the warranty, the Manufacturer shall not be held responsible for the claim.
- (iv) Should the Government disagree with the conclusion of the technical team pertaining to the defects in particular, then an independent third party competent in such technical evaluation shall be appointed to investigate the disputed defects.
- (v) The appointment of independent third party competent in such technical evaluation shall only be appointed upon the mutual agreement between the Government and the Manufacturer.
- (vi) The findings of the third party shall be conclusive and mutually accepted by the Government and the Manufacturer.
- (vii) If the findings of the independent third party are within the coverage of this performance warranty, all cost shall be borne by the Manufacturer or otherwise such cost shall be borne by the Contractor.
- (viii) All claims for the defects must be received by the Manufacturer not later than fourteen (14) days from the expiry of the warranty period.

MANUFACTURER

.....

Company Stamp

.....

.....

.....

Signature

Name:
Date:

WITNESS

.....

Company Stamp

.....

.....

.....

Signature

Name:
Date:

**REKOD PENGALAMAN KERJA
DALAM 5 TAHUN LEPAS –
BORANG D**

BORANG D – REKOD PENGALAMAN KERJA PENYEBUTHARGA

(Senarai semua kerja yang disiapkan dalam 5 tahun lepas +)

Bil.	Nama	Nilai Kontrak (RM)	Nilai Penyebutharga* Bertanggungjawab	Tempoh Kontrak **	Tarikh Milik Tapak	Tarikh Siap		Nama dan Alamat Penguasa/ Jurutera Perunding	Nama Alamat Majikan
						Kontrak	Sebenar		

+ Salinan Perakuan/Pengesahan Siap Kerja bagi setiap kerja yang disenaraikan hendaklah disertakan.
 * Hanya perlu diisi sekiranya penyebutharga melaksanakan kerja sebagai ahli syarikat gabungan.
 ** Tempoh kontrak hendaklah termasuk lanjutan masa yang diluluskan.

SENARAI KAKITANGAN TEKNIKAL - BORANG E

BORANG E – KAKITANGAN TEKNIKAL

(Butir-butir Kakitangan Teknikal Yang Ada Dalam Penggajian Penyebutarga Masa Kini)

*Nama dan No. K/P	Umur	Kelulusan Professional/ Pendidikan**	Tahun Kelulusan	Tarikh Diambil Bekerja	Jawatan yang Disandang/ Tugas semasa	Pengalaman Lepas (Jawatan disandang, Nama projek dan majikan dan tempoh Bekerja dan sebagainya)
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						

* Salinan Borang KWSP 'A' setiap pekerja bagi bulan caruman terakhir dan salinan perjanjian perkhidmatan ahli professional yang diambil khidmat secara kontrak hendaklah disertakan.

** Sila sertakan salinan Sijil Kelulusan atau Sijil Keahlian Badan-badan Professional

**SENARAI KEEMPUNYAAN LOJI
DAN PERALATAN UTAMA -
BORANG F**

BORANG F – KEEMPUNYAAN LOJI DAN PERALATAN PEMBINAAN UTAMA

(Senarai Loji dan Peralatan Pembinaan Utama kepunyaan penyebutharga yang sesuai yang boleh digunakan untuk projek)

Bil.	Butiran (Jenis, model, buatan dan keupayaan/ saiz)	Dimiliki, Disewa-beli Atau Disewapajak*	Bilangan Setiap satu	Nilai Semasa (RM)	Umur (dari tarikh belian asal)	Tempat simpanan/ digunakan sekarang	Catatan
A.	Loji dan Peralatan Asas **: i) Lorry / Tipper / Dumper / 4x4 ii) Sky lift						
B.	Loji dan Peralatan lain : i) Drill and Cutter ii) Welding Machine iii) Pneumatic Jackhammers						

* Salinan kad pendaftaran dan/ atau dokumen-dokumen lain bukti keempunyaan hakmilik penyebutharga atau perjanjian sewabeli/ sewapajak atas setiap Loji dan Peralatan yang disenaraikan hendaklah disertakan.

** Pegawai yang menyediakan Dokumen Sebutharga hendaklah menyenaraikan butiran-butiran Loji dan Peralatan Asas bagi projek berkenaan (tanpa bilangan AKM).

PRESTASI KERJA SEMASA
BORANG G

BORANG G - SENARAI KERJA/ KONTRAK SEMASA PENYEBUTHARGA

(Senarai semua kerja di dalam tangan/sedang berjalan dan belum siap termasuk kontrak yang baru diawadkan)

Bil	Nama Kontrak/Projek+	Nilai Kontrak (RM)	Nilai Penyebutharga* Bertanggungjawab	Tempoh Kontrak **	Tarikh Milik Tapak	Tarikh Siap Kontrak	Kemajuan Kerja+		Nama dan Alamat Jurutera Projek	Nama dan Alamat Majikan
							Ikut Jadual (%)	Sebenar Dicapai (%)		

* Hanya perlu diisi sekiranya penyebutharga melaksanakan kerja sebagai ahli syarikat gabungan
 ** Tempoh Kontrak hendaklah termasuk lanjutan masa yang diluluskan.

+ Peringatan Penting

Bagi setiap kerja semasa dalam tangan yang disenaraikan, penyebutharga wajib mengemukakan Laporan Penyelia Projek seperti format di Borang GA/GA1.

SULIT

BORANG GA – LAPORAN PENYELIA PROJEK ATAS PRESTASI KERJA (BUKAN PROJEK MSN) SEMASA PENYEBUTHARGA

(Borang ini hendaklah dilengkapkan oleh Penyelia Projek atau Pembantu Kanannya yang mengawasi projek dan diserahkan kepada Kontraktor dalam satu sampul berlakri untuk disertakan bersama-sama sebuttharganya)

Kepada: Pengarah.....
.....
.....
(u/p:.....)

Nama Kontraktor:
Nama Projek Yang Dilaksanakan

No. Kontrak :

Harga Kontrak (termasuk anggaran nilai kerja perubahan) : RM
Wang Kos Prima dan Peruntukan Sementara : RM
Nilai Kerja Pembina : RM

Tarikh Milik Tapak : Tempoh Kontrak: Minggu
Tarikh Penyiapan Asal :

Lanjutan Masa Yang Telah Diluluskan : hari

Lanjutan Masa Seterusnya:

Yang difikir/ dijangka layak diperakukan : hari
Atas Sebab-sebab : (i)
(ii)

Kemajuan Kerja (berdasarkan penilaian kerja yang telah dilaksanakan):

Pencapaian sebenar: % Mengikut Jadual: %
Tarikh Kerja dijangka akan dapat disiapkan:

Nilai Bahagian Kerja Yang Telah Siap : RM
Nilai Baki Kerja Yang Belum Siap : RM

Ulasan-ulasan mengenai Prestasi Kontraktor:

(Nyatakan apa-apa kepujian dan/ atau kelemahan kontraktor dan juga apa-apa tindakan/ perakuan yang diambil/ dipertimbang berhubung dengan prestasi Kontraktor melaksanakan Kontrak)

Tandatangan Penyelia Projek :

Nama :
Jawatan :

Tarikh:

SULIT

BORANG GA1 – LAPORAN JURUTERA PROJEK ATAS PRESTASI KERJA SEMASA PENYEBUTHARGA

(Borang ini hendaklah dilengkapi oleh Jurutera Projek atau Pembantu Kanannya yang mengawasi projek apabila diminta berbuat demikian oleh Pegawai Penilaian dan hendaklah dihantar segera dengan menggunakan mesin Fax/Email)

Kepada: Pengarah.....
.....
.....
(u/p:.....)

Nama Kontraktor:
Nama Projek Yang Dilaksanakan
.....

