

## Memorandum

To: Program Projects and Operations Subcommittee  
Re: Stormwater Best Management Practices Program FY2012 Applications  
From: Lori Laster, Stormwater Management Engineer  
Date: April 4, 2011

The District received 5 eligible applications for Fiscal Year 2012 for the Stormwater Best Management Practices Program.

- SID #202, Lincoln Place – Stormwater BMPs – SID #202, Lincoln Place will install native vegetation along with natural structures that will act as grade control on three outlots in the SID. They are requesting a cost share of \$10,000, the maximum of this program.
- SID #444, Bridlewood – Rain Garden – SID #444 will install a rain garden adjacent to an existing parking lot. They are requesting a cost share of \$7,500.
- City of Ralston – Ralston Sports and Entertainment Center Rain Garden – The City of Ralston will construct rain garden adjacent to the proposed parking lot for the new Ralston Sports and Entertainment Center. They are requesting a cost share of \$10,000, the maximum of this program.
- Millard Public Schools – Sandoz Elementary School Rain Garden – Millard Public Schools will install a rain garden as part of an outdoor classroom space for students. They are requesting a cost share of \$10,000, the maximum of this program.
- SID #197, Heartland Hills – Rain Garden – SID #197, Heartland Hills will install a rain garden to address stormwater prior to entering a natural drainageway. They are requesting a cost share of \$10,000, the maximum of this program.

The FY 2011 budget for this program was \$115,000.

Project Name	Total Project Cost	Cost Share Requested
Lincoln Place BMPs	\$37,950	\$10,000
Bridlewood Rain Garden	\$15,000	\$7,500
Ralston Sports and Entertainment Center Rain Garden	\$50,000	\$10,000
Sandoz Elementary School Rain Garden	\$59,000	\$10,000
Heartland Hills Rain Garden	\$22,434	\$10,000
<b>Total</b>	<b>\$2,110,384</b>	<b>\$47,500</b>

- Staff recommends that the Subcommittee recommend to the Board of Directors that the District approve the the Lincoln Place BMP application for \$10,000, the Bridlewood Rain Garden application for \$7,500, the

**Ralston Sports and Entertainment Center Rain Garden application for \$10,000, the Sandoz Elementary School Rain Garden application for \$10,000, and the Heartland Hills Rain Garden application for \$10,000, a total of \$47,500 for District Program 17.41, Stormwater BMP Program, subject to funding the in Fiscal Year 2012 budget.**



# Sarpy County, Nebraska



Disclaimer: This data is for informational purposes only, and should not be substituted for a true title search, property appraisal, survey, or for zoning district verification. Sarpy County and the Sarpy County GIS Coalition assume no legal responsibility for the information contained in this data.

Map Scale  
1 inch = 709 feet  
4/4/2011





**17.41 STORMWATER BEST MANAGEMENT PRACTICES PROGRAM**

**SPECIAL PROJECT REQUEST APPLICATION**

1. DATE: March 18, 2011

2. PROJECT NAME: Lincoln Place - SID #202

3. PROJECT SPONSOR: SID #202

ADDRESS: SE of 216th Street and Lincoln Road  
Gretna, NE 68028

4. CONTACT PERSON: Bob Czerwinski

TITLE: SID Engineer

5. EMAIL AND PHONE: bczerwinski@eacg.com

**6. PROJECT LOCATION:**

Lincoln Place subdivision (SID #202). Refer to the attached site location map.

**7. DESCRIPTION OF STORMWATER BEST MANAGEMENT PRACTICE AND HOW IT WILL BE INCORPORATED IN THE PROJECT:**

There are three Outlot areas identified in the attached exhibits that could be improved with the use of this grant. Outlots D, E and I are all located within the border of SID 202, and all drain to jurisdictional waterways directly adjacent to these areas.

We're proposing to provide additional BMP's to enhance the area in both water quality and aesthetics through the use of additional shrubs, flowers and trees along with aesthetically pleasing check-dams to promote additional biological treatment and to help slow down the runoff. In two Outlots (D and I), the proposed improvements are in drainageways where erosion has been a continuous concern. These improvements will help to slow down the runoff and also to help treat said runoff at the bottom of these drainageways. In Outlot E, there exists an area Inlet in a detention area that has no treatment means. The proposed improvements in this area will again include shrubs, flowers and trees to allow for biological treatment. Additional enhancements may include the incorporation of an amended soil mixture and subsurface drains to allow for infiltration to further treat the runoff if funds are available. Schedule for implementation would be Spring-Fall of 2011. Refer to the attached exhibits for specific locations.

9. TOTAL ESTIMATED COST:

\$ 37,950

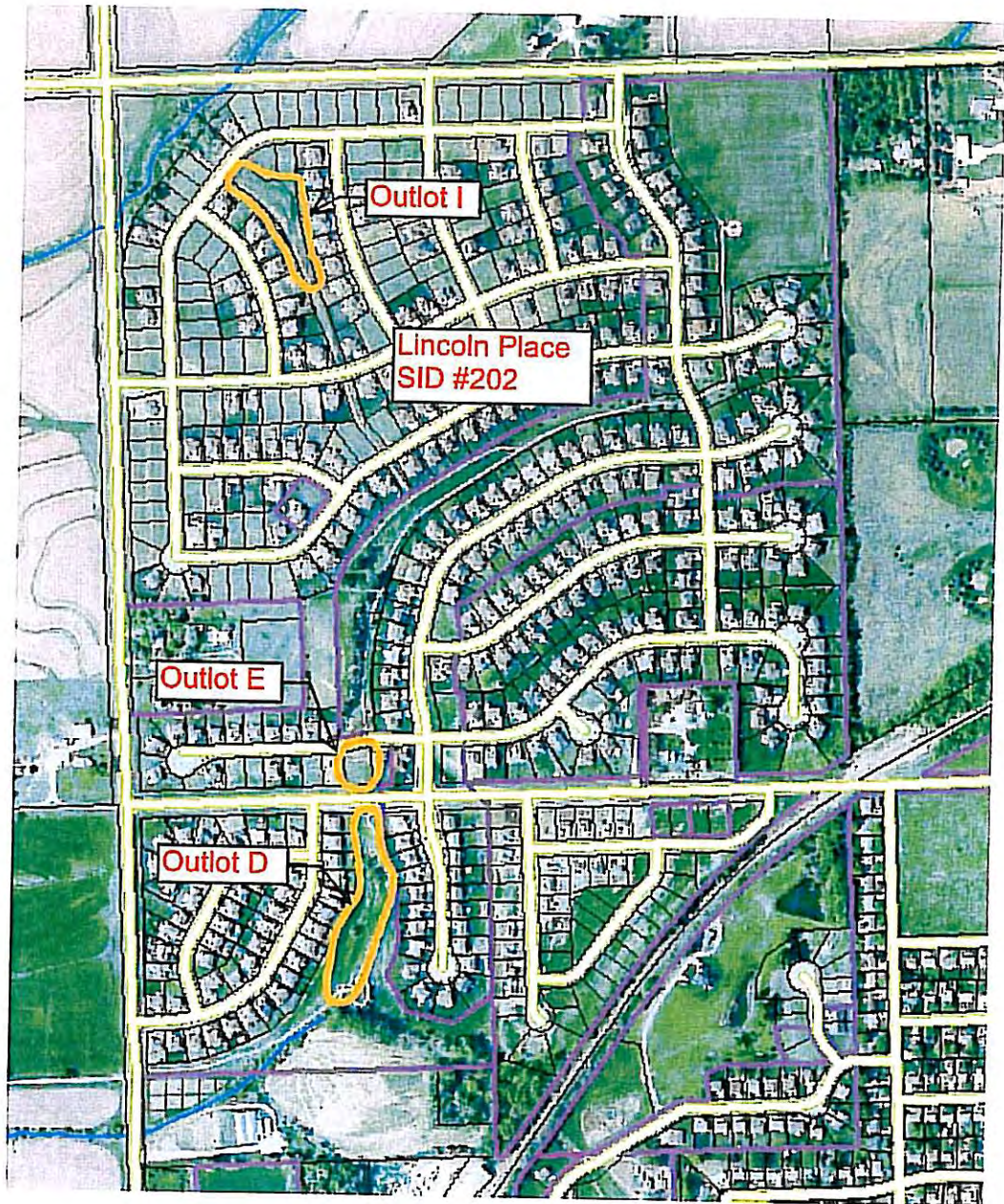
10. COST SHARE REQUESTED:

