1 NRE Enforcement:

Program Latihan Penguatkuasaan Untuk Pegawai JPS Bagi Pelaksanaan Perintah Kualiti Alam Sekeliling (Perwakilan Kuasa - Penyiasatan Ke Atas Kawalan Hakisan Dan Kelodakan)

Module 6

BMPs INSPECTION

THE GOOD , THE BAD AND THE BMPs OPTION AND SELECTION

(Prepared by Nor Razzaman Hamzah)

SEQUENCE OF ENFORCEMENT INSPECTION

- **PRE-INSPECTION**
- **FIELD INSPECTION**
  - **EVIDENCE COLLECTION**
    - Samples
    - Photographs
    - Documents
- **ENFORCEMENT INSPECTION REPORT**
- **FOLLOW-UP ACTION**
  - Follow-up visit- EIA 5-08(EIA 4-08 Citation and Notices S 31 & 37)
  - Analysis samples result
- **Investigation Paper**

ENFORCEMENT INSPECTION REPORT (Non-compliance / Violation)

- Prevention and control measures outline in the EIA Report. ESCP Report
- Approval Conditions: Previous New
  - ESCP
  - BMPs
  - Discharge

Enforcement Action:

1. Citation
2. Notices under Section 31 & 37
3. Legal action under Section 34A(7)

ENFORCEMENT FOLLOW-UP ACTION

1. Follow-up visit to verify corrective actions taken base upon previous issued citations and notices. (EIA 5-08 and Section 31 & 37).

   At this stage, one must produce a new enforcement inspection report that may be reported on EIA 5-08 only and Section 31 & 37 compliance or both with fresh/new EIA 3-08 and EIA 4-08.

2. Analysis report received from Chemistry Department stating non-compliance from the previous visit.

3. Proceed with Investigation Paper process.

Course Material Notes

- Please refer to JPS TRAINING MODUL 6 PART 4 The Inspection SUNWAY MELAWATI

SUMMARY

- Flow Form Usage

PRE-INSPECTION

PRE-INSPECTION

- Prevention and control measures outline in the EIA Report.
- ESCP
- BMPS list
- Previous inspection reports:
  - Walk the site form: Tracking mechanism

EROSION AND SEDIMENT CONTROL PLAN (ESCP)

Cad. Skim Perumahan 195 Unit Rumah Di Atas Lot 30086 dan Lot 30087, Mukim Setapak, Kuala Lumpur oleh SUNWAY MELAWATI SDN BHD

The Proposed Development

- Total Site Area: 22.8 ha (56.4 ac)
- Total Area to be developed for residential 16.3 ha
- Ecological park: 16 acres (Class IV- Northeast)
- Development of Earthwork in 2 parcels and commence at the same date
- Excess earth is shipping out to dumping ground

Topography:

Pre- dev 81m (SW)- 200m (NE)

Post-dev 86.5 m– 169.25m

EDP/0631/C/SD/ESCP/001

	PARCEL 1	PARCEL 2
EW CUT	373704	775651
EW FILL	344960	152790
SURPLUS	28744	622861
DURATION (MONTH)	10	22

LIST PROPOSED BMPs	PARCEL 1 (QTY)	PARCEL 2 (QTY)
Wash Trough Earth Drain Diversion Channel Check Dam Sediment Pond Silt Fence Turfing Retaining Wall Interlocker Paver Berm Drain Interceptor Drain Toe Drain (at cut/fill berms) Cut-off Drain Drainage Blanket		

Sediment Basin

- Basin type : dry
- Design Storm : 3 month ARI
- Soil Type :

  Type C – Coarse grained sandy, sandy loam: < 33% < 0.02mm
- Runoff Coefficient: Type 5(Bare earth, Earth with sandstone)
- Silt Filtration?
- Pegs
- Close Turfing
- Size?

Land Disturbance

- Minimize erosion and sedimentation following approaches:

(i) Identify and limit the boundary

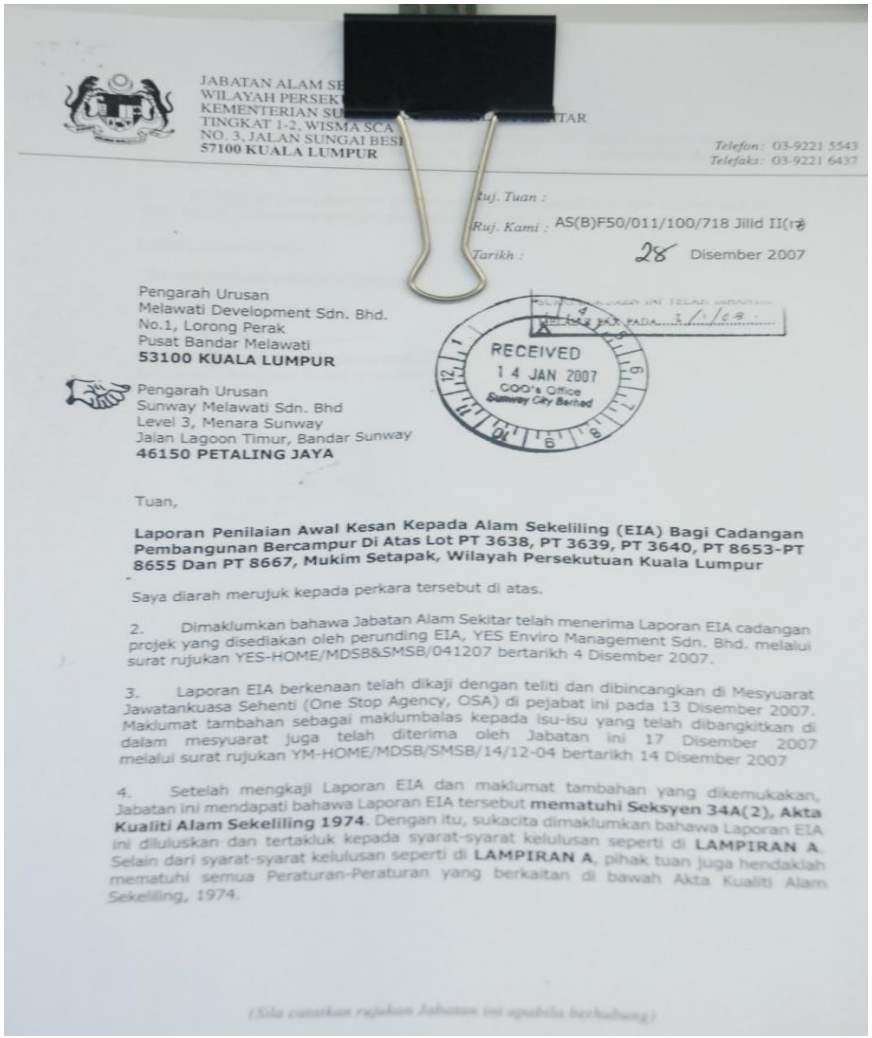
(ii) Determine and limit access points and roads

(iii) Minimize disturbance to necessarily required.

Site inspection and management

- Weekly inspection
- Immediately
  - Before site closure
  - After heavy rainfall event

EIA Approval Letter



JABATAN ALAM SE...
WILAYAH PERSEKU...
KEMENTERIAN SU...
TINGKAT 1-2, WISMA SCA...
NO. 3, JALAN SUNGAI BESI...
57100 KUALA LUMPUR

Telefon : 03-9221 5543
Telefaks : 03-9221 6437

Tuj. Tuan :
Ruj. Kami : AS(B)F50/011/100/718 Jilid II(...)
Tarikh : 28 Disember 2007

Pengarah Urusan
Melawati Development Sdn. Bhd.
No.1, Lorong Perak
Pusat Bandar Melawati
53100 KUALA LUMPUR

RECEIVED
14 JAN 2007
COO's Office
Sunway City Berhad

Pengarah Urusan
Sunway Melawati Sdn. Bhd
Level 3, Menara Sunway
Jalan Lagoon Timur, Bandar Sunway
46150 PETALING JAYA

Tuan,

Laporan Penilaian Awal Kesan Kepada Alam Sekeliling (EIA) Bagi Cadangan Pembangunan Bercampur Di Atas Lot PT 3638, PT 3639, PT 3640, PT 8653-PT 8655 Dan PT 8667, Mukim Setapak, Wilayah Persekutuan Kuala Lumpur

Saya diarah merujuk kepada perkara tersebut di atas.

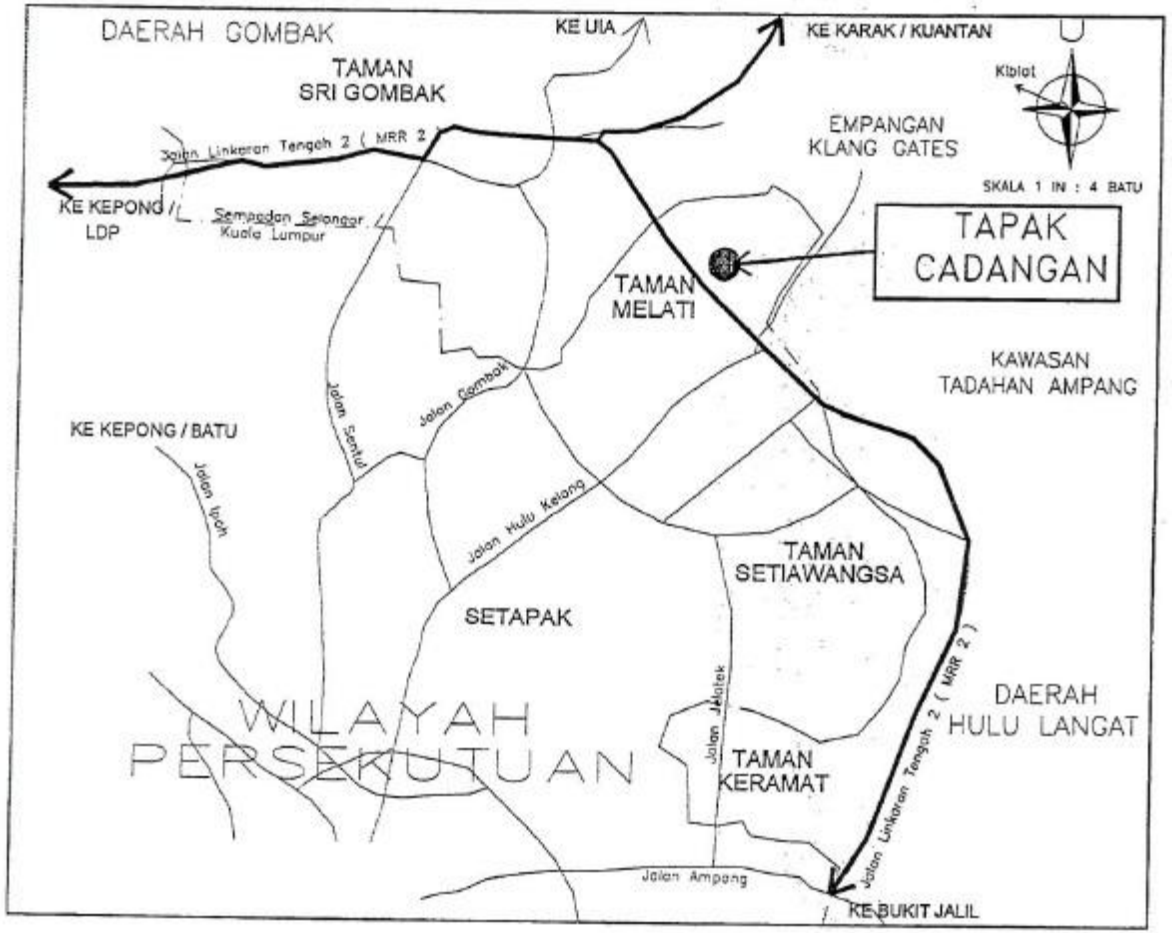
2. Dimaklumkan bahawa Jabatan Alam Sekitar telah menerima Laporan EIA cadangan projek yang disediakan oleh perunding EIA, YES Enviro Management Sdn. Bhd. melalui surat rujukan YES-HOME/MDSB&SMSB/041207 bertarikh 4 Disember 2007.

