



Department of Public Works
Infrastructure Services Division

*Sent to Honda
2/11/16*

Ghassan Korban
Commissioner of Public Works

Preston Cole
Director of Operations

Jeffrey S. Polenske
City Engineer

January 25, 2016

Ms. Jamie Lambert
Regional Nonpoint Source Coordinator
Department of Natural Resources
2300 North Martin Luther King Drive
Milwaukee, WI 53212

Subject: Expenditure and Reimbursement Form and Final Report
East Greenfield Avenue Bioswale Project
Grant Award #USC-MI01-40251-13

Dear Ms. Lambert:

Enclosed are the forms "Request for Reimbursement – Nonpoint Source Stormwater Management Grant Program" and the Final Report (Form 3400-189) for the subject Urban Nonpoint Source & Storm Water Management (UNPS&SW) Grant. Also included in the transmittal is a compact disc containing an electronic copy of the final report along with the project photos.

The City has previously submitted two reimbursement requests for a total of \$32,839.84 out of the \$90,000 that it was awarded under the subject UNPS&SW grant on December 5, 2012. The project is complete and the final expenditure amount incurred by the City for the period of January 1, 2015 through December 31, 2015 is \$27,449.02. In accordance with the Grant Award Agreement, the City would like to request the third and final reimbursement amount of \$8,234.70, which is 30% of the expenditures for said period.

If you have any questions, please contact Mr. Tim Thur at (414) 286-2463.

Sincerely,

Jeffrey S. Polenske, P.E.
City Engineer

NMJ
NMJ: adj

Enclosure

c: Mr. Martin Matson, Comptroller
Ms. Marjorie Washington-Jones, Department of Public Works
23-10



Final Report Form 3400-189 (rev. 7/30/09)

- Targeted Runoff Management Grant Program (ch. NR 153)
- Notice of Discharge Program (ch. NR 153)
- Urban Nonpoint Source & Storm Water Management Grant Program (ch. NR 155)

Wisconsin Department of Natural Resources
 Bureau of Watershed Management (WT/3)
 101 S. Webster St.
 Madison, WI 53703
 PO Box 7921
 Madison, WI 53707-7921

NOTICE: This Final Report is authorized under ss. 281.65 and 281.66., Wis. Stats., and chs. NR 153 and NR 155, Wis. Admin. Code. Personally identified information collected will be used for program administration and may be made available to requesters as required under Wisconsin Open Records Law [ss. 19.31-19.39, Wis. Stats.].

INSTRUCTIONS: Your grant agreement requires you to submit a Final Report with your final reimbursement request. This Final Report form must be used in conjunction with the "FINAL REPORT INSTRUCTIONS." The instructions detail how to complete and submit the report to DNR as described in the instructions.

1. GRANT TYPE. Check the one that applies.

- Targeted Runoff Management Grant – Agricultural
 Targeted Runoff Management Grant – Urban
 Urban Nonpoint Source & Storm Water Management Grant – Construction
 Urban Nonpoint Source & Storm Water Management Grant – Planning
 Notice of Discharge Grant

2. PROJECT NAME & LOCATION.

2.1. Project Name: East Greenfield Avenue Bioswale Project	2.2. Grant Number: USC-MI01-40251-13
2.3. Governmental Unit Name: City of Milwaukee	2.4. Primary Watershed Name: Kinnickinnic River
	2.5. Watershed Code: USC-MI01

NOTE FOR SECTION 2.6 (which follows):

Section 2.6. includes five (5) columns (A. through E.) for recording data about five (5) discrete site locations. If your grant has more than five (5) discrete project locations, attach additional columns for Section 2.6 as described in the instructions. If your project occurs in more than one 12-digit Hydrologic Unit Code (HUC), use the space in adjacent columns to record other HUC numbers.

