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**STORMWATER MANAGEMENT FACILITIES
OPERATION AND MAINTENANCE AGREEMENT**

This Stormwater Management Facilities Operation and Maintenance Agreement ("AGREEMENT") is made and entered into this _____ day of _____, 2019 ("Effective Date"), by and between The New Home Company Northern California LLC, a Delaware Limited Liability Company ("Developer"), the Ellison Park Community Association, a California nonprofit mutual benefit corporation ("Association"), and the City of Milpitas, a municipal corporation of the State of California ("City").

RECITALS

This AGREEMENT is made and entered into with reference to the following facts:

- A. **WHEREAS**, the Developer and the Association collectively own the real property more particularly depicted and described on the attached as **Exhibit A** ("Association Property") and fully incorporated herein by reference; and
- B. **WHEREAS**, the Developer received entitlements from the City allowing the development of the Ellison Park residential project ("Project"), including the construction of 19 buildings comprising of up to 114 units with, emergency vehicle access, utilities, and associated offsite and onsite improvements landscaping, irrigation, and stormwater treatment measures on a 5.85 acre site located at 231, 247, 271 Houret Drive and 1757 Houret Ct in Milpitas and more commonly known as
1. Resolution No. 8511 approving Site Development Permit No. SD15- 0006,
 2. Resolution No. 8511 approving Conditional Use Permit No. UP15- 0010,
 3. Resolution No. 8511 approving Major Tentative Map No. MT15- 0008; and

- C. **WHEREAS**, discharges to the City's municipal separate storm sewer system ("MS4") are regulated under state and federal law pursuant to Waste Discharge Requirements and National Pollutant Discharge Elimination System permit ("MS4 Permit") issued by the Regional Water Quality Control Board, San Francisco Region ("Regional Board"); and
- D. **WHEREAS**, pursuant to the requirements of the MS4 Permit and the City's Stormwater and Urban Runoff Pollution Control Ordinance as codified in Milpitas Municipal Code Chapter 16 ("Ordinance"), the City Approvals require the Developer and the Association, as applicable, to install, operate and maintain, at no cost or expense to the City, the Permanent Stormwater Pollution Prevention Measures ("BMPs") more particularly described in the City-approved Stormwater Control Operation and Maintenance Plan (sometimes referred to herein as "Plan") for the Project on file with the City as Exhibit B and fully incorporated herein by reference; and
- E. **WHEREAS**, the Stormwater Control Operation and Maintenance Plan may be subsequently modified from time to time with City's written approval and such changes shall be fully incorporated as part of this Agreement by this reference; and
- F. **WHEREAS**, the Stormwater Control Operation and Maintenance Plan includes provisions for the BMP Operation and Maintenance and an annual inspection checklist for the BMPs constructed on the Association Property, and
- G. **WHEREAS**, this Agreement memorializes the maintenance, operations, and inspection obligations of the Developer and the Association, as applicable, under the City's Ordinance and the approved Stormwater Control Operation and Maintenance Plan.

NOW, THEREFORE, in consideration of the foregoing premises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

SECTION 1. Responsibility for Operation and Maintenance:

The Developer, at its sole cost and expense, shall construct and install the BMPs shown in Exhibit B in accordance with the plans approved by and on file with the City. The Developer and the Association, as applicable, shall diligently maintain in perpetuity the BMPs in a manner assuring peak performance at all times, shall make such changes or modifications to the BMPs, subject to City's prior approval as may be reasonably necessary for the BMPs to continue to operate as designed and approved and to accomplish its intended purpose and in good repair, and in compliance with all applicable Federal, State, County and local laws and regulations, including but not limited to the Ordinance, as the same may be amended, revised, and replaced from time to time. The Developer and the Association, as applicable, shall be responsible for the costs incurred in operating, maintaining, repairing and replacing the BMPs. The Developer and the Association shall not destroy or remove the BMPs or modify any measure in any manner that would lessen its effectiveness. The Developer and the Association shall make available copies of the approved Stormwater Control Operation and Maintenance Plan at the site with the facility or property manager.

SECTION 2. Inspection of BMPs:

The Developer and the Association, as applicable, at their sole cost and expense, shall conduct annual inspections of all permanent installed BMPs per the Plan. The annual inspection report shall include completion of the checklist described in the approved Stormwater Control Operation and Maintenance Plan. The BMPs must be inspected by a qualified independent inspector who is acceptable to the City. The Developer and the Association, as applicable, shall submit the Inspection Report on these BMPs to the City Engineer no later than July 15th of each year.

SECTION 3. Facility Inspection by the City:

- (a) **Right of Entry.** The Developer and the Association, on their behalf and on behalf of their successors and assigns, grant permission to the City, the inspectors of the Regional Board, and local mosquito and vector control agency, and their authorized agents and employees, to enter the Association Property, and to inspect the BMPs whenever the City deems necessary to enforce provisions of the Ordinance, this Agreement, or any other local or state requirements. The City may enter the premises at any reasonable time during normal business hours and upon at least 48 hours prior written notice (except that prior written notice is not required in case of emergency) to inspect the premises related to BMPs and BMP operation and maintenance, to inspect and copy records related to storm water compliance, and to collect samples and take measurements related to BMPs. Simultaneously with the execution of this Agreement, the Developer shall make an initial deposit into a Private Job Account with the City a minimum balance of Four Thousand Dollars (\$4,000) for inspection by City Staff pursuant to this Section 3. The Association shall be responsible for maintaining such Private Job Account, including without limitation, making any additional deposits as required by the City pursuant to this Agreement.
- (b) **Security.** The City may require the Developer and the Association, as applicable, and their successors and assigns, from time to time, to post security in a form, amount, and for a time period satisfactory to City to guarantee performance of the obligations stated herein. Should the Developer and the Association, as applicable, and their successors and assigns, fail to perform the obligations under this Agreement, the City may, in the case of a cash bond, act for the Developer and the Association, as applicable, and their successors and assigns, using the proceeds from such cash bond, or in the case of a surety bond, require the surety to perform the obligations of this Agreement.

SECTION 4. Failure to Perform Required Facility Repairs or Maintenance:

- (a) **Enforcement Action.** If the Developer or the Association, as applicable, or its successors fail to operate and maintain the BMPs in good working order and in accordance with the approved Plan and the City's Ordinance, the City may, but is not required to, pursue any enforcement action available at law or in equity to cause the completion of all maintenance and may charge the costs of such enforcement action against the Developer or the Association, as applicable, in any manner authorized by law or in equity.
- (b) **City Maintenance.** In the event of the failure by the Developer or the Association, as applicable, to operate and maintain BMPs in accordance with the Plan and the City's Ordinance, the City may also, with prior written notice, enter the Association Property to return the BMPs to good working order; provided however that the Developer or the Association, as applicable, shall have 30 days after any such notice, or such other time provided by law, to cure the relevant failure and provided further that the Developer or the Association, as applicable, shall have such additional time after the initial 30 days to complete a cure so long as the Developer or the Association, as applicable, commences the cure within the initial 30 days and diligently prosecutes the cure to completion. Notwithstanding the foregoing, City may in its sole discretion enter the Association Property to return the BMPs to good working order in an emergency and take any other necessary action to mitigate an emergency without any notice to the Developer or the Association. The City is under no obligation to maintain or repair the BMPs, and this Agreement may not be construed to impose any such obligation on the City. If the City, under this Section 4 takes any action to return the BMPs to good working order, the Developer or the Association, as applicable, shall reimburse the City for all the reasonable costs and expenses incurred by the City. The City will provide the Developer or the Association, as applicable, with an itemized invoice of the City's costs and expenses and the Developer or the Association, as applicable, shall make full payments to the City within thirty (30) days of the date of the invoice. If the Developer or the Association, as applicable, fails to pay the invoice within thirty (30) days, the City shall be entitled to cause a lien for any such unpaid maintenance expense bill to be recorded

against the Association Property. In addition, the City shall be entitled to have the unpaid amount of the invoice placed as a special assessment on the next regular tax bill levied against the Association Property, after which such assessment shall be collected in the same manner as ordinary municipal taxes are collected, and shall be subject to the same penalties and same procedures under foreclosure and sale in the case of delinquency as provided for ordinary municipal taxes. The actions described in this section are in addition to and not in lieu of other legal remedies provided by law. Notwithstanding the above, it is understood that City is under no obligation to repair or maintain the BMPs, and in no event shall this Agreement be construed to impose any such obligation on City.

- (c) Specific Performance. The provisions of this Agreement are expressly declared to be for the benefit of the City. The City may bring an action to obtain specific performance of this Agreement and may recover its costs, including attorney fees, incurred in bringing such action.

SECTION 5: Successors and Assigns:

The Developer and the Association hereby declare that the Association Property shall be held, transferred, encumbered, used, conveyed, leased and occupied subject to the covenants, conditions, restrictions, easements and rights set forth herein for the use and benefit of each of the residential lots in the Project. All of the limitations, easements, uses, obligations, covenants, restrictions and conditions stated herein shall run with the Association Property and shall be binding upon the Developer and the Association, as applicable, and their successors and assigns, any and all parties having or acquiring any right, title or interest in or to the Association Property or any part thereof or interest therein and shall inure to the benefit of and be binding upon each successor-in-interest thereto.

Except for Section 6 and notwithstanding anything to the contrary herein, upon conveyance of all or any portion of the Association Property to the Association, this Agreement shall be deemed automatically assigned to the Association with respect to such portion of the Association Property, and the Developer shall be released from any obligation hereunder relating to such portion of the Association Property. When the Developer has conveyed to the Association all portions of the Association Property which are subject to maintenance pursuant to this Agreement, the Developer shall automatically be completely released from any obligation hereunder. Section 6 survives the assignment of this Agreement.

SECTION 6. Indemnity:

- (a) Developer. The Developer, on its behalf and on behalf of all successors in interest pursuant to Section 5 of this Agreement, shall indemnify, release, hold harmless, and defend the City and its authorized agents and employees from and against any and all demands, suits, liabilities, fines, losses, damages, accidents, casualties, occurrences or claims, including reasonable attorneys' fees, against the City which may in anyway arise or relate to the construction of the BMPs, or from any personal injury or property damage that may arise or relate from the City entering the property under Section 4 in connection with the construction of the BMPs. In addition, prior to conveyance of any portion of the Association Property to the Association, Developer, on its behalf and on behalf of all successors in interest pursuant to Section 5 of this Agreement, shall indemnify, release, hold harmless, and defend the City and its authorized agents and employees from and against any and all demands, suits, liabilities, fines, losses, damages, accidents, casualties, occurrences or claims, including reasonable attorneys' fees, against the City which may in anyway arise or relate to the construction, operation, presence, existence or maintenance of the BMPs located on such portion of the Association Property, or from any personal injury or property damage that may arise or relate from the City entering the property under Section 4 in connection with the construction, operation, presence, existence or maintenance of the BMPs located on such portion of the Association Property. If a claim is asserted under this Section 6(a) against the City, its authorized agents or employees, the City shall promptly notify the Developer, and the Developer shall defend the claim and any resulting litigation at its sole cost and expense, with counsel approved by City, and if any judgment is entered against the City, or its authorized

agents or employees, the Developer must pay all costs and expenses to satisfy the judgment.

- (b) Association. Upon conveyance to the Association of any portion of the Association Property, the Association, on its behalf and on behalf of all successors in interest pursuant to Section 5 of this Agreement, shall indemnify, release, hold harmless, and defend the City and its authorized agents and employees from and against any and all demands, suits, liabilities, fines, losses, damages, accidents, casualties, occurrences or claims, including reasonable attorneys' fees, against the City which may in anyway arise or relate to the operation, presence, existence or maintenance of the BMPs located on such portion of the Association Property conveyed to the Association, or from any personal injury or property damage that may arise or relate from the City entering the property under Section 4 in connection with the operation, presence, existence or maintenance of the BMPs located on such portion of the Association Property conveyed to the Association. If a claim is asserted under this Section 6(b) against the City, its authorized agents or employees, the City shall promptly notify the Association, and the Association shall defend the claim and any resulting litigation at its sole cost and expense, with counsel approved by City, and if any judgment is entered against the City, or its authorized agents or employees, the Association must pay all costs and expenses to satisfy the judgment.

