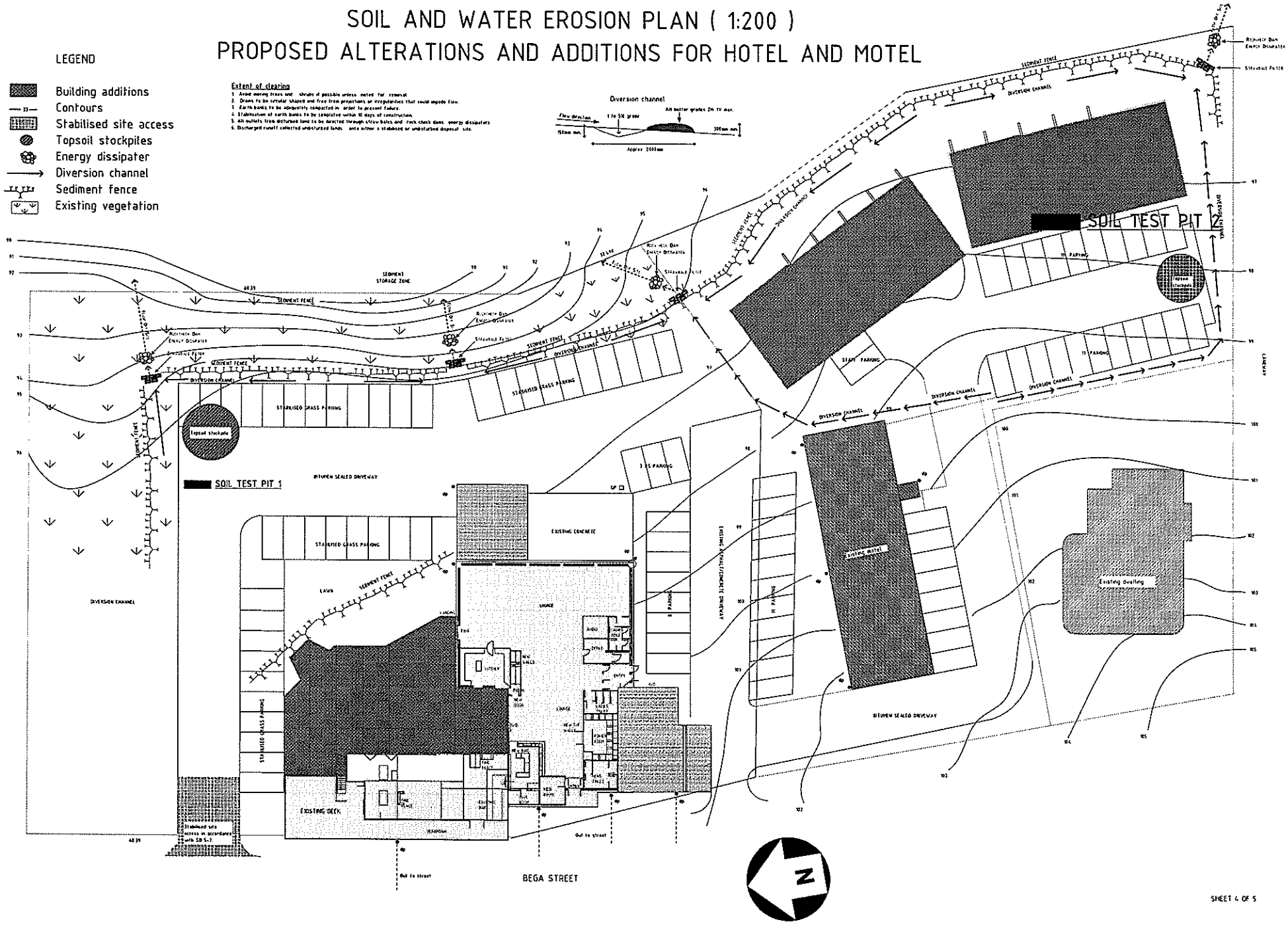
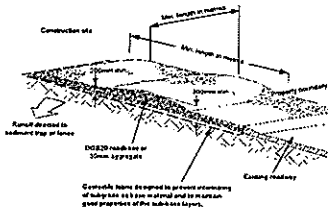
APPENDIX 4-SOIL & WATER MANAGEMENT PLAN PREPARED BY VAN LEEUWEN & STOODARD, CONSULTING ENGINEERS

SOIL AND WATER EROSION PLAN (1:200)
PROPOSED ALTERATIONS AND ADDITIONS FOR HOTEL AND MOTEL



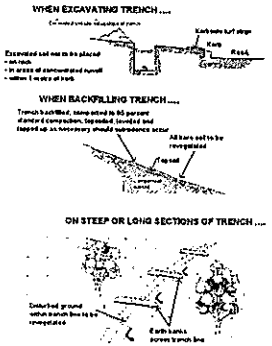
EROSION CONTROL MEASURES



Construction Notes

1. Strip topsoil and level site.
2. Compact Subgrade
3. Cover area with needle punched approved geotextile
4. Construct 200mm thick mat of 30mm aggregate rock over geotextile to a minimum length of 15 metres or to the building alignment, 10minimum width to be 2 m mess
5. Construct hump immediately within the boundary to divert water from the site to a sediment fence or other sediment trap

