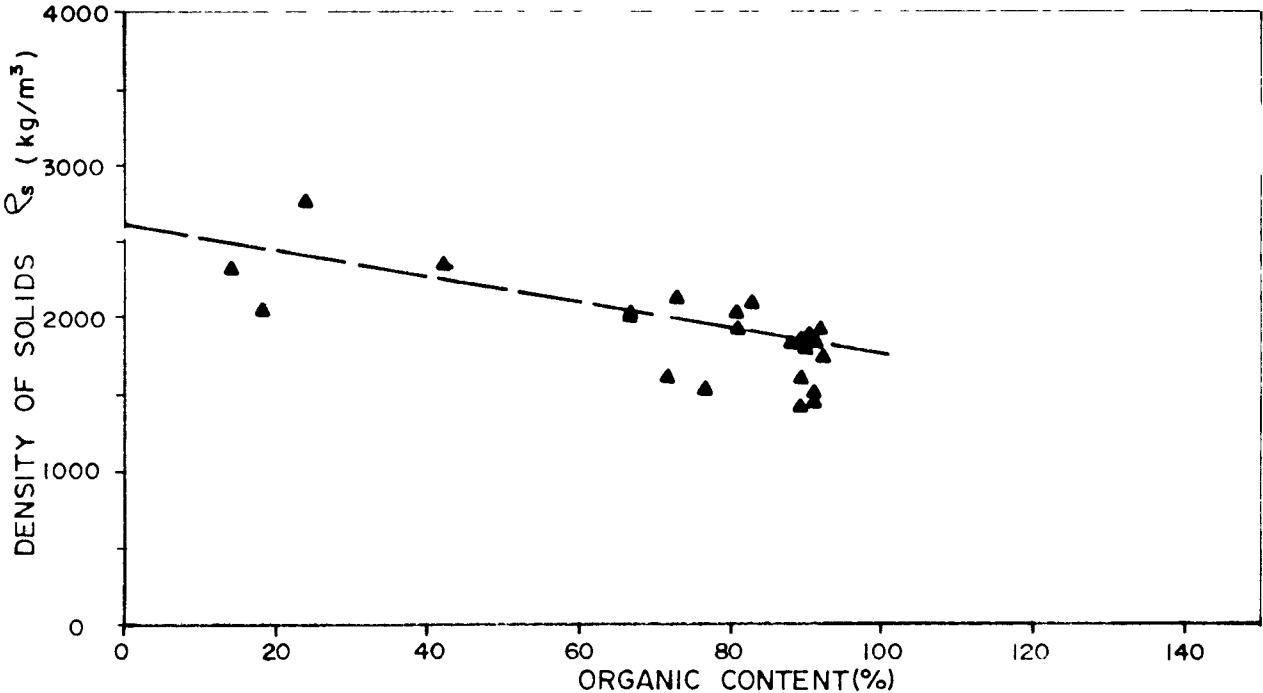
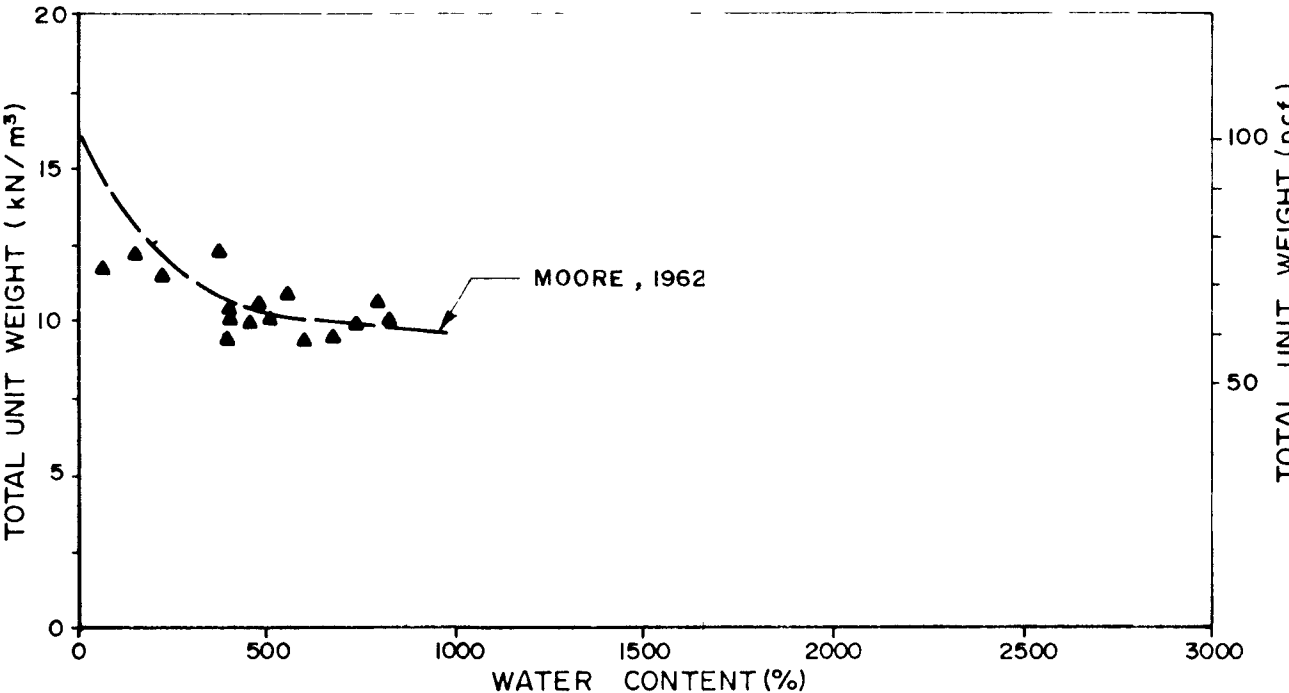