SECTION 7. Severability:

Invalidation of any one of the provisions of this Agreement shall in no way effect any other provisions, and all other provisions shall remain in full force and effect.

SECTION 8. Non-Discrimination:

The Developer and the Association shall not discriminate, in any way, against any person on the basis of race, sex, color, age, religion, sexual orientation, actual or perceived gender identity, disability, ethnicity, or national origin, in connection with or related to the performance of this Agreement.

SECTION 9. Governing Law:

The parties agree that the law governing this Agreement shall be that of the State of California and that the Developer and the Association shall comply with all applicable laws, ordinances, codes and regulations of the federal, state and local governments.

SECTION 10. Recordation:

The Developer shall, within 10 days after the effective date of this Agreement, record or cause the Agreement to be recorded in the Office of the Recorder, Santa Clara County, California, at the expense of the Developer, which recording shall constitute notice of the obligations herein set forth and a covenant running with the land and shall be binding upon all of the successors and assigns in title to the Association Property. In the event the Developer fails to timely record this Agreement, City shall be authorized but not required to record the Agreement.

SECTION 11. Books and Records:

- A. The Developer and the Association, as applicable, shall maintain any and all ledgers, books of account, invoices, vouchers, cancelled checks, and other records or documents evidencing or relating to charges for services, or expenditures and disbursements or in any way relating to the performance of this Agreement for a minimum period of three (3) years, or for any longer period required by law.
- B. Any records or documents required to be maintained pursuant to this Agreement shall be made available for inspection or audit at no cost to City, at reasonable any time during regular business hours, upon at least 48 hours' prior written request by the City Attorney, City Manager, or a

designated representative of any of these officers. Copies of such documents shall be provided to City for inspection at City Hall when it is practical to do so. Otherwise, unless an alternative is mutually agreed upon, the records shall be available at the Association's address indicated for receipt of notices in this Agreement.

SECTION 12. Notices:

All notices and other communications required or permitted to be given under this Agreement shall be in writing and shall be personally served or mailed, postage prepaid and return receipt requested, addressed to the respective parties as follows:

To CITY:

City of Milpitas
Attn: City Engineer
455 East Calaveras Blvd.
Milpitas, CA 95035

To DEVELOPER:

The New Home Company Northern California LLC
Attn: Justin Walters
2220 Douglas Blvd., Suite 240
Roseville, CA 95661

To ASSOCIATION:

Ellison Park Community Association
c/o The New Home Company
Attn: Lori Michel
85 Enterprise, Suite 450
Aliso Viejo, CA 92656

Notice shall be deemed effective on the date personally delivered or, if mailed, three (3) days after deposit in the mail.

SECTION 13. Venue:

In the event that suit shall be brought by either party to this contract, the parties agree that venue shall be exclusively vested in the state courts of the County of Santa Clara, or if federal jurisdiction is appropriate, exclusively in the United States District Court, Northern District of California, San Jose, California.

SECTION 14. Interpretation, Prior Agreements:

This Agreement, including all Exhibits attached hereto, represents the entire understanding of the parties as to those matters contained herein. In the event that the terms specified in any of the Exhibits attached hereto conflict with any of the terms specified in the body of this Agreement, the terms specified in the body of this Agreement shall control. No prior oral or written understanding shall be of any force or effect with respect to those matters covered hereunder. This Agreement may be modified only by a written amendment duly executed by the parties to this Agreement.

[Signatures on Next Page]

IN WITNESS WHEREOF, the parties execute this Stormwater Management Facilities Operation and Maintenance Agreement as of the last date set forth below:

DEVELOPER:

THE NEW HOME COMPANY NORTHERN CALIFORNIA LLC,
a Delaware limited liability company

By:



Name: Kevin Carson
Title: Northern California President

ASSOCIATION:

ELLISON PARK COMMUNITY ASSOCIATION,
a California nonprofit mutual benefit corporation

By:



Name: Justin Walters
Title: President

By:



Name: Alan Dickson
Title: Secretary

CITY:

CITY OF MILPITAS, A MUNICIPAL CORPORATION:

Recommended for approval

By:

Steven McHarris
Interim City Manager

By:

Steve Erickson, P.E.
Engineering Director/City Engineer

Approved as to form

By:

Christopher Diaz,
City Attorney

By:

Walter Rossmann
Director of Finance

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of Placer)

On June 14, 2019, before me, Vanessa Griffin, a Notary Public, personally appeared Kevin Carson, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument, and acknowledged to me that he/~~she~~/they executed the same in his/~~her~~/their authorized capacity(~~ies~~), and that by his/~~her~~/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

Vanessa Griffin



A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of Placer)

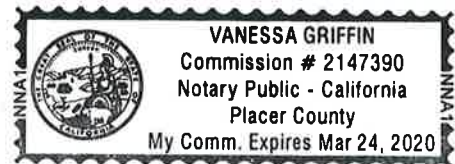
On June 14, 2019, before me, Vanessa Griffin, a Notary Public, personally appeared Justin Walters, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument, and acknowledged to me that he/~~she~~/they executed the same in his/~~her~~/their authorized capacity(~~ies~~), and that by his/~~her~~/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

Vanessa Griffin



A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

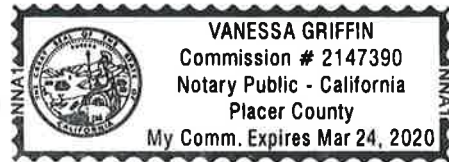
State of California)
County of Placer)

On June 14, 2019 before me, Vanessa Griffin, a Notary Public, personally appeared Alan Douglas, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument, and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Vanessa Griffin



THIS CERTIFICATE MUST BE ATTACHED TO THE DOCUMENT DESCRIBED ABOVE

EXHIBIT A

Legal Description of the Association Property

All of that certain real property located in the City of Milpitas, County of Santa Clara, State of California, described as follows:

PARCEL NO. 1

Parcels A, B, C, D, E, F, G, H, J, K, L and M of Tract No. 10372 as shown on a Subdivision Map, filed in Book 901, at Pages 40 to 46, inclusive, of Maps, in the Office of County Recorder of Santa Clara, California.

PARCEL NO. 2

Adjusted Parcel I as described on Exhibit A and depicted on Exhibit B of the Certificate of Compliance for Lot Line Adjustment recorded on December 13, 2017, as Instrument No. 23827104, in the Official Records of Santa Clara County, California.

PARCEL NO. 3

"Association Property" as shown on and defined in the Condominium Plan – Phase 1, Tract 10372, Ellison Park, recorded on March 8, 2018, as Instrument No. 23883730, in the Official Records of Santa Clara County, California, consisting of Lots 11 and 12 of Tract No. 10372 as shown on a Subdivision Map, filed in Book 901, at Pages 40 to 46, inclusive, of Maps, in the Office of County Recorder of Santa Clara, California.

PARCEL NO. 4

"Association Property" as shown on and defined in the Condominium Plan – Phase 2, Tract 10372, Ellison Park, recorded on March 8, 2018, as Instrument No. 23883731, in the Official Records of Santa Clara County, California, consisting of Lot 8 of Tract No. 10372 as shown on a Subdivision Map, filed in Book 901, at Pages 40 to 46, inclusive, of Maps, in the Office of County Recorder of Santa Clara, California.

PARCEL NO. 5

"Association Property" as shown on and defined in the Condominium Plan – Phase 3, Tract 10372, Ellison Park, recorded on March 8, 2018, as Instrument No. 23883732, in the Official Records of Santa Clara County, California, consisting of Lot 10 of Tract No. 10372 as shown on a Subdivision Map, filed in Book 901, at Pages 40 to 46, inclusive, of Maps, in the Office of County Recorder of Santa Clara, California.

PARCEL NO. 6

"Association Property" as shown on and defined in the Condominium Plan – Phase 4, Tract 10372, Ellison Park, recorded on April 26, 2018, as Instrument No. 23919337, in the Official Records of Santa Clara County, California, consisting of Lot 7 of Tract No. 10372 as shown on a Subdivision Map, filed in Book 901, at Pages 40 to 46, inclusive, of Maps, in the Office of County Recorder of Santa Clara, California.

PARCEL NO. 7

"Association Property" as shown on and defined in the Condominium Plan – Phase 5, Tract 10372, Ellison Park, recorded on April 26, 2018, as Instrument No. 23919338, in the Official Records of Santa

Clara County, California, consisting of Lot 9 of Tract No. 10372 as shown on a Subdivision Map, filed in Book 901, at Pages 40 to 46, inclusive, of Maps, in the Office of County Recorder of Santa Clara, California.

PARCEL NO. 8

"Association Property" as shown on and defined in the Condominium Plan – Phase 6, Tract 10372, Ellison Park, recorded on April 26, 2018, as Instrument No. 23919339, in the Official Records of Santa Clara County, California, consisting of Lot 4 of Tract No. 10372 as shown on a Subdivision Map, filed in Book 901, at Pages 40 to 46, inclusive, of Maps, in the Office of County Recorder of Santa Clara, California.

PARCEL NO. 9

"Association Property" as shown on and defined in the Condominium Plan – Phase 7, Tract 10372, Ellison Park, recorded on April 26, 2018, as Instrument No. 23919340, in the Official Records of Santa Clara County, California, consisting of Lot 6 of Tract No. 10372 as shown on a Subdivision Map, filed in Book 901, at Pages 40 to 46, inclusive, of Maps, in the Office of County Recorder of Santa Clara, California.

PARCEL NO. 10

"Association Property" as shown on and defined in the Condominium Plan – Phase 8, Tract 10372, Ellison Park, recorded on June 25, 2018, as Instrument No. 23963121, in the Official Records of Santa Clara County, California, consisting of Lot 3 of Tract No. 10372 as shown on a Subdivision Map, filed in Book 901, at Pages 40 to 46, inclusive, of Maps, in the Office of County Recorder of Santa Clara, California.

PARCEL NO. 11

"Association Property" as shown on and defined in the Condominium Plan – Phase 9, Tract 10372, Ellison Park, recorded on June 25, 2018, as Instrument No. 23963122, in the Official Records of Santa Clara County, California, consisting of Lot 5 of Tract No. 10372 as shown on a Subdivision Map, filed in Book 901, at Pages 40 to 46, inclusive, of Maps, in the Office of County Recorder of Santa Clara, California.

PARCEL NO. 12

"Association Property" as shown on and defined in the Condominium Plan – Phase 10, Tract 10372, Ellison Park, recorded on June 25, 2018, as Instrument No. 23963123, in the Official Records of Santa Clara County, California, consisting of Adjusted Lot 13 as described on Exhibit A and depicted on Exhibit B of the Certificate of Compliance for Lot Line Adjustment recorded on December 13, 2017, as Instrument No. 23827104, in the Official Records of Santa Clara County, California.

PARCEL NO. 13

"Association Property" as shown on and defined in the Condominium Plan – Phase 11, Tract 10372, Ellison Park, recorded on August 6, 2018, as Instrument No. 23997614, in the Official Records of Santa Clara County, California, consisting of Adjusted Lot 14 as described on Exhibit A and depicted on Exhibit B of the Certificate of Compliance for Lot Line Adjustment recorded on December 13, 2017, as Instrument No. 23827104, in the Official Records of Santa Clara County, California.

PARCEL NO. 14

"Association Property" as shown on and defined in the Condominium Plan – Phase 12, Tract 10372, Ellison Park, recorded on August 6, 2018, as Instrument No. 23997615, in the Official Records of Santa

Clara County, California, consisting of Lot 18 of Tract No. 10372 as shown on a Subdivision Map, filed in Book 901, at Pages 40 to 46, inclusive, of Maps, in the Office of County Recorder of Santa Clara, California.

PARCEL NO. 15

"Association Property" as shown on and defined in the Condominium Plan – Phase 13, Tract 10372, Ellison Park, recorded on August 27, 2018, as Instrument No. 24011434, in the Official Records of Santa Clara County, California, consisting of Lots 15 and 19 of Tract No. 10372 as shown on a Subdivision Map, filed in Book 901, at Pages 40 to 46, inclusive, of Maps, in the Office of County Recorder of Santa Clara, California.