3. Laporan EIA berkenaan telah dikaji dengan teliti dan dibincangkan di Mesyuarat Jawatankuasa Sehenti (One Stop Agency, OSA) di pejabat ini pada 13 Disember 2007. Maklumat tambahan sebagai maklumbalas kepada isu-isu yang telah dibangkitkan di dalam mesyuarat juga telah diterima oleh Jabatan ini 17 Disember 2007 melalui surat rujukan YM-HOME/MDSB/SMSB/14/12-04 bertarikh 14 Disember 2007

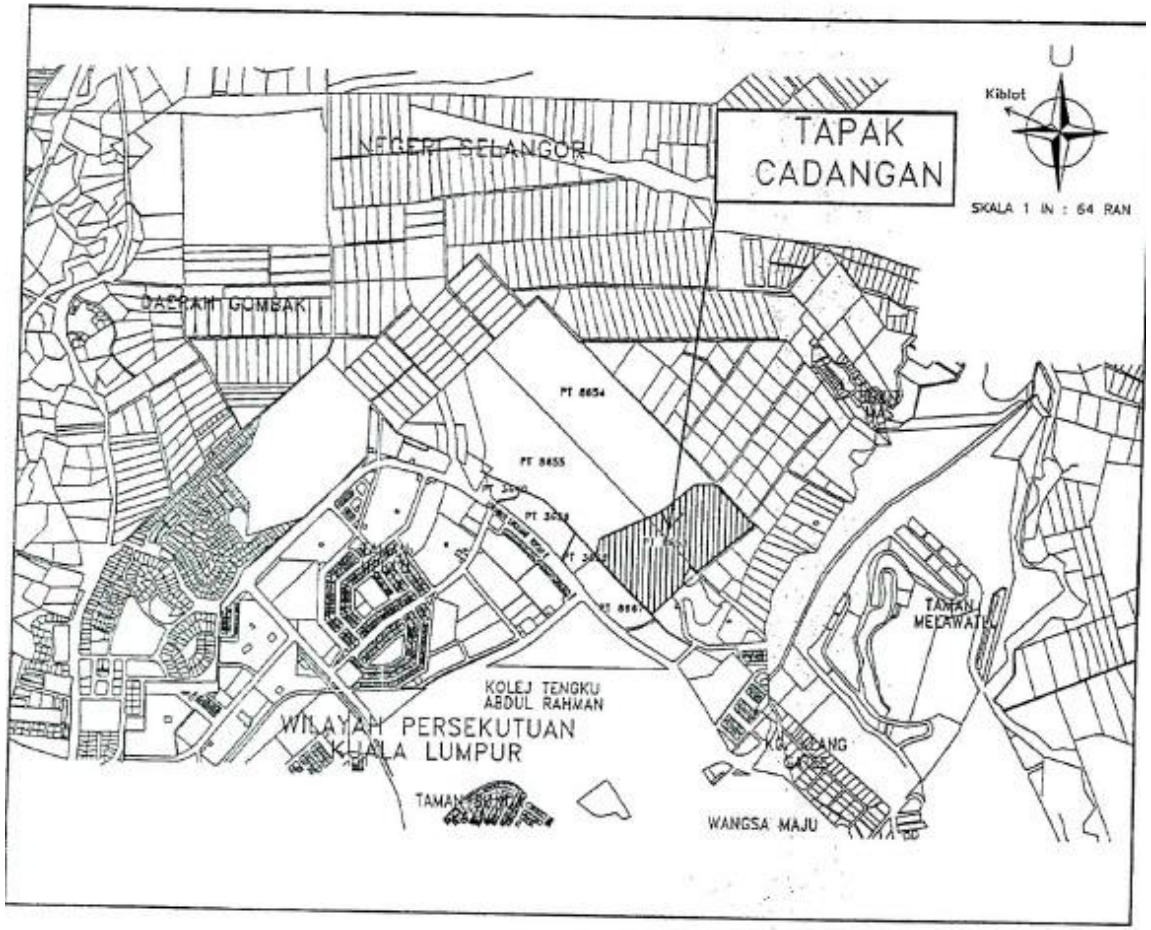
4. Setelah mengkaji Laporan EIA dan maklumat tambahan yang dikemukakan, Jabatan ini mendapati bahawa Laporan EIA tersebut **mematuhi Seksyen 34A(2), Akta Kualiti Alam Sekeliling 1974**. Dengan itu, sukacita dimaklumkan bahawa Laporan EIA ini diluluskan dan tertakluk kepada syarat-syarat kelulusan seperti di **LAMPIRAN A**. Selain dari syarat-syarat kelulusan seperti di **LAMPIRAN A**, pihak tuan juga hendaklah mematuhi semua Peraturan-Peraturan yang berkaitan di bawah Akta Kualiti Alam Sekeliling, 1974.

(Sila catatkan rujukan Jabatan ini apabila berhubung)

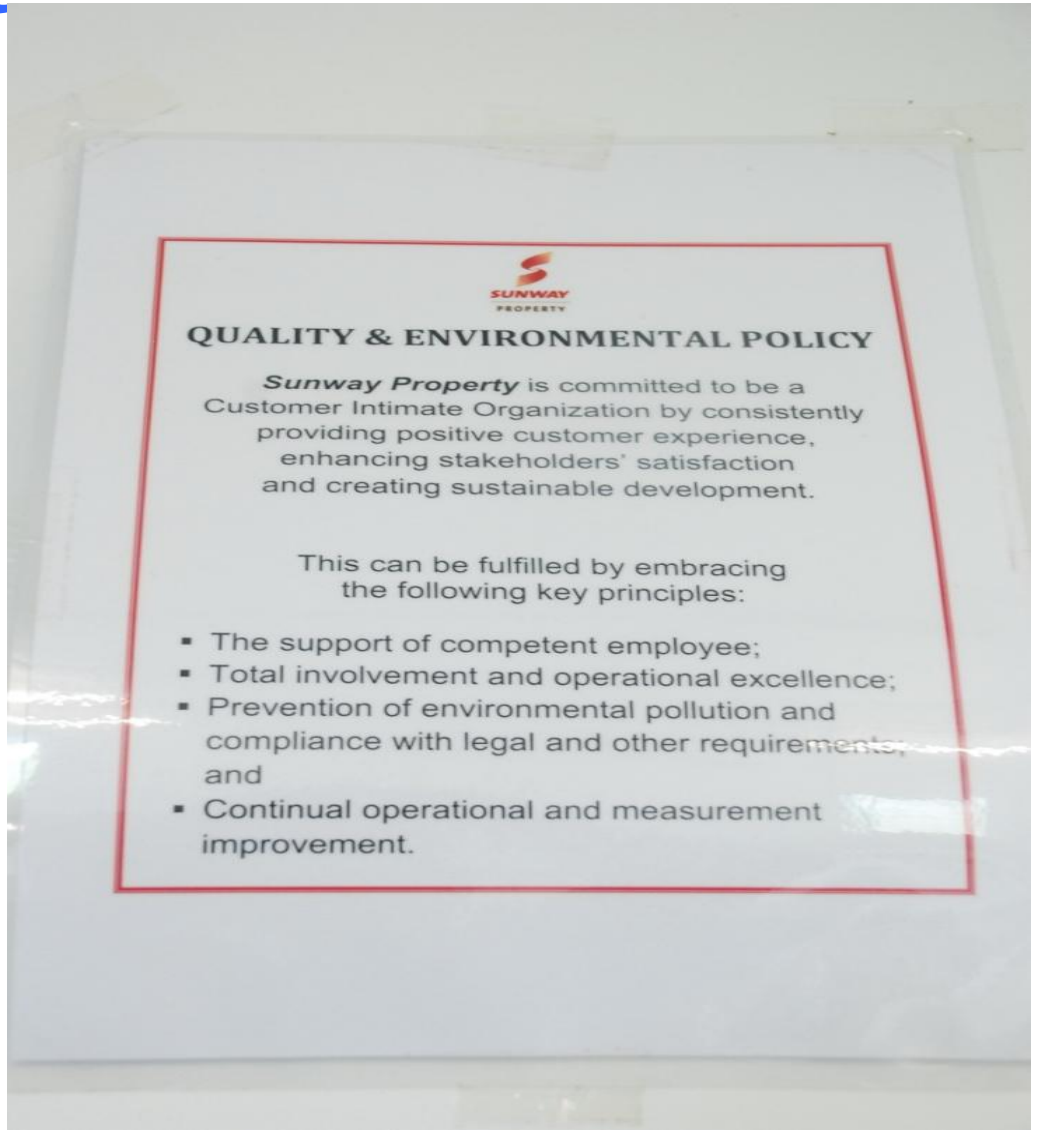
Key Plan


DAERAH GOMBAK
KE UIA
KE KARAK / KUANTAN
TAMAN SRI GOMBAK
Kiblat
EMPANGAN KLANG GATES
Jalan Linkaran Tengah 2 (MRR 2)
SKALA 1 IN : 4 BATU
KE KEPONG / LDP
Sempadan Selangor / Kuala Lumpur
TAPAK CADANGAN
TAMAN MELATI
KAWASAN TADAHAN AMPANG
Jalan Sentul
Jalan Gombak
KE KEPONG / BATU
Jalan Ipoh
Jalan Hulu Kelang
TAMAN SETIAWANGSA
SETAPAK
WILAYAH PERSEKUTUAN
Jalan Jelatek
DAERAH HULU LANGAT
TAMAN KERAMAT
Jalan Linkaran Tengah 2 (MRR 2)
Jalan Ampang
KE BUKIT JALIL