2.6 Site Location(s) →	A.	B.	C.	D.	E.
Name of Cost-Share Recipient or Governmental Unit	Milwaukee, City				
Cost-Share Agreement Number (Agricultural only)					
12-Digit Hydrologic Unit Code(s) (HUC) Where Work Was Completed	040400030606				
Nearest Surface Receiving Water Affected					
Name:	Kinnickinnic River				
Waterbody Identification Code(s) (WBIC):	15100				
Nearest Impaired Water Affected					
Name:	Kinnickinnic River				
Waterbody Identification Code(s) (WBIC):	15100				
Pollutants Reduced	Sediment (TSS)				
Impairments/Impacts Addressed	Sediment (TSS)				

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Project Location(s) (cont.) →	A.	B.	C.	D.	E.
Project Coordinates:					
Town	06N	06N	06N	07N	06N
Range	R22E	R22E	R22E	R22E	R22E
Section	04	04	04	33	04
Quarter	NW	NW	NW	SW	NW
Quarter-Quarter	NW	NW	NW	SW	NW
Latitude (degrees, minutes, seconds North of Equator; use the DNR's Surface Water Data Viewer (SWDV))	43° 01' 0.8" N	43° 01' 0.8" N	43° 01' 0.8" N	43° 01' 1.6" N	43° 01' 0.8" N
Longitude (degrees, minutes, seconds W of Prime Meridian, use the SWDV)	87° 54' 19.4" W	87° 54' 18.0" W	87° 54' 16.2" W	87° 54' 14.8" W	87° 54' 14.4" W

3. SUMMARY OF RESULTS.

Table A. Agricultural Projects. – Ch. NR 151 Performance Standards and Prohibitions and Other Water Resources Management Priorities

A.1. Management Measures	Units of Measure	Quantity	Measurement Method Used
Sheet, rill and wind erosion	Acres meeting "T"	acres	
Manure Storage Facilities: New Construction/Alterations	Number of facilities	facilities	
	Number of animal units	animal units	
Manure Storage Facilities: Closure	Number of facilities	facilities	
Manure Storage Facilities: Failing/Leaking Facilities	Number of facilities	facilities	
	Number of animal units	animal units	
Clean Water Diversions in WQMA	Pollutant load reduction	lbs.	
	Number of farms with diversions	farms	
	Number animal units	animal units	
Nutrient Management on Agricultural Land	Acres planned	acres	
Prohibition: Manure Storage Overflow	Number of farms	farms	
	Number of animal units	animal units	
Prohibition: Unconfined Manure Pile in WQMA	Number of farms	farms	
Prohibition: Direct Runoff From Feedlot/Stored Manure	Pollutant load reduction	lbs.	
	Number of facilities	facilities	
	Number of animal units	animal units	
Prohibition: Unlimited Livestock Access	Feet of bank protected	feet	
	Number of farms	farms	

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Project Location(s) (cont.) →	F.	G.	H.	I.	J.
Project Coordinates:					
Town	06N	07N	06N		
Range	R22E	R22E	R22E		
Section	04	33	04		
Quarter	NW	SW	NW		
Quarter-Quarter	NE	SW	NE		
Latitude (degrees, minutes, seconds North of Equator; use the DNR's Surface Water Data Viewer (SWDV))	43° 01' 0.8" N	43° 01' 1.6" N	43° 01' 1.2" N		
Longitude (degrees, minutes, seconds W of Prime Meridian, use the SWDV)	87° 54' 13.0" W	87° 54' 12.6" W	87° 54' 11.9" W		

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Table A. Agricultural Projects. (continued)			
A.2. Other Management Measures			
	Units of Measure	Quantity	Measurement Method Used
Streambank & Shoreline Protection	Units (use feet, acres or number as applicable)		
	Pollutant load reduction (if method available)		
Other:	Units (use feet, acres or number as applicable)		
	Pollutant load reduction (if method available)		
Other:	Units (use feet, acres or number as applicable)		
	Pollutant load reduction (if method available)		
Other:	Units (use feet, acres or number as applicable)		
	Pollutant load reduction (if method available)		

