

Design of I-84 Widening, Bridge No. 1229 Waterbury, CT

Project Description:

Location

Carrying I-84 over Pierpont Rd., Waterbury, CT

Owner

Tom Harley
ConnDOT
2800 Berlin Turnpike
Newington, CT 06111
(860) 594-3189

Duration

2003 – 2005

Prime/Sub

Sub

Construction Cost

\$1.6 million

AI Engineers, Inc. was assigned to prepare structural design, plans, specifications, and construction estimate for this bridge. The design was done in the new AASHTO LRFD specification.

This project included the replacement and widening of the superstructure for the twin bridges carry I-84 in both eastbound and westbound directions. The twin structures were connected by median retaining walls. The proposed widening was achieved by partially shifting the alignment inward toward the median and partially widening outward by constructing new abutments and wingwalls. The final section consists of 3-12 ft. lanes and 3 widened shoulders. The overall length is 61.5 ft. and out to out width of 136.5 ft.

The bridge widening towards the median required modification of the existing concrete retaining wall into a bridge abutment to provide a bridge seat for beam bearing. Since the original median retaining wall with 40 Ksi steel was not designed to function as an abutment; the stem was found inadequate using regular fill material.

In order to modify the existing retaining wall to an abutment approximately 17 ft. deep, lightweight fill was required behind the existing retaining wall to ensure overall stability of the wall as well as its structural adequacy. Existing abutment stem was to be modified to accommodate the proposed profile.



Salient Features

- Superstructure Replacement
- Construction of Widened Substructure
- Modify Median Retaining Wall
- New Wingwalls & Abutment
- Improve Minimum Vertical Clearance
- Lightweight Fill
- 2-Stage Construction
- Staged Construction/Traffic Controls