Location Plan



QUALITY ENVIRONMENT POLICY



Proposed Earthworks Sequences

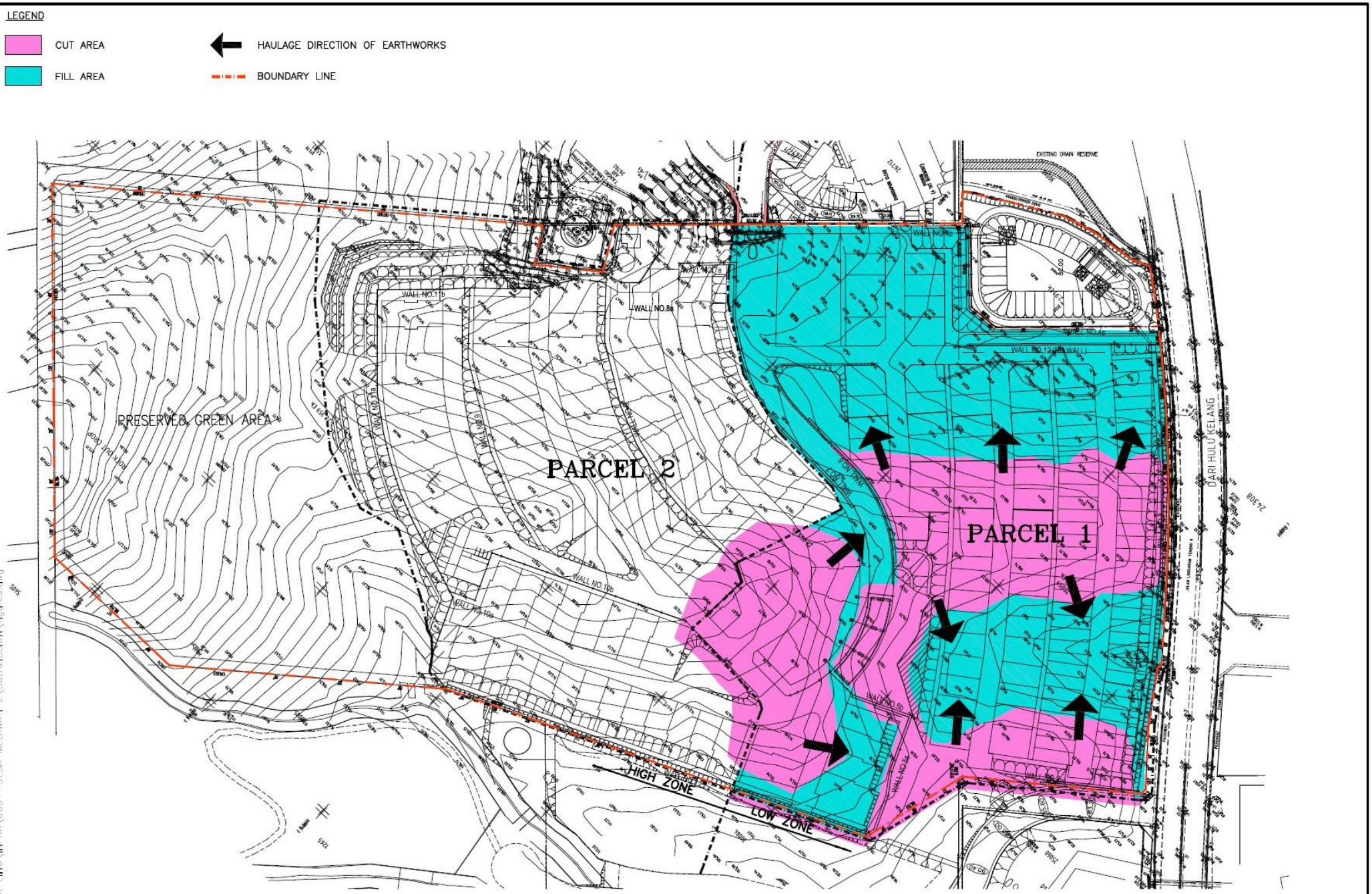


FIGURE 3A

EARTHWORKS SEQUENCE FOR PARCEL 1

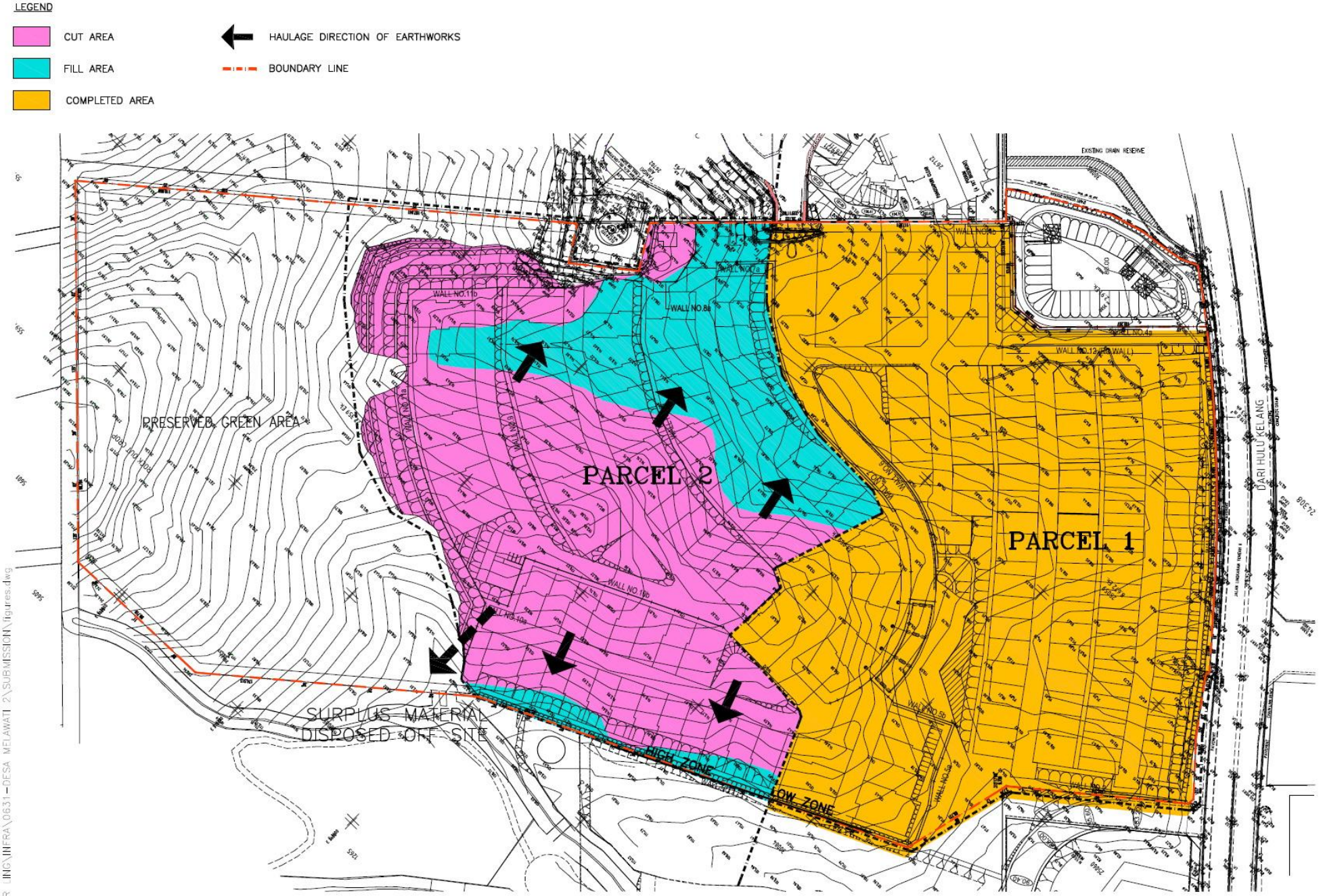


FIGURE 3B

EARTHWORKS SEQUENCE FOR PARCEL 2

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STORMWATER FLOW DIRECTION

BOUNDARY LINE