\$ 10,000

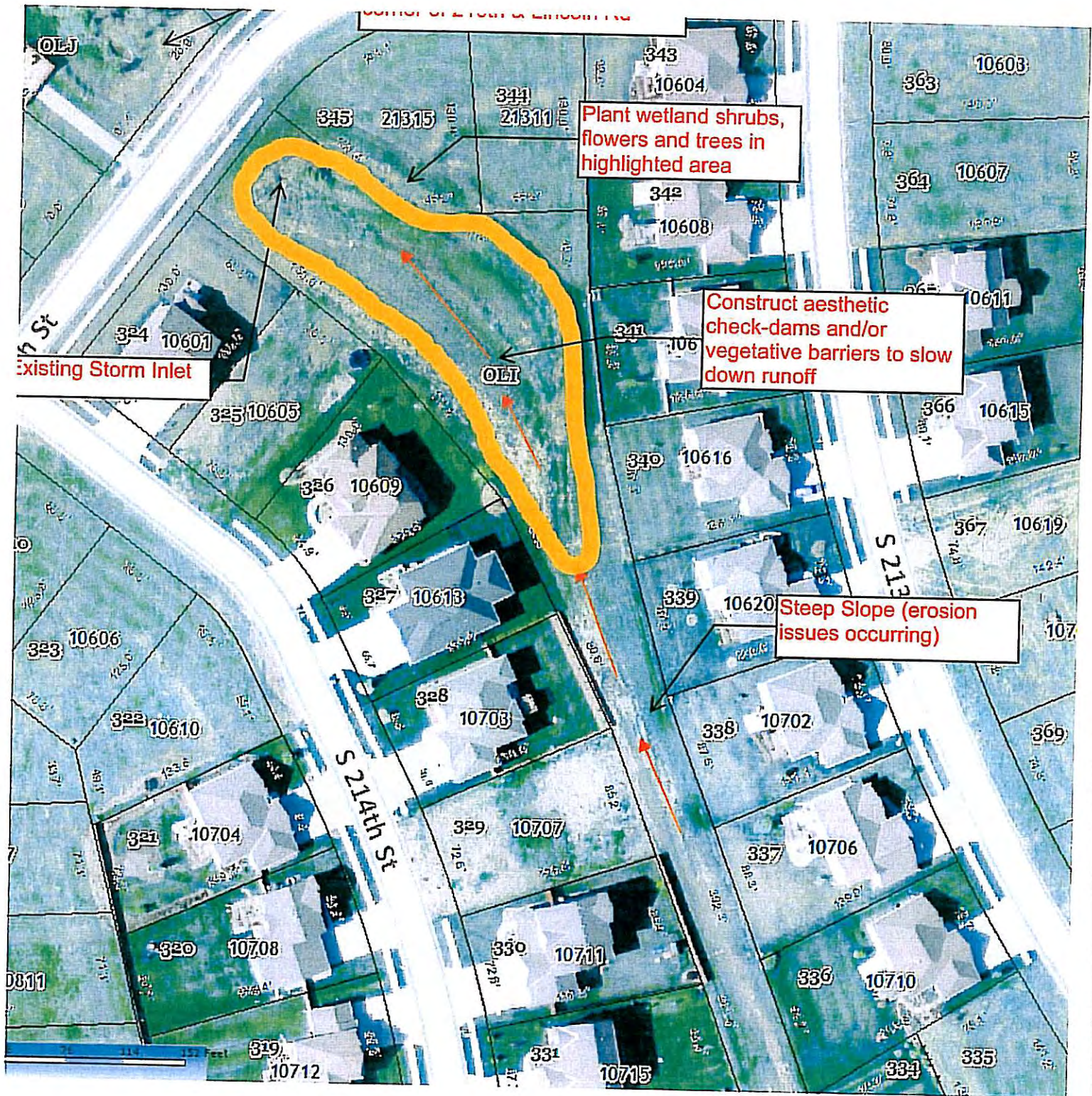
11. SIGNATURE/TITLE:

FORM 17.41

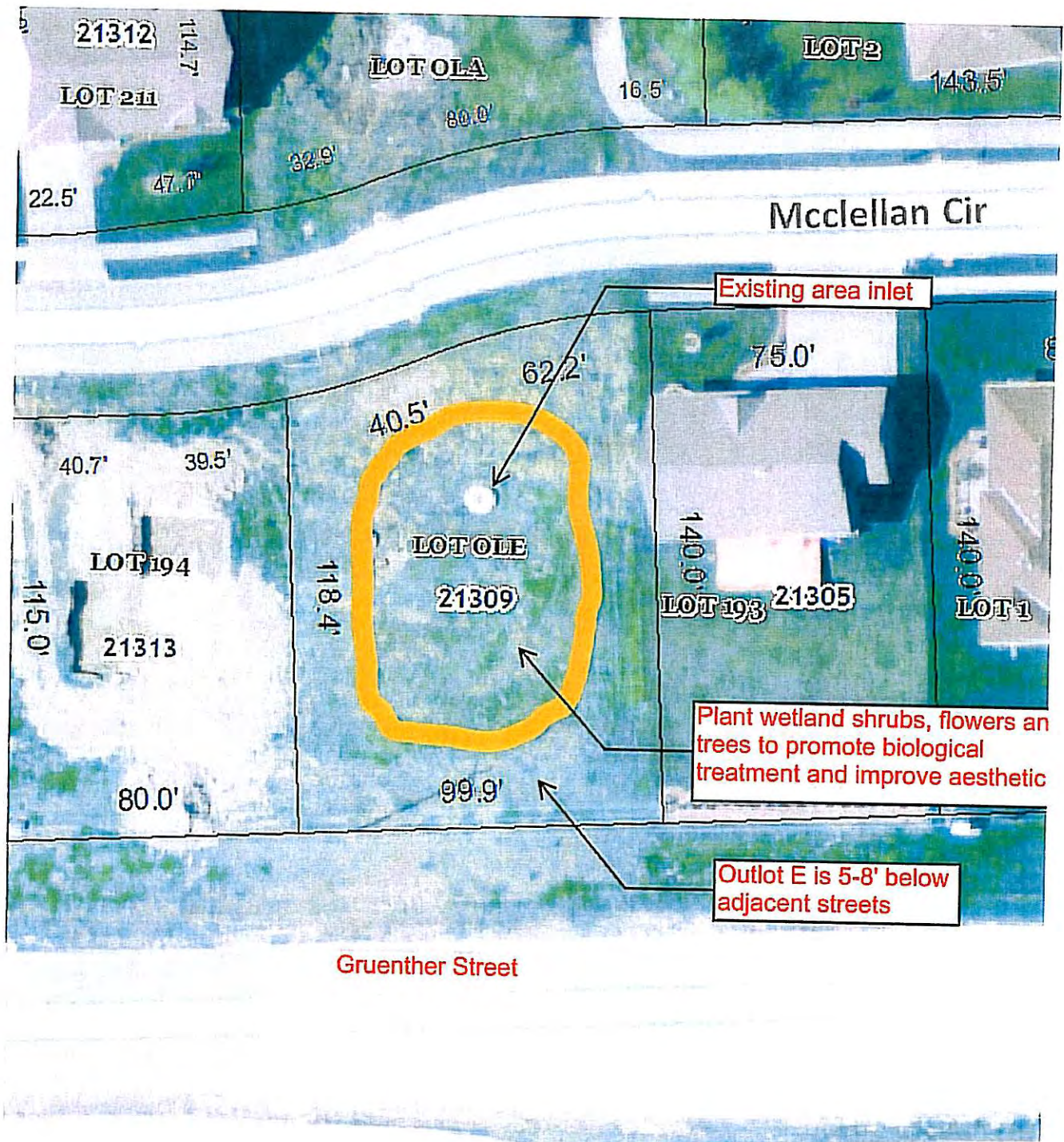
[Signature] SID Board of Trustees  
Jared B. Morris Member