No. Kontrak :

Harga Kontrak (termasuk anggaran nilai kerja perubahan) : RM
Wang Kos Prima dan Peruntukan Sementara : RM
Nilai Kerja Pembina : RM

Tarikh Milik Tapak : Tempoh Kontrak: minggu
Tarikh Penyiapan Asal :

Lanjutan Masa Yang Telah Diluluskan : hari

Lanjutan Masa Seterusnya:

Yang difikir/ dijangka layak diperakukan : hari
Atas Sebab-sebab : (i)
(ii)

Kemajuan Kerja (berdasarkan penilaian kerja yang telah dilaksanakan):

Pencapaian sebenar: % Mengikut Jadual: %

Tarikh Kerja dijangka akan dapat disiapkan:

Nilai Bahagian Kerja Yang Telah Siap : RM

Nilai Baki Kerja Yang Belum Siap : RM

Ulasan-ulasan mengenai Prestasi Kontraktor:

(Nyatakan apa-apa kepujian dan/ atau kelemahan kontraktor dan juga apa-apa tindakan/ perakuan yang diambil/ dipertimbang berhubung dengan prestasi Kontraktor melaksanakan Kontrak)

Tandatangan Pegawai Penguasa/
Jurutera Projek/ Wakilnya :

Nama :
Jawatan :

Tarikh:

**SENARAI SUB-KONTRAKTOR
PAKAR - BORANG H**

BORANG H

SENARAI SUB KONTRAKTOR UNTUK KERJA PAKAR
(PEMBUAT / PEMBEKAL)

SUB KONTRAKTOR DAN PEMBEKAL YANG DINIATKAN UNTUK KONTAK INI			
Penyebutharga hendaklah menyenaraikan nama-nama sub-kontraktor yang dicadangkan.			
No.	Bidang Kerja dan Maklumat Am Kontraktor Pakar	Pendaftaran Dengan CIDB (Gred / Kategori / Pengkhususan)	Pendaftaran Dengan Lain-Lain Jabatan Berkaitan / MOF
1	Skop Pembekalan a) Jenis Skop : b) Nama Pembekal : c) Alamat Pembekal :		
2	Pembuat Pakar a) Jenis Skop Kerja : b) Nama Pembuat : c) Alamat Pembuat :		
3	d) Profit Produk : e) Profit Projek Dilaksanakan : f) Sample : (wajib dikemukakan bersama dengan dokumen sebutharga)		
3	Pengesahan daripada sub-kontraktor pakar. Kami dengan ini mengesahkan bahawa penyebutharga telah mendapat maklumat kos dan kaedah pembinaan produk kami dan kami bersetuju untuk melaksanakan kerja ini untuk pihak Kerajaan. (Tandatangan) Nama : _____ No. KP : _____ Jawatan : _____ Tarikh : _____ Cop Syarikat :		

Nota :

- 1 Sekiranya kontraktor gagal mengemukakan pengesahan daripada pembekal / pembuat pakar. Sebutharga kontraktor boleh tidak dipertimbangkan oleh Jawatankuasa berkaitan
- 2 Sekiranya sub-kontraktor pakar gagal untuk meyakinkan pihak Kerajaan tentang kualiti daya tahan dan pematuhan kepada syarat yang ditetapkan, kontraktor hendaklah bersetuju untuk menggunakan produk dan perkhidmatan sub-kontraktor pakar yang lain dengan tiada tambahan kos kepada kontrak

LIST OF SPECIALIST SUB-CONTRACTORS TO BE ENGAGED IN THIS PROJECT

NAME AND ADDRESS OF SUB- CONTRACTORS	REGISTRATION WITH CIDB / MOF (Submit copies of relevant registration)	TYPE OF WORK UNDERTAKEN	YEARS OF EXPERIENCE

LUKISAN



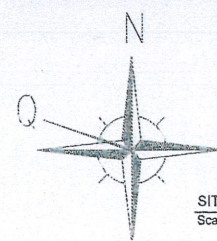
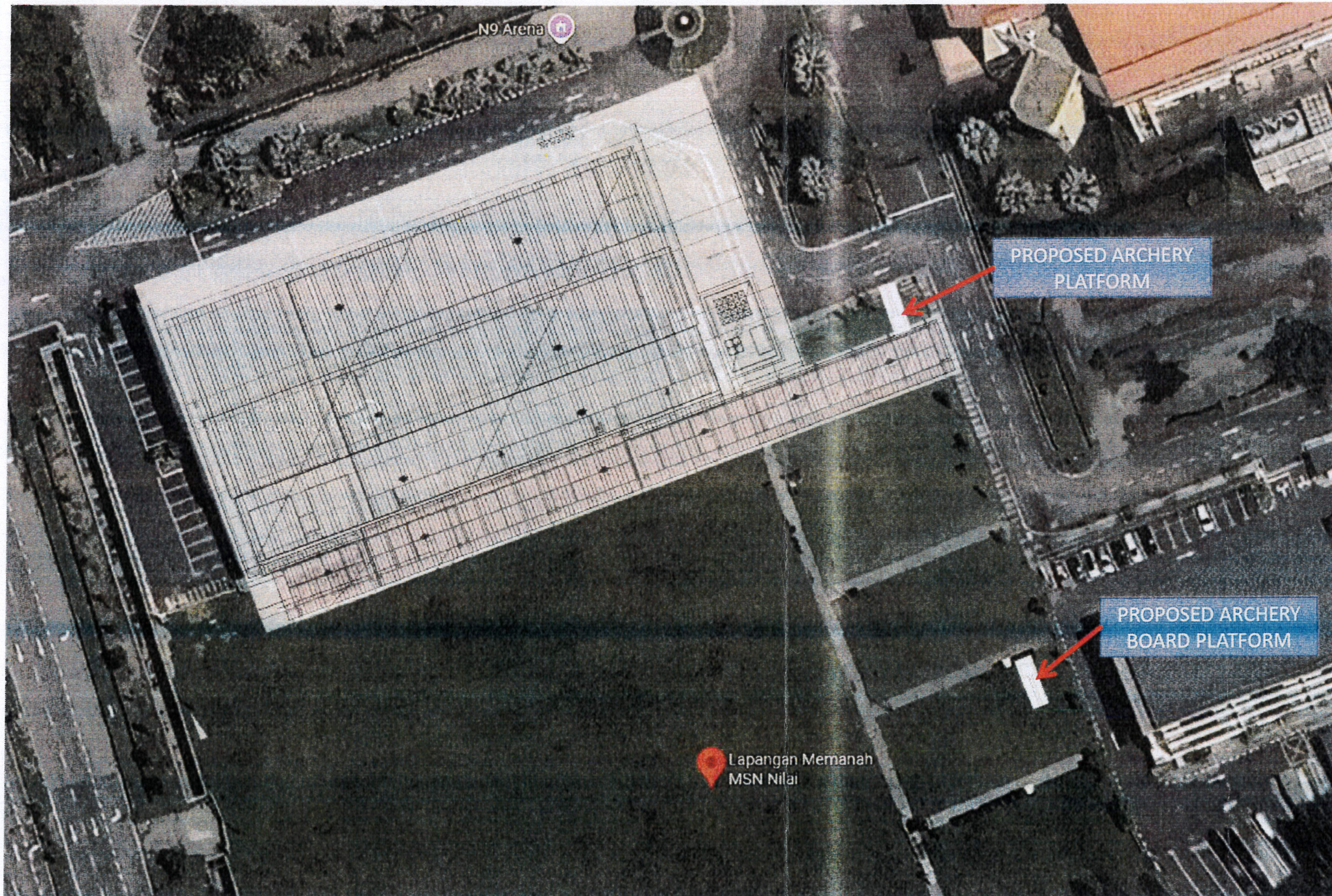
MAJLIS SUKAN NEGARA MALAYSIA

CADANGAN KERJA-KERJA MENAIKTARAF LALUAN BERBUMBUNG
BARU DI LAPANGAN MEMANAH MAJLIS SUKAN NEGARA NILAI,
NEGERI SEMBILAN
UNTUK :MAJLIS SUKAN NEGARA MALAYSIA