PARCEL NO. 16

"Association Property" as shown on and defined in the Condominium Plan – Phase 14, Tract 10372, Ellison Park, recorded on August 27, 2018, as Instrument No. 24011435, in the Official Records of Santa Clara County, California, consisting of Lot 17 of Tract No. 10372 as shown on a Subdivision Map, filed in Book 901, at Pages 40 to 46, inclusive, of Maps, in the Office of County Recorder of Santa Clara, California.

PARCEL NO. 17

"Association Property" as shown on and defined in the Condominium Plan – Phase 15, Tract 10372, Ellison Park, recorded on August 27, 2018, as Instrument No. 24011436, in the Official Records of Santa Clara County, California, consisting of Lot 16 of Tract No. 10372 as shown on a Subdivision Map, filed in Book 901, at Pages 40 to 46, inclusive, of Maps, in the Office of County Recorder of Santa Clara, California.

PARCEL NO. 18

"Association Property" as shown on and defined in the Condominium Plan – Phase 16, Tract 10372, Ellison Park, recorded on December 4, 2018, as Instrument No. 24075416, in the Official Records of Santa Clara County, California, consisting of Lot 1 of Tract No. 10372 as shown on a Subdivision Map, filed in Book 901, at Pages 40 to 46, inclusive, of Maps, in the Office of County Recorder of Santa Clara, California.

PARCEL NO. 19

"Association Property" as shown on and defined in the Condominium Plan – Phase 17, Tract 10372, Ellison Park, recorded on December 4, 2018, as Instrument No. 24075417, in the Official Records of Santa Clara County, California, consisting of Lot 2 of Tract No. 10372 as shown on a Subdivision Map, filed in Book 901, at Pages 40 to 46, inclusive, of Maps, in the Office of County Recorder of Santa Clara, California.

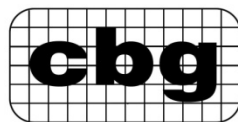
EXHIBIT B
Stormwater Management Plan

Operation and Maintenance Plan

Ellison Park
MILPITAS, CALIFORNIA

January 19, 2018

Prepared by:



**Carlson, Barbee
& Gibson, Inc.**

CIVIL ENGINEERS • SURVEYORS • PLANNERS

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I. Inspection and Maintenance Log

**Stormwater Treatment Measure Operation and Maintenance
Inspection Report to the City of Milpitas, California**

This report and attached Inspection and Maintenance Checklists document the inspection and maintenance conducted for the identified stormwater treatment measure(s) subject to the Maintenance Agreement between the City and the property owner during the annual reporting period indicated below.

I. Property Information:

Property Address of APN: 1757 Houret Court; 271, 247, 231 Houret Drive
Property Owner: The New Home Company

II. Contact Information:

Name of person to contact regarding this report: Dennis Summers
Phone number of contact person: 209-324-9953 E-mail: dsummers@nwhm.com
Address to which correspondence regarding this report should be directed:
1990 North California Blvd., Suite 620, Walnut Creek, CA 94596

III. Reporting Period:

This report, with the attached completed inspection checklists, documents the inspections and maintenance of the identified treatment measures during the time period from _____ to _____.

IV. Stormwater Treatment Measure Information:

The following stormwater treatment measures (identified treatment measures) are located on the property identified above and are subject to the Maintenance Agreement:

Identifying Number of Treatment Measure	Type of Treatment Measure	Location of Treatment Measure on the Property
DMA 1, DMA 2	Bioretention	On-Site Bioretention Facilities

V. Summary of Inspections and Maintenance:

Summarize the following information using the attached Inspection and Maintenance Checklists:

Identifying Number of Treatment Measure	Date of Inspection	Operation and Maintenance Activities Performed and Date(s) Conducted	Additional Comments

VI. Sediment Removal:

Total amount of accumulated sediment removed from the stormwater treatment measure(s) during the reporting period: _____ cubic yards.

How was sediment disposed?

- landfill
- other location on-site as described in and allowed by the maintenance plan
- other, explain _____

Bioretention Area Maintenance Plan
Property Address: 1757 Houret Court

Date of Inspection: _____
Treatment Measure No.: _____

VII. Inspector Information:

The inspections documented in the attached Inspection and Maintenance Checklists were conducted by the following inspector(s):

Inspector Name and Title	Inspector's Employer and Address

VIII. Certification:

I hereby certify, under penalty of perjury, that the information presented in this report and attachments is true and complete:

Signature of Property Owner or Other Responsible Party

Date

Dennis Summers
Type or Print Name

The New Home Company
Company Name

1990 North California Blvd., Suite 620, Walnut Creek, CA 94596
Address

(209)324-9953
Phone number

dsummers@nwhm.com
E-mail

Bioretention Area Maintenance Plan
Property Address: 1757 Houret Court

Date of Inspection: _____
Treatment Measure No.: _____

Ellison Park

June 19, 2018

Project Address and Cross Streets: Houret Drive/Montague Expressway

Assessor's Parcel No.: 086-41-009, -032, -033, -034

Property Owner: The New Home Company

Phone No.: (209)324-9953

Designated Contact: Dennis Summers Phone No.: (209)324-9953

Mailing Address: 1990 North California Blvd., Suite 620, Walnut Creek, CA 94596

The property contains 2 bioretention area(s), located as described below and as shown in the attached site plan¹.

- **Bioretention Areas 1 and 2** are located On-Site.

I. Routine Maintenance Activities

The principal maintenance objective is to prevent sediment buildup and clogging, which reduces pollutant removal efficiency and may lead to bioretention area failure. Routine maintenance activities, and the frequency at which they will be conducted, are shown in Table 1.

Table 1 Routine Maintenance Activities for Bioretention Areas		
No.	Maintenance Task	Frequency of Task
1	Remove obstructions, debris and trash from bioretention area and dispose of properly.	Monthly, or as needed after storm events
2	Inspect bioretention area for ponded water. If ponded water does not drain within 2-3 days, till and replace the surface soil and replant.	Monthly, or as needed after storm events
3	Inspect inlets for channels, soil exposure or other evidence of erosion. Clear obstructions and remove sediment.	Monthly, or as needed after storm events
4	Remove and replace all dead and diseased vegetation.	Twice a year
5	Maintain vegetation and the irrigation system. Prune and weed to keep bioretention area neat and orderly in appearance. Remove and or replace any dead plants.	Twice a year
6	Check that mulch is at appropriate depth (2 inches per soil specifications) and replenish as necessary before wet season begins.	Monthly
7	Inspect the energy dissipation at the inlet to ensure it is functioning adequately, and that there is no scour of the surface mulch.	Annually, before the wet season begins
8	Inspect bioretention area using the attached inspection checklist.	Monthly, or after large storm events, and after removal of accumulated debris or material

II. Use of Pesticides

The use of pesticides and quick release fertilizers shall be minimized, and the principles of integrated pest management (IPM) followed:

1. Employ non-chemical controls (biological, physical and cultural controls) before using chemicals to treat a pest problem.
2. Prune plants properly and at the appropriate time of year.
3. Provide adequate irrigation for landscape plants. Do not over water.
4. Limit fertilizer use unless soil testing indicates a deficiency. Slow-release or organic fertilizer is preferable. Check with municipality for specific requirements.
5. Pest control should avoid harming non-target organisms, or negatively affecting air and water quality and public health. Apply chemical controls only when monitoring indicates that preventative and non-chemical methods are not keeping pests below acceptable levels. When pesticides are required, apply the least toxic and the least persistent pesticide that will provide adequate pest control. Do not apply pesticides on a prescheduled basis.
6. Sweep up spilled fertilizer and pesticides. Do not wash away or bury such spills.
7. Do not over apply pesticide. Spray only where the infestation exists. Follow the manufacturer's instructions for mixing and applying materials.
8. Only licensed, trained pesticide applicators shall apply pesticides.
9. Apply pesticides at the appropriate time to maximize their effectiveness and minimize the likelihood of discharging pesticides into runoff. With the exception of pre-emergent pesticides, avoid application if rain is expected.
10. Unwanted/unused pesticides shall be disposed as hazardous waste.

III. Vector Control

Standing water shall not remain in the treatment measures for more than five days, to prevent mosquito generation. Should any mosquito issues arise, contact the Santa Clara Valley Vector Control District (District). Mosquito larvicides shall be applied only when absolutely necessary, as indicated by the District, and then only by a licensed professional or contractor. Contact information for the District is provided below.

Santa Clara Valley Vector Control District
1580 Berger Dr.
San Jose, California 95112
Phone: (408) 918-4770 / (800) 675-1155 - Fax: (408) 298-6356
www.sccgov.org/portal/site/vector

IV. Inspections

The attached Bioretention Area Inspection and Maintenance Checklist shall be used to conduct inspections monthly (or as needed), identify needed maintenance, and record maintenance that is conducted.

**Bioretention Area
Inspection and Maintenance Checklist**

Property Address: 1757 Houret Court; 271, 247, 231 Houret Drive

Property Owner: The New Home Company

Treatment Measure No.: _____ Date of Inspection: _____

Type of Inspection: Monthly End of Wet Season

Inspector(s): _____

After heavy runoff Other: _____

Defect	Conditions When Maintenance Is Needed	Maintenance Needed? (Y/N)	Comments (Describe maintenance completed and if needed maintenance was not conducted, note when it will be done)	Results Expected When Maintenance Is Performed
1. Standing Water	Water stands in the bioretention area between storms and does not drain within 2-3 days after rainfall.			There should be no areas of standing water once storm event has ceased. Any of the following may apply: sediment or trash blockages removed, improved grade from head to foot of bioretention area, or added underdrains.
2. Trash and Debris Accumulation	Trash and debris accumulated in the bioretention area.			Trash and debris removed from bioretention area and disposed of properly.
3. Sediment	Evidence of sedimentation in bioretention area.			Material removed so that there is no clogging or blockage. Material is disposed of properly.
4. Erosion	Channels have formed around inlets, there are areas of bare soil, and/or other evidence of erosion.			Obstructions and sediment removed so that water flows freely and disperses over a wide area. Obstructions and sediment are disposed of properly.
5. Vegetation	Vegetation is dead, diseased and/or overgrown.			Vegetation is healthy and attractive in appearance.
6. Mulch	Mulch is missing or patchy in appearance. Areas of bare earth are exposed, or mulch layer is less than 2 inches in depth.			All bare earth is covered, except mulch is kept 6 inches away from trunks of trees and shrubs. Mulch is even in appearance, at a depth of 2 inches.
7. Miscellaneous	Any condition not covered above that needs attention in order for the bioretention area to function as designed.			Meets the design specifications.

II. Updates, Revisions and Errata

Future updates, revisions and errata shall be listed in this section.

III. Introduction

This Operation and Maintenance Manual (O&M) for Ellison Park is submitted to the City of Milpitas as an accompaniment to the On-site Improvement Plans. The Stormwater Control Plan provides recommendations on the use of permanent Best Management Practices (BMPs) for the proposed project. BMP technical requirements are presented in the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) C.3 Stormwater Handbook dated April 2012.

The project address is 1757 Houret Court. 271, 247, and 231 Houret Drive which is located to the east of Montague Expressway (APN 086-41-009, -032, -033, -034). The project will include 114 units in 19 multi-family buildings, private roadways, landscaped paseos, and parks within the 5.63± ac project boundary, as well as sidewalk, landscape and roadway improvements of a public right-of-way and roadway easement area on the perimeter of the site.

Upon construction of the proposed improvements, approximately 80% (4.48 ac ±) will be covered by impervious surface and about 20% (1.14 ac ±) will be covered by landscaped areas. All walkways within these areas will be sloped to drain onto the surrounding landscaping.

The proposed on-site drainage system will consist of two principle drainage areas:

- Drainage Area '1' – Approximately 3.43 acres of impervious surface of the northern portion of the project site will discharge into the existing storm drain line west of the project site which flows through an existing outfall into Penitencia Creek. This area will be treated by bio-retention.
- Drainage Area '2' – Approximately 0.65 acres of impervious surface of the southwestern portion of the project site will discharge into the existing storm drain line west of the project site which flows through an existing outfall into Penitencia Creek. This area will be treated by bio-retention.