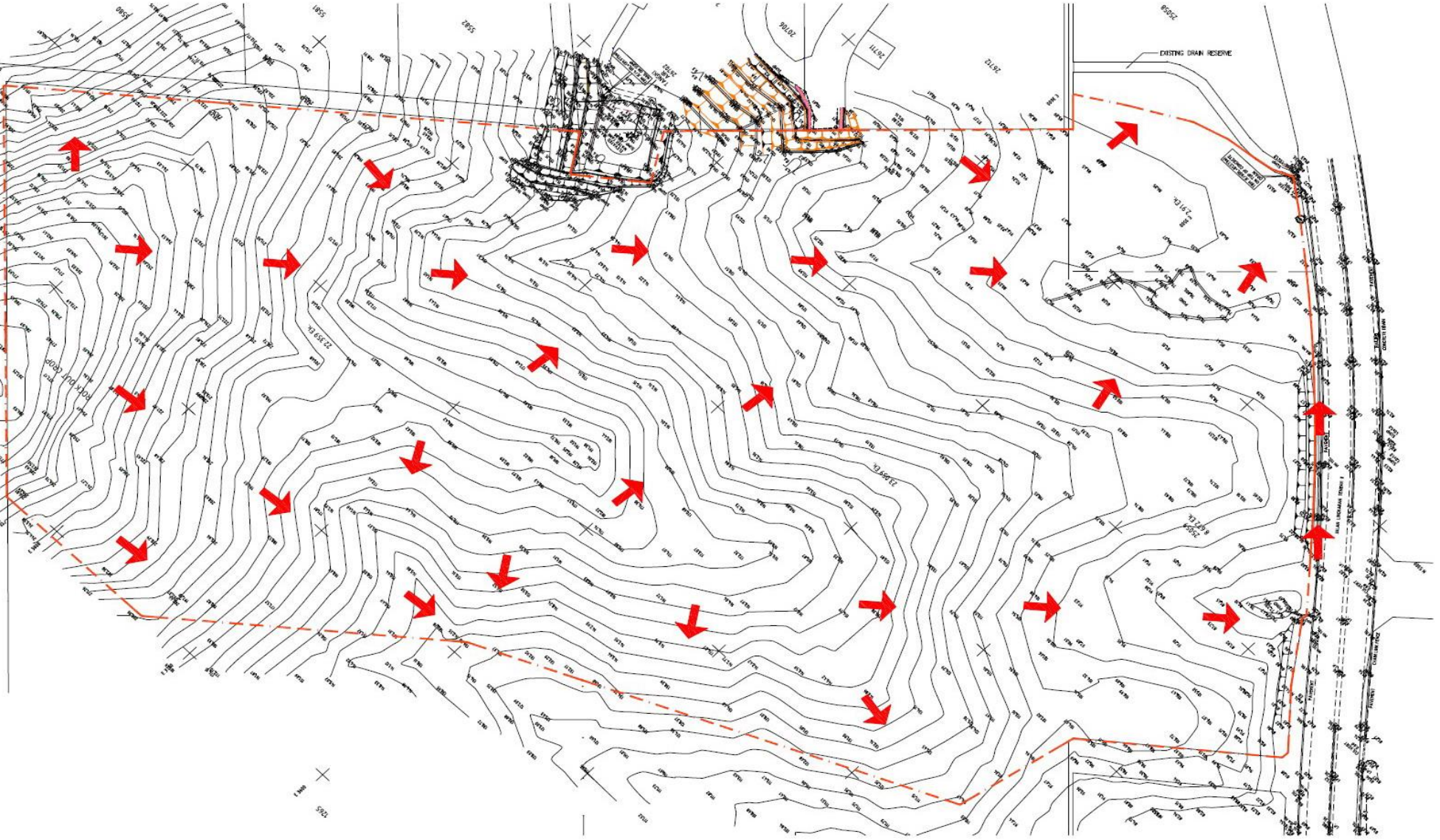

FIGURE 4

EXISTING DRAINAGE PATTERN AND FLOW PATH

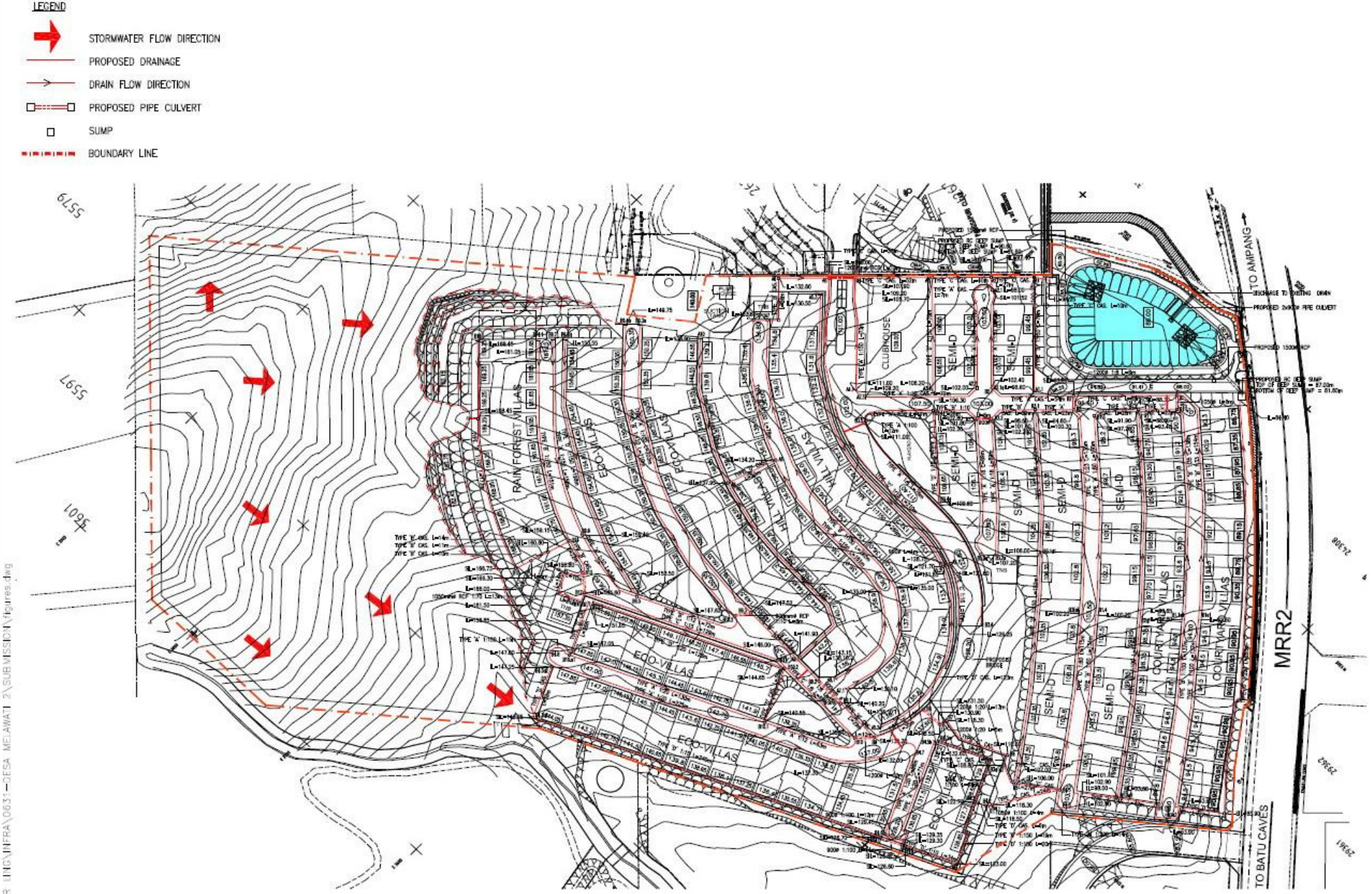

FIGURE 5 PROPOSED DRAINAGE PATTERN AND FLOW PATH

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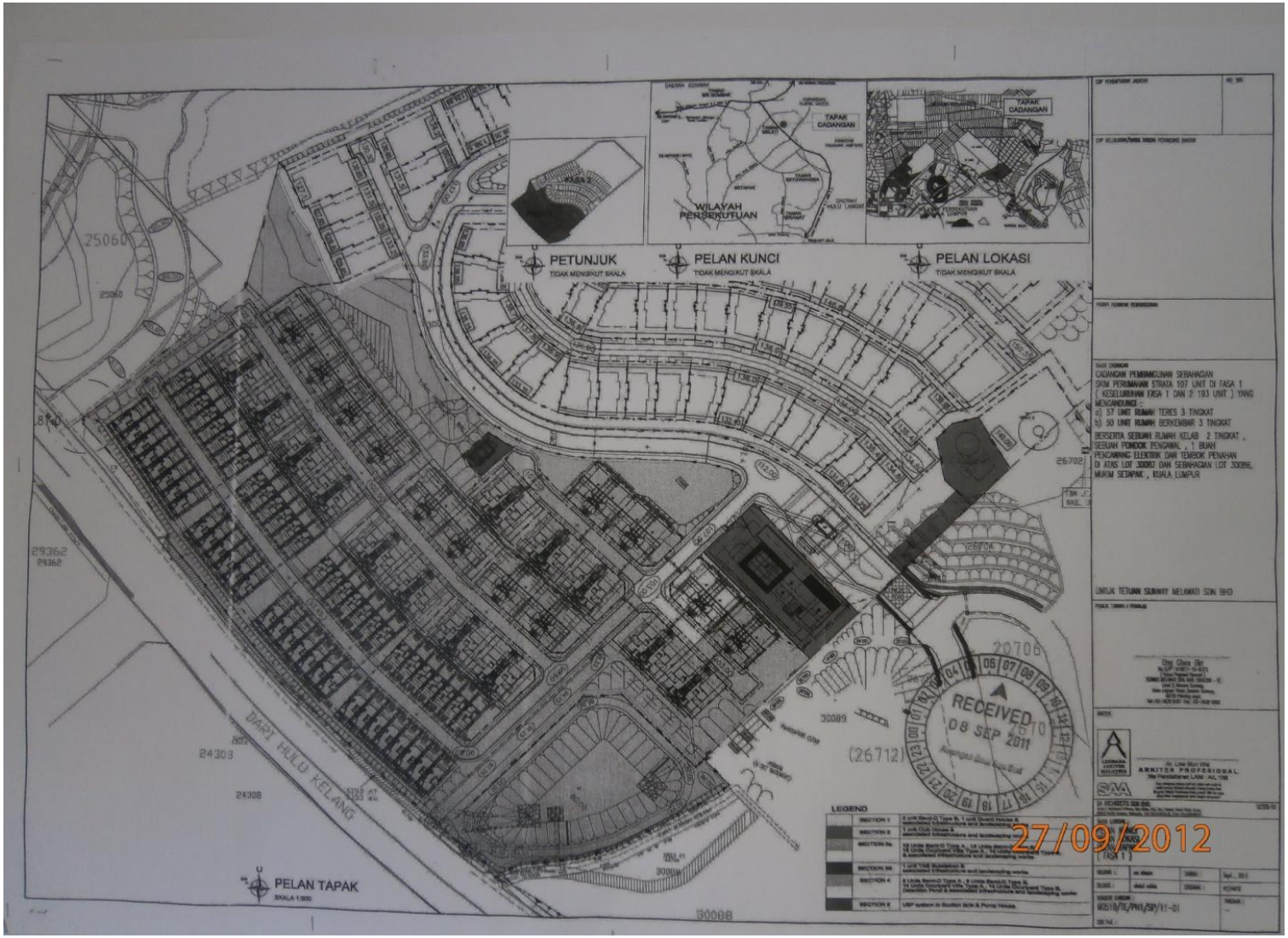
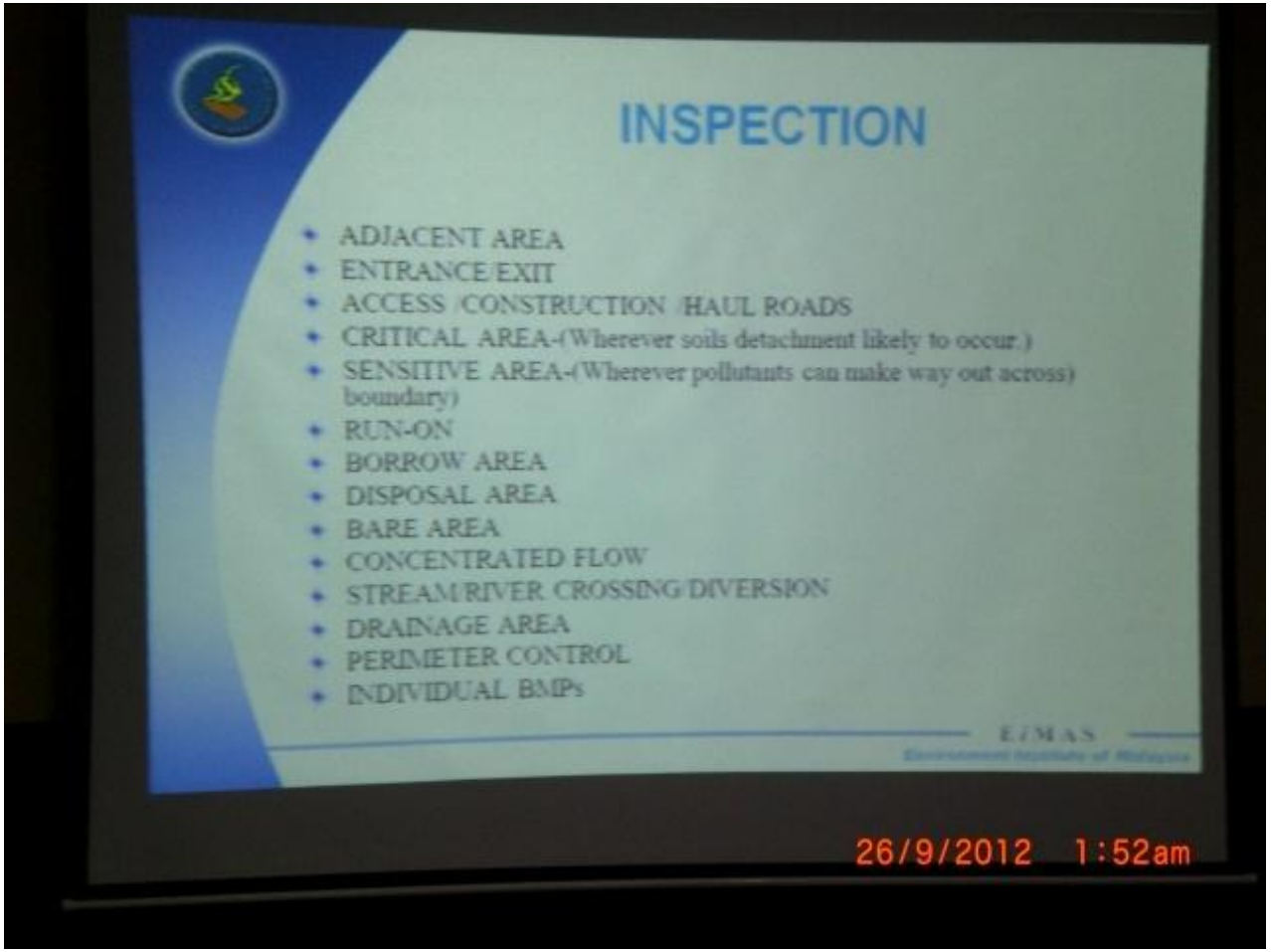
Location Plan



