

Hydrologic and Hydraulic Analyses and Final Design of the Storm Drainage Improvements along Riverside Avenue from Mulberry Street to Jefferson Street, Fort Collins, CO

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ANDERSON CONSULTING ENGINEERS, INC.
Civil • Water Resources • Environmental

Anderson Consulting Engineers, Inc. was contracted by the City of Fort Collins Utilities Department to design, develop, and provide final construction drawings for the Storm Drainage Improvements along Riverside Avenue from Mulberry Street up to Jefferson Street. As part of a Riverside Avenue reconstruction project by the Colorado Department of Transportation (CDOT), the City of Fort Collins chose to re-habilitate several stormwater inlets along Riverside Avenue prior to the road improvements being put in place. The project included the analysis and design of nine banks of stormwater inlets near Old Town Fort Collins, Colorado. The project also included the design of several stormwater pipe laterals, new manholes, and the rehabilitation of existing storm drains and manholes. The staff of Anderson Consulting Engineers completed the following specific tasks for this project:

- collection of existing site data and coordination of the surveying efforts necessary to develop existing topography and identify the several existing utilities on the project site;
- coordination with the City of Fort Collins Utilities Department concerning the location and condition of several stormwater facilities, some in excess of 100 years old;
- coordination with the Colorado Department of Transportation (CDOT) regarding the incorporation of the inlet design into the overall road design;
- **hydrologic analyses** using MODSWMM to determine the 10-year flows from portions of the Old Town basin to the proposed inlets;
- **hydraulic analysis and design of several Type 16 combination and Type R inlets and their respective laterals, including an analysis of the carrying capacity of the inlet box itself;**
- **hydraulic analysis of the existing stormwater pipes** to convey the additional flows captured by the new inlets;
- **final design and development of a set of construction drawings**, including plans and profiles of each inlet and lateral, connections to existing brick arch storm sewers, and new manholes;
- **preparation of as-built plans** showing the final grades and locations of all stormwater improvements.



**Pre-Project Inlet at Riverside Avenue
and Whedbee Street**



**New Combination Inlets at Riverside
Avenue and Whedbee Street**