Each drainage area relies on a storm drain pump to convey untreated runoff from the proposed storm drain system into the bioretention areas for treatment. The pumps shall be maintained and inspected as outlined in the CC&R's and per manufacturer's recommendations.

The remaining 0.40 acres of impervious surfaces (paseo sidewalks) will be treated by self-treating landscape areas. Self-treating landscape areas are shown in the figures section of the appendix.

The treatment BMP used on this site include:

- Bioretention Areas
- Self-Treating Landscape Areas

IV. Responsibility for Maintenance

A. *General*

1. Contact Information

**Designation of Individuals Responsible for Stormwater Treatment BMP
Operation and Maintenance**

Date Completed:

Facility Name:

Facility Address:

Designated Contact for Operation and Maintenance

Primary Contact:

Telephone:

Alternate Telephone:

Email:

Off-Hours or Emergency Contact

Primary Contact: Emergency Line

Telephone:

Alternate Telephone:

Email:

Corporate Officer (Authorized to Execute Contracts with City)

Primary Contact:

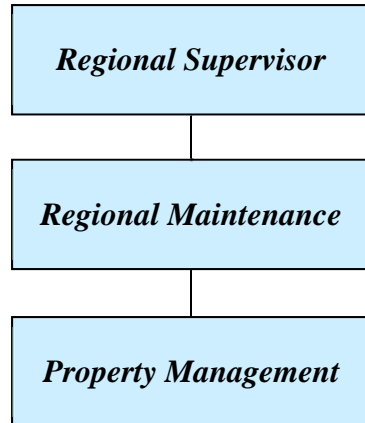
Title or Position:

Telephone:

Alternate Telephone:

Email:

2. Organization Chart



3. O&M Agreement

An operation and maintenance agreement between the Owner and City of Milpitas will be recorded with the County of Santa Clara.

4. Maintenance Funding

- a. Sources of funds for maintenance: Maintenance funds will be paid by the Homeowner’s Association.
- b. Budget category or line item: Funds for the maintenance of the BMPs will be listed under the “Maintenance Contracts” line item in the Homeowner’s Association.
- c. Description of procedure and process for ensuring adequate funding for maintenance: The cost of maintenance operations shall be covered by the Homeowner’s Association.

B. Staff Training Program

Employees will be trained to comply with the terms of the Operations and Maintenance Agreement to be recorded. Employees will be trained in the proper disposal of trash materials and hazardous waste. Employees will be trained to comply with the storm water inlet labels printed with the logo “No Dumping / Flows to Bay.” This educational measure is intended to prevent unlawful dumping of waste materials, such as motor oil, into the storm drain system.

C. Records

The Homeowners Association will maintain annual records of the operation and maintenance of the structural BMP units. The records will consist of annual inspection reports and certificates of compliance provided by the maintenance

company contracted to service the structural BMP units. The reports will be available to the City inspector upon request.

D. Safety

Only personnel with confined space training and possessing the necessary safety equipment should enter the mechanical BMP units to perform maintenance or inspection procedures. Inspections of the internal components can, in most cases, be accomplished through observations from the ground surface. The removal of the sediment from the units' sump should be performed by trained personnel and all debris should be disposed of per EPA standards.

V. Summary of Drainage Areas and BMPs

A. *Drainage Areas*

1. Approximately 4.54 acres (80%) of the site is covered by impervious surface and about 1.09 acres (20%) is covered by landscaping.
2. The site can be divided into two principle drainage areas:
 - Drainage Area '1' – Approximately 3.43 acres of impervious surface of the northern portion of the project site will discharge into the existing storm drain line west of the project site which flows through an existing outfall into Penitencia Creek. This area will be treated by bio-retention.
 - Drainage Area '2' – Approximately 0.65 acres of impervious surface of the southwestern portion of the project site will discharge into the existing storm drain line west of the project site which flows through an existing outfall into Penitencia Creek. This area will be treated by bio-retention.

B. Treatment BMPs

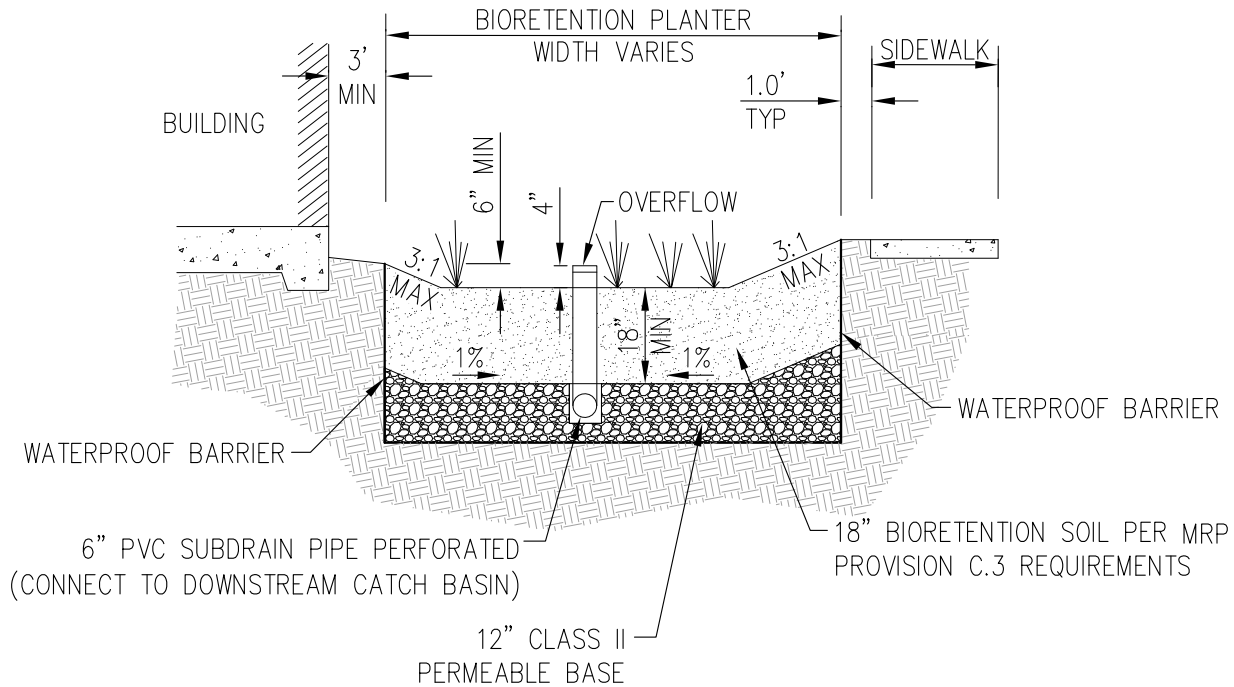
The treatment BMP used on this site are shown in the Appendix and include:

1. Bioretention Areas: Bioretention areas will be constructed throughout the site. These features use a combination of ponding, permeable planting soils, infiltration materials and sub-drains systems. They are designed to filter pollutants from stormwater runoff from adjacent roof areas and other impervious surfaces. Planting within the bioretention areas is shown on sheets LP4 and LP8 in the Appendix.
2. Self-Treating landscape Areas: Sidewalks will be sloped to drain to adjacent self-treating landscape areas. Both public and private landscape areas shall be maintained by the Homeowner's Association to ensure proper treatment of stormwater runoff.

VI. BMP Design Documentation

A. *“As-Built” Drawings of Each BMP*

Typical details provided at this time. As-built drawings will be provided upon completion of BMP construction.



NOTES:


1. INSTALL DEEPEMED CURB IN ADDITION TO WATERPROOF BARRIER WHERE NECESSARY PER GEOTECHNICAL RECOMMENDATIONS.
2. 2" OF FLOAT-RESISTANT MULCH SHALL BE USED ON ANY EXPOSED EARTH IN THE BIORETENTION AREAS.
3. 4"-6" COBBLE SHALL BE USED FOR ENERGY DISSIPATION WHERE NECESSARY.
4. THE 6" PERFORATED PVC UNDERDRAIN SHALL BE PLACED AT THE BOTTOM OF THE DRAIN ROCK LAYER WITH PERFORATIONS FACING DOWNWARD.
5. CONTRACTOR TO INSTALL AN UNDERDRAIN CLEANOUT WITH THE CLEANOUT CAP INSTALLED FLUSH WITH THE SOIL SURFACE.

FIGURE 7
TYPICAL
BIORETENTION
DETAIL
ELLISON PARK

CITY OF MILPITAS SANTA CLARA COUNTY CALIFORNIA

DATE: JUNE 2016

NOT TO SCALE

	<p>Carlson, Barbee & Gibson, Inc. CIVIL ENGINEERS • SURVEYORS • PLANNERS</p>
2633 CAMINO RAMON, SUITE 350 SAN RAMON, CALIFORNIA 94583	(925) 866-0322 www.cbandg.com

1/19/2018 2:37 PM

VII. BMP Design Documentation

B. Data, Manuals, and Maintenance Documents



Design Considerations

- Soil for Infiltration
- Tributary Area
- Slope
- Aesthetics
- Environmental Side-effects

Description

The bioretention best management practice (BMP) functions as a soil and plant-based filtration device that removes pollutants through a variety of physical, biological, and chemical treatment processes. These facilities normally consist of a grass buffer strip, sand bed, ponding area, organic layer or mulch layer, planting soil, and plants. The runoff's velocity is reduced by passing over or through buffer strip and subsequently distributed evenly along a ponding area. Exfiltration of the stored water in the bioretention area planting soil into the underlying soils occurs over a period of days.

California Experience

None documented. Bioretention has been used as a stormwater BMP since 1992. In addition to Prince George's County, MD and Alexandria, VA, bioretention has been used successfully at urban and suburban areas in Montgomery County, MD; Baltimore County, MD; Chesterfield County, VA; Prince William County, VA; Smith Mountain Lake State Park, VA; and Cary, NC.

Advantages

- Bioretention provides stormwater treatment that enhances the quality of downstream water bodies by temporarily storing runoff in the BMP and releasing it over a period of four days to the receiving water (EPA, 1999).
- The vegetation provides shade and wind breaks, absorbs noise, and improves an area's landscape.

Limitations

- The bioretention BMP is not recommended for areas with slopes greater than 20% or where mature tree removal would

Targeted Constituents

<input checked="" type="checkbox"/>	Sediment	■
<input checked="" type="checkbox"/>	Nutrients	▲
<input checked="" type="checkbox"/>	Trash	■
<input checked="" type="checkbox"/>	Metals	■
<input checked="" type="checkbox"/>	Bacteria	■
<input checked="" type="checkbox"/>	Oil and Grease	■
<input checked="" type="checkbox"/>	Organics	■

Legend (Removal Effectiveness)

- Low
- High
- ▲ Medium



be required since clogging may result, particularly if the BMP receives runoff with high sediment loads (EPA, 1999).

- Bioretention is not a suitable BMP at locations where the water table is within 6 feet of the ground surface and where the surrounding soil stratum is unstable.
- By design, bioretention BMPs have the potential to create very attractive habitats for mosquitoes and other vectors because of highly organic, often heavily vegetated areas mixed with shallow water.
- In cold climates the soil may freeze, preventing runoff from infiltrating into the planting soil.

Design and Sizing Guidelines

- The bioretention area should be sized to capture the design storm runoff.
- In areas where the native soil permeability is less than 0.5 in/hr an underdrain should be provided.
- Recommended minimum dimensions are 15 feet by 40 feet, although the preferred width is 25 feet. Excavated depth should be 4 feet.
- Area should drain completely within 72 hours.
- Approximately 1 tree or shrub per 50 ft² of bioretention area should be included.
- Cover area with about 3 inches of mulch.

Construction/Inspection Considerations

Bioretention area should not be established until contributing watershed is stabilized.

Performance

Bioretention removes stormwater pollutants through physical and biological processes, including adsorption, filtration, plant uptake, microbial activity, decomposition, sedimentation and volatilization (EPA, 1999). Adsorption is the process whereby particulate pollutants attach to soil (e.g., clay) or vegetation surfaces. Adequate contact time between the surface and pollutant must be provided for in the design of the system for this removal process to occur. Thus, the infiltration rate of the soils must not exceed those specified in the design criteria or pollutant removal may decrease. Pollutants removed by adsorption include metals, phosphorus, and hydrocarbons. Filtration occurs as runoff passes through the bioretention area media, such as the sand bed, ground cover, and planting soil.