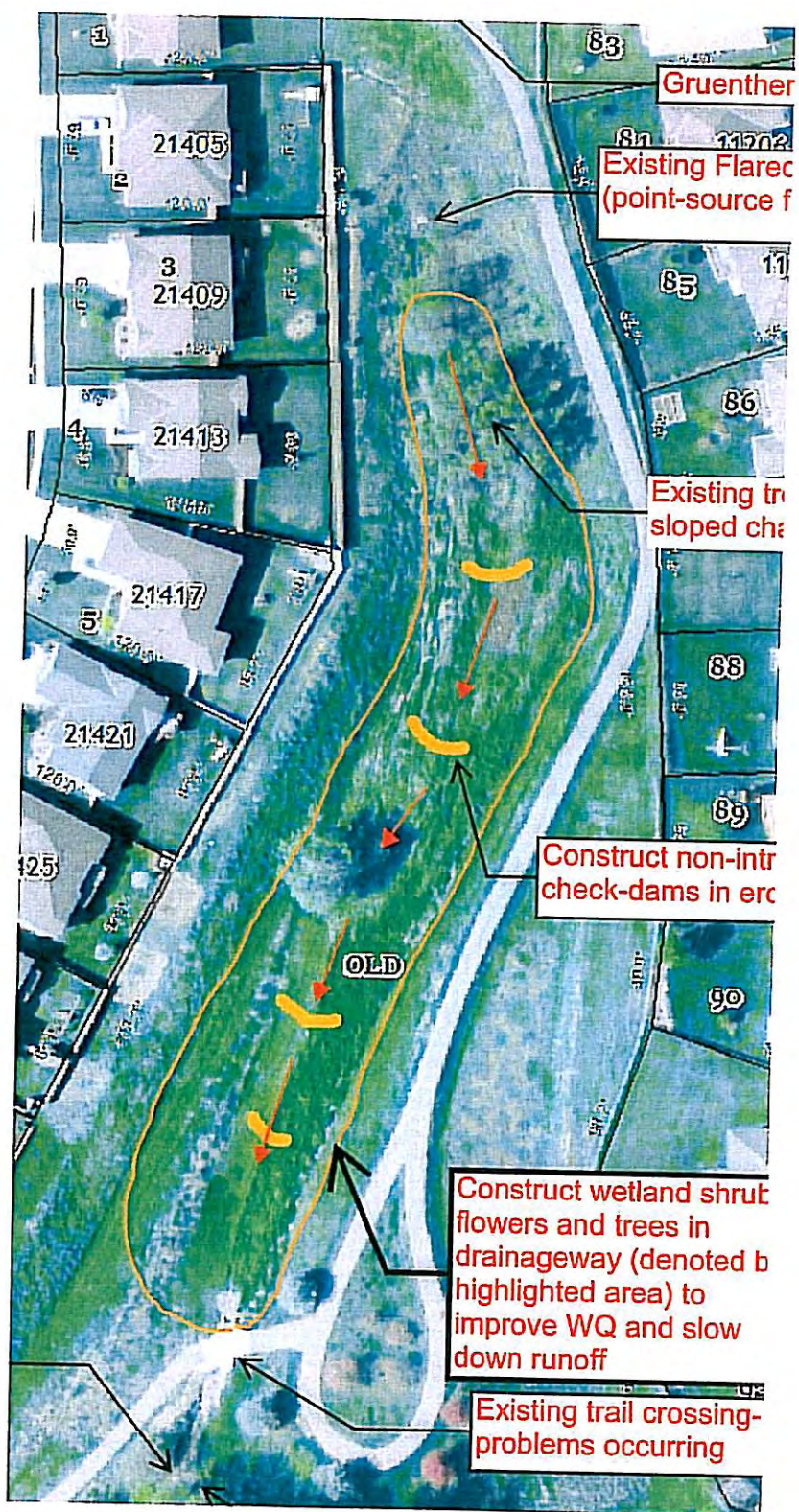














## COST ESTIMATE

Lincoln Place OL "D"  
Stormwater Management

#	DESCRIPTION	QUANT.	UNIT	UNIT PRICE	TOTAL
1	CONSTRUCT STEPPED GARDENS / CHECK DAMNS w/ AMENDED SOILS	4	EA	\$1,500.00	\$6,000.00
2	PLANT WETLAND TREES, SHRUBS, PERENNIALS	1	LS	\$8,500.00	\$8,500.00
3	SEED STORMWATER QUALITY SWALE	1	LS	\$2,000.00	\$2,000.00

Total Construction Cost	\$16,500.00
Construction Management	\$1,650.00
Total Project Cost	\$18,150.00

Lincoln Place OL "E"  
Stormwater Management

#	DESCRIPTION	QUANT.	UNIT	UNIT PRICE	TOTAL
1	PLANT WETLAND TREES, SHRUBS, PERENNIALS	1	LS	\$5,500.00	\$5,500.00
2	PLUGS OR SOD w/ AMENDED SOILS	1	LS	\$2,000.00	\$2,000.00

Total Construction Cost	\$7,500.00
Construction Management	\$750.00
Total Project Cost	\$8,250.00

Lincoln Place OL "I"  
Stormwater Management

#	DESCRIPTION	QUANT.	UNIT	UNIT PRICE	TOTAL
1	CONSTRUCT STEPPED GARDENS / CHECK DAMNS w/ AMENDED SOILS	2	EA	\$1,500.00	\$3,000.00
2	PLANT WETLAND TREES, SHRUBS, PERENNIALS	1	LS	\$4,500.00	\$4,500.00
3	SEED STORMWATER QUALITY SWALE	1	LS	\$3,000.00	\$3,000.00

Total Construction Cost	\$10,500.00
Construction Management	\$1,050.00
Total Project Cost	\$11,550.00

## Lincoln Place OVERALL

Total Project Cost	\$37,950.00
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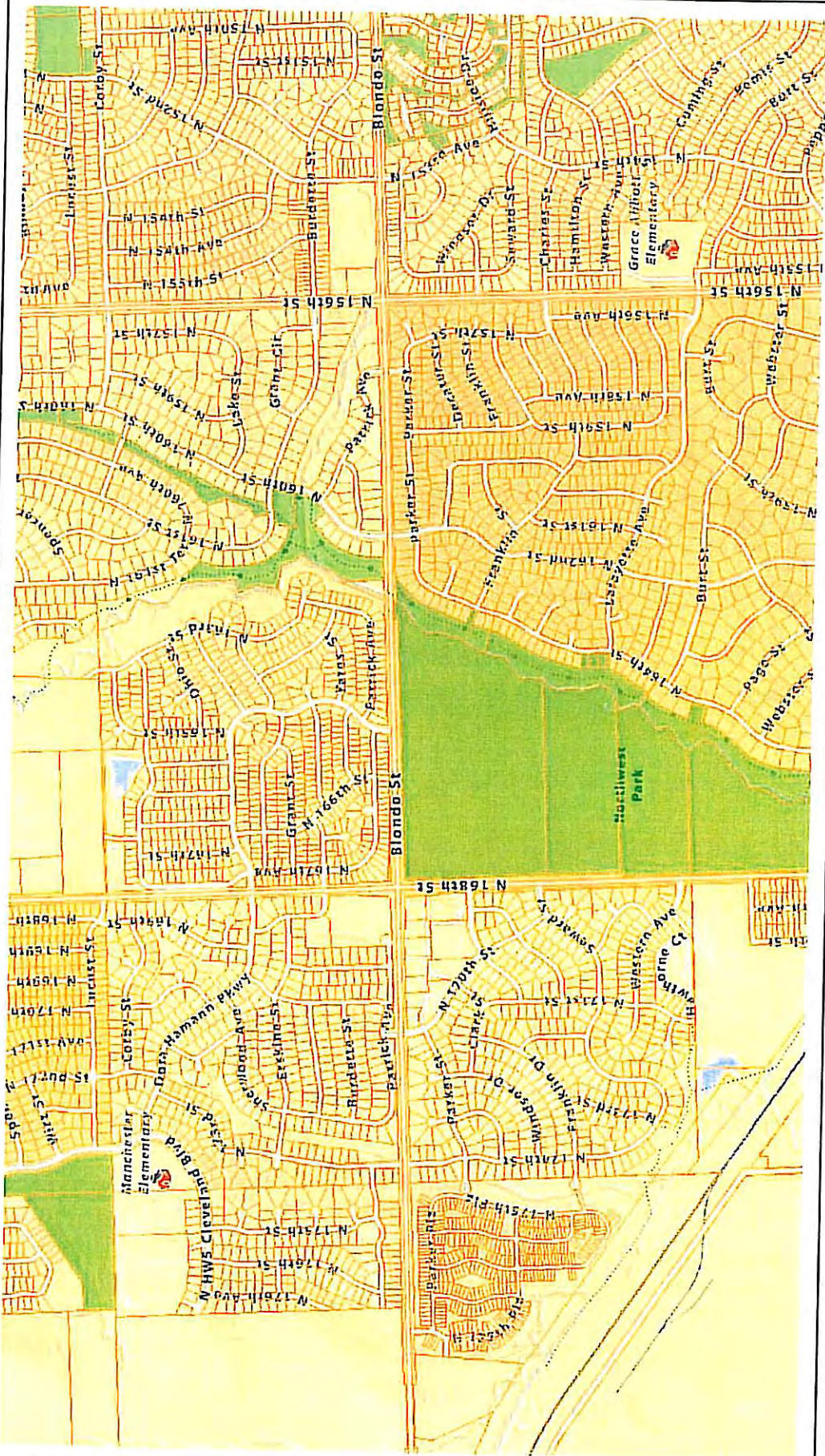


