Attachment A7- 1

CHECKLIST FOR CARRYING OUT TRIAL HOLES IN CHANGI/SELETAR AIRPORT

Objective: To locate and trace all underground services, both charted and uncharted, before commencement of ground works to ensure that all activities can proceed safely without damage or downtime to operating services.

Steps: Check boxes when completed

1. Before commencement of any trial holes on site, the Work Party shall Request for and obtain existing as-built services drawing using the "REQUEST FOR INFORMATION ON UNDERGROUND SERVICES FOR TRIAL HOLES / EXCAVATION / PILING WORKS" (Form A) and purchases services drawings from other relevant agencies. ☐

CAG Engineering & Development Group, covering:

- High Tension cables
- External Airside and Landside Low Tension cables
- Airfield lighting cables
- Control cables ☐
- Water pipelines
- Drainage subsoil pipes
- Turf maintenance
- CCTV Cables

- Other CAG Division, covering
  - Horticulture
  - Airside Operations (Airside Work Permit & Lane closure at airside) ☐
  - Roadway Unit (Lane closure at landside)
  - Corporate IT and Technology (Structured cabling)
  - Airport Operations Management (LT cable for Airport Operations Systems at landside)

- Other relevant agencies, including
  - CAAS Aeronautical Telecommunication & Engineering , covering:
    - Communications
    - Navigation
    - Surveillance Services
  - SingTel
  - StarHub ☐
  - CAFHI
  - CityGas / PowerGas
  - PUB - Sewage pipes
  - Tenants concerned, where necessary

Check boxes when completed

2. The Work Party shall submit the method statement for trial holes

works to CAG project officer and consultants one week in advance for approval.

3. The Work Party shall carry out services detection on site through engaging the services of a licensed cable detection worker (LCDW). The particulars of the licensed cable detector shall be submitted to the CAG project officer and consultants in charge for endorsement. The CAG project officer and consultants shall make necessary arrangements to ensure that all related electrical services are turned on to facilitate cable detection work. ☐

4. After LCDW has completed the detection works, the LCDW will compile a comprehensive services layout report and his recommendation of the proposed trial holes location through the Work Party to CAG project officer and consultants for approval. The LCDW report will recommend suitable measures to be taken to protect all services on site based on sound industrial practice and recommendations by the services' owners. The LCDW report showing exact locations of services found shall be submitted to relevant services' owners for verification. ☐

5. Prior commencement of trial holes works, the Work Party shall submit the "Application for Permit to Carry Out Trial Hole Works" (Form B) to CAG project officer and consultants one week in advance for approval. ☐

6. Prior commencement of trial holes works, LCDW shall marked out the detected services on the trial holes location using wooden pegs or different spray paints. ☐

7. Prior to commencement of each trial hole works, the Work Party's shall notify CAG Project Officer on the commencement and location of the trial holes works. LCDW shall conduct a briefing to all competent supervisors and workers assigned to perform the trial holes works to highlight to them the services layout and possibility of absence of indicators, eg cable slabs, markers and sand above existing indicated or non-indicated sevices or cables. He shall also determine depth of services or cables from users and own service detection plan as far as possible before commencement of trial holes and trenching works. ☐

Check boxes when completed

8. The Work Party shall provide trial holes that are manually dug under the standing supervision of the LCDW and competent supervisor to expose, identify and confirm the services detected. Trial holes shall be required to positively identify all communications cables, fibre optic cables, gas and water pipe location, as well as all other services within ☐

or in the proximity of the intended excavation/piling area that cannot be accurately located or easily detected. Detailed information shall be obtained from the appropriate party as to the possibility of such services being located within the proposed construction area. The Work Party shall take all necessary precautions to ensure that these “undetectable services”
are located and protected during the earthworks. Examples of “undetectable services” are certain telecommunication / data cables, un-energized cables, CAFHI fuel pipes, fibre optic cables, co-axial cables and radar cables.

9. All trial holes works must be carried out with caution and dug by manual means until services are successfully located or desired excavation depth is achieved with the standing supervision of both LCDW and competent supervisor. Excavator or other machinery shall not be used for digging trial holes except for the top asphalt or concrete layer (Only Registered Excavator (REO) or Probational Registered Excavator Operators (PREO) will be allowed to operate the excavators). ☐

10. The contractor shall stop any trial holes & trenching works if they encounter any unknown structure or obstruction. LCDW shall be on site to verify any presence of live services. Contractor has to consult CAG project/maintenance officers before proceeding further. ☐

11. The Work Party shall install safety barriers to protect workers from falling into trial holes when works is in progress or are left exposed. ☐

12. The LCDW report shall also highlight all discrepancies between the services layout indicated on plans versus their actual location found on site. CAG project officer shall coordinate a meeting to sort out such discrepancies with all relevant services owners concerned. ☐

13. Upon completing items 1 to 11, the Work Party shall submit an updated cable detection plan showing markings done on site, proposed work methods and services protection and/or diversion scheme to the CAG project officer, consultants and relevant service owners for approval at least 2 weeks before the planned commencement of actual excavation / piling work. ☐