CASE STUDY

MAYO CLINIC HOSPITAL, PHOENIX

Drainage Channel Stabilization
Phoenix, AZ

PROJECT SUMMARY

The Mayo Clinic Hospital, Phoenix is located within the southernmost portion of the Desert Ridge Master Planned Community. Early USACE permitting required wash corridors within the community to remain natural. Construction of the Mayo Clinic Phoenix Campus began in 1996. Prior to development, the City of Phoenix required a corridor be designated along the eastern boundary of the Campus for construction of a regional drainage channel. This channel would protect the eastern portion of the Campus from offsite flows. The entire project lies within the FEMA defined alluvial floodplain FEMA Special Flood Hazard Area.

In 2005 an Individual 404 Permit was issued by the USACE for the entire Campus, allowing disturbance to jurisdictional washes located on the Campus. Conditions of approval required reconstructed wash corridors to be revegetated.

Recent development along the eastern side of the campus required the construction of drainage improvements. A new channel was tied-in to existing culverts below the 101 Loop and then routed down gradient between buildings on the eastern portion of the Campus.

The channel section is designed to have a meandering, low-flow channel section to match the existing wash bank's full capacity. The 100-year design worst-case flow of 2,338 cfs would overtop the low flow banks and be contained in the flood flow channel.

PROBLEM

A vegetated solution was required for erosion protection the slopes of a drainage channel at the Mayo Clinic Hospital.

SOLUTION

PYRAMAT 75 was selected to reinforce vegetation, including large trees that were planted directly into the HPRM.

PYRAMAT®

PropexGlobal.com/Pyramat-75

FEATURES & BENEFITS

- Superior UV resistance for up to 75 year design life
- Withstands both hydraulic and non-hydraulic stresses
- Provides a nature-based soltuion with significant carbon footprint reduction over hard armoring
- Outlasts other slope reinforcement methods yielding significant cost savings
- Promotes infiltration of surface water
- Lightweight and easily transported into areas with access challenges
- Ease of installation reduces time and labor costs
- Trees and shrubs can be planted directly into the HPTRM to promote vegetation

To protect the outer banks of the flood flow channel from erosion, promote natural vegetation per the USACE permits requirements, and accommodate desert landscape plantings, the design engineer chose PYRAMAT® 75.

PYRAMAT 75 is a High Performance Turf Reinforcement Mat (HPTRM) that protects the ground surface from erosion while promoting natural vegetation. Due to its homogenous structure, PYRAMAT 75 can be cut to accommodate landscape plantings for aesthetics. PYRAMAT 75 is an approved material for privately owned channels within the City of Phoenix.

After PYRAMAT was installed, it was soil filled and hydroseeded with native seed mix. The installed nature-based solution meets the USACE permit requirements and required no revisions to the FEMA Flood Insurance Rate Map (FIRM).

PERFORMANCE

The nature-based solution meets the USACE requirements and required no revisions to the FEMA FIRM.

INNOVATION TO BUILD ON™

Propex®

Visit our website for more information, Product Samples, or other inquiries, or call Customer Service at 800 624 1273

PO Box 19269
4019 Industry Drive
Chattanooga, TN 34716

p: 800 621 1273
f: 423 899 5005
PropexGlobal.com

PGS-1724E-001 (01/2022)