TENDER DRAWING

ARCHITECT

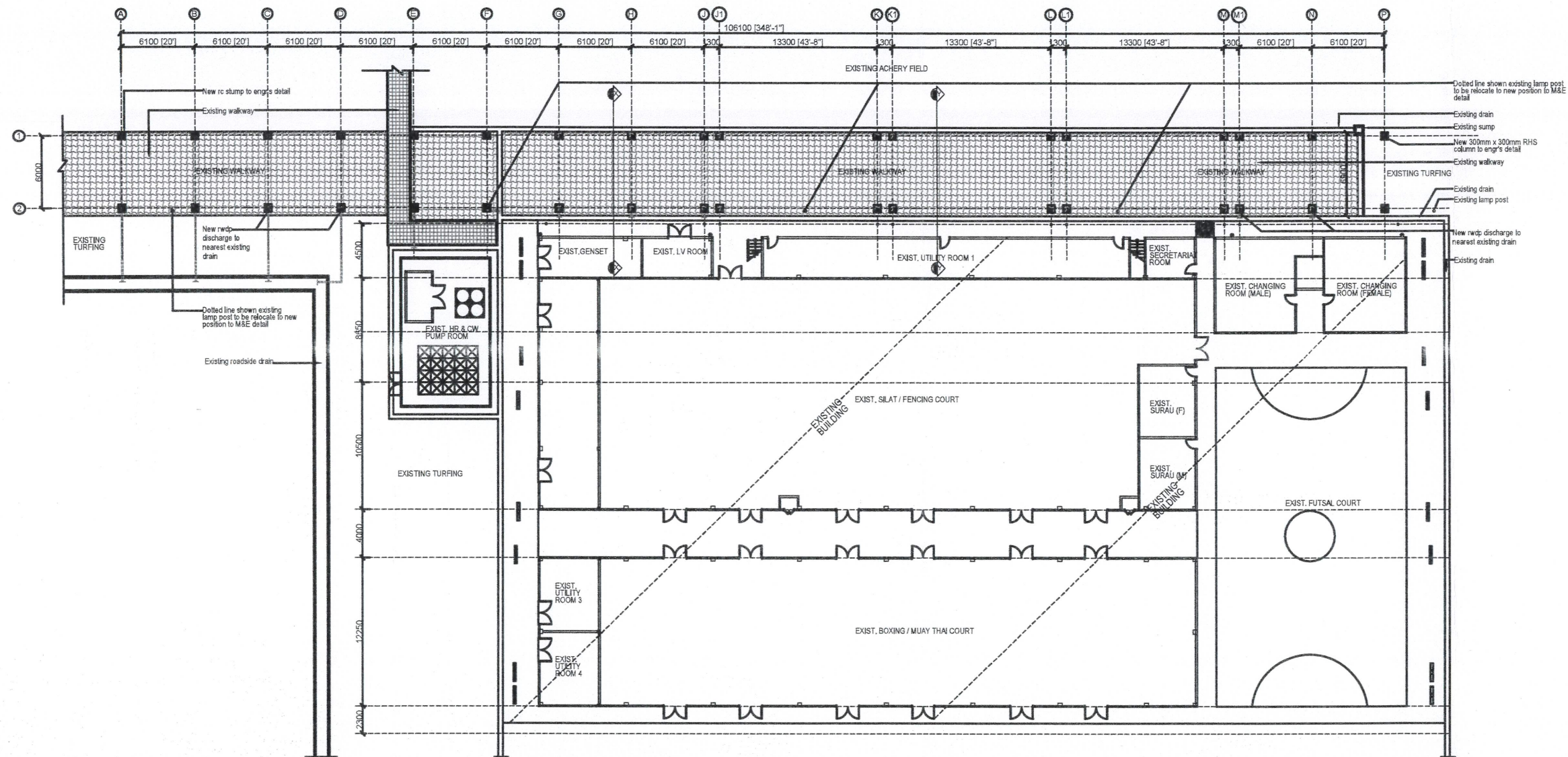
NO.	TITLE
01	GROUND FLOOR PLAN
02	ROOF PLAN, FRONT ELEVATION
03	SECTION X-X , SECTION Y-Y
01	SITE PLAN
02	PLAN, SECTION X-X , ELEVATION (VIEW A), ELEVATION (VIEW B)
03	PLAN, SECTION X-X , ELEVATION (VIEW A), ELEVATION (VIEW B)



SITE PLAN
Scale: NTS

THIS DRAWING IS FOR VISUAL INDICATION
LOCATION & DISTANCE PLATFORM OF ARCHERY
AND ARCHERY BOARD. THE LOCATION AND
DISTANCE WILL BE DETERMINED ON SITE

NOTA:			
TANDATANGAN PEMILIK:			
MAJLIS SUKAN NEGARA MALAYSIA Kompleks Sukan Bukit Jalil Seri Petaling 57000 Kuala Lumpur.			
ARKITEK:			
PERUNDING CAS:			
PERUNDING M&E:			
TAJUK PROJEK: CADANGAN MENAIKTARAF LALUAN BERBUMBUNG BARU DI LAPANGAN MEMANAH DI KOMPLEKS SUKAN MSN NILAI, NEGERI SEMBILAN. UNTUK : MAJLIS SUKAN NEGARA MALAYSIA			
TAJUK LUKISAN SITE PLAN			
DILUKIS OLEH	TARIKH	OGOS 2025	
DISEMAK OLEH			
DISAHAKAN OLEH			
SKALA	1:50	PINDAAN	
NO PROJEK	NO LUKISAN:		
FAIL CAD	01		
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GROUND FLOOR PLAN
SCALE 1 : 200
NEW BUILT UP AREA GROUND FLOOR : 318.30 sqm / 3426.15sqft

ALL NEW WORKS ARE SHOWN IN RED
ALL OMITTED WORKS ARE SHOWN IN BLUE

NOTA

TANDATANGAN PEMILIK :

MAJLIS SUKAN NEGARA MALAYSIA
Kompleks Sukan Bukit Jalil
Seri Petaling
57000 Kuala Lumpur.

ARKITEK :

PERUNDING C&S :

PERUNDING M&E :

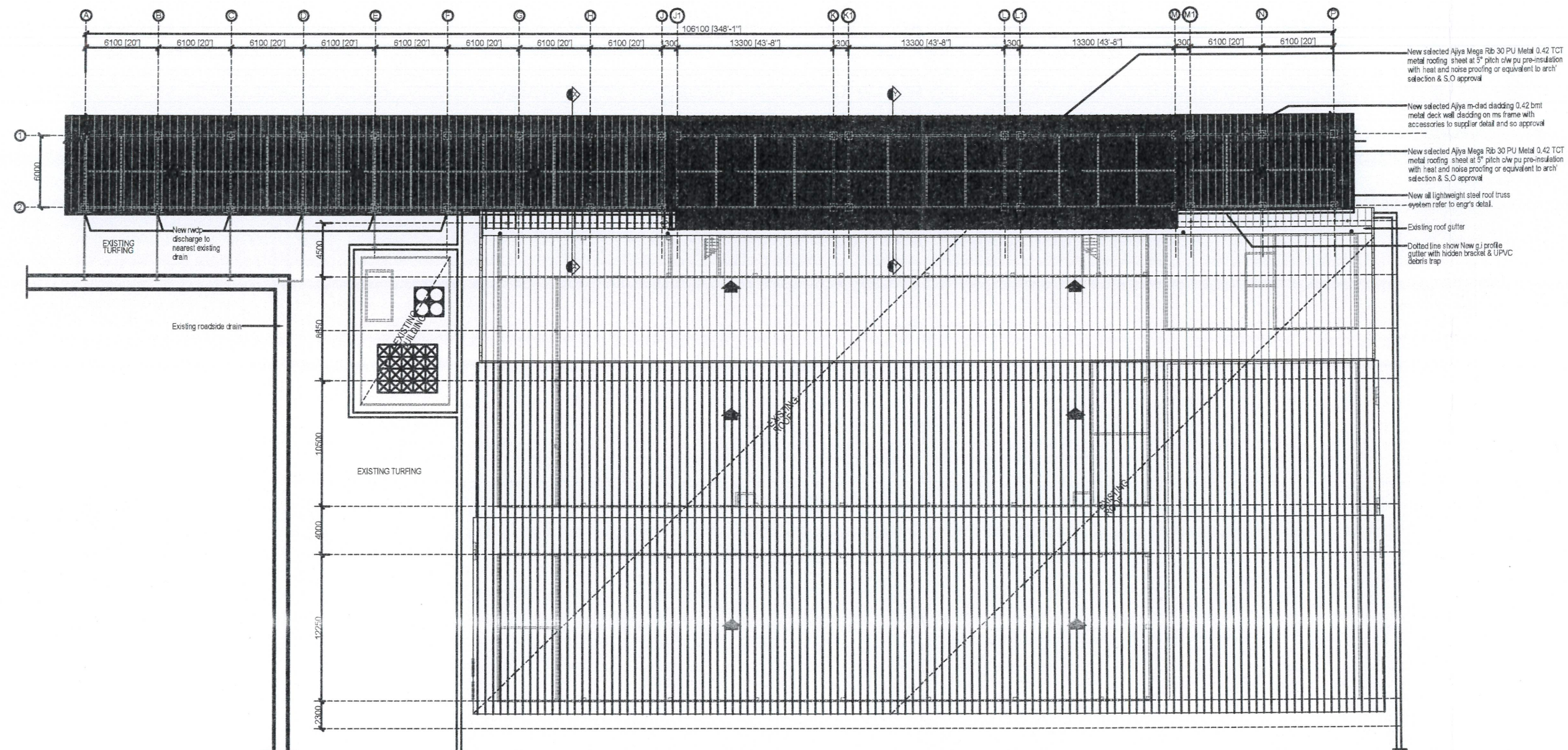
TAJUK PROJEK :
CADANGAN KERJA-KERJA MENAIKTARAF
LALUAN BERBUMBUNG BARU DI LAPANGAN
MEMANAH MAJLIS SUKAN NEGARA NILAI,
NEGERI SEMBILAN.

UNTUK : MAJLIS SUKAN NEGARA MALAYSIA

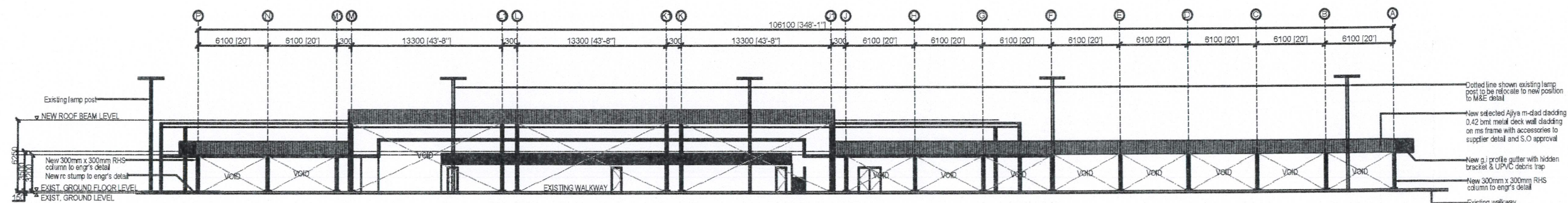
TAJUK LUKISAN
GROUND FLOOR PLAN

DILUKIS OLEH	TARIKH	0808 2025
DISEMAK OLEH		
DISAHKAN OLEH		
SKALA	1:200	PINDAAN
NO PROJEK		NO LUKISAN :
FAIL CAD		01

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MUST CHECK ALL DIMENSIONS ON SITE. ONLY FIGURED DIMENSIONS ARE TO BE
WORKED FROM. DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE
ARCHITECT BEFORE PROCEEDING.