Common particulates removed from stormwater include particulate organic matter, phosphorus, and suspended solids. Biological processes that occur in wetlands result in pollutant uptake by plants and microorganisms in the soil. Plant growth is sustained by the uptake of nutrients from the soils, with woody plants locking up these nutrients through the seasons. Microbial activity within the soil also contributes to the removal of nitrogen and organic matter. Nitrogen is removed by nitrifying and denitrifying bacteria, while aerobic bacteria are responsible for the decomposition of the organic matter. Microbial processes require oxygen and can result in depleted oxygen levels if the bioretention area is not adequately

aerated. Sedimentation occurs in the swale or ponding area as the velocity slows and solids fall out of suspension.

The removal effectiveness of bioretention has been studied during field and laboratory studies conducted by the University of Maryland (Davis et al, 1998). During these experiments, synthetic stormwater runoff was pumped through several laboratory and field bioretention areas to simulate typical storm events in Prince George's County, MD. Removal rates for heavy metals and nutrients are shown in Table 1.

Pollutant	Removal Rate
Total Phosphorus	70-83%
Metals (Cu, Zn, Pb)	93-98%
TKN	68-80%
Total Suspended Solids	90%
Organics	90%
Bacteria	90%

Results for both the laboratory and field experiments were similar for each of the pollutants analyzed. Doubling or halving the influent pollutant levels had little effect on the effluent pollutants concentrations (Davis et al, 1998).

The microbial activity and plant uptake occurring in the bioretention area will likely result in higher removal rates than those determined for infiltration BMPs.

Siting Criteria

Bioretention BMPs are generally used to treat stormwater from impervious surfaces at commercial, residential, and industrial areas (EPA, 1999). Implementation of bioretention for stormwater management is ideal for median strips, parking lot islands, and swales. Moreover, the runoff in these areas can be designed to either divert directly into the bioretention area or convey into the bioretention area by a curb and gutter collection system.

The best location for bioretention areas is upland from inlets that receive sheet flow from graded areas and at areas that will be excavated (EPA, 1999). In order to maximize treatment effectiveness, the site must be graded in such a way that minimizes erosive conditions as sheet flow is conveyed to the treatment area. Locations where a bioretention area can be readily incorporated into the site plan without further environmental damage are preferred. Furthermore, to effectively minimize sediment loading in the treatment area, bioretention only should be used in stabilized drainage areas.

Additional Design Guidelines

The layout of the bioretention area is determined after site constraints such as location of utilities, underlying soils, existing vegetation, and drainage are considered (EPA, 1999). Sites with loamy sand soils are especially appropriate for bioretention because the excavated soil can be backfilled and used as the planting soil, thus eliminating the cost of importing planting soil.

The use of bioretention may not be feasible given an unstable surrounding soil stratum, soils with clay content greater than 25 percent, a site with slopes greater than 20 percent, and/or a site with mature trees that would be removed during construction of the BMP.

Bioretention can be designed to be off-line or on-line of the existing drainage system (EPA, 1999). The drainage area for a bioretention area should be between 0.1 and 0.4 hectares (0.25 and 1.0 acres). Larger drainage areas may require multiple bioretention areas. Furthermore, the maximum drainage area for a bioretention area is determined by the expected rainfall intensity and runoff rate. Stabilized areas may erode when velocities are greater than 5 feet per second (1.5 meter per second). The designer should determine the potential for erosive conditions at the site.

The size of the bioretention area, which is a function of the drainage area and the runoff generated from the area is sized to capture the water quality volume.

The recommended minimum dimensions of the bioretention area are 15 feet (4.6 meters) wide by 40 feet (12.2 meters) long, where the minimum width allows enough space for a dense, randomly-distributed area of trees and shrubs to become established. Thus replicating a natural forest and creating a microclimate, thereby enabling the bioretention area to tolerate the effects of heat stress, acid rain, runoff pollutants, and insect and disease infestations which landscaped areas in urban settings typically are unable to tolerate. The preferred width is 25 feet (7.6 meters), with a length of twice the width. Essentially, any facilities wider than 20 feet (6.1 meters) should be twice as long as they are wide, which promotes the distribution of flow and decreases the chances of concentrated flow.

In order to provide adequate storage and prevent water from standing for excessive periods of time the ponding depth of the bioretention area should not exceed 6 inches (15 centimeters). Water should not be left to stand for more than 72 hours. A restriction on the type of plants that can be used may be necessary due to some plants' water intolerance. Furthermore, if water is left standing for longer than 72 hours mosquitoes and other insects may start to breed.

The appropriate planting soil should be backfilled into the excavated bioretention area. Planting soils should be sandy loam, loamy sand, or loam texture with a clay content ranging from 10 to 25 percent.

Generally the soil should have infiltration rates greater than 0.5 inches (1.25 centimeters) per hour, which is typical of sandy loams, loamy sands, or loams. The pH of the soil should range between 5.5 and 6.5, where pollutants such as organic nitrogen and phosphorus can be adsorbed by the soil and microbial activity can flourish. Additional requirements for the planting soil include a 1.5 to 3 percent organic content and a maximum 500 ppm concentration of soluble salts.

Soil tests should be performed for every 500 cubic yards (382 cubic meters) of planting soil, with the exception of pH and organic content tests, which are required only once per bioretention area (EPA, 1999). Planting soil should be 4 inches (10.1 centimeters) deeper than the bottom of the largest root ball and 4 feet (1.2 meters) altogether. This depth will provide adequate soil for the plants' root systems to become established, prevent plant damage due to severe wind, and provide adequate moisture capacity. Most sites will require excavation in order to obtain the recommended depth.

Planting soil depths of greater than 4 feet (1.2 meters) may require additional construction practices such as shoring measures (EPA, 1999). Planting soil should be placed in 18 inches or greater lifts and lightly compacted until the desired depth is reached. Since high canopy trees may be destroyed during maintenance the bioretention area should be vegetated to resemble a terrestrial forest community ecosystem that is dominated by understory trees. Three species each of both trees and shrubs are recommended to be planted at a rate of 2500 trees and shrubs per hectare (1000 per acre). For instance, a 15 foot (4.6 meter) by 40 foot (12.2 meter) bioretention area (600 square feet or 55.75 square meters) would require 14 trees and shrubs. The shrub-to-tree ratio should be 2:1 to 3:1.

Trees and shrubs should be planted when conditions are favorable. Vegetation should be watered at the end of each day for fourteen days following its planting. Plant species tolerant of pollutant loads and varying wet and dry conditions should be used in the bioretention area.

The designer should assess aesthetics, site layout, and maintenance requirements when selecting plant species. Adjacent non-native invasive species should be identified and the designer should take measures, such as providing a soil breach to eliminate the threat of these species invading the bioretention area. Regional landscaping manuals should be consulted to ensure that the planting of the bioretention area meets the landscaping requirements established by the local authorities. The designers should evaluate the best placement of vegetation within the bioretention area. Plants should be placed at irregular intervals to replicate a natural forest. Trees should be placed on the perimeter of the area to provide shade and shelter from the wind. Trees and shrubs can be sheltered from damaging flows if they are placed away from the path of the incoming runoff. In cold climates, species that are more tolerant to cold winds, such as evergreens, should be placed in windier areas of the site.

Following placement of the trees and shrubs, the ground cover and/or mulch should be established. Ground cover such as grasses or legumes can be planted at the beginning of the growing season. Mulch should be placed immediately after trees and shrubs are planted. Two to 3 inches (5 to 7.6 cm) of commercially-available fine shredded hardwood mulch or shredded hardwood chips should be applied to the bioretention area to protect from erosion.

Maintenance

The primary maintenance requirement for bioretention areas is that of inspection and repair or replacement of the treatment area's components. Generally, this involves nothing more than the routine periodic maintenance that is required of any landscaped area. Plants that are appropriate for the site, climatic, and watering conditions should be selected for use in the bioretention cell. Appropriately selected plants will aide in reducing fertilizer, pesticide, water, and overall maintenance requirements. Bioretention system components should blend over time through plant and root growth, organic decomposition, and the development of a natural

soil horizon. These biologic and physical processes over time will lengthen the facility's life span and reduce the need for extensive maintenance.

Routine maintenance should include a biannual health evaluation of the trees and shrubs and subsequent removal of any dead or diseased vegetation (EPA, 1999). Diseased vegetation should be treated as needed using preventative and low-toxic measures to the extent possible. BMPs have the potential to create very attractive habitats for mosquitoes and other vectors because of highly organic, often heavily vegetated areas mixed with shallow water. Routine inspections for areas of standing water within the BMP and corrective measures to restore proper infiltration rates are necessary to prevent creating mosquito and other vector habitat. In addition, bioretention BMPs are susceptible to invasion by aggressive plant species such as cattails, which increase the chances of water standing and subsequent vector production if not routinely maintained.

In order to maintain the treatment area's appearance it may be necessary to prune and weed. Furthermore, mulch replacement is suggested when erosion is evident or when the site begins to look unattractive. Specifically, the entire area may require mulch replacement every two to three years, although spot mulching may be sufficient when there are random void areas. Mulch replacement should be done prior to the start of the wet season.

New Jersey's Department of Environmental Protection states in their bioretention systems standards that accumulated sediment and debris removal (especially at the inflow point) will normally be the primary maintenance function. Other potential tasks include replacement of dead vegetation, soil pH regulation, erosion repair at inflow points, mulch replenishment, unclogging the underdrain, and repairing overflow structures. There is also the possibility that the cation exchange capacity of the soils in the cell will be significantly reduced over time. Depending on pollutant loads, soils may need to be replaced within 5-10 years of construction (LID, 2000).

Cost

Construction Cost

Construction cost estimates for a bioretention area are slightly greater than those for the required landscaping for a new development (EPA, 1999). A general rule of thumb (Coffman, 1999) is that residential bioretention areas average about \$3 to \$4 per square foot, depending on soil conditions and the density and types of plants used. Commercial, industrial and institutional site costs can range between \$10 to \$40 per square foot, based on the need for control structures, curbing, storm drains and underdrains.

Retrofitting a site typically costs more, averaging \$6,500 per bioretention area. The higher costs are attributed to the demolition of existing concrete, asphalt, and existing structures and the replacement of fill material with planting soil. The costs of retrofitting a commercial site in Maryland, Kettering Development, with 15 bioretention areas were estimated at \$111,600.

In any bioretention area design, the cost of plants varies substantially and can account for a significant portion of the expenditures. While these cost estimates are slightly greater than those of typical landscaping treatment (due to the increased number of plantings, additional soil excavation, backfill material, use of underdrains etc.), those landscaping expenses that would be required regardless of the bioretention installation should be subtracted when determining the net cost.

Perhaps of most importance, however, the cost savings compared to the use of traditional structural stormwater conveyance systems makes bioretention areas quite attractive financially. For example, the use of bioretention can decrease the cost required for constructing stormwater conveyance systems at a site. A medical office building in Maryland was able to reduce the amount of storm drain pipe that was needed from 800 to 230 feet - a cost savings of \$24,000 (PGDER, 1993). And a new residential development spent a total of approximately \$100,000 using bioretention cells on each lot instead of nearly \$400,000 for the traditional stormwater ponds that were originally planned (Rappahanock,). Also, in residential areas, stormwater management controls become a part of each property owner's landscape, reducing the public burden to maintain large centralized facilities.

Maintenance Cost

The operation and maintenance costs for a bioretention facility will be comparable to those of typical landscaping required for a site. Costs beyond the normal landscaping fees will include the cost for testing the soils and may include costs for a sand bed and planting soil.

References and Sources of Additional Information

Coffman, L.S., R. Goo and R. Frederick, 1999: Low impact development: an innovative alternative approach to stormwater management. Proceedings of the 26th Annual Water Resources Planning and Management Conference ASCE, June 6-9, Tempe, Arizona.

Davis, A.P., Shokouhian, M., Sharma, H. and Minami, C., "Laboratory Study of Biological Retention (Bioretention) for Urban Stormwater Management," *Water Environ. Res.*, 73(1), 5-14 (2001).