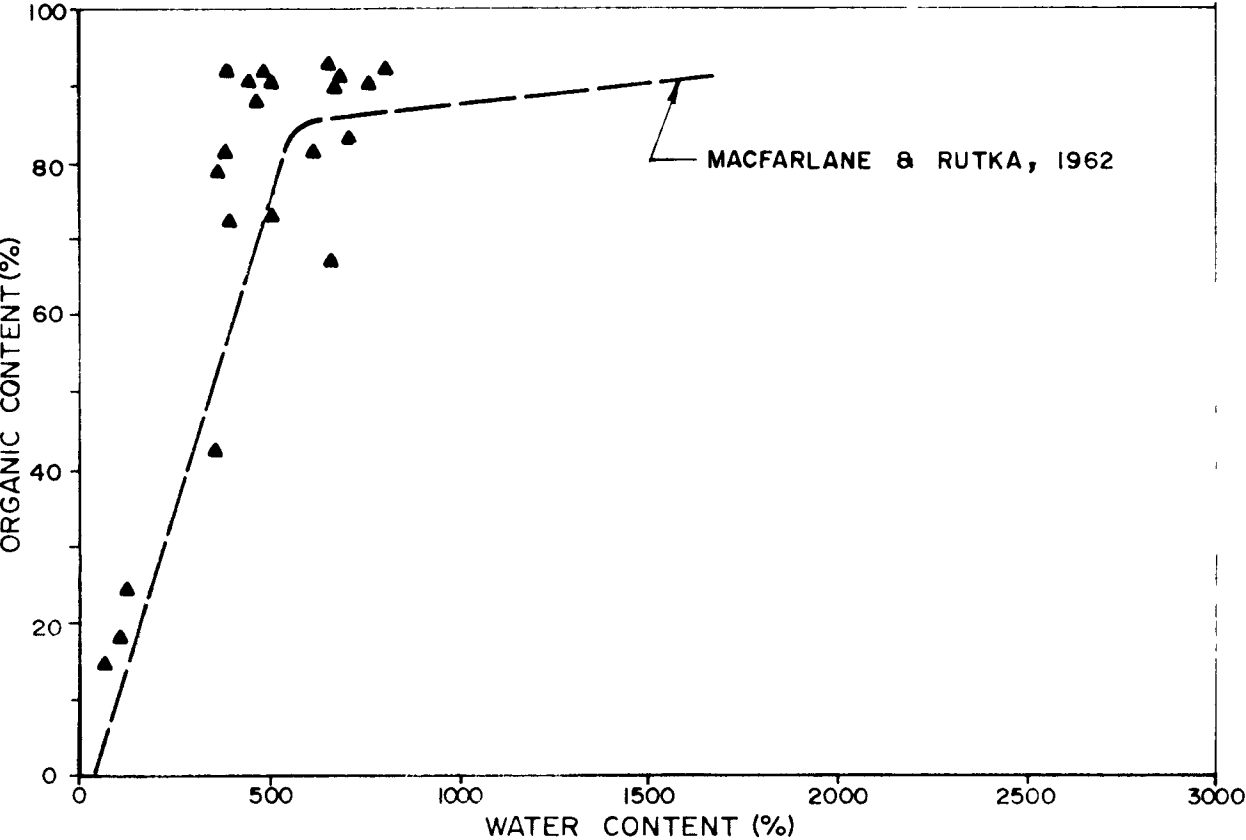