ROOF PLAN
SCALE 1 : 200



FRONT ELEVATION
SCALE 1 : 200

ALL NEW WORKS ARE SHOWN IN RED
ALL OMITTED WORKS ARE SHOWN IN BLUE

NOTA :

TANDATANGAN PEMILIK :

MAJLIS SUKAN NEGARA MALAYSIA
Kompleks Sukan Bukit Jalil
Seri Petaling
57000 Kuala Lumpur.

ARKITEK :

PERUNDING C&S :

PERUNDING M&E :

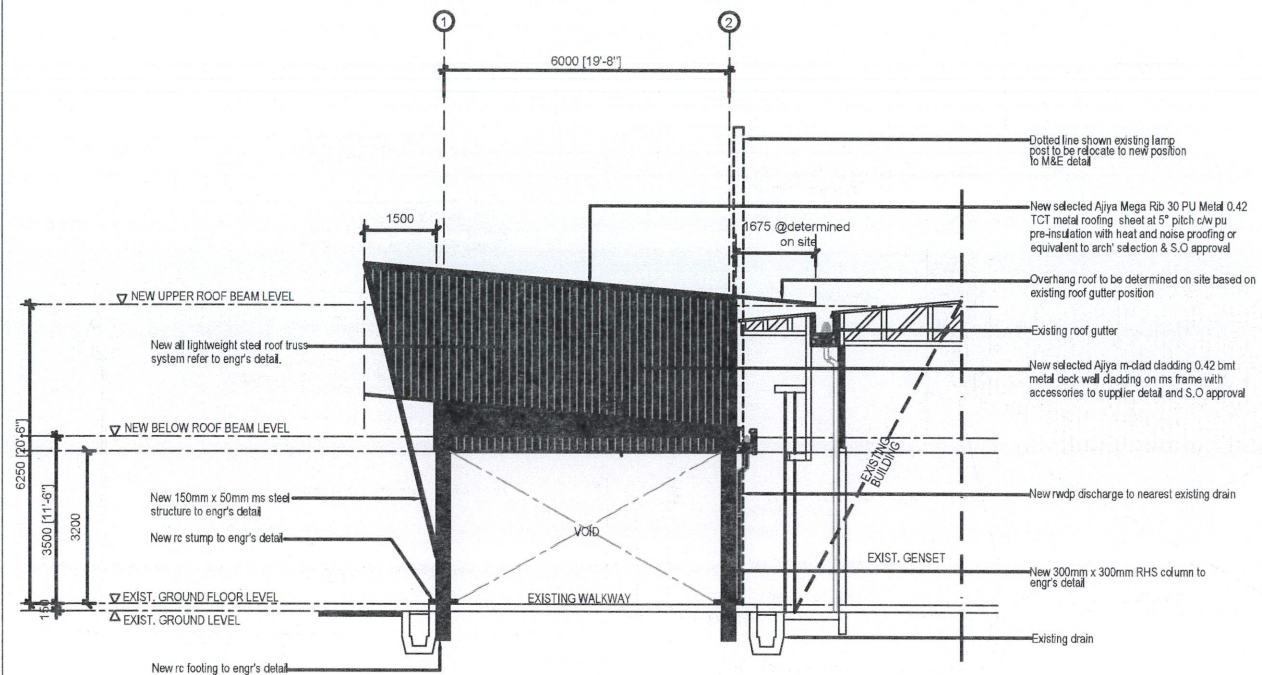
TAJUK PROJEK :
CADANGAN KERJA-KERJA MENAIKTARAF
LALUAN BERBUMBUNG BARU DI LAPANGAN
MEMANAH MAJLIS SUKAN NEGARA NILAI,
NEGERI SEMBILAN.

UNTUK : MAJLIS SUKAN NEGARA MALAYSIA

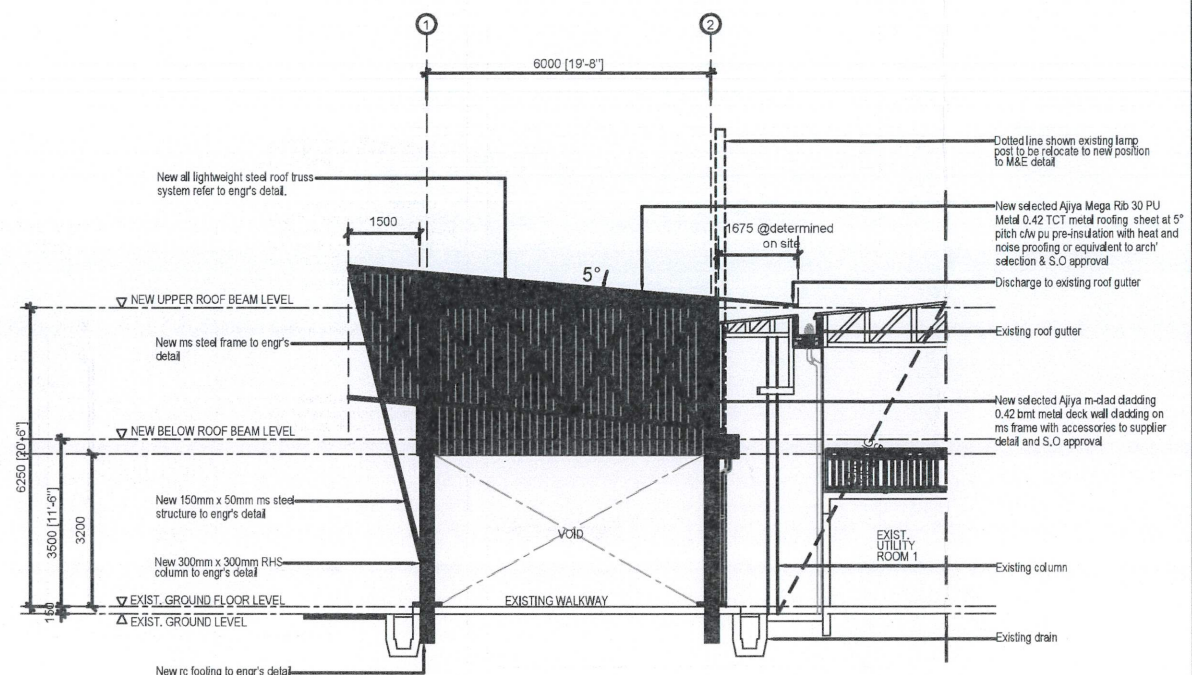
TAJUK LUKISAN
ROOF PLAN
FRONT ELEVATION

DILUKIS OLEH	TARIKH	CGOS 2023
DISEMAK OLEH		
DISAHKAN OLEH		
SKALA	1:200	PINDAAN
NO PROJEK		NO LUKISAN
FAIL CAD		02

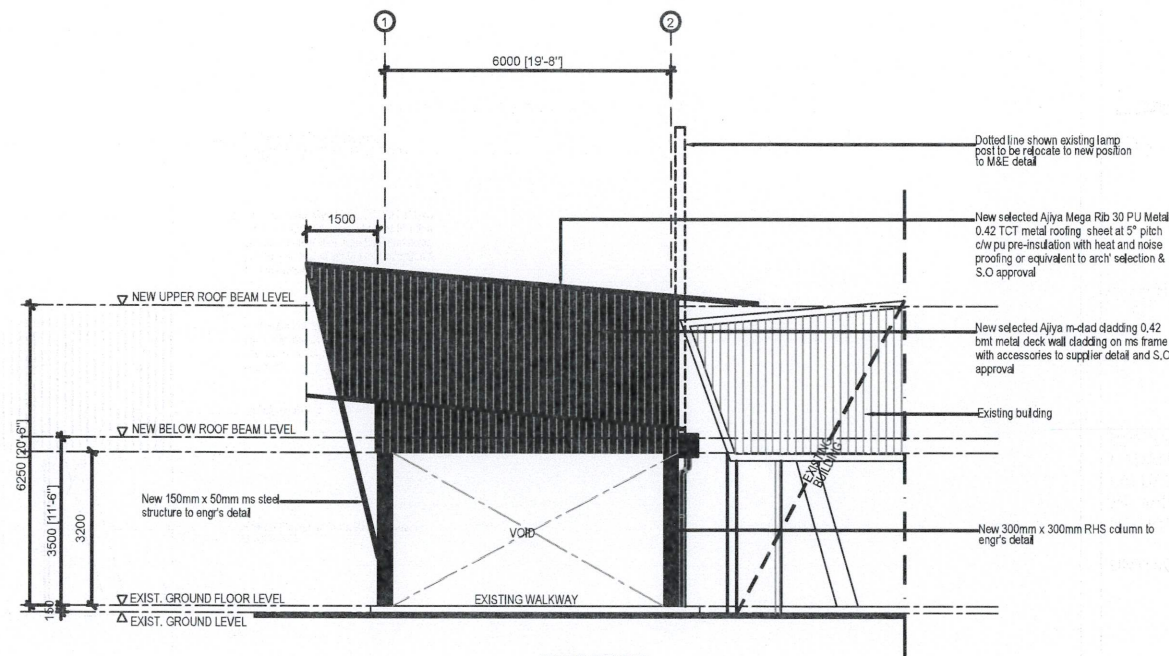
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SECTION X-X
SCALE 1 : 75