Logistic Layout Plan

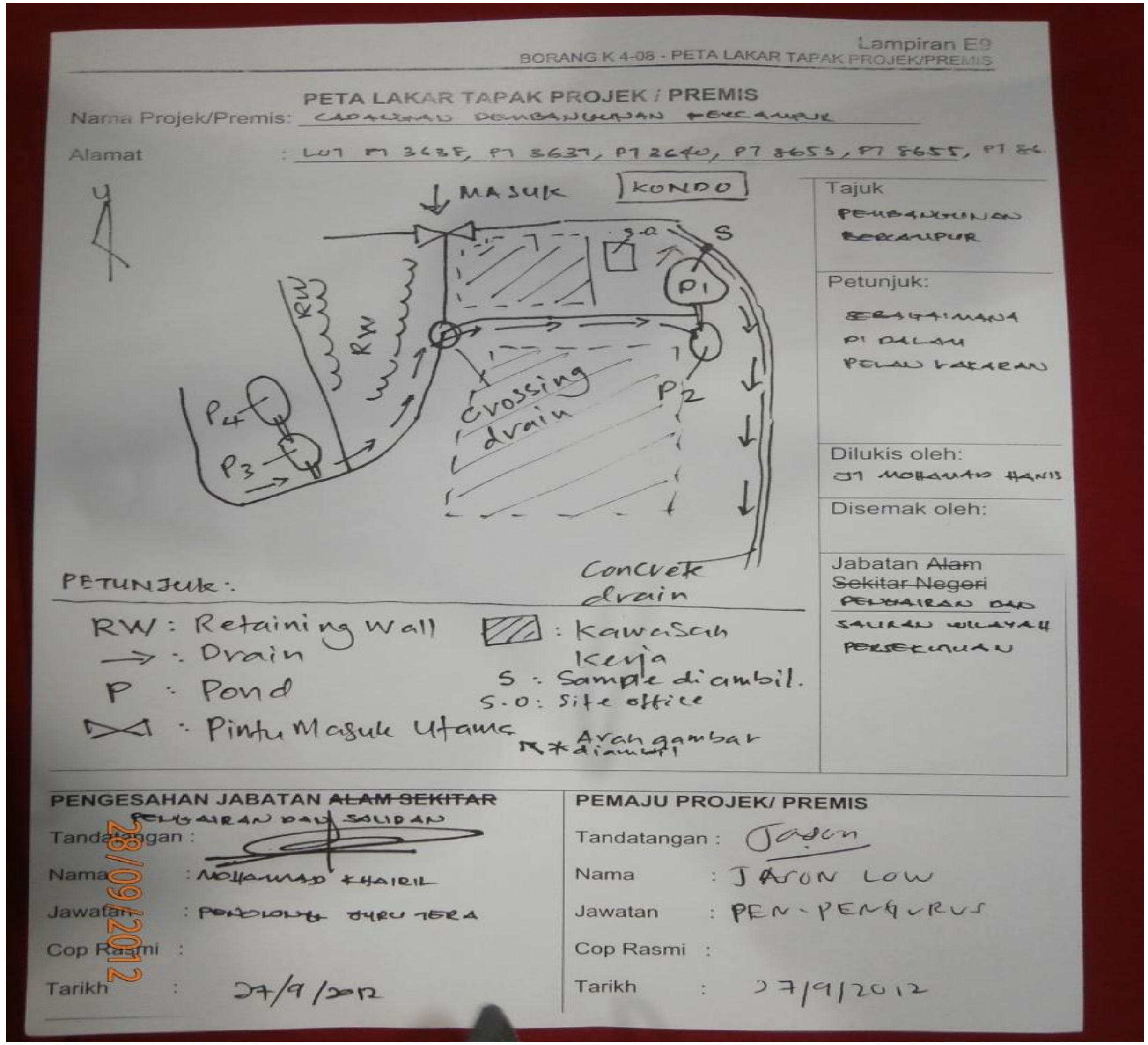
FIELD INSPECTION


INSPECTION
ADJACENT AREA
ENTRANCE/EXIT
ACCESS /CONSTRUCTION /HAUL ROADS
CRITICAL AREA-(Wherever soils detachment likely to occur.)
SENSITIVE AREA-(Wherever pollutants can make way out across) boundary)
RUN-ON
BORROW AREA
DISPOSAL AREA
BARE AREA
CONCENTRATED FLOW
STREAM/RIVER CROSSING/DIVERSION
DRAINAGE AREA
PERIMETER CONTROL
INDIVIDUAL BMPs
E i M A S
26/9/2012 1:52am

Reference Documents At The Time Of Inspection

Revised ESCP-EDP/0631/C/SD/ESCP/001

Site Sketch Map



Lampiran E9

BORANG K 4-08 - PETA LAKAR TAPAK PROJEK/PREMIS

PETA LAKAR TAPAK PROJEK / PREMIS

Nama Projek/Premis: CADANGAN PEMBANGUNAN BERCAMPUR

Alamat : LOT PT 3638, PT 3637, PT 2640, PT 8653, PT 8655, PT 86..

Tajuk: PEMBANGUNAN BERCAMPUR

Petunjuk: KEDUDUKAN P1 DALAM PELAN LAKARAN

Dilukis oleh: CIT MOHAMAD HANIS

Disemak oleh:

Jabatan ~~Alam Sekitar Negeri~~ PENGAIRAN DAN SALIRAN WILAYAH PERSEKUTUAN

PETUNJUK :

RW : Retaining Wall
→ : Drain
P : Pond
⋈ : Pintu Masuk Utama
▨ : Kawasan kerja
S : Sample diambil.
S.O : Site office
↖* Arah gambar diambil

PENGESAHAN JABATAN ~~ALAM SEKITAR~~ PENGAIRAN DAN SALIRAN

Tandatangan :

Nama : MOHAMAD KHAIRIL

Jawatan : PEMBANTU JURU TERA

Cop Rasmi :

Tarikh : 27/9/2012

PEMAJU PROJEK/ PREMIS

Tandatangan : Jason

Nama : JASON LOW

Jawatan : PEN. PENGURUS

Cop Rasmi :

Tarikh : 27/9/2012

28/09/2012

ESCP

- The proposed earthwork sequences were not fully followed.
- Inadequate ESCP

- Corrective Actions Required:
  - Revise

  Enforcement Action:

  Citation

  Notices Section 31 & 37

  Question: Can proceed Section 34A(7)?

Syarat-Syarat Baru EIA

Link to New General and Specific AC

ESCP

ESCP Variation

- Produced ESCP at the time of inspection not match with the one submitted earlier, EDP/0631/C/SD/ESCP/001.
- Even with the yet to be approved ESCP issued during the inspection, BMPs component such as diversion, check dam and pond 2,3 & 4 were not either followed the standard and specification specified or not in placed at all.
- Overall finding of the inspection proved the existing ESCP is not adequate.

EIA 4-08
(Inadequate ESCP)

- Refer EIA 4-08
- Issue notice section 31/37 base upon the afore-mentioned violations.
- **You may decide whether to proceed with enforcement inspection or not. You may defer enforcement inspection until new revised ESCP is approved. The justification towards this decision is due to existing approved ESCP is almost completely no meaning or useless. (Personal opinion)**

EIA 4-08
(Inadequate ESCP)

- Inspection is actually still have to be conducted to look for the matching and variation between the ESCP and the project site.

ESCP

Important Notes:

- Make sure that the new revise ESCP submission must strictly adhered to the minimum requirement set forth in Guideline for ESC and MSMA published both by JPS.

- ESCP shall be prepared according to contributing drainage area as well as according to construction stages especially involving large area.

THE INSPECTION

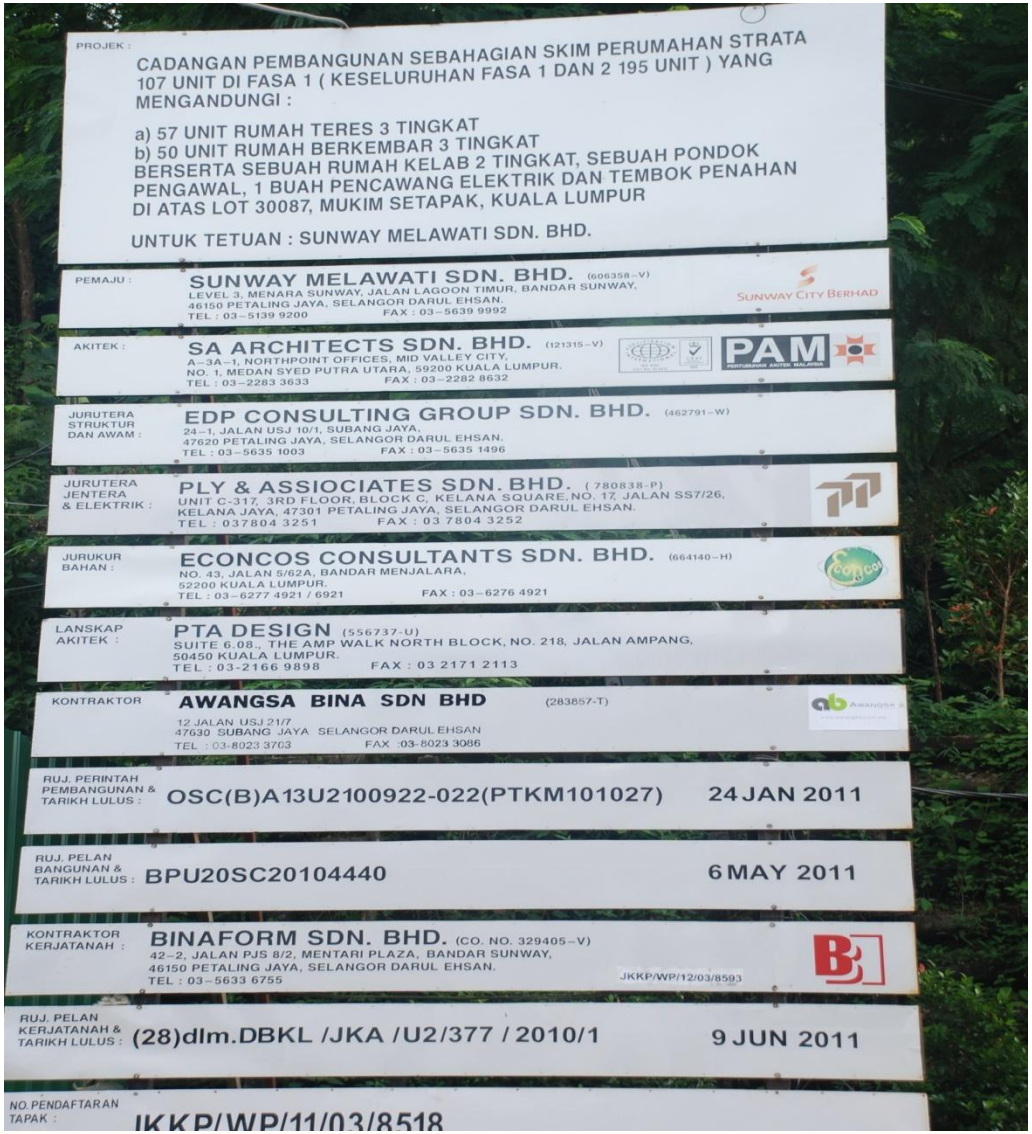
LIST BMPs

	PARCEL 1 (QTY)	PARCEL 2 (QTY)
Wash Trough		
Earth Drain		
Diversion Channel		
Check Dam		
Sediment Pond		
Silt Fence		
Turfing		
Retaining Wall		
Interlocker Paver		
Berm Drain		
Interceptor Drain Toe Drain		
Cut-off Drain		
Drainage Blanket		

INSPECTION

- ADJACENT AREA
- ENTRANCE/EXIT
- ACCESS /CONSTRUCTION /HAUL ROADS
- CRITICAL AREA-(Wherever soils detachment likely to occur.)
- SENSITIVE AREA-(Wherever pollutants can make way out across) boundary)
- RUN-ON
- BORROW AREA
- DISPOSAL AREA
- BARE AREA
- CONCENTRATED FLOW
- STREAM/RIVER CROSSING/DIVERSION
- DRAINAGE AREA
- PERIMETER CONTROL
- INDIVIDUAL BMPs

PROJEK SUNWAY MELAWATI SIGNBOARD



ADJACENT AREA (OFFSITE)

Buildings on South-East (Clean)

MRR2 Highway on South-West: Evidence of silts deposition along the Sandbag perimeter barrier

MRR2 Highway on South-West: Evidence of silts deposition along the perimeter drain

At site perimeter during storm event

Muddy water from the project site overflows into MRR2 highway roadside drain during heavy storm event.