Table B. Urban Construction Projects Serving Developed Areas.			
B.1. Required Management Measures			
	Units of Measure	Quantity	Measurement Method Used
20-40% Total Suspended Solids (TSS) Reduction for NR 216 communities	TSS reduced	520 lbs.	WinSLAMM (Bioswales and Porous Pavement)
	TSS reduction	95 %	WinSLAMM (Bioswales and Porous Pavement)
B.2. Other Management Measures			
20-40% Reduction in TSS for non-NR 216 communities	TSS reduced	0 lbs.	
	TSS reduction	%	
Infiltration	Pre-development stay-on volume	%	
	Stay-on volume	ft ³ /year	
Peak flow discharge for 2 year/24 hour design storm	Change in cubic feet per second for design year	ft ³ /sec	
Protective areas	Bank protected	feet	
Fueling & maintenance areas	Oily sheen presence reduced	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Streambank & Shoreline Protection	Bank erosion reduced	tons	
	Bank protected	feet	
Other:	Pollutant load reduction (if method available)		
	Units (use feet, acres or number as applicable)		

Table C. Urban Planning Projects.			
C.1. Governmental unit(s) involved (list by name):			
C.2. Estimate total acres covered by the			
	Existing Developed Urban Areas	New Development	Total Acres

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planning product:	acres	acres	acres
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C.3. Products developed (check all below that apply)	Identify Documents by Name (if applicable)
<input type="checkbox"/> Storm Water Plan	
<input type="checkbox"/> Construction or Erosion Ordinances	
<input type="checkbox"/> Post-construction Storm Water Ordinances	
<input type="checkbox"/> Other Types of Storm Water Quality Ordinances	
<input type="checkbox"/> Financing Methods: identified and evaluated	
<input type="checkbox"/> Financing Methods: developed or implemented	
<input type="checkbox"/> I & E Plan	
<input type="checkbox"/> I & E Implementation Activities	
<input type="checkbox"/> Other:	
C.4. Identify the Storm Water goals addressed (check all that apply)	Comments:
<input type="checkbox"/> Reduce TSS	
<input type="checkbox"/> Maintain infiltration	
<input type="checkbox"/> Control Peak Flow	
<input type="checkbox"/> Protective Areas	
<input type="checkbox"/> Control of Fueling & Maintenance Areas	
<input type="checkbox"/> Remove Illicit Discharges	
<input type="checkbox"/> Other:	

4. Satisfaction of Notice Requirements. If cost sharing for this project was offered under a formal notice pursuant to chs. NR 151 or 243, provide information for each notice in the table below.

Notice Information				Notice Satisfaction Information		
Chs. NR 151 or 243 Notice Type	Issue Date	From (Name)	To (Name)	Satisfied?		Date Letter Sent
				Yes	No	
				<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	

- Targeted Runoff Management Grant Program (ch. NR 153)
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5. Additional Information. (Space will expand to fit your text.)

This project consisted of the design and construction of a treatment train system. Two (2) Best Management Practices (BMPs), porous pavement and seven (7) bioswales, were used in conjunction with each other as a single system to increase storm water quality while controlling runoff peak flows and volume. During storm events water from within the project area passes through the porous pavement and then through the bioswales before entering the storm sewer system where it is conveyed to the Kinnickinnic River. We have been monitoring the porous pavement and bioswale facilities during rain events and they have been functioning as designed.

6. Summary of Project Challenges. (Space will expand to fit your text.)

The biggest challenge of the project occurred during the design and layout of the proposed BMP facilities. Various iterations of design were required to ensure that the elevations of the porous pavement and bioswales could be constructed and function as a single treatment system. This was accomplished while taking into account site constraints, underground utilities, and aesthetics.

7. Grantee Certification.

Checking here certifies that, to the best of your knowledge, the information contained in this report is correct.

Name of Authorized Representative (type or print) ↓

Jeffrey S. Polenske

Title of Authorized Representative (type or print) ↓

City Engineer (City of Milwaukee)

Signature of Authorized Representative

Date

1/25/16

8. For Departmental Use Only.

Regional NPS Coordinator – Please complete the following:

8.A. Check here if you have received the following from the project sponsor:

- one (1) printed, signed, original Final Report + attachments
- one (1) electronic version of Final Report.

Send the printed, signed original Final Report with attachments + electronic version to the Community Financial Assistance Grants Manager. Community Financial Assistance will forward to Runoff Management Section Grants Coordinator.