SECTION Y-Y
SCALE 1 : 75



SIDE ELEVATION
SCALE 1 : 75

ALL NEW WORKS ARE SHOWN IN RED
ALL OMITTED WORKS ARE SHOWN IN BLUE

NOTA :

TANDATANGAN PEMILIK :

MAJLIS SUKAN NEGARA MALAYSIA
Kompleks Sukan Bukit Jalil
Seri Petaling
57000 Kuala Lumpur.

ARKITEK :

"SAYA MEMPERNYAI BAHAWA BUTIRAN BUTIRAN DALAM PELAKSANAAN INI ADALAH MENURUT
KEPERLUAN KENDERAAN LINDUNG LINDUNG KECIL BANGUNAN, INI ADALAH SETULU TERMA TANGGUTAN
PELAKSANAAN BANGUNAN"

PERUNDING C&S :

PERUNDING M&E :

TAJUK PROJEK :

CADANGAN KERJA-KERJA MENAIKTARAF
LALUAN BERBUMBUNG BARU DI LAPANGAN
MEMANAH MAJLIS SUKAN NEGARA NILAI,
NEGERI SEMBILAN.

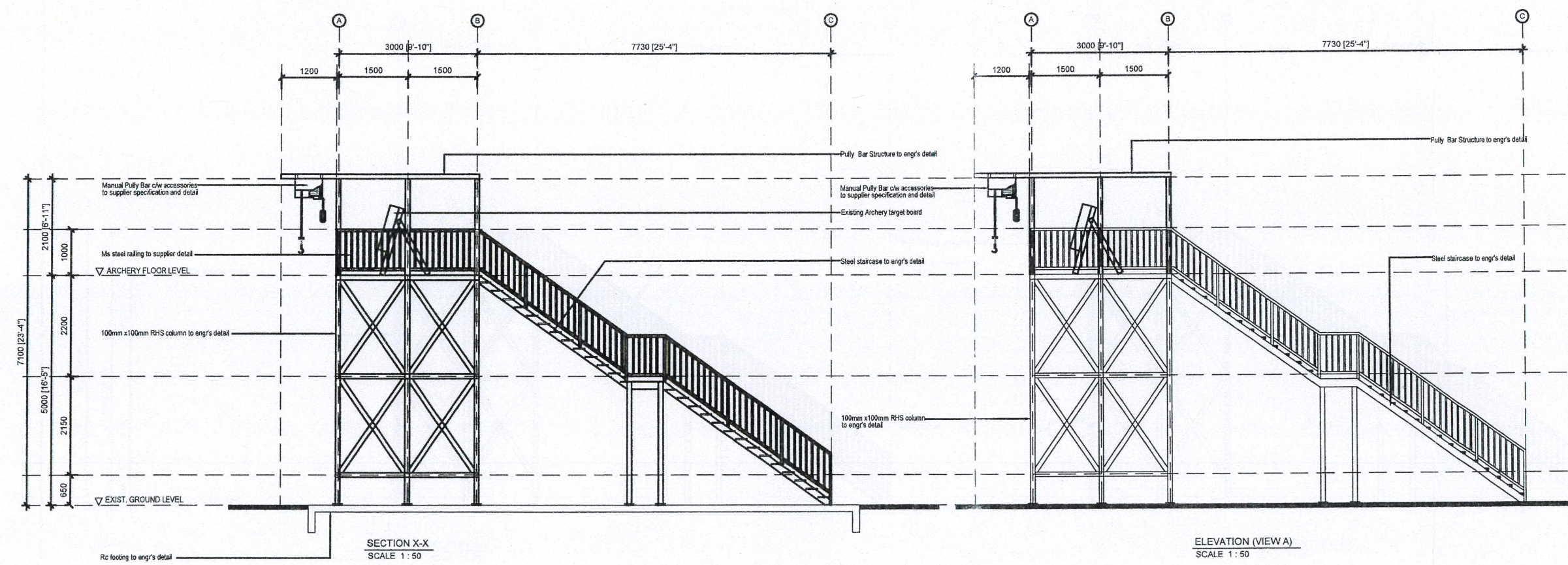
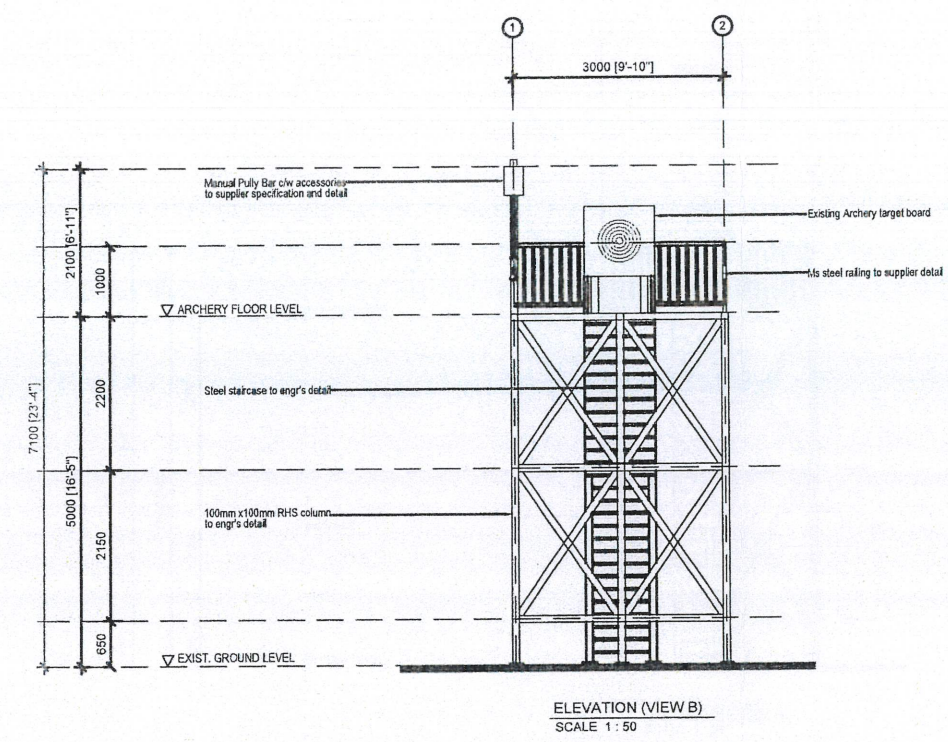
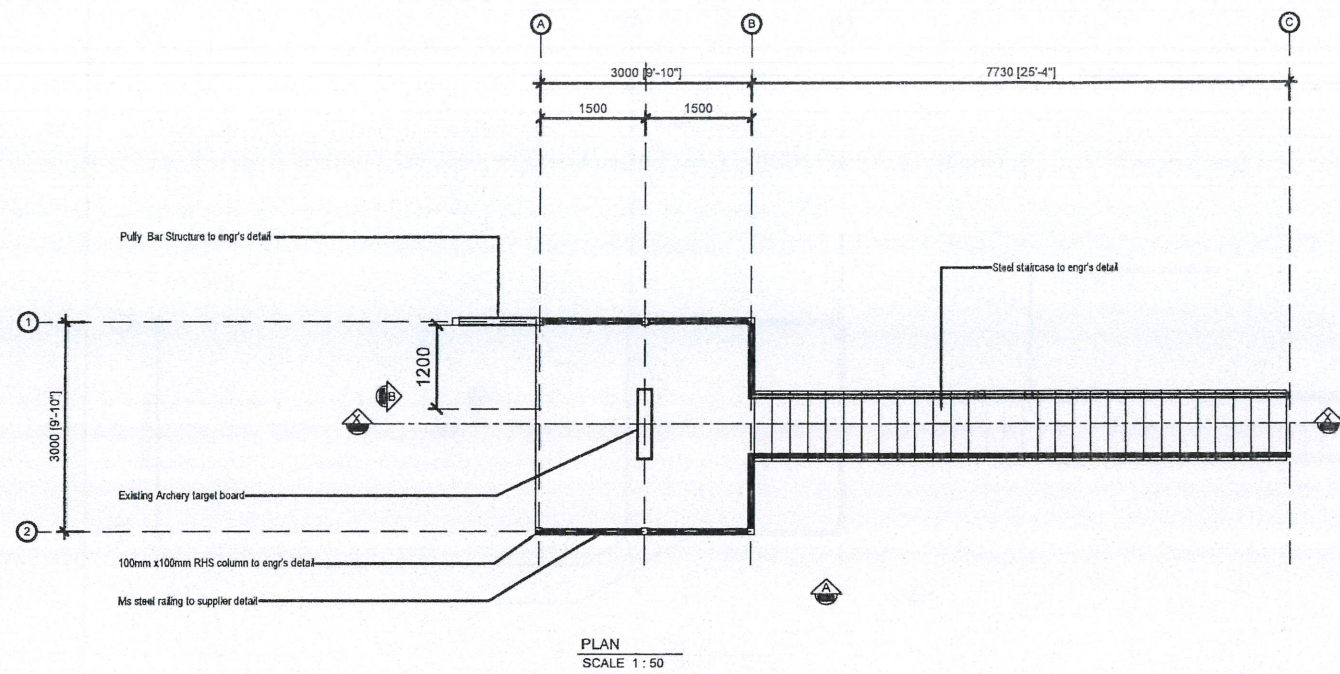
UNTUK : MAJLIS SUKAN NEGARA MALAYSIA

