

HR-320 Constructability in the Bridge Design Process

Key Words: Bridge Design, Construction,

ABSTRACT

In the United States many Bridge structures have been designed without consideration for their unique construction problems. Many problems could have been avoided if construction knowledge and experience was utilized in the design process. A systematic process is needed to create and capture construction knowledge for use in the design process. This study was conducted to develop a system to capture construction considerations from field people and incorporate it into a knowledge base for use by the bridge designers.

This report presents the results of this study. As a part of this study a micro computer based constructability system has been developed. The system is a user-friendly micro-computer database which codifies construction knowledge, provides easy access to specifications, and provides simple design computation checks for the designer. A structure for the final database was developed and used in the prototype system. A process for collecting, developing and maintaining the database is presented and explained. The study involved a constructability survey, interviews with designers and constructors, and visits to construction sites to collect constructability concepts. The report describes the development of the constructability system and addresses the future needs for the Iowa Department of Transportation to make the system operational. A user's manual for the system is included along with the report.