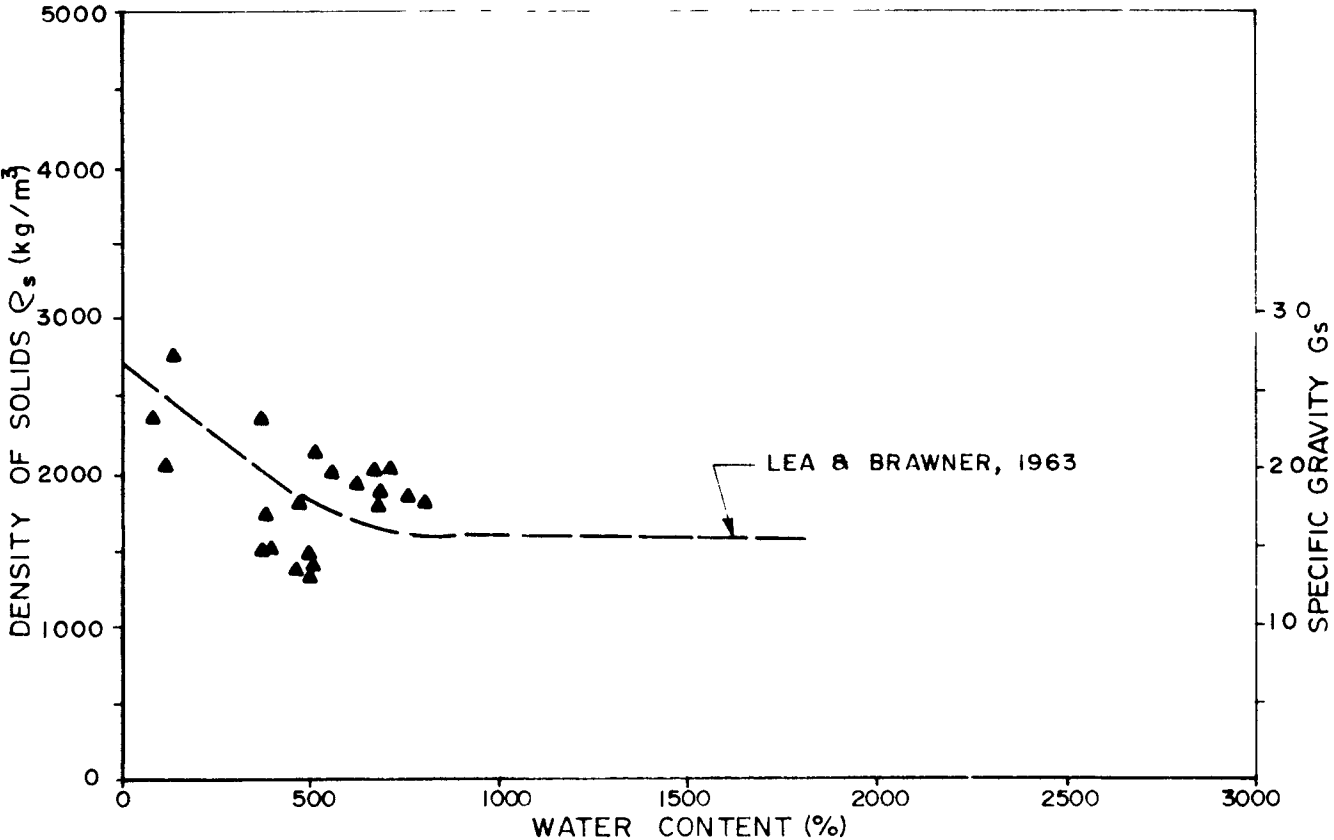
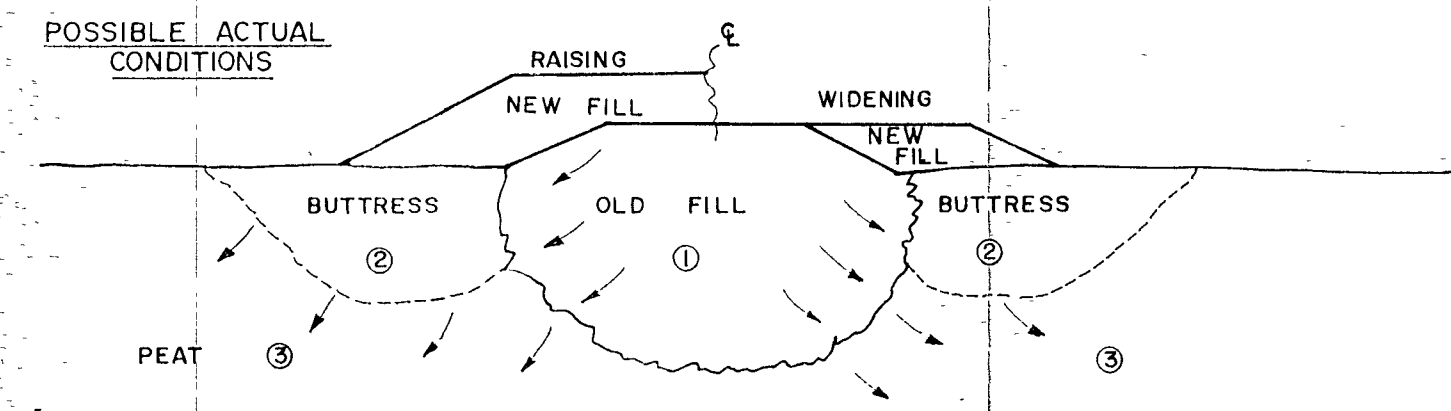