TAJUK LUKISAN :

SECTION X-X
SECTION Y-Y

DILUKIS OLEH		TARIKH	OGOS 2025
DISEMAK OLEH			
DISAHKAN OLEH			
SKALA	1:75	PINDAAN	
NO PROJEK		NO LUKISAN :	03
FAIL CAD			

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ARCHITECT BEFORE PROCEEDING.



NOTA :

TANDATANGAN PEMILIK :

MAJLIS SUKAN NEGARA MALAYSIA
Kompleks Sukan Bukit Jalil
Seri Petaling
57000 Kuala Lumpur.

ARKITEK :

PERUNDING CAS :

PERUNDING MAE :

TAJUK PROJEK :
CADANGAN MEMBINA PLATFORM PAPAN
MEMANAH BARU DI LAPANGAN MEMANAH
MAJLIS SUKAN NEGARA NILAI, NEGERI
SEMBILAN.

UNTUK : MAJLIS SUKAN NEGARA MALAYSIA

TAJUK LUKISAN
PLAN
SECTION X-X
ELEVATION (VIEW A)
ELEVATION (VIEW B)

DILUKIS OLEH	TARIKH	OGOS 2025
DISEMAK OLEH		
DISAHKAN OLEH		
SKALA	1:50	PINDAAN
NO PROJEK		NO LUKISAN :
FAIL CAD		02

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MUST CHECK ALL DIMENSIONS ON SITE. ONLY FIGURED DIMENSIONS ARE TO BE
WORKED FROM. DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE
ARCHITECT BEFORE PROCEEDING.



MAJLIS SUKAN NEGARA MALAYSIA

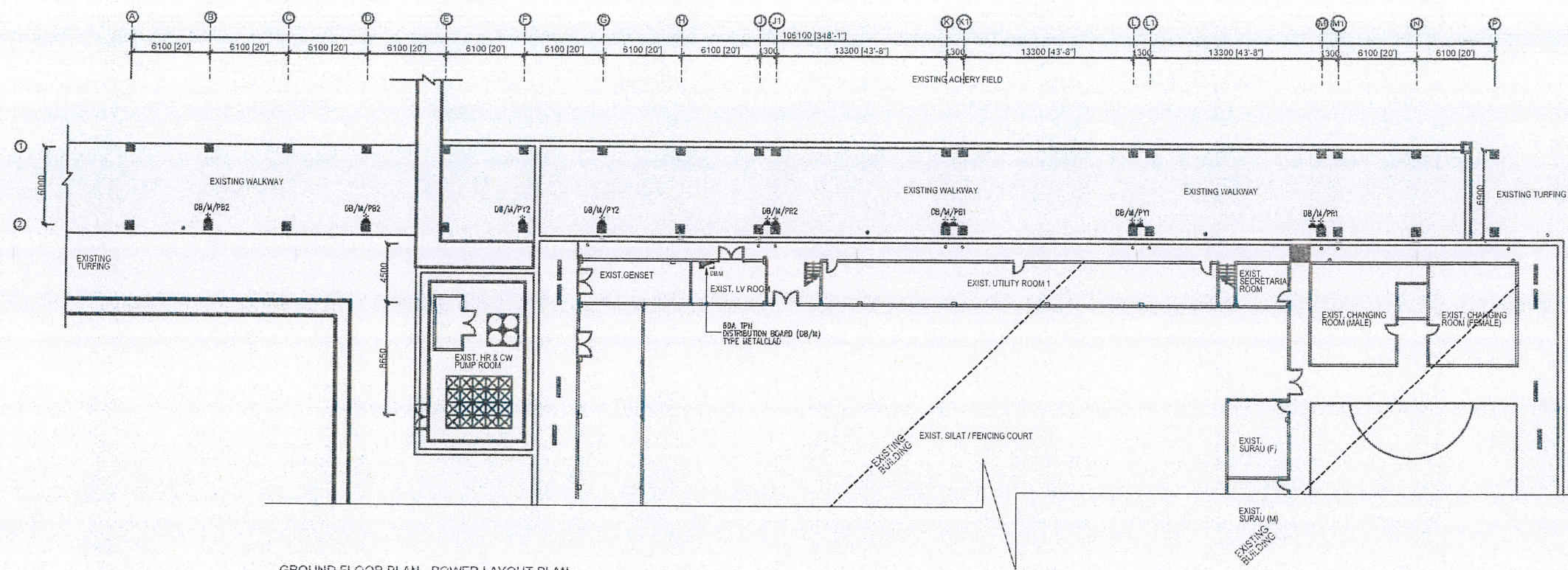
CADANGAN KERJA-KERJA MENAIKTARAF LALUAN BERBUMBUNG
BARU DI LAPANGAN MEMANAH MAJLIS SUKAN NEGARA NILAI,
NEGERI SEMBILAN
UNTUK :MAJLIS SUKAN NEGARA MALAYSIA

TENDER DRAWING

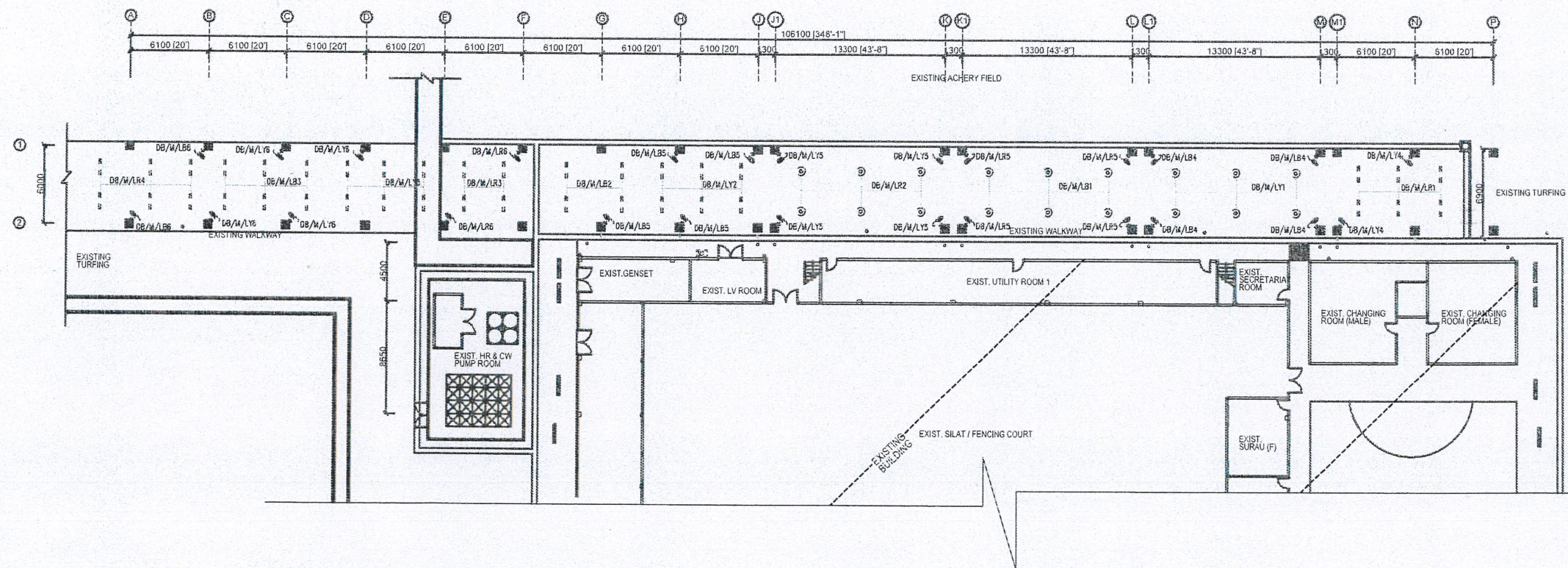
STRUCTURE

NO.	DRAWING NO.	TITLE
01	MNA/J25004/MSN-NILAI/MEMANAH/STR/01	GROUND FLOOR PLAN, ROOF TRUSSES PLAN, ELEVATION VIEW
02	MNA/J25004/MSN-NILAI/MEMANAH/STR/02	DETAILS STEEL FRAME
03	MNA/J25004/MSN-NILAI/MEMANAH/STR/03	DETAILS STEEL CONNECTION
04	MNA/J25004/MSN-NILAI/MEMANAH/STR/04	DETAILS PLATFORM