8.B. Comments about this project:

8.C. Type or print Name of Regional NPS Coordinator →

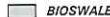

Jamie Lambert

8.D. Signature of Regional NPS Coordinator

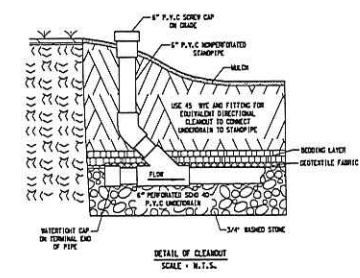
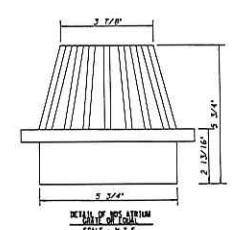
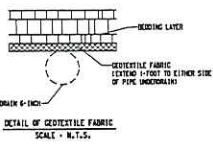
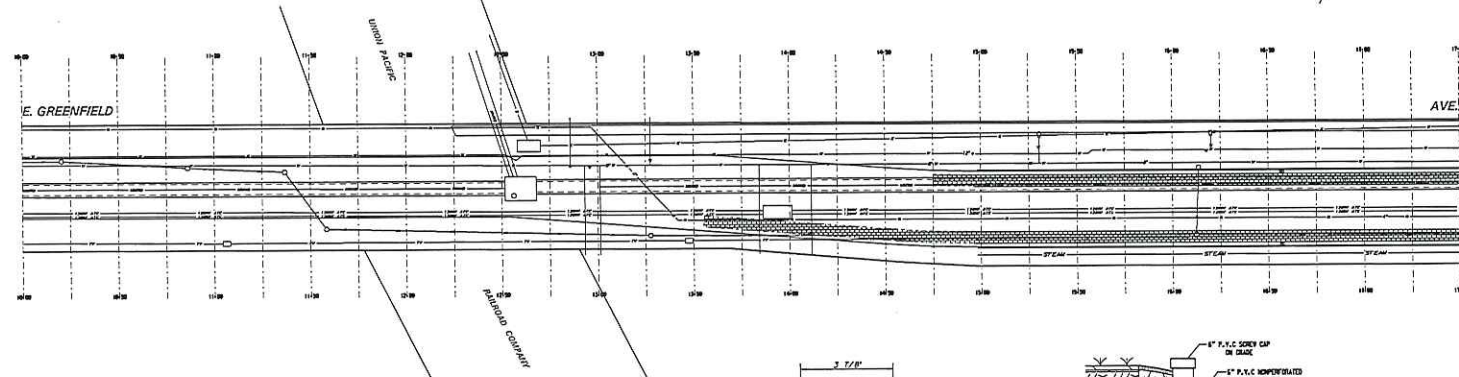
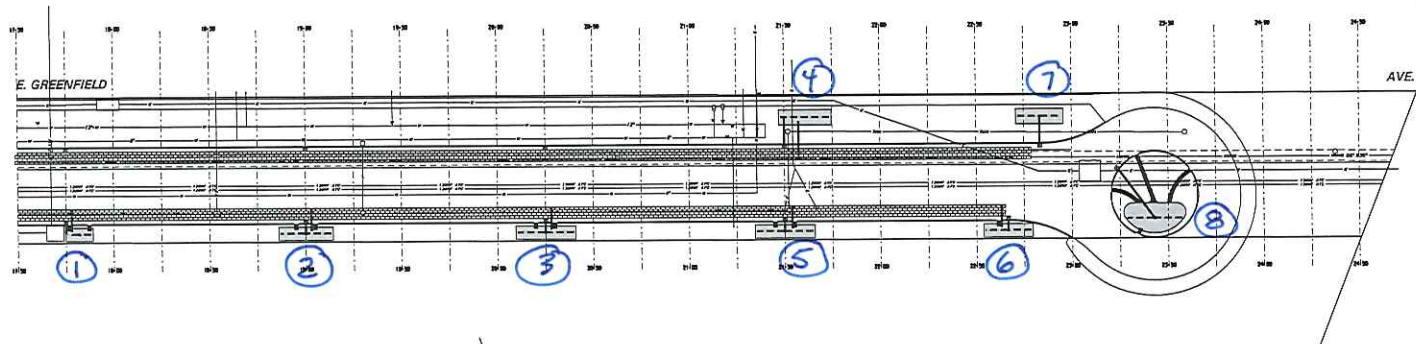
Jamie D Lambert

