

FACTS



CASE STUDY

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NORTH AMERICAN GREEN BLANKETS... GOLF COURSE EROSION CONTROL

On the Hawaiian island of Oahu, North American Green erosion control blankets are being used to establish grass cover on the newly constructed Minami Golf Course designed by Dick Nugents Associates (Chicago) and developed by Minami Group Inc. (USA).

Perched on the windward side of the Koolau Mountain Range, warm moist winds sweeping-in off the ocean dump tremendous amounts of water in the Minami area



A maze of North American Green erosion control blankets trace runoff at Minami. 40 GPM sprinklers and heavy rains necessitated the use of erosion blankets to prevent rill and gully formation.



Well-planned erosion control, including the use of North American Green blankets and proper vegetation, results in quick establishment and a timely course opening.

each season. From November through May, the 1989-90 rainy season delivered 134 inches of precipitation, much at tremendous intensities. In a two week period, over 20 inches of rain fell on the golf course site, 8 inches of which in a 24 hour period. Rain-fall at this intensity causes severe erosion damage to unprotected, freshly excavated soil.

In late August of 1990, with threat of another severe rainy season, the Project Architect Scott Fisette, and Course Superintendent Sean Hoolehan, realized that erosion protection would be necessary to establish grass on the newly prepared Minami Course in the coming months.

Severe weather was only one of the factors creating potential problems for the Minami Course, the silty clay volcanic soils predominant to the site are easily eroded. "Irrigation alone is enough to create erosion", claims Hoolehan. In order to protect the fresh, excavated soils on the course, "we tried various other erosion mats before deciding to use North American Green blankets".

The design of erosion protection is considered by Hoolehan an integral step in golf course construction. To plan an erosion control strategy for Minami, the sprinkler system was run for a short time after final grading to reveal potential problem areas on each hole. An erosion control plan was then developed to provide high performance erosion control where needed.

After an erosion control plan was developed in conjunction with erosion blanket and vegetation recommendations from North American Green Distributor Gilbert Araki of Pacific Agricultural Sales and Services, course revegetation activities began. Bermuda grass (328 hybrid) was hand sprigged on fairways and hydromulched. North American Green S150 double-netted straw erosion control blankets were then installed on steep undulation and bunker faces to control soil loss and hold sprigs in place. The North American Green SC150, a heavy-duty blanket made from a combination of wheat straw and coconut fiber, was used to line drainage swales and cover

steep slopes. For those high-flow channels designed to carry runoff water from large drainage areas on the course, the North American Green C125 coconut and P300 nylon channel liners provided maximum scour protection

The steep out-of-bounds slopes bordering fairway



Undulations formed from erosive soils propose problems to superintendents who try to stabilize them. North American Green blankets provide temporary stability until grass establishment, so undulations can challenge golfers, not the superintendent.

roughs were vegetatively planted with Bermudagrass and Wedelia, a local, commonly used ground cover. After spreading the chopped plant materials, the areas were covered with erosion control blankets. The Bermuda and Wedelia sprigs soon propagated through the mats, spreading stability through the protective matrix of netting and organic fibers.

Though erosion control blankets may initially cost more than conventional forms of erosion protection, they are necessary in many areas on newly constructed courses to insure the stability of meticulously-sculpted landscapes. At Minami, only 10% of the total course area required erosion control blankets, the remaining acreage was hydromulched to cover sprigs and hold moisture. Hoolehan believes a little extra effort up front is cheaper in the long run, "if you get grass established the first time, you don't have to go back". A great deal of time and money can be saved in reconstruction by doing things right the first time using high-performance erosion protection where necessary.



The North American Green P300 nylon channel lining was used to stabilize the ditch skirting this cart path. The non-degradable P300 will remain in place under the grass, increasing its resistance to damage from high velocity flows and golf cart tracking.

Substantiation of Hoolehan's theory was revealed through comparison of the first and second fairways of the Minami course after erosion control measures were applied. On the first fairway, where hydromulch provided the only protection, a 2 foot by 200 foot gully, requiring expensive rework and reshaping of the landscape, was formed by rainfall and irrigation



The C125 coconut fiber blanket used on the sideslopes of this high-flow drainage-way enabled vegetation establishment through heavy rains. The C125 is a slow-degrading blanket, providing extended erosion protection for gradually maturing vegetal stands.

runoff. On the second fairway where North American Green blankets were used, no significant erosion occurred. According to Hoolehan, "If we had not used blankets on the second fairway, the amount of finish work would have been a lot greater. Since the blankets effectively controlled the erosion, we can concentrate our efforts on fine tuning the hole".

The need for high-performance erosion control materials in golf course construction is obvious. With the newly successful establishment of vegetation on the Minami Course, Superintendent Sean Hoolehan and Project Architect Scott Fisette are firm believers in erosion control blankets for the protection and revegetation of critical course areas. As Hoolehan concludes, "North American Green blankets saved us a lot of repair work".