# Bridlewood

Printed: Apr 04, 2011



[www.dcgis.org/dogis](http://www.dcgis.org/dogis)





## 17.41 Stormwater Best Management Practices Program Special Project Request Application



### Project Information

Date	March 18, 2011
Project Name	Bridlewood Stormwater Best Management Practices Program
Project Sponsor	Douglas County SID 444
City ST ZIP Code	Omaha, NE
Contact Person/Title	Matt Tiarks
E-Mail/Phone	mtiarks@eacg.com

### Project Location

Northeast corner of 168th & Blondo streets in Bridlewood park at the end of the parking lot located at the intersection of 163rd & Ohio streets

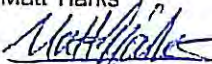
### Project Description

The parking lot for the Bridlewood Park located at North 163rd Street and Ohio Street is 9,500 square feet and sits above the North Branch Papio Creek. The northeast end of the parking lot takes surface water runoff from 5,200 square feet of streets and the parking lot itself. This edge of the parking lot has no curb and has experienced increased erosion over the past couple of years. This would be an ideal location due to the erosion and its visibility to park visitors for an improvement project funded by the PMNRD.

### Cost Estimate

Total Estimated Cost	\$15,000
Cost Share Requested	\$7,500

### Agreement and Signature

Name (printed)	Matt Tiarks
Signature	
Date	March 18, 2011



**Bridlewood Stormwater Best Management Practice Project**  
**BioRetention Garden Concept**

This letter and the attached application is a submittal for the Stormwater Best Management Practices Program Special Project Request.

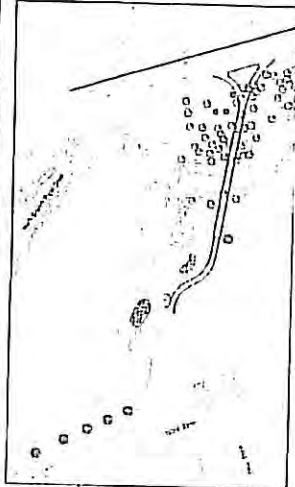
The parking lot for the Bridlewood Park located at North 163<sup>rd</sup> Street and Ohio Street is 9,500 square feet and sits above the North Branch Papio Creek. The northeast end of the parking lot takes surface water runoff from 5,200 square feet of streets and the parking lot itself. This edge of the parking lot has no curb and has experienced increased erosion over the past couple of years. This would be an ideal location due to the erosion and its visibility to park visitors for an improvement project funded by the PMNRD.

A bioretention garden is one cost effective way to help reduce damaging stormwater runoff and improve water quality in this area. It also adds value to the property with distinctive landscaping options improving the overall aesthetics of the site. The area that we are looking at is in need of improvement and by doing this we can implement a more efficient way to manage stormwater runoff at the end of this parking lot. This area of the SID could yield many benefits:

- Increased aesthetics for the neighborhood
- Deep rooting native plants & amended soils help increase the infiltration rate; thus it is able to decrease the overall amount of runoff.
- Increase pollutant filtering

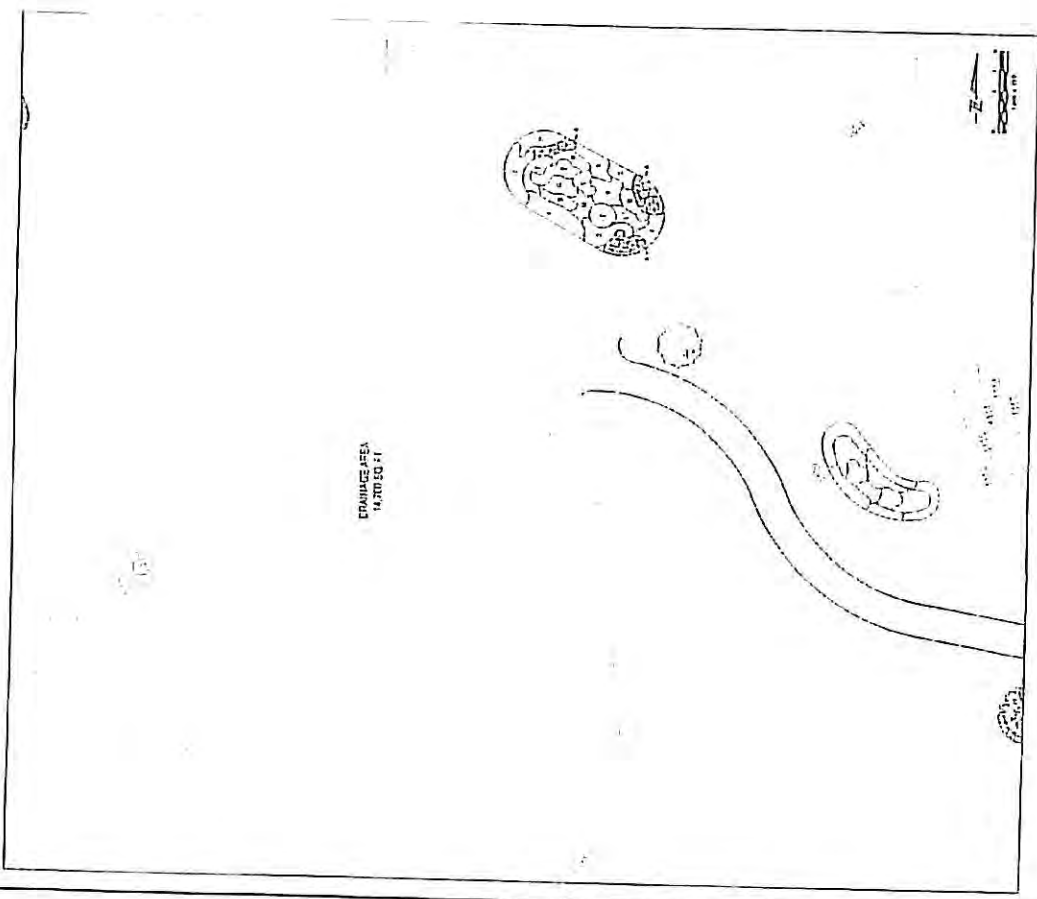
There is an opportunity to design a bioretention garden to aid in the management of stormwater runoff in this neighborhood. It is great that the NRD for our area recognizes the need for people to learn about these types of projects and what they can provide to the citizens of our area. With everyone's efforts combined, a bioretention garden can be built to create a functional, but also beautiful addition to this neighborhood.