8.E. Date

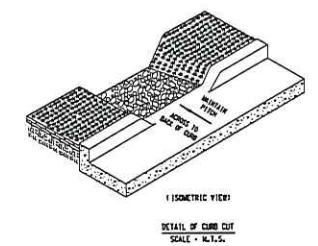
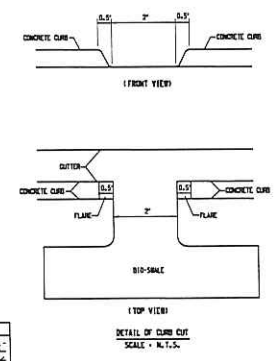
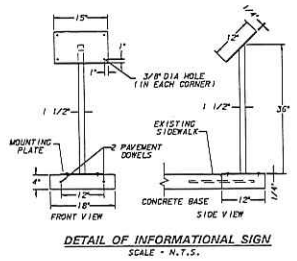
02/09/2016

 BIOSWALE
 PERMEABLE PAVEMENT

BIOSWALE LOCATIONS



SHEET 1 OF 6	15 PLAN FILE NO. 233-37
SHEET 2 OF 6	15 PLAN FILE NO. 233-38
SHEET 3 OF 6	15 PLAN FILE NO. 233-39
SHEET 4 OF 6	15 PLAN FILE NO. 233-40
SHEET 5 OF 6	15 PLAN FILE NO. 233-41
SHEET 6 OF 6	15 PLAN FILE NO. 233-47



 CALL DIGGERS HOTLINE
 1-800-242-8511
 TOLL FREE TO REPORT LOCATION OF UNDERGROUND
 UTILITIES. 24 HOURS A DAY. 7 DAYS A WEEK.