DIRIKAN OLIMPIADE	BERMUDA
OLIMPIADE	BERMUDA
DIRIKAN OLIMPIADE	BERMUDA
NO. LURUSAN	BERMUDA
MNA/I25004/MSN-NILAI/MEMANAH/STR/01	



GROUND FLOOR PLAN - POWER LAYOUT PLAN



GROUND FLOOR PLAN - LIGHTING LAYOUT PLAN

NOTA			
MAJLIS SUKAN NEGARA MALAYSIA Kompleks Sukan Bukit Jalil Seri Petaling 57000 Kuala Lumpur.			
ARKITEK			
PERUNDING C&S			
TAMBATAN JURUTERA			
PERUNDING M&E			
TAJUK PROJEK CADANGAN KERJA-KERJA MENAIKTARAF LALUAN BERBUMBUNG BARU DI LAPANGAN MEMANAH MAJLIS SUKAN NEGARA NILAI, NEGERI SEMBILAN.			
UNTUK : MAJLIS SUKAN NEGARA MALAYSIA			
TAJUK LUKISAN ELECTRICAL SERVICES - LIGHTING LAYOUT - POWER LAYOUT			
GROUND FLOOR PLAN			
DIKURUS OLEH		TARIKH	OGUS 2025
DISEMAK OLEH			
DISAHKAN OLEH			
SKALA	1:200	PINDAAN	
NO PROJEK	KR/SBN/MS/EL/25-01		
FILE CAD			
			01



MAJLIS SUKAN NEGARA MALAYSIA

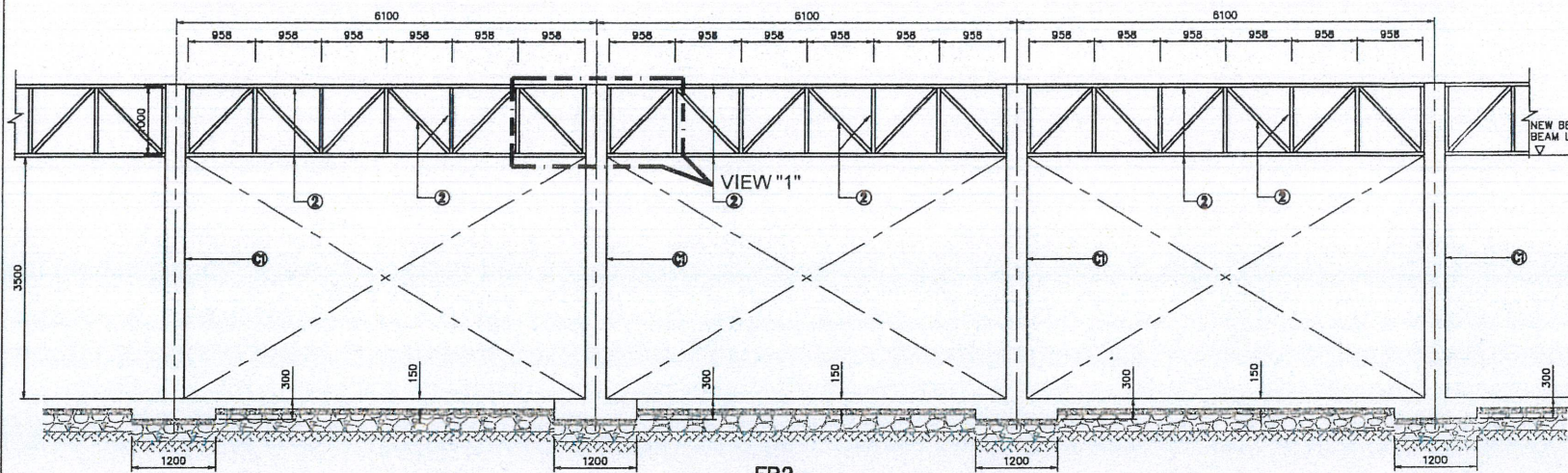
CADANGAN KERJA-KERJA MENAIKTARAF LALUAN BERBUMBUNG
BARU DI LAPANGAN MEMANAH MAJLIS SUKAN NEGARA NILAI,
NEGERI SEMBILAN
UNTUK :MAJLIS SUKAN NEGARA MALAYSIA

TENDER DRAWING

MECHANICAL AND ELECTRICAL (M&E)

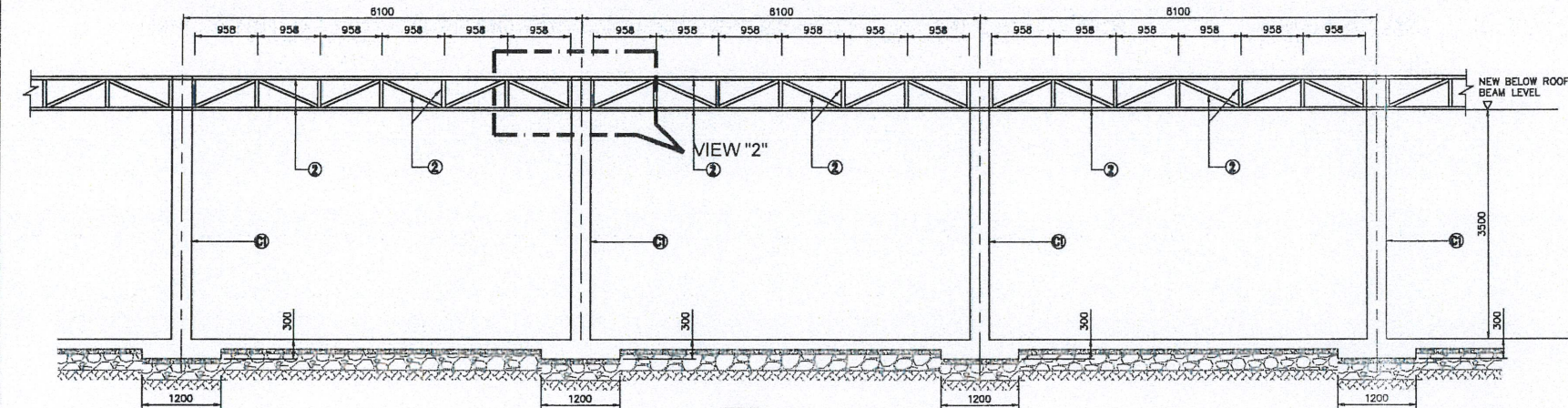
NO.	TITLE
01	ELECTRICAL SERVICES (LIGHTING LAYOUT , POWER LAYOUT)
02	ELECTRICAL SERVICES (SCHEMATIC DIAGRAM -DB/M)

DIRKHA OLD:	YMSD:
DELURS OLD:	BNLA:
OSIDANI OLD:	BLJUS OLD:
NO. LUBBAN	
MNA/25004MSN-NILAI/MEMANAH/STR04	
PRGMK	



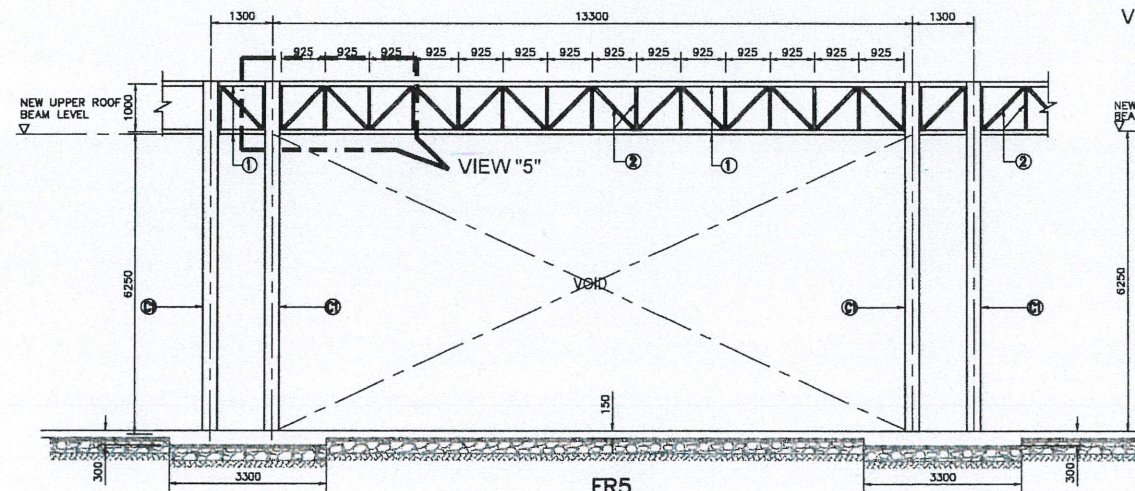
FR2
SCALE 1 : 50

- NOTES :
1. ALL FILLET WELD SHALL BE 6mm THK ALL ROUND UNLESS OTHERWISE STATED
 2. ALL BOLT SHALL BE 16# M.S BOLTS AND NUTS UNLESS OTHERWISE STATED
- LEGEND :
- ① 305mmx305mmx68.5kg/m UC COLUMN
 - ② 100 x 50 x 2.5mm THK RHS
 - ③ 50 x 50 x 1.5mm THK RHS