NO.	DATE	DESCRIPTION
1	10/1/00	Initial Design
2	10/1/00	Final Design
3	10/1/00	Construction
4	10/1/00	Operation
5	10/1/00	Maintenance



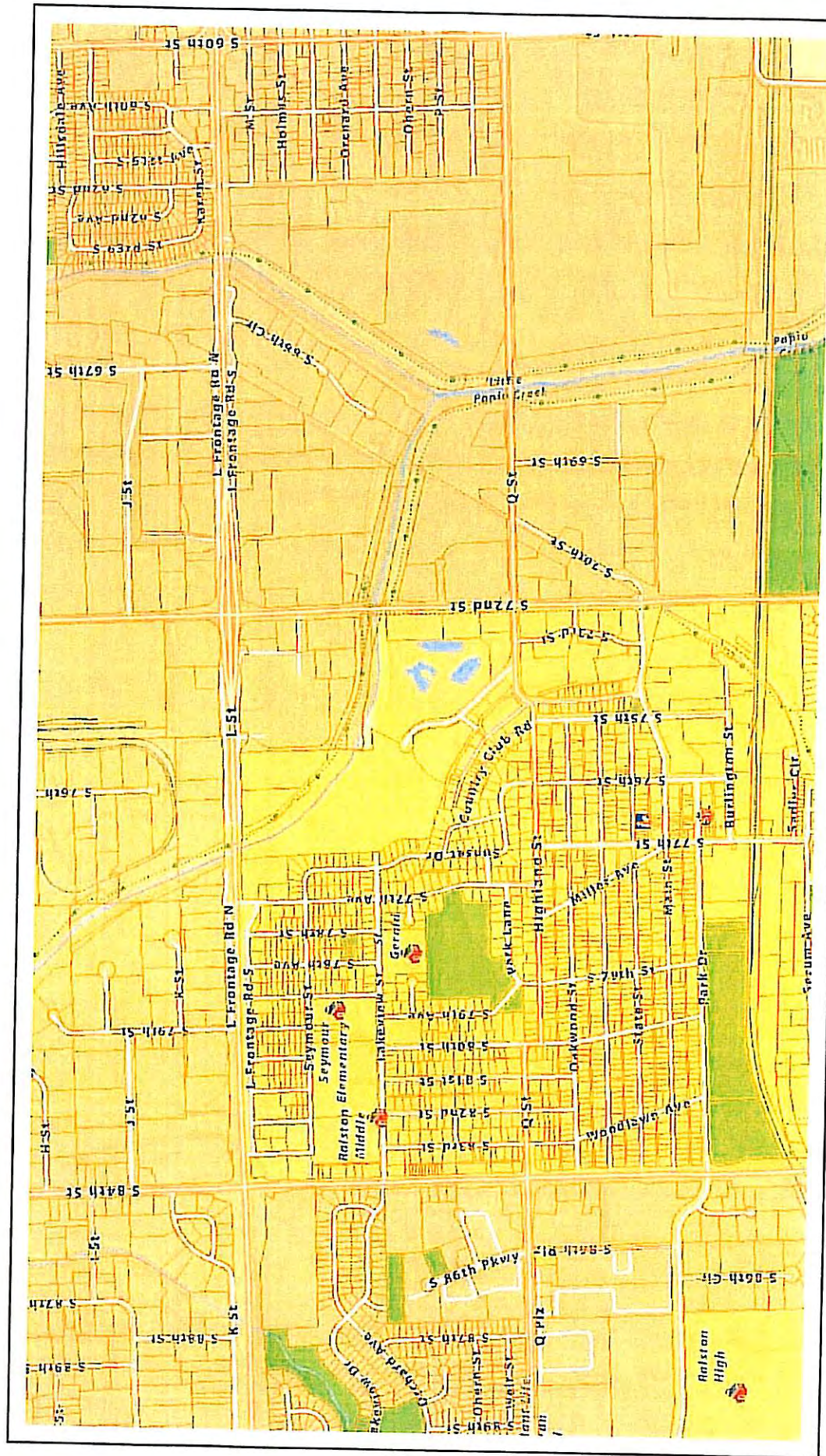
PLANT SCHEDULE

STATION	BOTANICAL NAME	COMMON NAME	SIZE	TYPE
1	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
2	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
3	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
4	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
5	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
6	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
7	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
8	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
9	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
10	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
11	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
12	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
13	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
14	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
15	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
16	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
17	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
18	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
19	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial
20	Asplenium platyneuron	Rock-creeping Spurge	12" x 12"	Perennial



DRAINAGE AREA  
 14,700 SQ. FT.





## Ralston Sports and Entertainment

Printed: Apr 04, 2011



[www.dcgis.org/dogis](http://www.dcgis.org/dogis)





**17.41 STORMWATER BEST MANAGEMENT PRACTICES PROGRAM**

**SPECIAL PROJECT REQUEST APPLICATION**

1. DATE: March 18, 2011

2. PROJECT NAME: Ralston Sports and Entertainment Center

3. PROJECT SPONSOR: City of Ralston

ADDRESS: 5500 South 77th Street

Ralston, NE 68127

4. CONTACT PERSON: Dan Freshman

TITLE: Director of Public Works

5. EMAIL AND PHONE: dfreshman@cityofralston.com

**6. PROJECT LOCATION:**

NW of the intersection of "Q" Street and 73rd Street (See attached overall site-plan).

**7. DESCRIPTION OF STORMWATER BEST MANAGEMENT PRACTICE AND HOW IT WILL BE INCORPORATED IN THE PROJECT:**

Said BMP will include enhancement of a proposed stormwater management detention pond to include additional landscaping with shrubs, flowers and trees to enhance the treatment of runoff from the parking lot area of Lot 2 on the attached site map. Additional enhancements may include the incorporation of an amended soil mixture and subsurface drains to allow for infiltration to further treat the runoff. With these features, the overall BMP will provide for not only stormwater detention, but also water quality benefits prior to entering into a newly created wetland mitigation area. Schedule for implementation will be prior to July of 2012. Preliminary costs are \$50,000, which assumes a pond area of 7,150 SF at \$7/SF for typical costs for this type of project. (see attached preliminary sketch for more information).

9. TOTAL ESTIMATED COST: \$ 50,000

10. COST SHARE REQUESTED: \$ 10,000

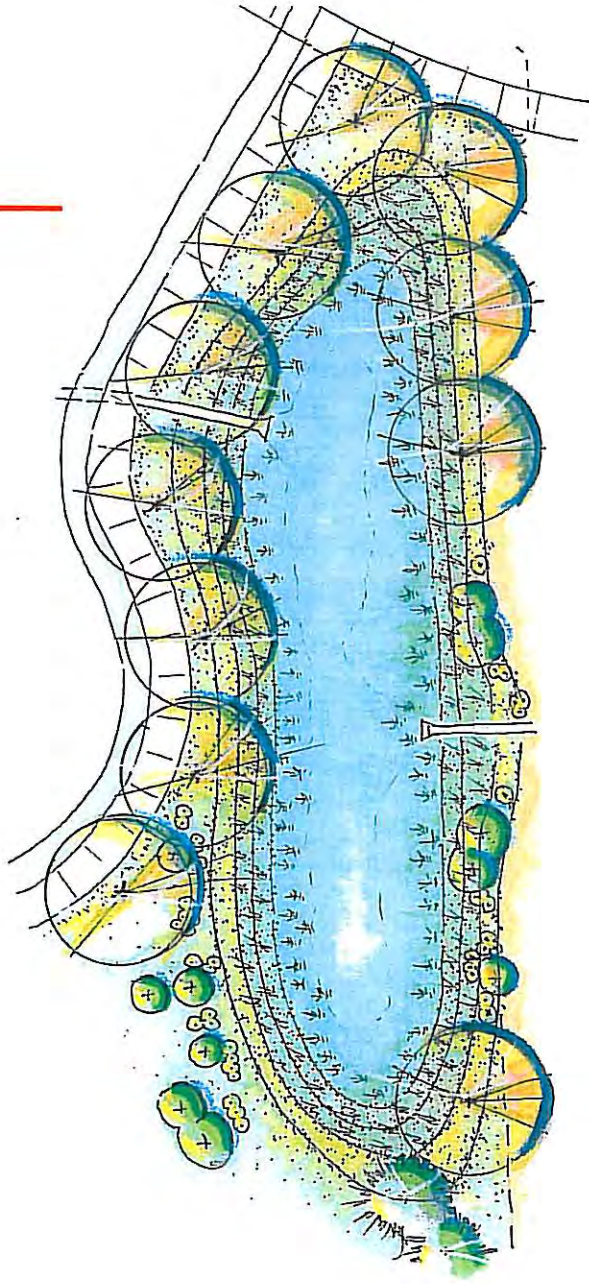
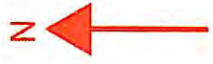
11. SIGNATURE/TITLE:

FORM 17.41

*[Signature]* on behalf of the  
Jared E. Morris  
Olsson Associates City of Ralston