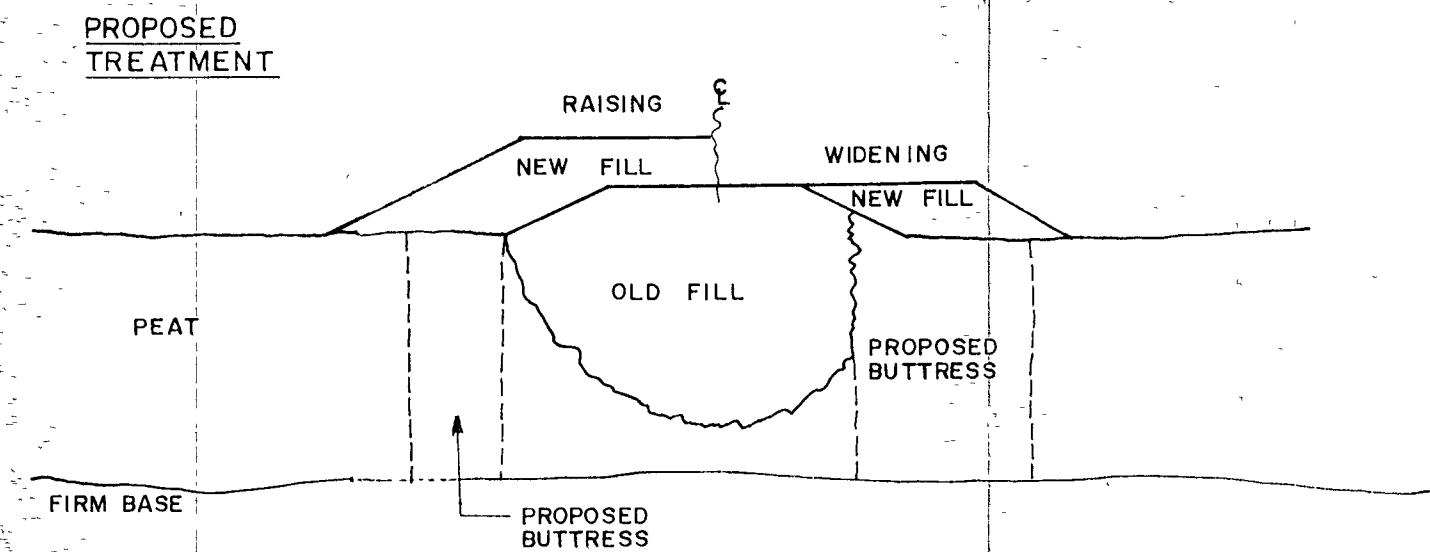