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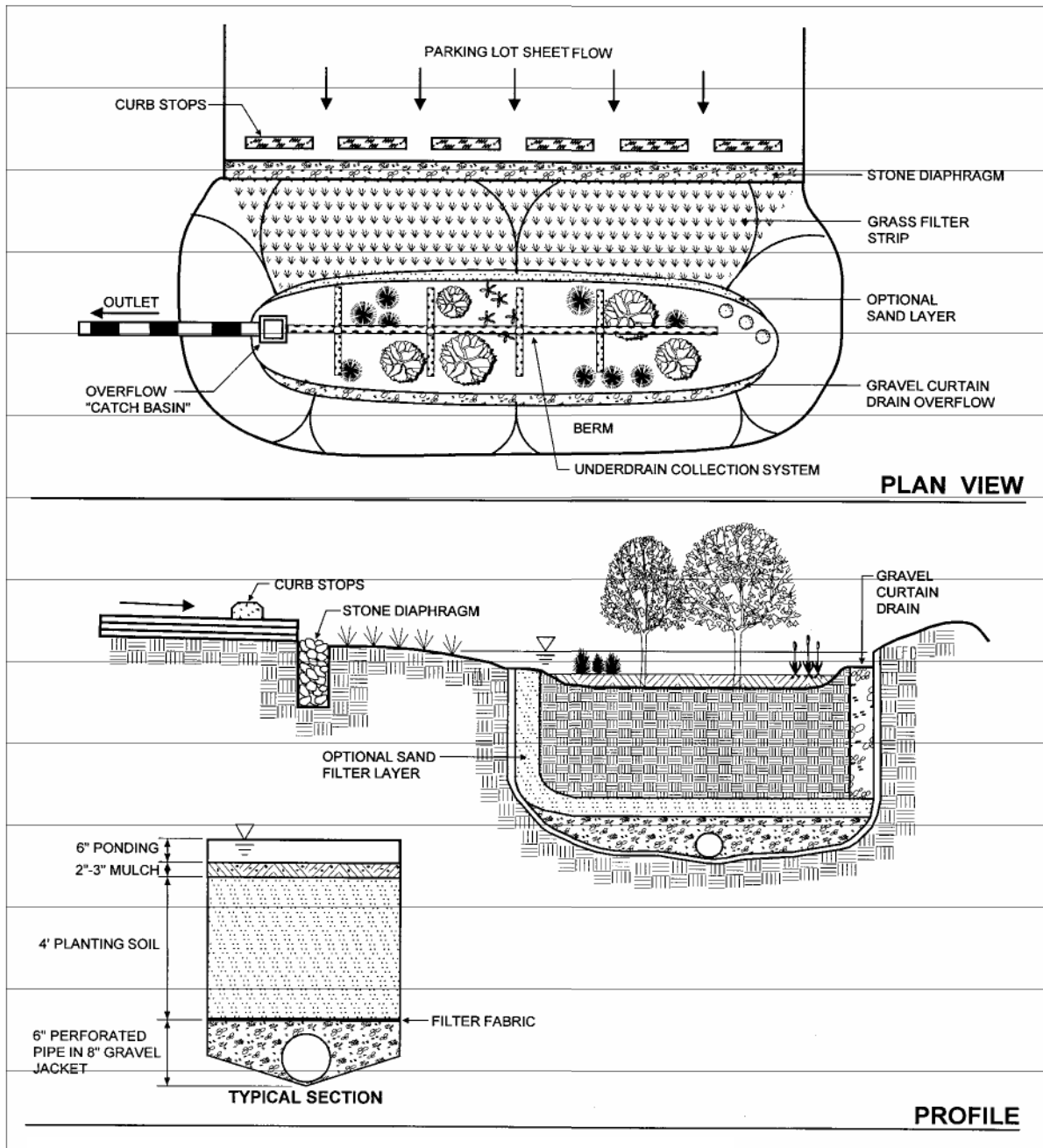
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Schematic of a Bioretention Facility (MDE, 2000)



Objectives

- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	<input checked="" type="checkbox"/>
Trash	<input checked="" type="checkbox"/>
Metals	
Bacteria	
Oil and Grease	
Organics	
Oxygen Demanding	<input checked="" type="checkbox"/>

Description

Landscape maintenance activities include vegetation removal; herbicide and insecticide application; fertilizer application; watering; and other gardening and lawn care practices. Vegetation control typically involves a combination of chemical (herbicide) application and mechanical methods. All of these maintenance practices have the potential to contribute pollutants to the storm drain system. The major objectives of this BMP are to minimize the discharge of pesticides, herbicides and fertilizers to the storm drain system and receiving waters; prevent the disposal of landscape waste into the storm drain system by collecting and properly disposing of clippings and cuttings, and educating employees and the public.

Approach

Pollution Prevention

- Implement an integrated pest management (IPM) program. IPM is a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools.
- Choose low water using flowers, trees, shrubs, and groundcover.
- Consider alternative landscaping techniques such as naturescaping and xeriscaping.
- Conduct appropriate maintenance (i.e. properly timed fertilizing, weeding, pest control, and pruning) to help preserve the landscapes water efficiency.



- Consider grass cycling (grass cycling is the natural recycling of grass by leaving the clippings on the lawn when mowing. Grass clippings decompose quickly and release valuable nutrients back into the lawn).

Suggested Protocols***Mowing, Trimming, and Weeding***

- Whenever possible use mechanical methods of vegetation removal (e.g mowing with tractor-type or push mowers, hand cutting with gas or electric powered weed trimmers) rather than applying herbicides. Use hand weeding where practical.
- Avoid loosening the soil when conducting mechanical or manual weed control, this could lead to erosion. Use mulch or other erosion control measures when soils are exposed.
- Performing mowing at optimal times. Mowing should not be performed if significant rain events are predicted.
- Mulching mowers may be recommended for certain flat areas. Other techniques may be employed to minimize mowing such as selective vegetative planting using low maintenance grasses and shrubs.
- Collect lawn and garden clippings, pruning waste, tree trimmings, and weeds. Chip if necessary, and compost or dispose of at a landfill (see waste management section of this fact sheet).
- Place temporarily stockpiled material away from watercourses, and berm or cover stockpiles to prevent material releases to storm drains.

Planting

- Determine existing native vegetation features (location, species, size, function, importance) and consider the feasibility of protecting them. Consider elements such as their effect on drainage and erosion, hardiness, maintenance requirements, and possible conflicts between preserving vegetation and the resulting maintenance needs.
- Retain and/or plant selected native vegetation whose features are determined to be beneficial, where feasible. Native vegetation usually requires less maintenance (e.g., irrigation, fertilizer) than planting new vegetation.
- Consider using low water use groundcovers when planting or replanting.

Waste Management

- Compost leaves, sticks, or other collected vegetation or dispose of at a permitted landfill. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Place temporarily stockpiled material away from watercourses and storm drain inlets, and berm or cover stockpiles to prevent material releases to the storm drain system.
- Reduce the use of high nitrogen fertilizers that produce excess growth requiring more frequent mowing or trimming.

- Avoid landscape wastes in and around storm drain inlets by either using bagging equipment or by manually picking up the material.

Irrigation

- Where practical, use automatic timers to minimize runoff.
- Use popup sprinkler heads in areas with a lot of activity or where there is a chance the pipes may be broken. Consider the use of mechanisms that reduce water flow to sprinkler heads if broken.
- Ensure that there is no runoff from the landscaped area(s) if re-claimed water is used for irrigation.
- If bailing of muddy water is required (e.g. when repairing a water line leak), do not put it in the storm drain; pour over landscaped areas.
- Irrigate slowly or pulse irrigate to prevent runoff and then only irrigate as much as is needed.
- Apply water at rates that do not exceed the infiltration rate of the soil.

Fertilizer and Pesticide Management

- Utilize a comprehensive management system that incorporates integrated pest management (IPM) techniques. There are many methods and types of IPM, including the following:
 - Mulching can be used to prevent weeds where turf is absent, fencing installed to keep rodents out, and netting used to keep birds and insects away from leaves and fruit.
 - Visible insects can be removed by hand (with gloves or tweezers) and placed in soapy water or vegetable oil. Alternatively, insects can be sprayed off the plant with water or in some cases vacuumed off of larger plants.
 - Store-bought traps, such as species-specific, pheromone-based traps or colored sticky cards, can be used.
 - Slugs can be trapped in small cups filled with beer that are set in the ground so the slugs can get in easily.
 - In cases where microscopic parasites, such as bacteria and fungi, are causing damage to plants, the affected plant material can be removed and disposed of (pruning equipment should be disinfected with bleach to prevent spreading the disease organism).
 - Small mammals and birds can be excluded using fences, netting, tree trunk guards.
 - Beneficial organisms, such as bats, birds, green lacewings, ladybugs, praying mantis, ground beetles, parasitic nematodes, trichogramma wasps, seed head weevils, and spiders that prey on detrimental pest species can be promoted.
- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.

- Use pesticides only if there is an actual pest problem (not on a regular preventative schedule).
- Do not use pesticides if rain is expected. Apply pesticides only when wind speeds are low (less than 5 mph).
- Do not mix or prepare pesticides for application near storm drains.
- Prepare the minimum amount of pesticide needed for the job and use the lowest rate that will effectively control the pest.
- Employ techniques to minimize off-target application (e.g. spray drift) of pesticides, including consideration of alternative application techniques.
- Fertilizers should be worked into the soil rather than dumped or broadcast onto the surface.
- Calibrate fertilizer and pesticide application equipment to avoid excessive application.
- Periodically test soils for determining proper fertilizer use.
- Sweep pavement and sidewalk if fertilizer is spilled on these surfaces before applying irrigation water.
- Purchase only the amount of pesticide that you can reasonably use in a given time period (month or year depending on the product).
- Triple rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Dispose of empty pesticide containers according to the instructions on the container label.

Inspection

- Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering, and repair leaks in the irrigation system as soon as they are observed.
- Inspect pesticide/fertilizer equipment and transportation vehicles daily.

Training

- Educate and train employees on use of pesticides and in pesticide application techniques to prevent pollution. Pesticide application must be under the supervision of a California qualified pesticide applicator.
- Train/encourage municipal maintenance crews to use IPM techniques for managing public green areas.
- Annually train employees within departments responsible for pesticide application on the appropriate portions of the agency's IPM Policy, SOPs, and BMPs, and the latest IPM techniques.

- Employees who are not authorized and trained to apply pesticides should be periodically (at least annually) informed that they cannot use over-the-counter pesticides in or around the workplace.
- Use a training log or similar method to document training.

Spill Response and Prevention

- Refer to SC-11, Spill Prevention, Control & Cleanup
- Have spill cleanup materials readily available and in a known location
- Cleanup spills immediately and use dry methods if possible.
- Properly dispose of spill cleanup material.

Other Considerations

- The Federal Pesticide, Fungicide, and Rodenticide Act and California Title 3, Division 6, Pesticides and Pest Control Operations place strict controls over pesticide application and handling and specify training, annual refresher, and testing requirements. The regulations generally cover: a list of approved pesticides and selected uses, updated regularly; general application information; equipment use and maintenance procedures; and record keeping. The California Department of Pesticide Regulations and the County Agricultural Commission coordinate and maintain the licensing and certification programs. All public agency employees who apply pesticides and herbicides in “agricultural use” areas such as parks, golf courses, rights-of-way and recreation areas should be properly certified in accordance with state regulations. Contracts for landscape maintenance should include similar requirements.
- All employees who handle pesticides should be familiar with the most recent material safety data sheet (MSDS) files.
- Municipalities do not have the authority to regulate the use of pesticides by school districts, however the California Healthy Schools Act of 2000 (AB 2260) has imposed requirements on California school districts regarding pesticide use in schools. Posting of notification prior to the application of pesticides is now required, and IPM is stated as the preferred approach to pest management in schools.

Requirements

Costs

Additional training of municipal employees will be required to address IPM techniques and BMPs. IPM methods will likely increase labor cost for pest control which may be offset by lower chemical costs.