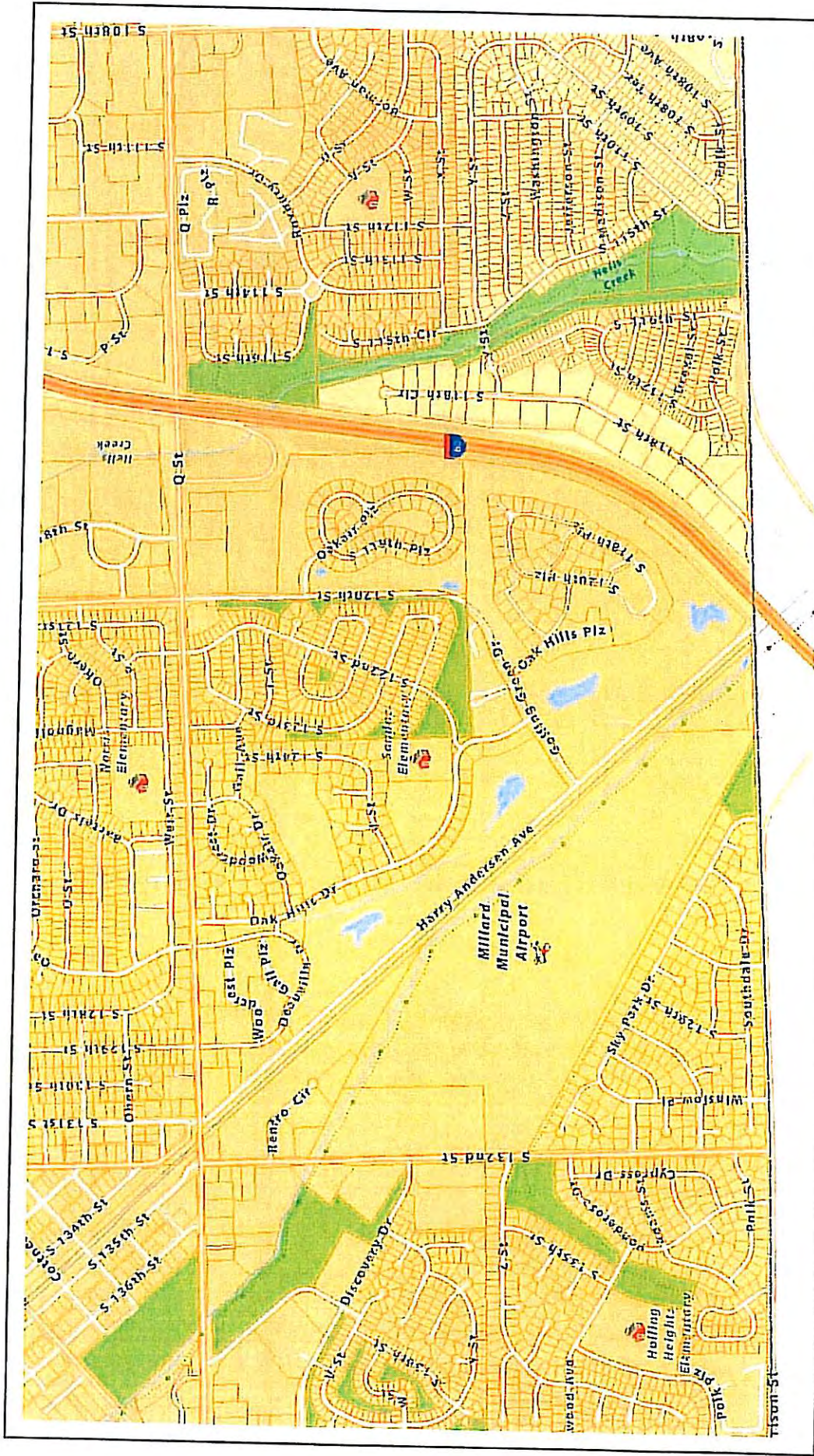


# Sandoz Elementary School

Printed: Apr 04, 2011



[www.dogis.org/dogis](http://www.dogis.org/dogis)





**17.41 Stormwater Best Management  
Practices Program Special Project Request  
Application**

**PAPIO-MISSOURI RIVER  
NATURAL  
RESOURCES  
DISTRICT**



8901 S. 154th Street  
Omaha, NE 68138-3621  
402-444-6222  
www.papionrd.org

**Project Information**

Date	March 31, 2011
Project Name	Mari Sandoz Elementary Rain Garden
Project Sponsor	Millard Public Schools, Sandoz PTA, Douglas County Health Department
City ST ZIP Code	Omaha Nebraska 68137
Contact Person/Title	Susan McAdam / Millard Public Schools Grants Coordinator
E-Mail/Phone	spmccadam@mpsomaha.org / 402-715-8250

**Project Location**

The school is located at 5959 Oak Hills Drive, Omaha, NE, 68137. The location of the outdoor classroom rain garden is on the front(South)side of the building.

**Project Description**

Attached is a site plan for the entire outdoor classroom site. The rain garden portion for which we are seeking NRD grant assistance, is the portion on the East. The rain garden would infiltrate roof run off, and provide an area for students to study an array of science concepts. This area is currently turf grass and retains water after any storm event. We would like to utilize this landscape and filter the storm water by incorporating rain garden plants, and pervious pavers for the walkway.

**Cost Estimate**

Total Estimated Cost	\$59,000.00
Cost Share Requested	\$10,000.00

**Agreement and Signature**

Name (printed)	Kenneth J. Fossen, Assoc. Supt.
Signature	<i>Kenneth J. Fossen</i>
Date	3-31-2011

Name:

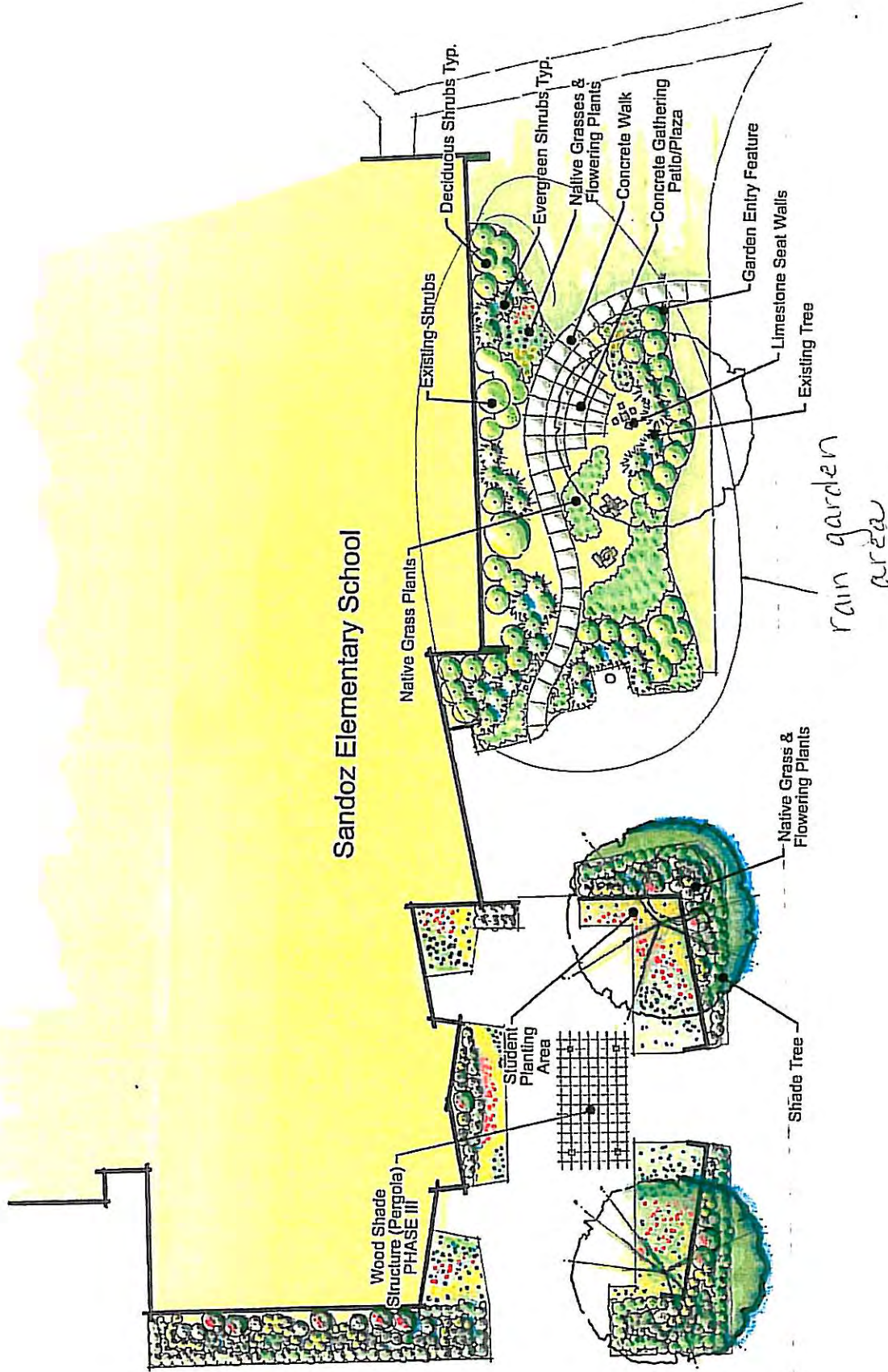
Signature:

Date:

*Susan McAdam, Grants Coordinator*  
*Susan McAdam, Grants Coordinator*  
3/31/2011



# Sandoz Elementary School





# Sarpy County, Nebraska



Disclaimer: This data is for informational purposes only, and should not be substituted for a true titles search, property appraisal, survey, or for zoning district verification. Sarpy County and the Sarpy County GIS Coalition assume no legal responsibility for the information contained in this data.

