1. INTRODUCTION
1. Generally, slope remedial work will be carried out on existing failed slopes.
2. Normally, the application of remedial work is subjected to the suitability of site condition, such as the location of site, site difficulty, type of failure, soil profile, etc.
3. Thus, the cost of slope remedial at particular location might be differ with another location.
4. Cost estimation of the remedial work is necessary to carried out to ensure the cost applied for the remedial is range with the market value.
5. Cost estimation is an approximation of the probable cost of a project on the basis of available information.
6. A problem with a cost overrun can be avoided with a credible, reliable and accurate cost estimate.
1. Preliminary Work
2. Earthwork (excavation & backfilling)
3. Slope Stabilization Work
4. Surface Protection Work
5. Drainage System Work
6. Road Work
PRELIMINARY WORK

- Mapping/Relocation/Supply
- Site Office Requirement & Provision, etc

SITE FACILITIES

TESTING

Example

EARTHWORK (EXCAVATION & BACKFILLING)

Example

SLOPE STABILIZATION WORK

Example of Rubble Wall & Stone pitching
SURFACE PROTECTION WORK

Shotcrete
Hydroseeding

DRAINAGE SYSTEM WORK

ROAD WORK

Filling
Crusher Run
Premix Work
1. **Man Power**
2. **Materials**
3. **Machinery**
4. **Production**

**MAN POWER**

1. Man power is person that probably involve to complete the work.
2. It can be divide into few category such as:
   1. Site Administration Staff
   2. Machine Operator
   3. Skill Worker
   4. General Worker
3. Number of worker need to be estimate to ensure the work can be carried out efficiently and match with production required.
4. The estimation of rate of salary for the workers involve in particular work must be in range of current market.
MATERIALS
1. The materials required for the particular work must be identified for quantity estimation purpose.
2. Quantity estimation
3. Rate of materials

MACHINERY
1. Type of machinery required must be listed
2. Number of machinery
3. Rate of rental
4. Duration required
5. Consumption for the used machinery must be identified (fuel, diesel, maintenance)

PRODUCTION
1. Understand the process to carry out the work.
2. Estimation of completion per day.
3. Consideration of work delay possibility.
4.0 EXTERNAL FACTOR OF COST ESTIMATION

1. Type of remedial.
2. Location of site.
3. Difficulty of site.
5. Market value of construction materials and machinery rental.

DOES THE EXTERNAL FACTOR AFFECT THE COST ESTIMATION FOR REMEDIAL WORK???

HOW???
1. Type of remedial is one of the factors that will affect the cost estimation because:
   1. Different work scope will be involved.
   2. Different materials will be used.

**TYPE OF REMEDIAL**

**FACTOR OF LOCATION**

(Rate of Machinery)

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Different rate of machinery depends on site location (state).

**FACTOR OF LOCATION**

(Rate of Man Power)

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Different rate of man power depends on site location (state).
SITE DIFFICULTY
(Limited Access to Failure Area)

Less of production per day will increase the cost of operation work

SITE DIFFICULTY
(Limited Work Space)

Need the high skill/experience man power to carry out the work.

PAPER CUTTING ON CURRENCY EXCHANGE
PAPER CUTTING ON INCREMENT OF MARKET VALUE FOR CONSTRUCTION MATERIALS

5.0 EXAMPLE OF COST ESTIMATION

EXAMPLE OF COST ESTIMATION
1. Cost estimation of slope remedial work must be carried out to prevent the overrun of cost.
2. The estimator must experience on the market rate of man, paves, materials and machinery.