Maintenance

Not applicable

Supplemental Information***Further Detail of the BMP******Waste Management***

Composting is one of the better disposal alternatives if locally available. Most municipalities either have or are planning yard waste composting facilities as a means of reducing the amount of waste going to the landfill. Lawn clippings from municipal maintenance programs as well as private sources would probably be compatible with most composting facilities

Contractors and Other Pesticide Users

Municipal agencies should develop and implement a process to ensure that any contractor employed to conduct pest control and pesticide application on municipal property engages in pest control methods consistent with the IPM Policy adopted by the agency. Specifically, municipalities should require contractors to follow the agency's IPM policy, SOPs, and BMPs; provide evidence to the agency of having received training on current IPM techniques when feasible; provide documentation of pesticide use on agency property to the agency in a timely manner.

References and Resources

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VIII. BMP Maintenance Schedule

A. *Annual Maintenance Schedule for all BMPs*

Treatment BMPs require minimum maintenance similar to that for any landscape areas. BMPs must be regularly maintained to ensure that they continue to be effective and do not cause flooding or other harmful nuisances.

B. *Inspection and Maintenance Schedule for each BMP*

1. *Routine Inspection and Maintenance:* Regular inspections shall be made of all BMP features and any maintenance performed as needed. Any collected debris shall be removed from the feature.
 - The bioretention areas shall be maintained as described in TC-32 of the California Stormwater BMP Handbook prepared by CASQA.
 - Self-Treating Landscape area shall be maintained as described in TC-73 of the California Stormwater BMP Handbook prepared by CASQA.
2. *Annual Inspection and Maintenance:* Annual inspections and maintenance shall be performed as described above in the “Routine Inspection and Maintenance” Section.
3. *Inspection and Maintenance during the Rainy Season:* All BMP features shall be inspected immediately after the first rain event of the season. During the rainy season the BMP features shall be inspected at least once every 30 days and after any significant rain event.
4. *Test and Inspection of Storm Drain Pumps:* There are two storm drain pumps located on-site, see Figure 6. It shall be the HOA’s responsibility to confirm, test, and inspect annually between the months of September and October that the storm drain pumps located on the Common Property are in functional working condition.

C. *Service Agreement Information*

The frequency of cleaning the treatment BMPs will depend on the generation of trash and debris and sediment at the site. Cleanout and preventive maintenance schedules will be determined based on operating experience. The mechanical BMP units should be periodically inspected to determine the amount of accumulated pollutants and to ensure the cleanout frequency is adequate to handle the predicted pollutant load being processed by the unit.

IX. Copy of O&M Agreement

(Final Recorded Copy to be Inserted)

Appendix

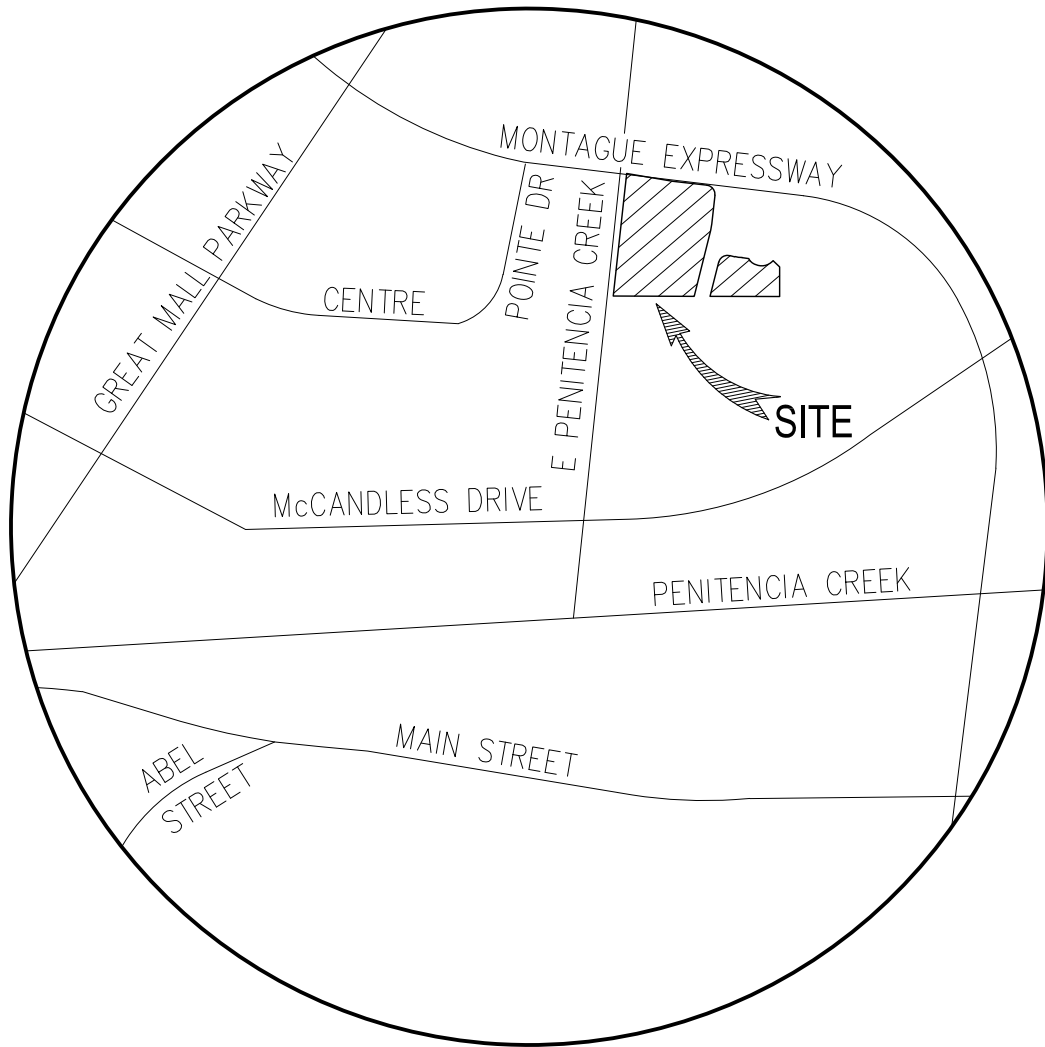
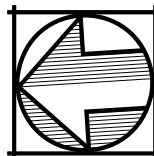



FIGURE 1
VICINITY MAP
ELLISON PARK

CITY OF MILPITAS SANTA CLARA COUNTY CALIFORNIA

DATE: JUNE 2016

NOT TO SCALE



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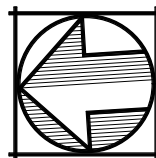
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FIGURE 2
AERIAL MAP
ELLISON PARK

CITY OF MILPITAS SANTA CLARA COUNTY CALIFORNIA
 DATE: JUNE 2016

SCALE: 1"=200'



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LEGEND

- PROJECT BOUNDARY
- IMPERVIOUS SURFACE (ON-SITE) – 4.98 AC±
- IMPERVIOUS SURFACE (OFF-SITE) – 0.03 AC±

- TOTAL IMPERVIOUS SURFACE – 5.01 AC± (84%)
- PERVIOUS SURFACE (ON-SITE) – 0.71 AC±
- PERVIOUS SURFACE (OFF-SITE) – 0.32 AC±

- TOTAL PERVIOUS SURFACE – 1.03 AC± (16%)

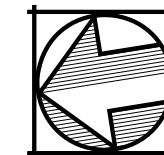
**FIGURE 3
EXISTING CONDITIONS**

ELLISON PARK

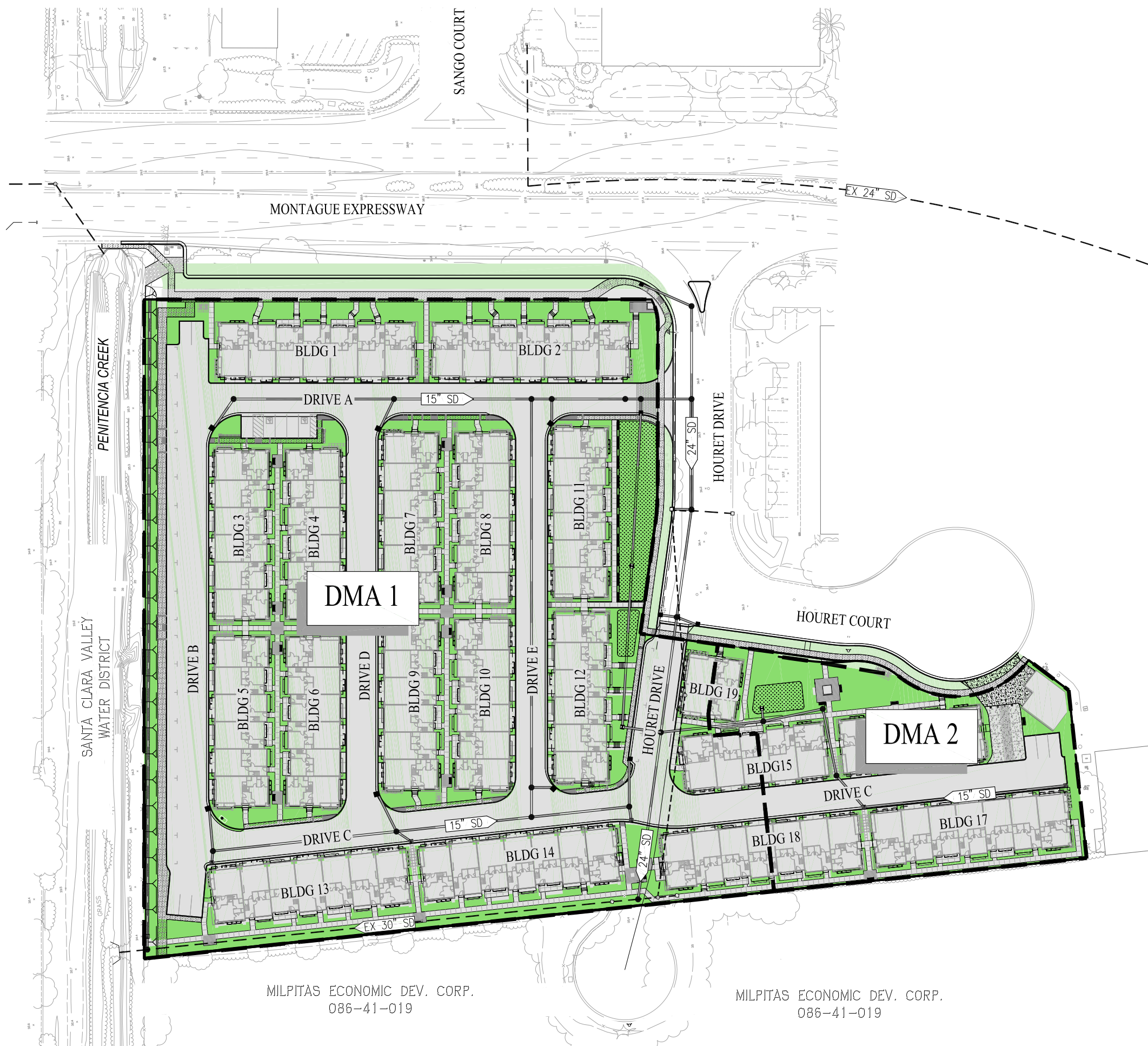
CITY OF MILPITAS SANTA CLARA COUNTY CALIFORNIA
 DATE: JUNE 2016
 SCALE: 1"=80'

MILPITAS ECONOMIC DEV. CORP.
 086-41-019
 EXISTING OUTFALL




MILPITAS ECONOMIC DEV. CORP.
 086-41-019


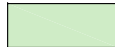


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LEGEND

-  DRAINAGE MANAGEMENT AREA BOUNDARY
-  IMPERVIOUS SURFACE (ON-SITE) - 4.54 AC±
-  IMPERVIOUS SURFACE (OFF-SITE) - 0.16 AC±

- TOTAL IMPERVIOUS SURFACE - 4.70 AC± (84%)
-  PERVIOUS SURFACE (ON-SITE) - 1.09 AC±
-  PERVIOUS SURFACE (OFF-SITE) - 0.25 AC±

- TOTAL PERVIOUS SURFACE - 1.34 AC± (16%)

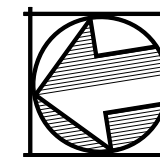
**FIGURE 4
POST-DEVELOPMENT
CONDITIONS**

