



# Hillsdale Vegetated Channel & Sediment Removal Structure

150<sup>th</sup> Ave & Hillsdale Ave, Omaha, NE

City of Omaha Stormwater Program

## SITE AND PROJECT SUMMARY

This 250 linear foot, channel restoration project by the City of Omaha Stormwater Program is located within a 0.75-mile long open drainage channel that accepts runoff from the surrounding neighborhood, approximately 300 acres. The twin box culverts at 150<sup>th</sup> Ave would regularly have significant amounts of sediment and debris build up on the downstream side, creating a difficult to maintain area that wasn't aesthetically pleasing, see photo below.

In 2008, excess sediment was removed and the channel was replanted to a native grass and wildflower mix in place of the traditional turf grass. During the following years, sediment rapidly accumulated in the channel and needed maintenance once again. To address the significant amount of sediment entering the channel and simplify future maintenance, a new configuration of the channel at the

culvert was explored. The sediment removal structure installed is designed to capture the sediment in a sump structure that allows for removal with a vac truck from the adjacent road. Between the two sump structures, a low flow channel allows for the water to continue downstream. During intense storms, flows will overtop the structure but once the storm has passed, flows will drop and be managed through the typical operation of the structure.

The low flow channel continues downstream from the sediment removal structure for approximately 250 feet, consisting of stacked coir logs on either side. The vegetation in the low flow channel consists of variety of sedges, including fox and bristly sedge. The side slopes of the channel are seeded with little bluestem, Indian grass, blue grama, black-eyed susan, monarda and liatris.



## PROJECT DETAILS

|                                     | VEGETATED CHANNEL   |
|-------------------------------------|---|
| Project Footprint                   | 13,000 ft <sup>2</sup>  |
| Length of Channel                   | 250 linear feet   |
| Sediment Removal Structure Material | Limestone with gabion mattress base   |
| Plants                              | <b>Low flow channel:</b> Sedges<br><b>Side slopes:</b> Prairie cordgrass, little bluestem, blue grama, Indian grass, monarda, liatris, & black-eyed susan |
| Contributing Area                   | Approximately 300 acres   |
| Predominant Land Use                | Residential   |
| Percent Impervious (%)              | Approximately 40%   |
| Predominant Soil Types              | Classic Urban Complex, Silty Clay   |



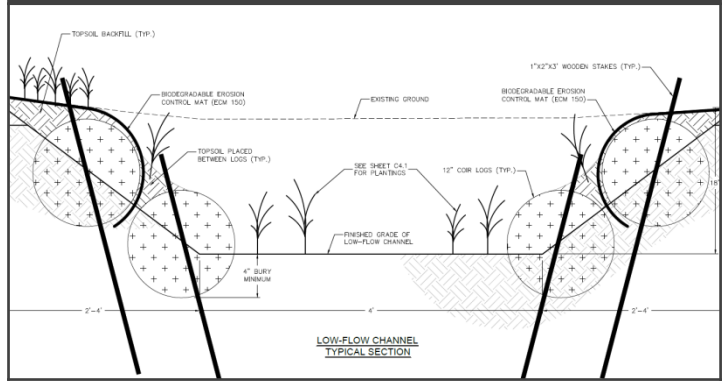
| COSTS                  |              |
|------------------------|--------------|
| Design                 | \$19,514.00  |
| Construction           | \$120,445.00 |
| Construction Oversight | \$12,290.00  |
| Total                  | \$152,249.00 |

| DESIGNED BY   | CONSTRUCTED BY           | MAINTENANCE BY                      |
|---|--------------------------|-------------------------------------|
| Olsson & Associates:<br>Felsburg, Holt & Ulevig (FHU) | Next Phase Environmental | City of Omaha<br>Stormwater Program |

# SITE LOCATION – 150<sup>th</sup> Ave & Hillsdale Ave



# LOW FLOW CHANNEL DETAIL



# PHOTOS



# PROJECT LAYOUT

