

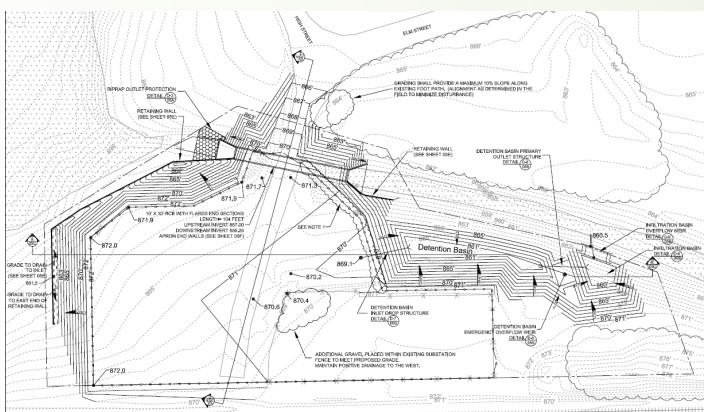
LAMAR SUBSTATION CIVIL SITE DESIGN, STORMWATER MANAGEMENT

MILTON, WISCONSIN

A large expansion of the Lamar Substation was proposed by American Transmission Company and Alliant Energy. The site, however, was severely constrained by a large, existing drainage ditch that served a substantial portion of Milton, plans by the City to use as much of the adjacent land as possible for a dog park, and existing, temporary, and proposed electrical transmission facilities.

MARS worked closely with the electrical and environmental consultants on initial site planning that involved the feasibility, permitting, and planning-level costs of various substation layouts. The design team and client finally selected the layout that best balanced construction costs and electrical capacity needs. The drainage ditch flows under a portion of the substation, and because the area served by the drainage ditch already experiences flooding issues, a “minimal impact” design was selected. A 100-foot long, 10'x10' box culvert was required to convey the flow under the substation. A maximum 11-foot high retaining wall was also required because of the steep slopes on the site and limited space to accommodate the substation. The site also required stormwater management facilities, and MARS was able to gain approval from the State and City on the stormwater management plan, which required an innovative approach to provide water quality treatment while still fitting the facility on the site.

MARS prepared the construction plans and specifications for the civil site work, with assistance from the electrical consultant on structural design. MARS also was responsible for construction-time observations, with assistance from the environmental consultant.



Grading, drainage, and stormwater plan created by MARS



Constructed box culvert and portion of retaining wall

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Project Schedule

2008-2009