Nice Picturesque Signboard

SERIOUSLY IMPACTED

MRR2 Highway

Observe the tore fence and the quantity of earth eroded

Residential Area

ADJACENT AREA

- Buildings on South-East (Clean)
- MRR2 Highway on South-West: Evidence of silts deposition along the Sandbag perimeter barrier
- MRR2 Highway on South-West: Evidence of silts deposition along the perimeter drain

COMMENT

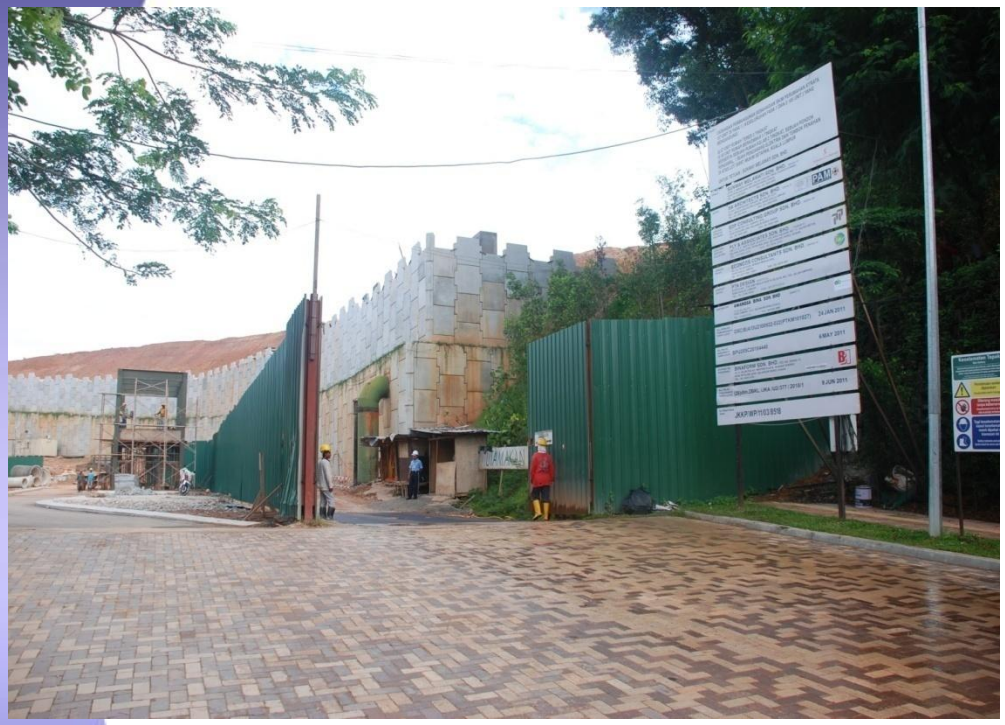
- Evidence of mudflow along the perimeter drain indicates a non-compliance project site.
- Sandbags used for perimeter control should have been placed along the side slope serve as earth bank barrier.
- Silt fences should have been used in lieu of sandbags.
- In earlier construction stage of the land disturbing activities along the boundary, pre-limit a wider space by establishing earth bank combine with diversion channel that can serve as barrier and runoff conveyance structure/medium. Once the Parcel 1 development area is stabilized, the then pre-limit working space at the boundary shall be attended to.
- The stretch along the perimeter boundary to MRR2 should also be constructed a few more (3 units) of sediment traps.
- Other BMPs that shall be installed and implemented around this area includes check dams, seeding and proper earth drains.

Corrective Actions

- EIA 4-08

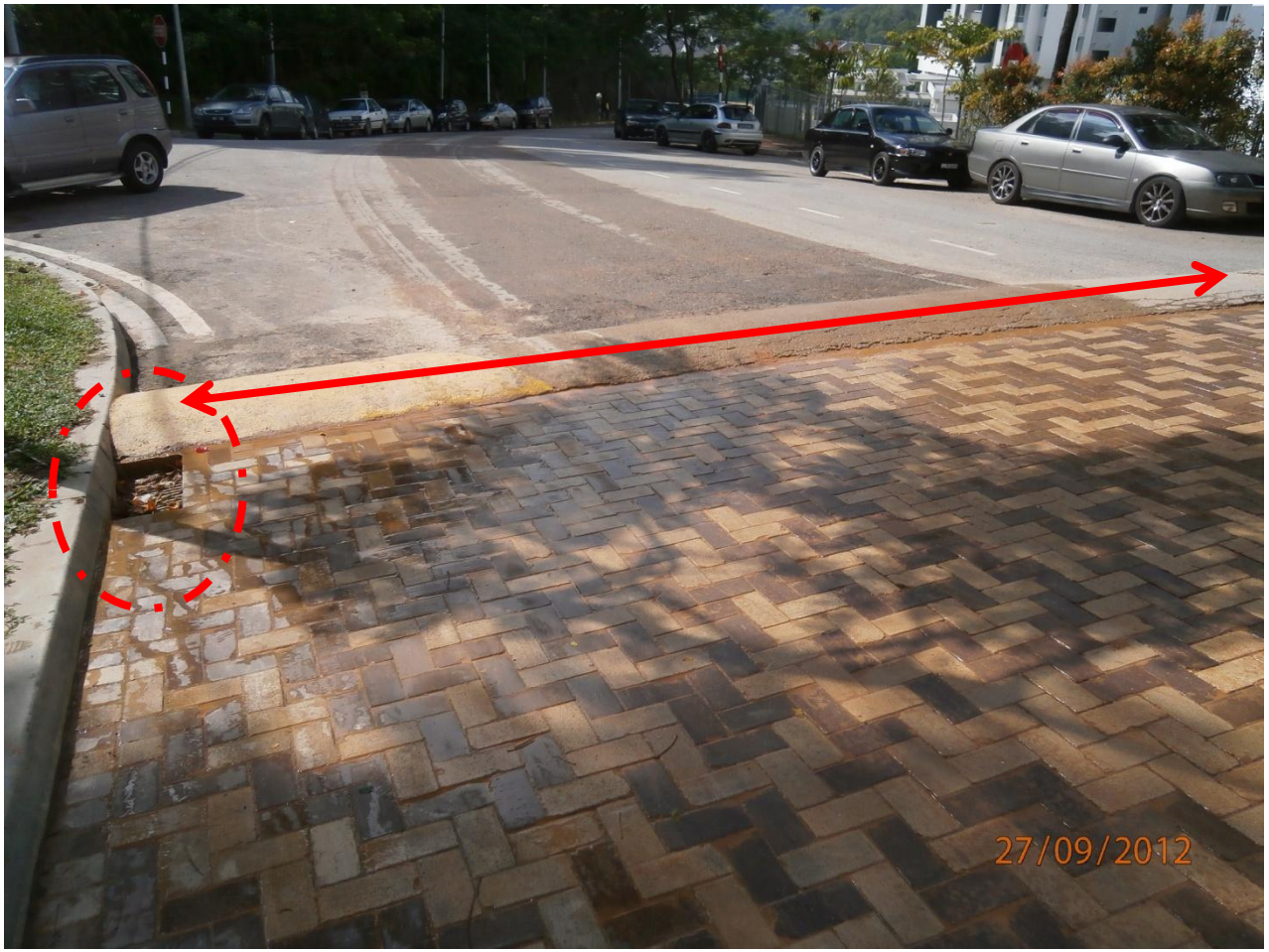
ENTRANCE

Entrance to the Project Site is kept cleaned



Interlocker Pavement

Small sediment trap used as a secondary control after wash trough combined with hump/water bar prevent dirt water from flowing down the road surface.



ENTRANCE

- Entrance to the Project Site is kept cleaned
- Interlocker Pavement
- Small sediment trap used as a secondary control after wash trough combined with hump/water bar prevent dirt water from flowing down the road surface.

COMMENT

- Clean entrance.

ACCESS /CONSTRUCTION /HAUL ROADS

Active Construction Road 1 (5-8 % gradient)

Active Construction Road 1 (5-8 % gradient)

Active Construction Road 2 (5-10 % gradient)

Active Construction Road 2 (5-10 % gradient)

Storm event

Active Construction Road 2 (5-10 % gradient)

Active Construction Road 2 (5-10 % gradient)

Active Construction Road 2 (5-10 % gradient) green northern boundary

Active Construction Road 2 (5-10 % gradient)

ACCESS /CONSTRUCTION /HAUL ROADS

- Active Construction Road 1
  (5-8 % gradient)
- Active Construction Road 2
  (5-10 % gradient)
- Active Construction Road 2
  (5-10 % gradient) green northern boundary

COMMENT

- Actives construction roads preferably must implement stabilization with gravels or crusher run.
- Wherever required, maximize the use of rolling dip, broad-based dip and water bar BMPs along the sloping or grades access to break and divert the potential runoff erosive flow, volume and direction.
- Establishing the road ditch is among the best method to control sediment-laden runoff. Construction of slot checks along the ditch may settle the sediment. Channel lined (riprap) with suitable stone sizes and mixtures with respect to runoff flow rate may reduce runoff velocity to weaken the erosive flow and promote settling capability.
- Method of grading by establishing in-slope and out-slope will naturally construct earth drain.
- Construction of earth bank along the critical side slope of the alignment may help to prevent runoff running onto the slope.

Corrective

- EIA-4-08

SEDIMENTATION AREAS (OFFSITE/ON-SITE)

Silted Drainageway Parcel 2

Silted Drainageway Parcel 2

Silted Drainageway Parcel 2

Silted Drainageway Parcel 2. End point of drainageway been constructed earthen dam and with pipe outlet point.

Without proper structure and maintenance, this embankment may give way

SEDIMENTATION AREAS (OFFSITE/ON-SITE)

- Silted Drainageway Parcel 2
- Silted Drainageway Parcel 2.
  End point of drainageway been constructed earthen dam and with pipe outlet point.
- Without proper structure and maintenance, this embankment may give way

COMMENT

- Series of sediment trap/basin shall be constructed along the drainageway.
- Erosion and sediment control measures around this catchments area must be thoroughly revised and applied accordingly.

Corrective Actions

- EIA-4-08

BORROW AREA (OFFSITE/ONSITE)

BORROW AREA

- None since this project having surplus of earth.

DISCHARGES

Public Main Drain

Discharge Point

Discharge Point

Discharge

DISCHARGES

- Public Main Drain
- Discharge Point

COMMENT

- Make sure to have a safe and accessible discharge point.

EVIDENCE
OF
CONCENTRATED FLOW

Access Road

Building Construction Area 2

Building Construction Site Area 2

Building Construction Site Area 2

Building Construction Site Area 2

Building Construction Site Area 2

At Junction of Access Rd 1 and Rd 2 Near Retaining Wall

EVIDENCE OF CONCENTRATED FLOW

- Access Road
- Building Construction Area 2
- At Junction of Access Rd 1 and Rd 2 Near Retaining Wall

COMMENT

- Indicate unmanaged runoff flow.
- Use the maximum extent of runoff BMPs and wherever required apply temporary cover.

Corrective Actions

- EIA-4-08

CRITICAL AREAS

Slopes were not protected

Unprotected

Unprotected

CRITICAL AREAS

- Slopes were not protected

COMMENT

- Cut and fill skills of slopes plays an important role in reducing the potential erosion problem. To complete certain cut/fill slope may take month, so method used such as terraces, benches and rounding the edge of the unfinished cutting of the most upslope shall reduce the vulnerability of the slope surface.

- Application of runoff BMPs such as temporary earth, interceptor, toe, cut-off and berms drains is mandatory in dealing with slopes formation process. Incomplete slopes formation that left exposed of more than 2 weeks shall be temporarily covered.

Corrective Actions

- EIA 4-08
- Notice S31

EVIDENCE OF GULLIES

Gullies not likely to form maybe due to hard soil surface properties

BARE AREA

BARE AREA

- Almost all of the incomplete / active construction area left exposed and unprotected.

Almost all of the active construction area left unprotected

Almost all of the active construction area left unprotected

Even awaiting for landscapes work to commence, shall be temporary covered

BARE AREA

- Almost all of the incomplete / active construction area left exposed and unprotected.
- Even awaiting for landscapes work to commence, shall be temporary covered

COMMENT

- Not a single effort to temporarily cover with seeding or hydroseed seen around this project area particularly active or changing site elevation and condition.

Corrective Actions

- EIA 4-08
- Notice S31

SENSITIVE AREAS

Public neighbourhood drain

Drained to main drain

Waterway culvert across MRR2 Highway

SENSITIVE AREAS

- Public neighbourhood drain
- Drained to main drain
- Waterway culvert across MRR2 Highway

COMMENT

- Obviously this site is not complying as evidence of silts deposited not far from discharge point.
- Indicator.

RUN-ON

RUN-ON

- Not sighted any run-on flows onto the site. However two dirt washing facilities within the jobsite **drain** washed water into Sediment Basin 1 may overload the said basin capacity.

Dirt washed water facility drains into SB 1

COMMENT

- Dirt washed water should have been discharged separately since sediment trapping control provided would be enough to filter sediment from shoes washing.