AS BUILT CONTRACT NO.	DATE ENT'D.	
DESIGNED BY	REGISTERED	DATE
ENT'D. BY	REGISTERED	DATE

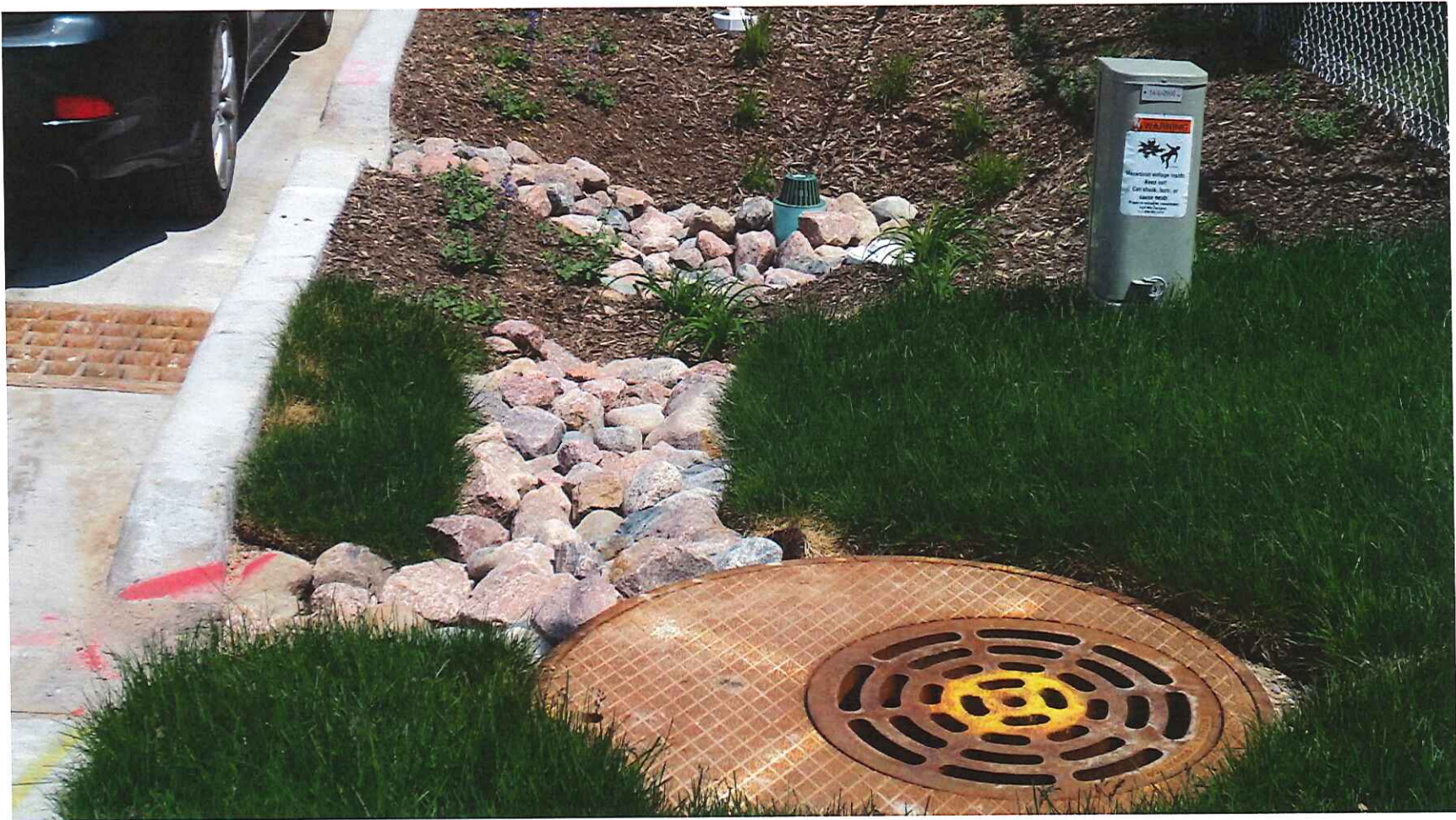
ESTIMATE OF QUANTITIES		
ITEM NO.	QUANTITY	DESCRIPTION
1	2500 SQ FT	PERMEABLE PAVEMENT
2	6000 SQ YDS	SEPARATION MESH
3	3 EACH	INFORMATIONAL SIGN
4	1000 SQ YD	PLANTS, MAINTENANCE AND WARRANTY

ENVIRONMENTAL ENGINEERING SECTION
 INFRASTRUCTURE SERVICES DIVISION
 DEPARTMENT OF PUBLIC WORKS
 MILWAUKEE, WISCONSIN
SEWER MAIN PLAN
E. GREENFIELD AVENUE

SCALE	1" = 30'
DATE	4-2-14
DESIGNED BY	J. QUANDT
DRAWN BY	N. O. A. G.
CHECKED BY	S. BEVELLE
PROJECT NO.	0802004
PLAN FILE NO.	233-47
SHEET NO.	6 OF 6
PLAN FILE NO.	233-47

LINE CODE LEGEND			
GAS	.....	SANITARY SEWER	..... SAN
ELECTRIC	.....	STORM SEWER	..... STB
TELEPHONE	.....	COMBINED SEWER	..... CWP
CABLE TELEVISION	.....	SEW DISTRACT SEWER	..... MWD
FIBER OPTICS	.....	WATER MAIN	..... WMP
CITY UNDERGROUND CONDUIT	.....	SEWERS/WATER OVER 24"	.....
STREET LIGHTING	.....	STREET LIGHTING	.....
PAVING LIMITS	.....	PAVING LIMITS	.....
STRUCTURE CHANGING	.....	STRUCTURE CHANGING	.....
FENCE	.....	FENCE	.....

East Greenfield Avenue Bioswale Project Photos



Bio Area #1

East Greenfield Avenue Bioswale Project Photos



Bio Area #2

East Greenfield Avenue Bioswale Project Photos



Bio Area #3

East Greenfield Avenue Bioswale Project Photos



Bio Area #4

East Greenfield Avenue Bioswale Project Photos



Bio Area #5

East Greenfield Avenue Bioswale Project Photos



Bio Area #6

East Greenfield Avenue Bioswale Project Photos



Bio Area #7

East Greenfield Avenue Bioswale Project Photos



Bio Area #8