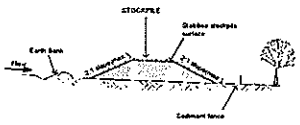
STABILISED SITE ACCESS



Construction Notes

1. Do not open any trench unless it is likely to be closed within three days
2. Place excavated material upslope of trench
3. Stockpile topsoil separately from subsoil
4. Divert runoff from the line of the cut with diversions as shown in SWMP/ESCP or as indicated in other drawings
5. Rehabilitate excavated areas in accordance with the specification

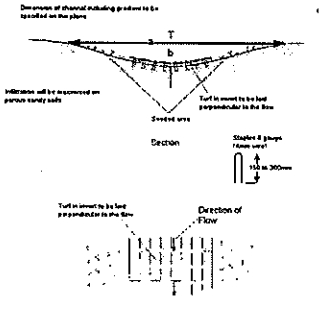
UTILITY CONSTRUCTION



Construction Notes

1. Locate stockpile at least 5 metres from existing vegetation, concentrated waterflows, roads and hazardous areas
2. Construct on the contour as a low flat elongated mound
3. Where there is sufficient area topsoil stockpiles shall be less than 2 metres in height
4. Rehabilitate the stockpile site in accordance with the SWMP/ESCP
5. Construct earth bank as per standard drawings on the upslope side of the stockpile to divert runoff around the stockpile and a sediment fence erected 1 to 2 metres downslope of the stockpile

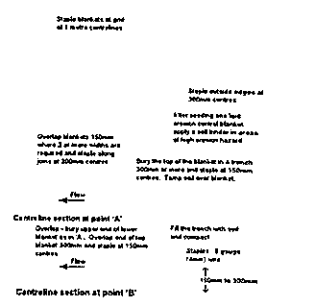
STOCKPILES



Construction Notes

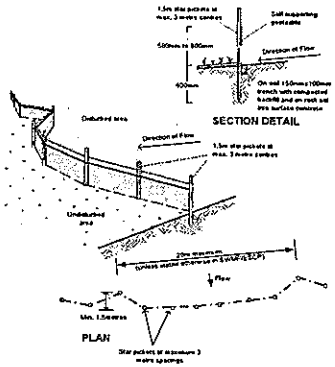
1. Ensure that sufficient upstream site work practices are in place to ensure that sediment is unlikely to reach the swale
2. Remove topsoil and stockpile outside the swale
3. Form a shallow depression ensuring that its grade does not exceed 5 per cent and side slopes do not exceed 30 percent.
4. Prepare seedbed and sow seed in accordance with specifications
5. Turf the invert as specified
6. Pin turf through topsoil to natural groun at 1 pin per square metre
7. fertilise and irrigate frequently for two months to establish vigorous ground cover

GRASS SWALES



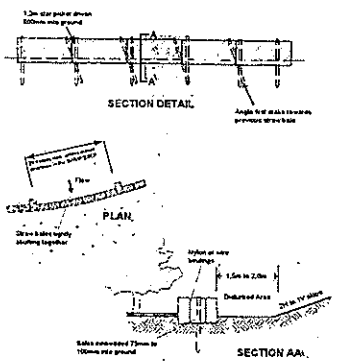
Construction Notes

1. Remove any rocks, sticks or plants from surface before laying matting.
2. Topsoil to be minimum 75mm deep
3. Fertilising and seeding to be completed before matting
4. Ensure fabric is continuously in contact with the soil by grading the surface carefully
5. Lay in "shingle fashion" with the end of the upstream roll overlapping the next roll placed
6. Full width of flow in channel to be covered by matting
7. Water to be diverted away from treated slopes until vegetation is established and unless otherwise sprayed with a slow setting bitumen soil binder.



Construction Notes

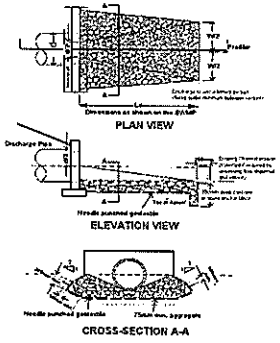
1. Construct sediment fence as close as possible to a parallel to contours of the site.
2. Drive 1.5m star long star pickets into ground at 3 metres apart
3. Dig a 150mm deep trench along the upslope line of the fence for the bottom of the fabric to be embedded
4. Backfill the trench over the base of the fabric
5. For self supporting geotextile in windows ends of posts with wire ties or as recommended by geotextile manufacturer
6. Join sections of fabric at a support post with a 150mm overlap



Construction Notes

1. Construct straw bale filter as close as possible to a parallel to contour of the site or at the toe of the slope.
2. Place bales lengthwise in a row with ends tightly abutting. Use straw to fill any gaps between bales. Bales to be placed to be inverted parallel with the ground
3. Maximum height of filter is one bale only
4. On soil in areas subject to rill bale 75mm to 100mm and anchor with two 1.2metre star pickets. Angle first stake on each bale towards the previously laid bale. Drive stakes 600mm into the ground and flush with the top of bales.
5. Where a straw bale filter is constructed downslope of a disturbed batter the bales should be located 1.5m to 2.0m from the toe of the batter.

STRAW BALE FILTER



Construction Notes

1. Subgrade fill to be compacted to the density of the surrounding undisturbed material.
2. Ensure that concrete or rip rap used for energy dissipator or outlet protection conforms to the grading limits specified on the SWMP/ESCP
3. Ensure the geotextile does not sustain serious damage by preparing a smooth even foundation
4. Repair minor damage to the geotextile before spreading any aggregate. For repairs each one piece of fabric over the damage making sure that all joint and patches overlap by more than 300mm

ENERGY DISSIPATOR