Corrective Actions

- **Give advice.**

STREAM OR DRAINAGE CROSSING / DIVERSION

Free runoff flow practice shouldn't be allowed for any reason

Culvert Crossing

High channel gradient shall apply inlet/outlet protection around culvert

Outlet Of Culvert Crossing

Undermining

Further down channel

Access road Crossing

Access road Crossing


Runoff crossing
15/08/2012 14:50

Another internal road crossing needs to install/construct Culvert or Broad-based dip BMPs

STREAM OR DRAINAGE CROSSING / DIVERSION

- Free runoff flow practice shouldn't be allowed for any reason
- Culvert Crossing
  - High channel gradient shall apply inlet/outlet protection around culvert

❑Access road Crossing
❑Another internal road crossing needs to install/construct Culvert or Broad-based dip BMPs

COMMENT

- Any crossing preferably use pipe culvert or bridge. Other BMPs such as broad-based dip may workable even for active construction roads. Protection must be applied around the crossing depending on the channel conveyance medium.

Corrective Actions

- EIA 4-08 or EIA 3-08 wherever related.

De-silted Materials Disposed On-Site

DISPOSAL AREA

Temporary disposal area for de-silting material shall be contained properly and stabilized

DISPOSAL AREA

- Temporary disposal area for de-silting material shall be contained properly and stabilized

COMMENT

- Must install perimeter barrier control and preferably cover.

Corrective Actions

- **EIA 4-08.**

INDIVIDUAL BMPs INSPECTION

BEST MANAGEMENT PRACTICES (BMPs)

THE INSPECTION

SITE PLANNING AND MANAGEMENT BMPs

SITE PLANNING AND MANAGEMENT BMPs

- Preservation of existing vegetation and trees. (Delineation)
- Preserving topsoil for the next construction
- Phasing/Scheduling/Sequencing of construction works in line with installation of erosion and sediment measures.
- Training & Certification of employees towards understanding of pollution control.
- On-site erosion and sediment control material resource such as Biomass, Plant Nursery (native), Gravels & rocks.

PRESERVE EXISTING TREES & VEGETATION

PRESERVE EXISTING TREES & VEGETATION

- 16 Acres on the northeast site of project area is preserved as green area.

COMMENT

- The development area was completely cleared without temporarily preserved existing vegetation significantly promotes erosion and sedimentation problem.

Phasing / Scheduling / Sequencing of construction works in line with installation of erosion and sediment measures.

Phasing/Scheduling/Sequencing of construction works in line with installation of erosion and sediment measures.

- Obviously not been practiced.

COMMENT

- The project implementation planned into two phases but construction will be implemented simultaneously. This condition normally meant for engaging two separate contractors to take over the construction activities separately.

- However the scheduling of both phases were not implemented by incorporating ESC elements and BMPs installation stages into their construction process. This is obvious to observe run-off discharged from Parcel 2 (uphill development) is conveyed into SB 1 sited in Parcel 1 while land disturbance in this area are yet to be stabilized. This may be due to many conflicting issues during the course of construction of which affected the staging and sequences of planned construction process.
-

Corrective Actions

- Too late.
- Legal action?
- EIA-3-08.

RESOURCE ON-SITE

BIOMASS

BIOMASS

- Disposed off-site

COMMENT

- Some of the branches established during site clearing may be used as mulching or brush barrier BMPs.

RESOURCE ON-SITE ROCKS FOR BMPs

ROCKS

- Being informed the source was not available on-site.

COMMENT

- On-site rocks or stones material if available may be used as check dam and riprap BMPs.

STOCKPILE TOPSOIL

STOCKPILE TOPSOIL

- No stockpile was seen on-site

COMMENT

- Topsoil should have been stockpile for the purpose of seeding and turfing BMPs activities.

SALVAGE TREES (TRANSLOCATION)

SALVAGE TREES

- Not practiced.

COMMENT

- Protect the native trees around the site and saving cost and time as well as expedite the trees growing for the purpose of landscaping.

ESTABLISH NURSERY

ESTABLISH NURSERY

- Not practiced

COMMENT

- Save cost and time. Made immediate availability of the grass/shrubs during the time of needed.

EROSION CONTROL

EROSION CONTROL LIST

- SOIL ROUGHENING
- MULCHING & HYDROMULCHING
- SEEDING & HYDROSEEDING
- TURFING
- RECP
- PLASTIC SHEET & GEOTEXTILE

HYDROSEEDING

Not seen other than slopes along the southwest side of the project site parallel to MRR2 highway.

HYDROSEEDING

- Not seen other than slopes along the southwest side of the project site parallel to MRR2 highway.

COMMENT

- Temporary Hydroseeding should have been applied to all of the critical slopes nevertheless it may be complete or not.

Corrective Actions

- Implemented properly and functioning.
- EIA-3-08.

TURFING

Sediment Basin Embankment and Side-slope well turfed

Other areas are not seen, except around the perimeter along the MRR2 highway.

TURFING

- Sediment Basin Embankment and Side-slope well turfed.
- Other areas are not seen, except around the perimeter along the MRR2 highway.

COMMENT

- Must be applied immediately upon completion of slopes and any other unattended flat surface areas.

Corrective Actions

- Nicely done and functioning.
- EIA-3-08

TEMPORARY PLASTIC SHEET COVER

Being informed that this low quality plastic sheet can only last for one month

Parcel 2: The only slope temporarily covered with low quality plastic sheet

TEMPORARY PLASTIC SHEET COVER

- Parcel 2: The only slope temporarily covered with low quality plastic sheet

COMMENT

- Installation:
  - The many exposed slopes around the site, only two slopes have been covered with plastic sheet.
  - Low quality material.
  - Installation not to the standard and specification such as sheet was not staked, no lengthwise and crosswise overlapped at edge, not trench and extend at top and bottom of slope.
- Maintenance:
  - Tore sheets were not replaced.

Corrective Actions

- Use high quality plastic sheet.
- Shall follow standard and specification.
- EIA 3-08

SEEDING

SEEDING

- None

COMMENT

- Any expected unattended flat surface for a long time should be seeded.

ROLLED EROSION CONTROL PRODUCTS

Matting

Matting

Matting

Matting – Staple/rebar

Matting

- Installed at one slope location GPS:

COMMENT

- Installation
  - Material used was not made available by contractor.
  - For the 1:1 slope, one must use high strength material combined with hydroseeding.

Corrective Actions

- Nicely done and working.
- EIA-3-08

SOIL ROUGHENING

SOIL ROUGHENING

- Not practiced.

COMMENT

- A very good practice in reducing erosion potential on slope surface especially incomplete slopes awaiting for cover BMPs.

MULCHING & HYDROMULCHING

MULCHING & HYDROMULCHING

- Not practiced.

COMMENT

- Available source material such as Biomass either by shredding or packed branches may be used for mulching and brush barrier/layer BMPs respectively.

REVEGETATION

REVEGETATION

- None

COMMENT

- Should be practiced similar to seeding and turfing. It normally involves the previously vegetated areas and application of native grass/shrubs.

RUNOFF CONTROL

RUNOFF CONTROL LIST

- DIVERSION
- EARTH BANK
- EARTH DRAIN
- RIPRAP
- CUT-OFF DRAIN
- BERM DRAIN
- INTERCEPTOR DRAIN

EARTH DRAIN

Parcel 1: Earth drain (Access Rd 1) draining from Building Construction Area 1

Parcel 1: Earth drain (Access Rd 1)

Parcel 1: Earth drain (Access Rd 1) End Point

Parcel 2: Earth drain

Parcel 2: Earth drain

EARTH DRAIN

- Parcel 1: Earth drain (Access Rd 1) draining from Building Construction Area 1
- Parcel 1: Earth drain (Access Rd 1)
- Parcel 1: Earth drain (Access Rd 1) End Point
- Parcel 2: Earth drain

COMMENT

- For very large platform, earth drain must be constructed around the exposed surface by dividing necessarily the suitable surface areas to prevent flow accumulation that may generate erosive flow manner (concentrated flow).

Corrective Actions

- Improperly done and evidence of overtopping as well as undermining of drain slope and bed.
- EIA-3-08

EARTH BANK

Not seen other than slopes along the southwest side of the project site parallel to MRR2 highway.

EARTH BANK

- Not seen other than slopes along the southwest side of the project site parallel to MRR2 highway.

COMMENT

- Installation:

  Good application along the site boundary but not fully constructed according to the specifications such as break of continuity direction into sediment basin, bank width, side slope, check slots /dam, concave top surface and seeded.

- Practice that to be used throughout the site for the purpose of diversion and perimeter barrier control.

Corrective Actions

- Improperly done and evidence of overtopping as well as undermining of drain slope and bed.
- EIA-3-08

DIVERSION

Diversion Channel drain runoff from Parcel 2 uphill

Lined with stones (Riprap)

Crossing over Access Rd 2 and continuing into channel draining into SB2

Cross over Access Road 2

Concrete dam (claimed as Check Dam)

Concrete dam (claimed as Check Dam)

Drains through culvert crossing (lined with concrete piles)

Overtopping culvert crossing

Outlet of culvert crossing (lined with concrete piles)

More downstream (lined with mixed stones and concrete)

Storm event

Further downstream without lining

Expected wash away material downstream during high flow. Another construction road crossing

Further downstream

Further downstream

Runoff turned erosive with increase gradient and starts to undercut channel bed.

Observe wash away concrete piles

Visible Check Dams during storm recede

Eroded channel bank

Sub-division access road crossing

Direction flow to SB2

Diversion Channel drain to SB2

Diversion Channel drain to SB2

Bypass SB2

Bypass SB2 overflow to SB1

Flow into SB1

DIVERSION

- Diversion Channel drain runoff from Parcel 2 uphill and along site boundary at perimeter along MRR2

COMMENT

- Follow strictly standards and specifications been set.

Corrective Actions

- Improperly done and evidence of overtopping as well as undermining of drain slope and bed.
- EIA-3-08

CHECK DAM

IMPROPER CHECK DAM

Concrete dam (claimed as Check Dam)

Concrete dam (claimed as Check Dam)

IMPROPER CHECK DAM

COMMENT

- Follow strictly standards and specifications been set.

Corrective Actions

- Consider not done or installed.
- EIA-3-08

RIPRAP

RIPRAP

RIPRAP

RIPRAP

RIPRAP

RIPRAP
(Comparison within 2 months)

RIPRAP
(Must consider specification)

Further upslope

Further upslope

COMMENT

- Follow strictly standards and specifications been set.

Corrective Actions

- Installation not according to standards and specifications.
- EIA-3-08

OUTLET PROTECTION

No outlet protection around culvert

Rock Outlet Protection (Observe the stone placed in the pipe pose possibility of dam break)

Discharge not conveyed properly downstream (Must extend apron)

Storm Event

OUTLET PROTECTION

- No outlet protection around culvert
- Rock Outlet Protection
  (Observe the stone placed in the pipe pose possibility of dam break)
- Discharge not conveyed properly downstream
  (Must extend apron)

COMMENT

- Shall follow standards and specifications been set.

Corrective Actions

- Installation not according to standards and specifications.
- EIA-3-08

DISSIPATER

Dissipater

COMMENT

- Shall follow standards and specifications been set.

Corrective Actions

- Installation not according to standards and specifications.
- EIA-3-08

SOIL RETENTION

AE Wall

Retaining Wall

AE Wall in Progress

Storm Event

Storm Event

COMMENT

- Shall follow standards and specifications been set.

Corrective Actions

- No evidence of soil movement.
- EIA-3-08

INLET PROTECTION

Sandbag Inlet Protection (connector box sump)

Storm Event

No Storm Drain Inlet Protection

No Storm Drain Inlet Protection

No Storm Drain Inlet Protection

Storm Drain Inlet Protection

- Sandbag Inlet Protection (connector box sump)

COMMENT

- Shall follow standards and specifications been set.
- Should be applied at many more locations:
  - Suitable sediment basin inlet point
  - All of storm drain inlet point

Corrective Actions

- Properly installed.
- EIA-3-08

PIPE SLOPE DRAIN

PIPE SLOPE DRAIN

- None

COMMENT

- Many possible locations may be installed at critical locations to convey upslope runoff downslope.