Map Scale  
1 inch = 355 feet  
4/4/2011



**17.41 Stormwater Best Management  
Practices Program Special Project Request  
Application**



**Project Information**

Date	Spring 2011
Project Name	Landscape Proposal-North Improvements
Project Sponsor	Heartland Hills Home Owners Association
City ST ZIP Code	Bellevue NE 68123
Contact Person/Title	Stephen J Ruskamp
E-Mail/Phone	sruskamp3@cox.net 402-321-4277

**Project Location**

Out lot B Heartland Hills SID 197  
west of playground area, North of Sheridan Rd,  
east of 37th Circle

**Project Description**

Install landscape designed by CM's Custom  
lawn and landscape, to include rain garden, Cut street  
curb to allow runoff water to enter rain garden

**Cost Estimate**

Total Estimated Cost	\$22,434.28
Cost Share Requested	\$10,000

MAR -9 2011

**Agreement and Signature**

Name (printed)	Stephen J Ruskamp
Signature	<i>Stephen J Ruskamp</i>
Date	02/22/11

Treasure Heartland Hills  
Homeowners Assoc.



4151 S. 84th St.  
Omaha, NE 68127  
Phone: 402.738.1718  
Fax: 402.614.2771  
[www.cmcustomlawn.com](http://www.cmcustomlawn.com)

***Recipient of the Sarpy County Small Business of the Year Award***

**PROPOSAL**

Name: Heartland Hills HOA  
Address: 36th & Sheridan  
City, St, Zip: Bellevue, NE 68123

**Job Site Information (if different from above)**

Contact: Stephen Ruskamp  
Address: 36th & Sheridan  
City, St, Zip: Bellevue, NE 68123  
Email: [sruskamp3@cox.net](mailto:sruskamp3@cox.net)

Referral: current client

Home:  
Work:  
Cell: 402.321.4277  
Fax:

Rep: Bobby Byers  
Tele: 402-738-1718 ext. 635  
Email: [bbyers@cmcustomlawn.com](mailto:bbyers@cmcustomlawn.com)  
Designer: Byers

**Landscape**

Sub-Total	\$ 19,394.86
Tax	\$ 1,117.31
Total	\$ 20,512.17

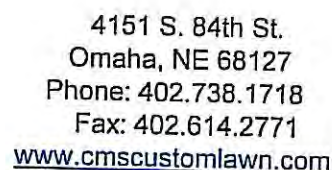
**Concrete**

Sub-Total	\$ 1,922.11
Tax	\$ -
Total	\$ 1,922.11

**Total Project**

Sub-Total	\$ 21,316.97
Tax	\$ 1,117.31
Total	\$ 22,434.28





## LANDSCAPE PROPOSAL

Home:  
Work:  
Cell:  
Fax:

**Contact:** Stephen Ruskamp  
**Address:** 36th & Sheridan  
**City, St, Zip** Bellevue, NE 68123  
**Email:** sruskamp3@cox.net

Home:  
Work:  
Cell: 402.321.4277  
Fax:

Referral: current client

Rep: Bobby Byers  
Tele: 402-738-1718 ext. 635  
Email: bbyers@cmscustomlawn.com  
Design: Bvers

**Objective:** Install rain gardens/landscape on North lot.

**Install landscape per design by completing the following:**

CM's will arrange for locating services to locate buried municipalities etc...

It is the owners responsibility to inform contractor of private lines.(Dog fences,Outdoor lighting,etc.)  
Determine shape of bad lines

Determine shape of bed lines

Remove existing sod from determined planting beds as necessary

### Rain Garden Construction:

Approximately 28 yards of soil mix installed to planting beds and shape accordingly.

Install granite boulders with approximate weight of	20000	lbs.
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Install	44	shrubs consisting of the following sizes,	20000
Install	22		Three gallon

Install	63	perennials consisting of the following size, One gallon
Install	64	perennials consisting of the following size, One gallon

Install	31	perennials consisting of the following size, One gallon	
Install	31	ornamental grasses consisting of the following sizes,	One gallon

Install	0	ornamental grasses consisting of the following sizes,
Annuals	0	annuals consisting of the following sizes,

Approximately	21	yards of mulch installed to newly planted areas using,	Hardwood Mulch
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Approximately	2	ton of River Rock (Regular)
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Approximately	2	ton of River Rock (1-2")
Approximately	5	ton of 5-9" Cobbles

Plant, stake and mulch ( 10 ) selected tree's in proper locals

Tree sizes: Deciduous: 2-2.5 inch caliper

Coniferous: 6-8 ft.

Cut in natural bed line to newly installed beds

**Apply granular Pre-Emergent and Fertilizer to newly constructed beds**

### Water in newly planted material

Clean up work site of any remaining or discarded plant or construction material etc... and properly dispose

Does not include any other clean up or removal of soil, trash, or debris left on site by other contractors.

3/1/2011 9:27 AM

Heartland Hills- revised '11, landscape

**Task Complete**

[illegible]

Total Plant related	\$ 15,961.55
Sales Tax	\$ 1,117.31
Total Non-Plant related	\$ 3,433.31
Total	\$ 20,512.17



I would like a fresh layer of mulch with pre-emergents applied to my landscape in the spring of 2011

\$	-
client initials	

#### CM'S Custom Lawn & Landscape Guarantee

CM'S Custom Lawn & Landscape guarantees trees, shrubs and perennials installed for one (1) year, from the date of install and will replace nursery stock one (1) time with same size and variety, providing death occurs within one year. The consumer shall provide reasonable and proper care. \*\*Excludes tropical, annuals, damage by an act of God and vandalism, or any animal damage. \*\*This guarantee is void if terms or payments are not fulfilled.

An initial down payment of 50% is due upon acceptance of proposal. I agree to pay progress payments equal to the percent of completed construction if my project last more than five days. Contractor may withdraw proposal if not accepted within 30 days.

client initials
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Owner is responsible for clearly and accurately marking property lines.

Contractor will arrange for locating services to locate any public buried cable and/or municipalities. Owner is responsible for clearly and accurately marking private utility lines. If private lines are damaged, It is the owners responsibility to arrange for repair and payment for repair of private lines. Private lines include, but are not limited to, buried drain tile outdoor lighting, buried gas lines and pool lines. Private lines are not located by One-Call. A public utility line that is damaged beyor working condition by the contractor will be repaired at the contractor's expense, unless that line is buried improperly or improperly located, in which case the cost of repair will be at the expense of the public utility.

client initials
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Any alteration or deviation from above specifications involving extra costs will become an extra charge over and above the contract price. These alterations and deviations will be billed at 60.00 per hour per person plus materials, equipment, disposal fees and applicable taxes. Should the contract be terminated for any reason whatsoever before completion of the work as specified herein, the owner (s) agree to pay in full for all labor and materials furnished up to the date of such termination at the rate and price herein above specified. Any tools or equipment and unused materials left on the premises by the contractor shall, under any conditions, remain the property of the contractor. All tools, equipment and materials delivered for this job by the contractor shall be stored by the owner and no rental or storage charge shall be made or assessed by the owner.

client initials
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Any buried debris that obstructs the contractor's work, whether the debris needs to be removed or not, will be charged to the owner at \$60.00 per person per hour plus equipment and disposal fees. Unsuitable sub-grade material will be removed and replaced with suitable sub-grade material and billed to the owner at \$100 per cubic yard of material removed and replaced. The owner must provide a signed document stating that he/she does not wish to have unsuitable sub-grade replaced. All warranties are void if unsuitable sub-grade material is discovered and not replaced.

client initials
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Contract Price \$ 20,512.17

50% Down payment \$ 10,256.09

Balance Paid in Full at Completion \$ 10,256.09

#### ACCEPTANCE OF PROPOSAL

The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature \_\_\_\_\_

Date accepted \_\_\_\_\_

Phone order authorized by \_\_\_\_\_ to \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ AM/PM.