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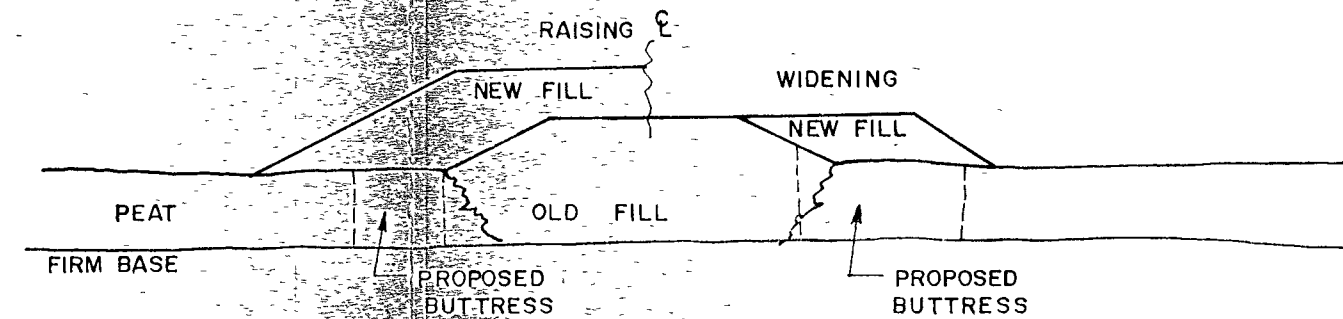


