



UNI-GROUP U.S.A.

## “The Village” Bend, Oregon

### PROJECT:

“The Village”  
Streetscape Renovation  
City of Bend, Oregon

### PROJECT MANAGER:

Mary Hopkins  
Bend Development Board

### ENGINEERING:

Dave Zimmerman  
City Engineer

### GENERAL

### CONTRACTOR:

Jack Robinson and Sons, Inc.  
Bend, Oregon

### PAVER CONTRACTOR:

E.H. Glaab Construction  
Bend, Oregon

### CONCRETE PAVER MANUFACTURER:

Willamette Graystone, Inc.  
Wood Village, Oregon

### PAVERS:

UNI-Decor®

**Sidewalks** 84,000 sq ft  
Red - 2 3/8 in. (60mm)

**Curb Cuts** - 2,800 sq ft  
Red/Charcoal Blend  
3 1/8 in. (80mm)

**Crosswalks** - 14,900 sq ft  
Red/Charcoal Blend and  
Gray - 3 1/8 in. (80mm)

## Case Study



*The crosswalks utilize UNI-Decor® in a red/charcoal blend, with contrasting gray UNI-Decor®*

**L**ike many older cities and towns throughout the United States, Bend, Oregon’s downtown area was suffering from neglect and obsolescence. Incorporated in 1905, Bend’s primary industry for many years was timber and its associated businesses. Over the years, as the timber market waned, the area gradually became a major resort and recreation destination. Nearby Mt. Bachelor offers year-round skiing and is host to the U.S. Ski Team. Hiking, camping, fishing, and water sports on the nearby Deschutes River draw millions of tourists year-round.

Originally, most of the traffic had to travel through downtown Bend to reach the recreation areas. However, with the construction of the interstate highways 97 and 20, and the development of a major regional mall, traffic volume had gradually decreased over the years. As a result, the Bend Development Board decided in 1992 to undertake a major renovation of their streets and sidewalks to promote downtown businesses and encourage the return of tourists and residents to the area.

According to Mary Hopkins, project manager for the Bend Development Board, the streetscape improvement project was intended “to make our downtown sidewalks and streets safe and pedestrian-friendly.”

Encompassing a 13-block area from Newport Avenue to Franklin

Street and Lava Road to Brooks Street, “The Village”, as it is known locally, maintains an 1890’s appearance, with specialty shops, boutiques, and cafes.

To enhance the turn-of-the-century ambiance, city planners chose UNI-Decor® interlocking concrete pavers for the streetscape project. Nearly 84,000 sq ft of red 2 3/8" (60mm) thick pavers was used for the sidewalks and courtyards. To delineate the crosswalks, city engineer Dave Zimmerman specified 14,900 sq ft of 3 1/8" (80mm) thick UNI-Decor® pavers in contrasting bands of gray and a red/charcoal blend. Another 2,800 sq ft in the red/charcoal blend was installed in curb-cuts.



*Shops, restaurants, boutiques, and cafes use architectural styles from the 1890’s*



*Old-fashioned lampposts evoke a turn-of-the-century atmosphere that is enhanced by the UNI-Decors® pavers*

**UNI-GROUP U.S.A.** manufacturer Willamette Graystone, Inc. supplied the UNI-Decors® pavers for the Bend renovation project. The general contractor was Jack Robinson and Sons, Inc. and the paving contractor was E. H. Glaab Construction.

The pavers for the sidewalks and curb-cuts were installed over a 6" base of 1/4 by 3/4-inch aggregate, compacted to local standards. All streets in the renovation project area were excavated and new base materials and asphalt were installed. For the paver crosswalk sections, the asphalt was saw cut and milled out to 4". Drainage holes 2" in diameter were drilled through the remaining asphalt into the base material, filled with pea gravel, and covered with filter fabric. The UNI-Decors® pavers were then installed on a 1" sand bed.

**A**lthough many crosswalks usually incorporate concrete beams as edge restraints, the Bend installation primarily used the asphalt edge as a restraint, with a few L-shaped iron restraints placed in some areas. Even with this type of restraint, the UNI-Decors® crosswalks have performed beautifully, with no repairs or maintenance needed since the original installation six years ago.

Les Shores, street superintendent for the city for the last 12 years, said "We're extremely pleased with the performance of the UNI-Decors® interlocking concrete pavements. They are fantastic!"

Another benefit of the concrete pavers became apparent during a water line break a couple of years ago. "We were able to take up the UNI-Decors® pavers to repair the pipes and then reinstate them without evidence of a patch. We are now in the process of adjusting the pavers around the tree grates to accommodate the tree growth," Shores added.

The Bend region experiences some of the most extreme climate changes in the country, with over 350 freeze-thaw cycles a year. Temperatures range from a low of -30°F to over 95°F,



*The different color UNI-Decors® units delineate pedestrian and vehicular areas*

and it is not uncommon to have a 60° shift in temperature in as little as eight hours. Classified as a high-desert environment, the Bend area receives only about 12" of rainfall a year, but snowfall can range from 8" to over 60". Situated only 24 miles from the Cascade Mountain range, arctic air can sweep down the valley, causing the drastic temperature changes.

**M**ost pavements are extremely stressed under these types of environmental conditions, and Shores notes that they've tried all types of asphalt pavements with little success. "The climate extremes have posed absolutely no problem for the UNI-Decors® pavers. In the winter, even the snow-plows, studded tires, and volcanic cinders used for snow and ice traction control haven't affected the pavers at all," he remarked.

The streetscape renovation project has paid off for Bend, attracting many of the over 1 million people per day that use the nearby recreational areas to downtown's lively market place.

Note: Interlocking concrete pavement design will vary with climate, available construction materials, design methods, existing site soils, and traffic loads. A qualified engineer or other design professional should be consulted in concrete paver applications to ensure good results.

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