Acknowledgement copy sent to \_\_\_\_\_ by \_\_\_\_\_ Date \_\_\_\_\_.

For Office Use	date	initial			
Sale			T.S.		

3/1/2011 9:27 AM

Heartland Hills- revised '11,landscape





4151 S. 84th St.  
Omaha, NE 68127  
Phone: 402.738.1718  
Fax: 402.614.2771  
[www.cmscustomlawn.com](http://www.cmscustomlawn.com)

**Winner of the 2009 Watkins Ultimate Backyard Challenge**

**CONCRETE PROPOSAL**

Name: Heartland Hills HOA  
Address: 36th & Sheridan  
City, St, Zip: Bellevue, NE 68123  
Email:

Home:  
Work:  
Cell:  
Fax:

**Job Site Information (if different from above)**

Owner: Stephen Ruskamp  
Address: 36th & Sheridan  
City, St, Zip: Bellevue, NE 68123  
Email: sruskamp3@cox.net

Home:  
Work:  
Cell: 402.321.4277  
Fax:

Referral: current client

Rep: Bobby Byers  
Tele: 402-738-1718 ext. 635  
Email: bbyers@cmscustomlawn.com  
Design: Byers

**Objective:** Install new sidewalk section for water access to rain garden.

**Install project by completing the following:**

CM's will arrange for locating services to locate buried municipalities etc...

It is the owners responsibility to inform contractor of any private lines. (Dog fences, Outdoor lighting, etc.)

Demo Concrete sidewalk at dry creek bed access point

Pour suspended sidewalk with supports to allow water to run to gardens

Clean up work site of any remaining or discarded plant or construction material etc... and properly dispose

Does not include any other clean up or removal of soil, trash, or debris left on site by other contractors.

Sub-Total	\$1,922.11
Sales Tax	\$0.00
<b>Total</b>	<b>\$1,922.11</b>

**CM's Custom Lawn & Landscape Guarantee**

Concrete cracking is minimized by pouring concrete at proper depths, installing reinforcement material, thorough compaction of sub-grade, insuring that sub-grade material is suitable, and adding contraction joints. Concrete is not guaranteed against cracking. We do guarantee that we focus on taking the steps and using available resources to reduce stresses in curing concrete. This guarantee does not cover acts of God, damage caused by others, or any project that is altered or added to by persons not working as employees of CM's Custom Lawn & Landscape.

**\*\*This guarantee is void if terms or payments are not fulfilled.**

client initials

An initial down payment of 50% is due upon acceptance of proposal. I agree to pay progress payments equal to the percent of completed construction if my project last more than five days. Contractor may withdraw proposal if not accepted within 30 days.

Owner is responsible for clearly and accurately marking property lines.

3/1/2011 9:28 AM

Heartland Hills- revised '11, Concrete



Contractor will arrange for locating services to locate any public buried cable and/or municipalities. Owner is responsible for clearly and accurately marking private utility lines. If private lines are damaged, It is the owners responsibility to arrange for repair and payment for repair of private lines. Private lines include, but are not limited to, buried drain tile outdoor lighting, buried gas lines and pool lines. Private lines are not located by One-Call. A public utility line that is damaged beyor working condition by the contractor will be repaired at the contractor's expense, unless that line is buried improperly or improperly located, in which case the cost of repair will be at the expense of the public utility.

client initials

Any alteration or deviation from above specifications involving extra costs will become an extra charge over and above the contract price. These alterations and deviations will be billed at 60.00 per hour per person plus materials, equipment, disposal fees and applicable taxes. Should the contract be terminated for any reason whatsoever before completion of the work as specified herein, the owner (s) agree to pay in full for all labor and materials furnished up to the date of such termination at the rate and price herein above specified. Any tools or equipment and unused materials left on the premises by the contractor shall, under any conditions, remain the property of the contractor. All tools, equipment and materials delivered for this job by the contractor shall be stored by the owner and no rental or storage charge shall be made or assessed by the owner.

client initials

Any buried debris that obstructs the contractor's work, whether the debris needs to be removed or not, will be charged to the owner at \$60.00 per person per hour plus equipment and disposal fees. Unsuitable sub-grade material will be removed and replaced with suitable sub-grade material and billed to the owner at \$100 per cubic yard of material removed and replaced. The owner must provide a signed document stating that he/she does not wish to have unsuitable sub-grade replaced. All warranties are void if unsuitable sub-grade material is discovered and not replaced.

client initials

Contract Price \$ 1,922.11  
50% Down payment \$ 961.05  
Balance Paid in Full at Completion \$ 961.05

### ACCEPTANCE OF PROPOSAL

The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature \_\_\_\_\_

Date accepted \_\_\_\_\_

Phone order authorized by \_\_\_\_\_ to \_\_\_\_\_

Date \_\_\_\_\_ Time \_\_\_\_\_ AM/PM.

Acknowledgement copy sent to \_\_\_\_\_ by \_\_\_\_\_ Date \_\_\_\_\_

For Office Use	date	Initial			
Sale			T.S.		

# Main Worksheet Bioretention Sizing Procedure Form

Designer: BOBBY BYERS Checked By: ANDREW SZATKO Company: CM's

Date: 2/28/2011

Project: HEARTLAND HILLS Location: 36TH & SHERIDAN  
BELLEVIEW

## Water Quality Volume

**Step 1 - Tributary area to bioretention area  $A_T$ (ac)**

$$A_T(\text{ac}) = 29,400 \text{ sq ft}$$

**Step 2 - Calculate WQv using methodology as described in this section**

$$WQv(\text{cu-ft}) = 846 \text{ cu ft}$$

$$(A_T * 43,560 \text{ sq ft/ac} * .5 \text{ inches} * 1 \text{ ft}/12 \text{ in} = WQv(\text{cu ft}))$$

## Infiltration Cell and Ponding Area

**Step 1 - Infiltration cell amended soil depth,  $d_f$ (ft)**

$d_f$  should be between 1.5 feet and 2.5 feet

$$d_f(\text{ft}) =$$

**Step 2 - Coefficient of permeability for infiltration cell,  $k$ (ft/day)**

$k$  should be at least 1 feet/day

$$k(\text{ft/day}) =$$

Note: Using the prescribed amended soil mix, assume  $k = 6 \text{ ft/d}$

**Step 3 - Average ponding depth,  $h_{avg}$ (ft)**

$h_{max}$  should be between .25 feet and 1.0 feet

$$h_{avg}(\text{ft}) = 1.0'$$

**Step 4 - Time required for WQv to filter through the infiltration cell,  $t_f$ (days)**

$t_f$  of 1 to 2 days is recommended

$$t_f(\text{days}) =$$

**Step 5 - required infiltration cell surface area,  $A_f$ (ft<sup>2</sup>)**

$$A_f = WQv / k * t_f$$

$$A_f(\text{ft}^2) =$$

**Step 6 - Approximate infiltration cell length,  $L_f$ (ft), assuming a length to width ratio of 2:1**

$$(\text{SqRt}(A_f) * 1.5 = L_f)$$

$$L_f(\text{ft}) =$$

**Step 7 - Approximate infiltration cell width,  $W_f$ (ft), assuming a length to width ratio of 2:1**

$$(\text{SqRt}(A_f) * 0.6667 = W_f)$$

$$W_f(\text{ft}) =$$

**Step 8 - Infiltration cell (and amended soil mix) volume ( $V_f$ )**

$$V_f(\text{cft}) =$$

**Step 9 - Required Ponding Area,  $A_p$  (sf)**

$$A_p = WQv / h_{avg}$$

$$A_p(\text{ft}^2) = 846 \text{ sq ft}$$

Note: Infiltration cell does not necessarily need to have W/L 2:1 ratio



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Maps

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43°F

Data provided by AccuWeather



Explore 3D photo experiences



DIRECTIONS



Get help planning the best route

EXPLORE

- What's nearby
- Restaurants

- Traffic
- Hotels