22.1 BUTTRESS APPROACH ON DEEP PEAT DEPOSITS

COMMENTS

1. Spreading of existing rockfill due to lateral displacement into buttress excavation - damage to existing pavement.
2. Not possible to dig deep excavations in very soft peat - side slopes very flat, depth uncertain.
3. Peat adjacent to/below existing rockfill disturbed. Post-construction lateral deformation/settlement of peat below new rockfill.

- This approach not recommended for deep deposits of amorphous peat.



22.2 BUTTRESS APPROACH ON SHALLOW PEAT DEPOSITS

COMMENTS

- Possible to subexcavate to shallow depth (2-3 m) and to ensure that buttress backfill rests on firm bottom.
- Distress to existing fill will be at outer extremities but main body of old fill should be unaffected.
- With new fill on "firm" base post-construction lateral deformations and vertical settlement should be modest.

COMMENTS

PURPOSE:

- Maximize shear stress/displacement of virgin peat without affecting existing fill, combined with pre-loading this approach should minimize post-construction deformations.

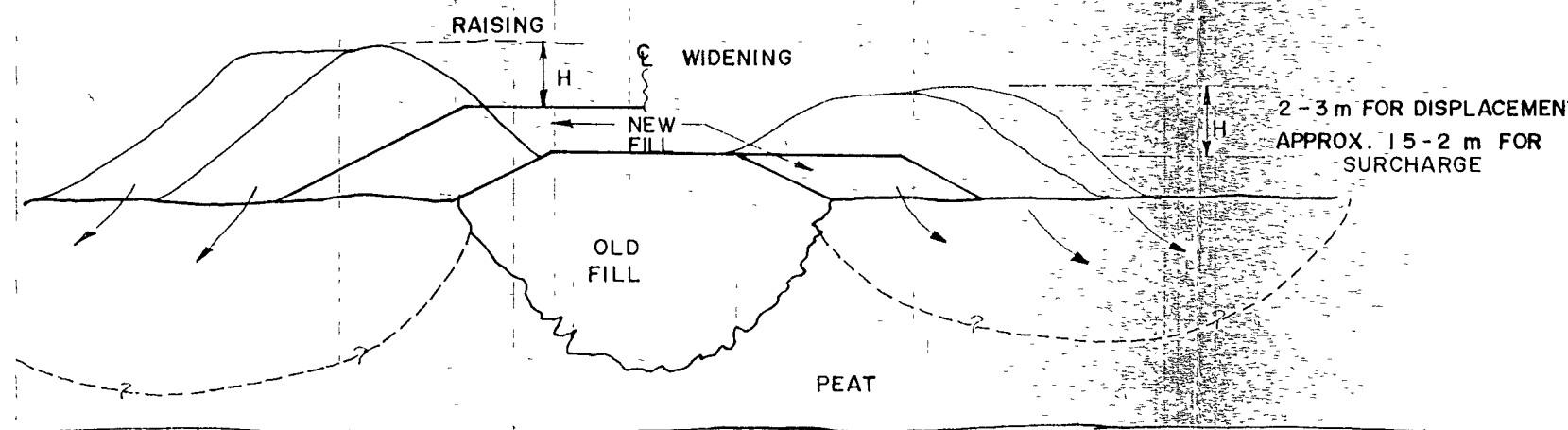
PLACEMENT METHOD:

- To maximize displacement
 - Blasting - too near highway to risk undetonated charges, requires shutdown of highway. Could be used if new alignment well away from existing pavement.
 - Pre-Excavation - limited depth to avoid distress of existing fill.
 - Overfill and Induce Failure - safest approach and consistent with pre-load requirement.
 - continuous operation filling out and away from road, removal of mud wave
 - needs wider fill width and relatively large volumes of material since traffic to be maintained during filling pre-loading.

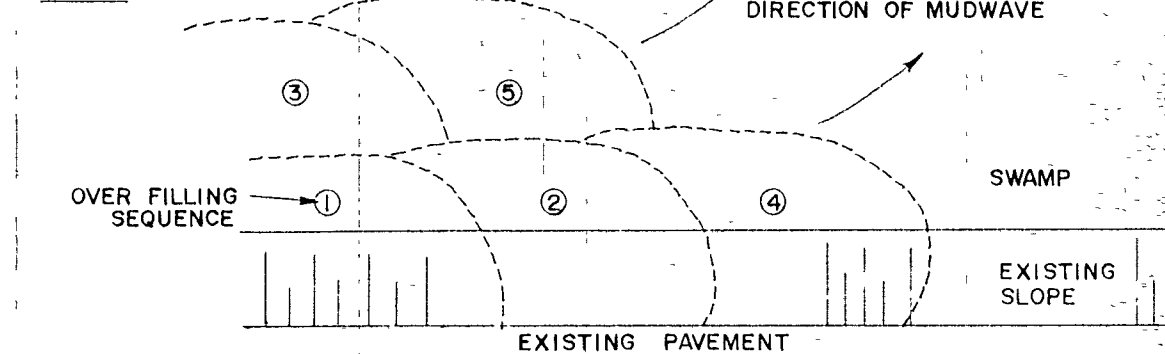
PRE-LOAD:

- Required since not all peat will be displaced and post-construction settlement will occur.
- With lateral overfill, potential future distress area on outside away from completed pavement.