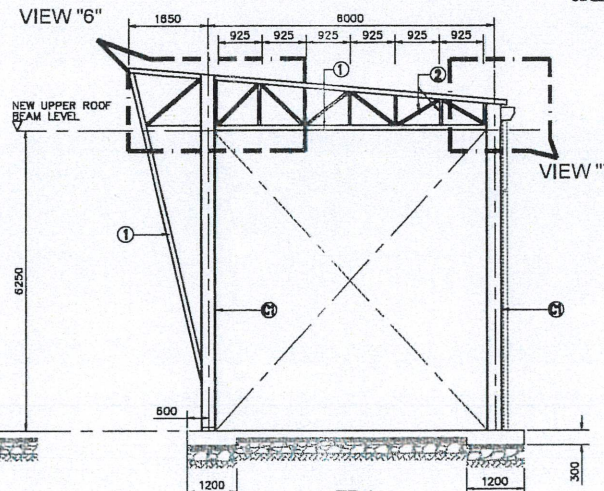
FR3
SCALE 1 : 50

- NOTES :
1. ALL FILLET WELD SHALL BE 6mm THK ALL ROUND UNLESS OTHERWISE STATED
 2. ALL BOLT SHALL BE 16# M.S BOLTS AND NUTS UNLESS OTHERWISE STATED
- LEGEND :
- ① 305mmx305mmx68.5kg/m UC COLUMN
 - ② 100 x 50 x 2.5mm THK RHS
 - ③ 50 x 50 x 1.5mm THK RHS

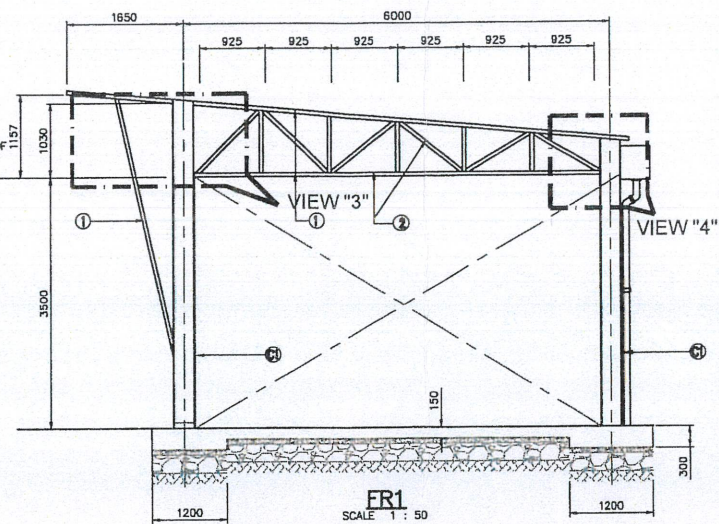


FR5
SCALE 1 : 75

- NOTES :
1. ALL FILLET WELD SHALL BE 6mm THK ALL ROUND UNLESS OTHERWISE STATED
 2. ALL BOLT SHALL BE 16# M.S BOLTS AND NUTS UNLESS OTHERWISE STATED
- LEGEND :
- ① 305mmx305mmx68.5kg/m UC COLUMN
 - ② 100 x 50 x 2.5mm THK RHS
 - ③ 50 x 50 x 1.5mm THK RHS

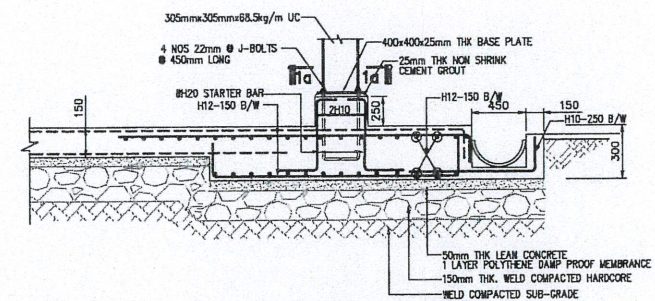


FR4
SCALE 1 : 75

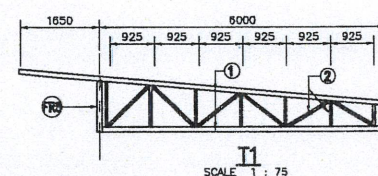


FR1
SCALE 1 : 50

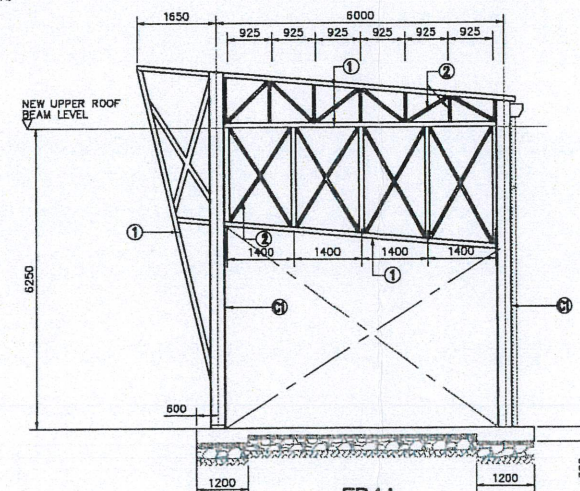
- NOTES :
1. ALL FILLET WELD SHALL BE 6mm THK ALL ROUND UNLESS OTHERWISE STATED
 2. ALL BOLT SHALL BE 16# M.S BOLTS AND NUTS UNLESS OTHERWISE STATED
- LEGEND :
- ① 305mmx305mmx68.5kg/m UC COLUMN
 - ② 100 x 50 x 2.5mm THK RHS
 - ③ 50 x 50 x 1.5mm THK RHS



TYPICAL DETAIL FOOTING
SCALE 1:30



T1
SCALE 1 : 75



FR4A
SCALE 1 : 75

- NOTES :
1. ALL FILLET WELD SHALL BE 6mm THK ALL ROUND UNLESS OTHERWISE STATED
 2. ALL BOLT SHALL BE 16# M.S BOLTS AND NUTS UNLESS OTHERWISE STATED
- LEGEND :
- ① 305mmx305mmx68.5kg/m UC COLUMN
 - ② 100 x 50 x 2.5mm THK RHS
 - ③ 50 x 50 x 1.5mm THK RHS

F O R	
TENDER	
Hak Cipta Terpeliharai : Semua uraian rasmi dikekalkan di atas tapak khazanah. Hanya uraian-uraian yang disediakan sahaja diperbolehkan. Sebarang salinan rasmi hendaklah dipaparkan dengan ingatan kepada Engineer.	
NO :	Terbit :
NAMA ALAMAT & TANDATANGAI PEMILIK :	
MAJLIS SUKAN NEGARA MALAYSIA Kompleks Sukan Bukit Jalil Seri Petaling 57000 Kuala Lumpur.	
PEMILIK :	
MAJLIS SUKAN NEGARA MALAYSIA Kompleks Sukan Bukit Jalil Seri Petaling 57000 Kuala Lumpur.	
JARUMBERA PERKANDANG : SAYA MEMPERKASA BAHAWA BUTIRAN-BUTIRAN DI DALAM PELAN KERJA TANAH DAN INFRASTRUKTUR BE ADALAH BENAR DAN SEBENAR. SEBANYAK LAMBAK LAMBAK KESALAHAN TANAH DAN SERTA SERTA TANAH TANGGALANAN POKOK SUDAH SEBANYAK.	
SKALA PEMILIK :	
CADANGAN KERJA-KERJA MENAINTAN ALUHAN BERBUNBUNG BARU DI LAPANGAN MEMANAH MAJLIS SUKAN NEGARA NILAI, NEGERI SEMBILAN.	
UNTUK : MAJLIS SUKAN NEGARA MALAYSIA	
SKALA LAMBAK :	
DETAILS STEEL FRAME	
ORIGIN CLERK	TAMBAH
ORIGIN CLERK	SEKALU
ORIGIN CLERK	SEKALU CLERK
NO. LAMBAK	PEMILIK
MNA/J25004/MSN-NILAI/MEMANAH/STR/02	