TEMPORARY CUT-OFF DRAIN

TEMPORARY CUT-OFF DRAIN

- Not sighted.

COMMENT

- Many possible locations may be installed at critical locations to convey upslope runoff downslope.

FLUME / CHUTE

FLUME / CHUTE

- None

COMMENT

- Not so applicable.

ROLLING DIP / BROAD-BASED DIP / WATER BAR

ROLLING DIP / BROAD-BASED DIP / WATER BAR

- None

COMMENT

- Many possible locations may be installed at critical locations to convey upslope runoff downslope.

LEVEL SPREADER

LEVEL SPREADER

- NONE

COMMENT

- Suitable for Stormwater BMPs but may be applied at suitable location and site condition.

SEDIMENT CONTROL

SEDIMENT CONTROL LIST

- SILT FENCE
- SEDIMENT BASIN/TRAP
- WASH TROUGH
- CONSTRUCTION ROAD STABILISATION
- BRUSH BARRIER

WASH TROUGH
AND
STABILIZED ENTRANCE/EXIT

Tire Wash Facility

Rumble Grating

Recycle water pond

Storm event

WASH TROUGH AND STABILIZED ENTRANCE/EXIT

- Tire Wash Facility
- Rumble Grating
- Recycle water pond and sediment trap

COMMENT

- Good applications of tire wash facility. Consider frequent maintenance of the recycle water compartment to remove the fast accumulated sediment due to active washing.

Corrective Actions

- Check the frequency of maintenance especially the clean out.
- EIA-3-08

CONSTRUCTION ROAD STABILIZATION

Compaction

Stabilized surface with crusher run

CONSTRUCTION ROAD STABILIZATION

- Compaction
- Stabilized surface with crusher run at the access track of material storage area.

COMMENT

- Earth compaction serves a good method of soil stabilization but tends to promote runoff volume due to impervious surface. Proper roadside drain and diverter should be constructed to avoid free flow and standing water that may rut the surface and induce erosion during heavy vehicles movement.

Corrective Actions

- Smooth compaction road surface shall be provided with roadside drain and runoff diverter or water bar.
- EIA-3-08

SILT FENCE

Silt Fence – the only 50 metres installed

Silt Fence – the only 50 metres installed

Silt Fence – the only 50 metres installed

SILT FENCE

- Silt Fence – the only 50 metres installed.

COMMENT

- Shall follow standards and specifications been set.
- Many potential location at the site should be applied especially the site boundary at perimeter along MRR2 highway as suggested in the ESCP.

Corrective Actions

- Shall follow standards and specifications been set.
- EIA-3-08

SEDIMENT BASIN / TRAP

SEDIMENT BASIN 1

Sediment Basin 1

RISER COVERED WITH FABRIC


SERVICE ACCESS
GOOD TURFED EMBANKMENT
26/9/2012 9:26pm

De-silting material dumped beside the pond

Foreign material placed on the pond embankment

Overview of Sediment Basin 1

Riser close-up

Storm event

Storm event

Site Office next to SB1 (upstream)

COMMENT

- Shall follow standards and specifications been set.
- Overload or under capacity.
- Construct many more.
- Establish forebay and baffles.
- Make use of PAM.

Corrective Actions

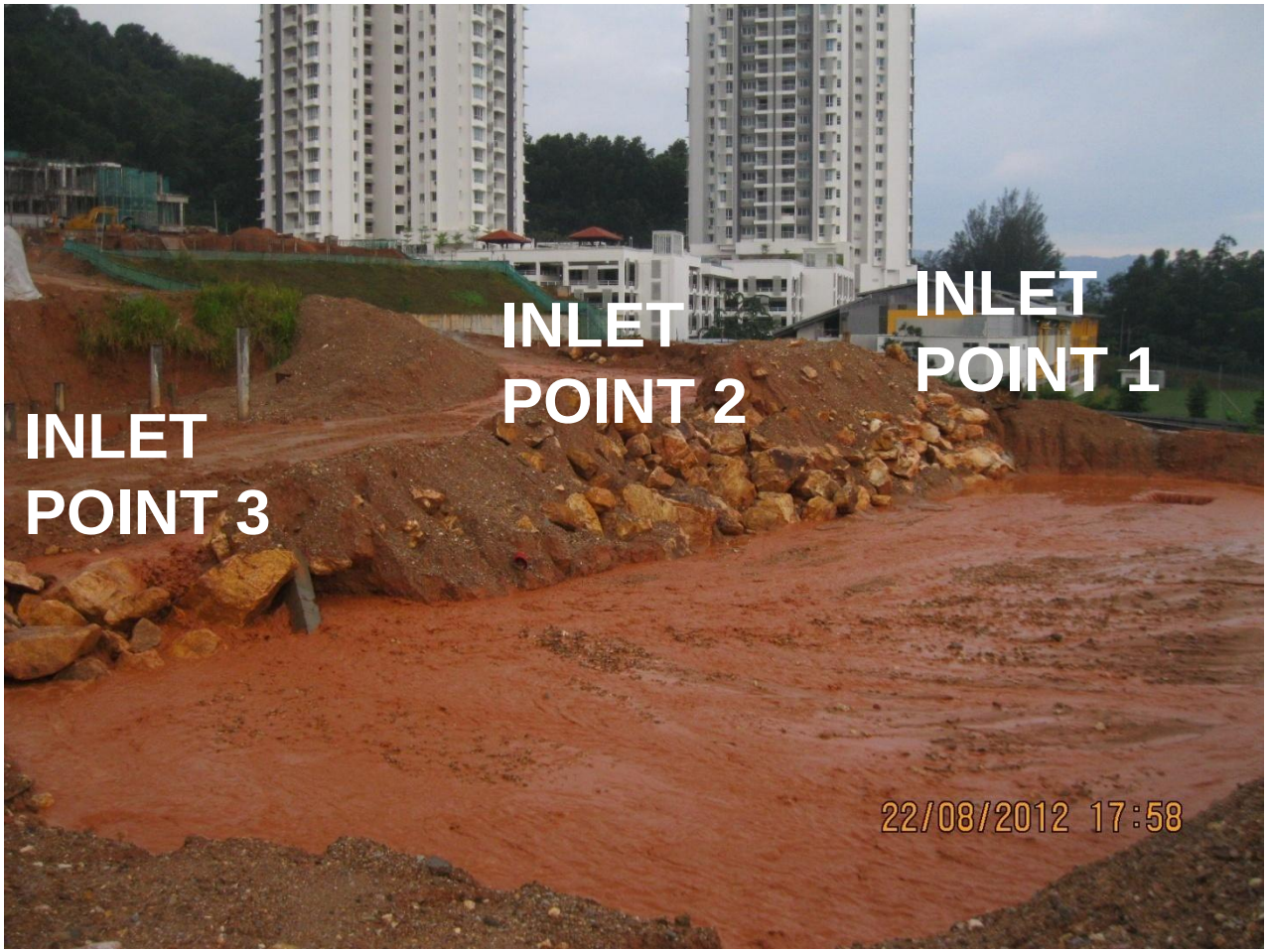
- Shall follow standards and specifications been set.
- EIA-3-08

SEDIMENT BASIN 2

Sediment Basin 2

Sediment Basin 2

Sediment Basin 2



INLET POINT 2 & 3

INLET POINT 2

COMMENT

- Shall follow standards and specifications been set.
- Overload or under capacity.
- Construct many more.
- Establish forebay and baffles.
- Make use of PAM.

Corrective Actions

- Shall follow standards and specifications been set.
- EIA-3-08

SEDIMENT BASIN 3

Sediment Basin 3

Sediment Basin 3

Evidently direct sediment-laden runoff flows down steep sloping access road.

Sediment Basin 3 Discharge Point

Contributing disturbed area that drains runoff into Sediment Basin 3

A suitable location to construct additional sediment basin after SB3

Overview of SB3

COMMENT

- Shall follow standards and specifications been set.
- Overload or under capacity.
- Construct many more.
- Establish forebay and baffles.
- Make use of PAM.

Corrective Actions

- Shall follow standards and specifications been set.
- EIA-3-08

BRUSH BARRIER

BRUSH BARRIER

- NONE

COMMENT

- Potentially being used during early stage of site clearing.

FIBER ROLLS / WATTLES

FIBER ROLLS / WATTLES

- NONE

COMMENT

- May be used as slope breaker and sub-division perimeter barrier.

TURBIDITY CURTAIN

TURBIDITY CURTAIN

- NA

POST CONSTRUCTION (STORMWATER BMPs)

Awaiting for cascade drain

Awaiting for cascade drain

Awaiting for cascade drain

Awaiting for cascade drain

Completed Cascade drain

Interlock Paver

POST CONSTRUCTION (STORMWATER BMPs)

- Cascade drain
- Interlock Paver

COMMENT

- Must incorporate associate BMPs for Post-construction versus During construction.

Corrective Actions

- EIA-3-08

GENERAL CONSTRUCTION CONTROL

Misappropriate

Bad Location

Waste oil container

Compressor, Schedule Waste Container and Skid Tank

Schedule Waste Store

GENERAL CONSTRUCTION CONTROL

- Inapropriate practice (skid tank)
- Bad Location
- Waste oil container
- Compressor, Schedule Waste Container and Skid Tank
- Schedule Waste Store

MAINTENANCE ISSUES

Just imagine the thickness of the silts

COMMENT

- Establish scheduled and contingency program. Please refer to execution method of Performance Monitoring.

Method Statement

- No method statement was made available during the time of inspection pertaining to how runoff from Parcel 2 to be convey or drain out environmentally safe from the project site.

COMMENT

- Whenever unavailable method statement of construction process around critical and sensitive area, one must request the environmental Method Statement so as to outline and lay the detail methodology that includes standards and specifications to be used for preventing and minimizing erosion and sedimentation problems.

Performance Monitoring

- No performance monitoring document was made available at the time of inspection.

COMMENT

- If Performance Monitoring is really not being done, then surely this project site is not complying at all time ever since it started. This reflects the documentation of the conducting duties during the course of installation, inspection and maintenance works.

CONCLUSION

CONCLUSION

- Phasing was not adhered to.
  - SB1 should be used as a Stage 2 additional operating sediment pond during Parcel 2 earthwork advances whenever Parcel 1 area is totally stabilized.

- Preventive measures was not practiced at all.
  - Being informed that the process of SB 1 cleaned out consumed non-stop of 3 weeks of de-silting work involving 100 trips of lorry transporting uphill to the disposal site costing up to RM 40k.

CONCLUSION

- Runoff control and management were not planned and implemented.
- Disturbed area were not stabilized and left exposed for long time.
- The extents of soil disturbance at a time are very large.
- BMPs installation, inspection and maintenance were not adhered to standards and specifications been set.

ENFORCEMENT INSPECTION REPORT (Non-compliance / Violation)

- Prevention and control measures outline in the EIA Report. ESCP Report
- Approval Conditions: Previous New
  - ESCP
  - BMPs
  - Discharge

Enforcement Action:

1. Citation
2. Notices under Section 31 & 37
3. Legal action under Section 34A(7)

ENFORCEMENT INSPECTION REPORT

- Apendiks 16-Laporan Siasatan EIA

Follow-up Action

- Serve notice to take corrective actions duly.
- Any legal action to be taken due to any violation shall reference to that specific approval condition. Make sure that evidence collection must base on the requirement of the burden of proof related to the afore-mention approval condition.

ENFORCEMENT FOLLOW-UP ACTION

Verification of corrective actions taken base upon previous issued citations and notices.

EIA- 5-08

THANK YOU

QUESTIONS?