SECTION



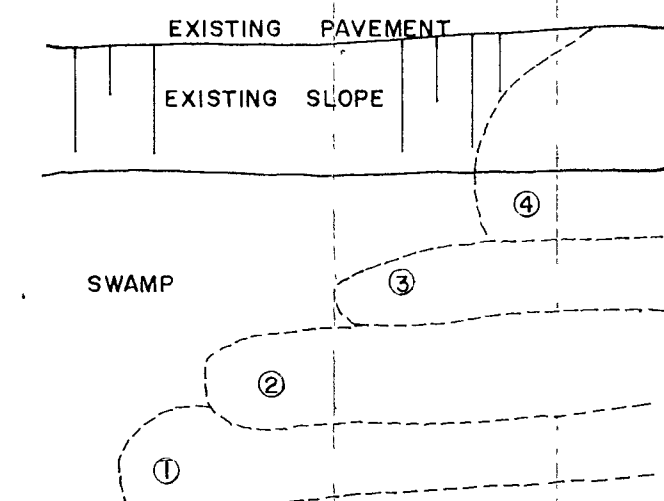
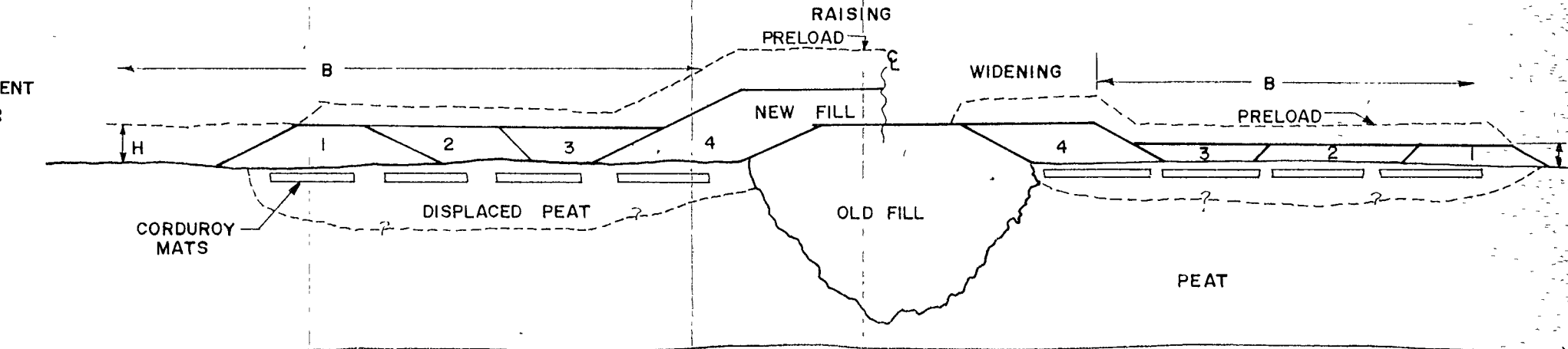
PLAN



22.3 DISPLACEMENT APPROACH

ALTERNATIVE CONSTRUCTION PROCEDURES FOR WIDENING / RAISING HIGHWAY FILLS ON PEAT DEPOSITS

FIGURE 22



22.4 BERM APPROACH

Comments

B = 2 x Peat Thickness
H = 1/2 of Final Fill Height Above Swamp

PURPOSE:

- Minimize shear stress in virgin peat prior to placing new fill & pre-load.

PLACEMENT METHOD:

- Corduroy mats to provide improved trafficability and stability of berms.
- Thin lifts and work from outside in towards existing fill to minimize shear stress in virgin peat.
- Continuous removal of mud wave in "trapped" pocket.

PRE-LOAD:

- May need to be staged to maintain 2-lane traffic or fill/berm width very wide.
- With less displacement, more virgin peat left in place and therefore more long term lateral/vertical deformation.

PROBLEMS:

- Poor trafficability on very weak virgin peat during berm construction.
- Substantial "topping up" of pre-load will be required.
- Some post-construction deformation likely even after pre-load.

NOT TO SCALE

SPECIAL NOTE
THIS DRAWING IS TO BE READ IN CONJUNCTION
WITH ACCOMPANYING REPORT

Date FEB 22, 1982.

Project 811-1291

Drawn M.V.

Chkd JMC

SAC