ELLISON PARK

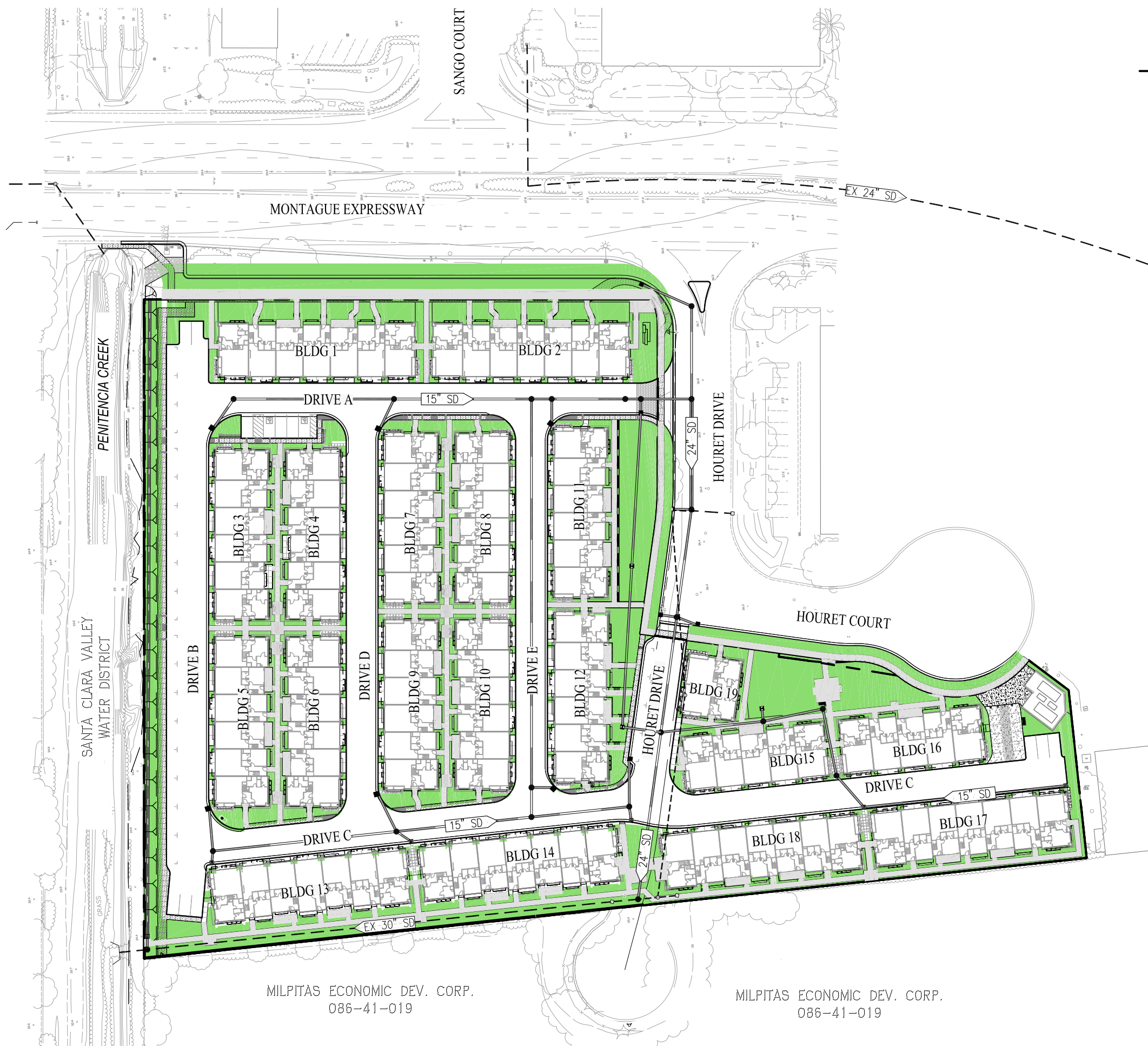
CITY OF MILPITAS SANTA CLARA COUNTY CALIFORNIA
 DATE: SEPTEMBER 2016
 SCALE: 1"=80'

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LEGEND

-  PROJECT BOUNDARY
-  SELF-TREATING LANDSCAPE AREA - 1.33 AC±
-  IMPERVIOUS PASEO SIDEWALK SURFACE (DRAINS TO SELF-TREATING LANDSCAPE AREAS) - 0.54 AC±

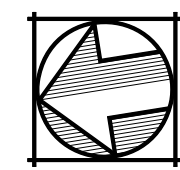
**FIGURE 5
SELF-RETAINING
TREATMENT AREAS**

ELLISON PARK

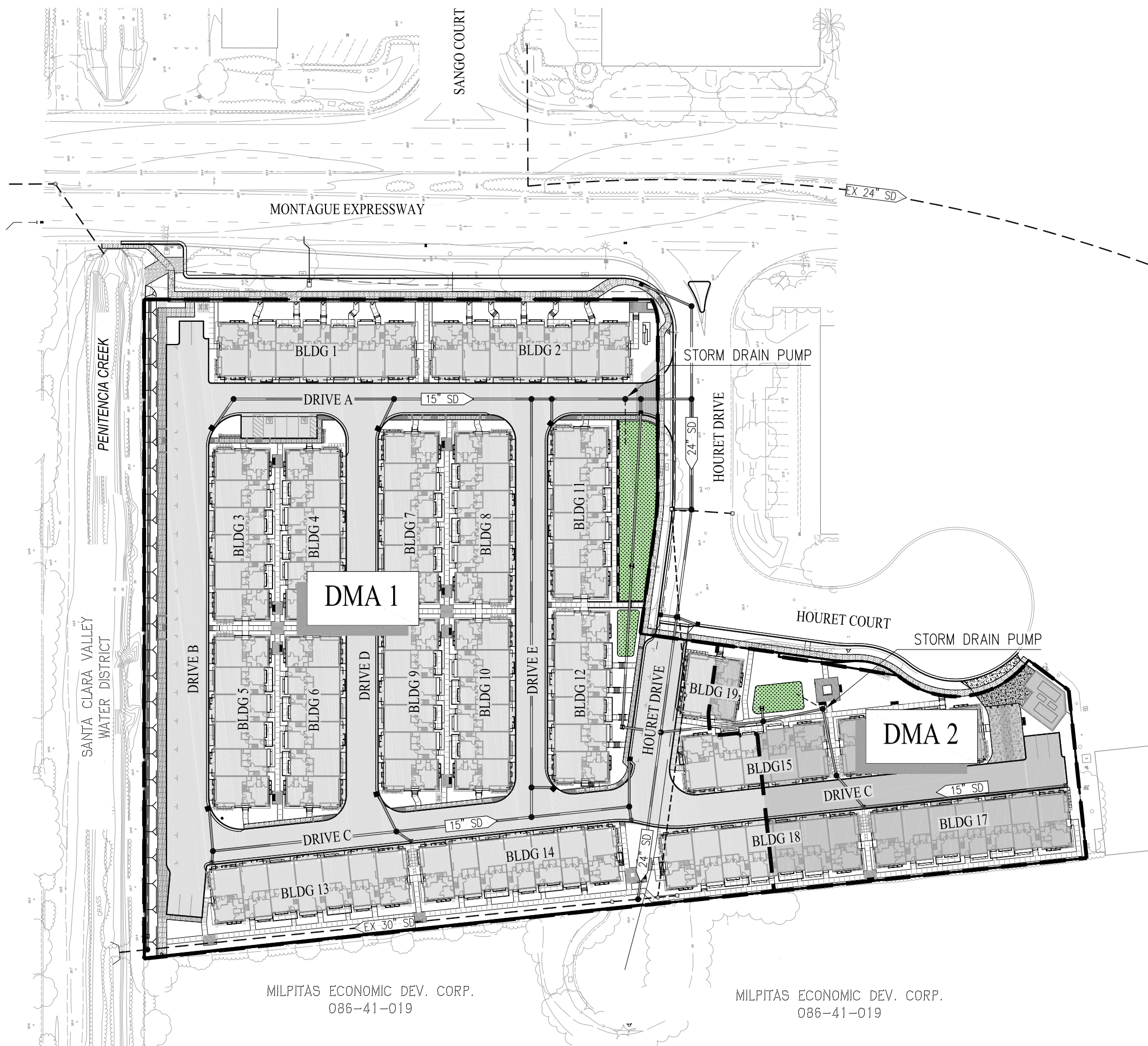
CITY OF MILPITAS SANTA CLARA COUNTY CALIFORNIA
 DATE: JUNE 2016
 SCALE: 1"=80'

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LEGEND



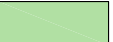
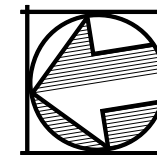
-  DRAINAGE MANAGEMENT AREA BOUNDARY
-  IMPERVIOUS SURFACE (DRAINS TO BIORETENTION)
-  BIORETENTION AREA


FIGURE 6
BIORETENTION
TREATMENT AREAS
ELLISON PARK

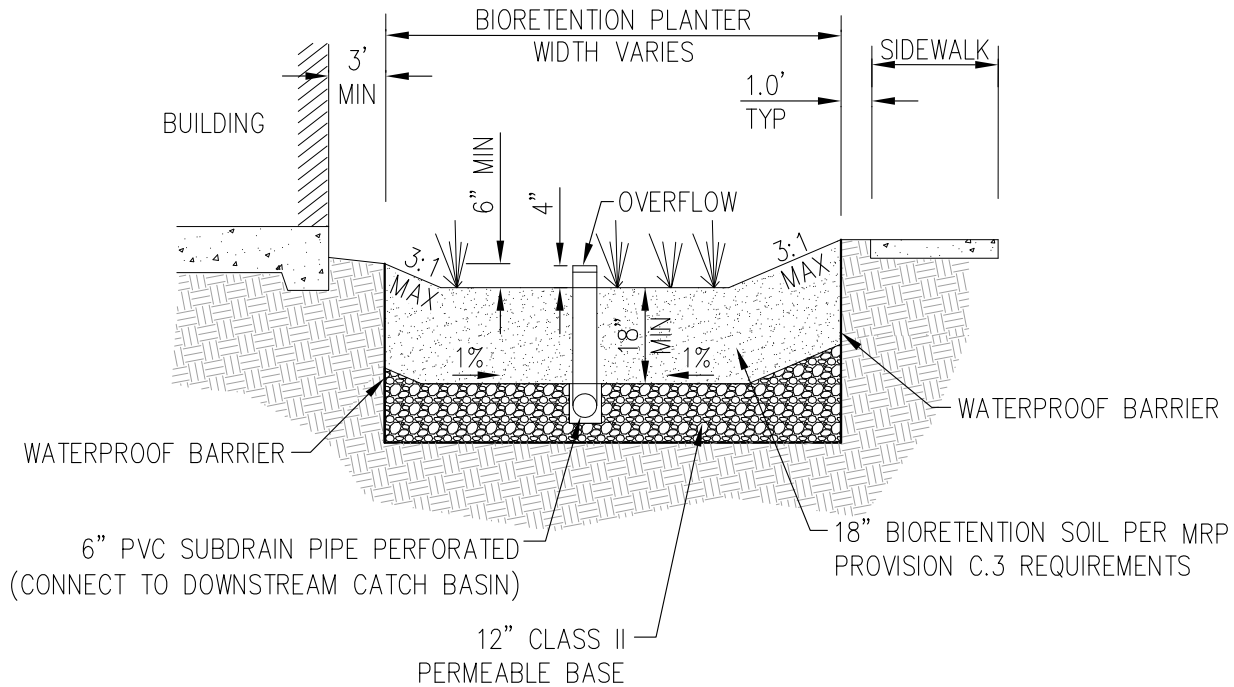
CITY OF MILPITAS SANTA CLARA COUNTY CALIFORNIA
 DATE: SEPTEMBER 2016
 SCALE: 1"=80'

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NOTES:


1. INSTALL DEEPEMED CURB IN ADDITION TO WATERPROOF BARRIER WHERE NECESSARY PER GEOTECHNICAL RECOMMENDATIONS.
2. 2" OF FLOAT-RESISTANT MULCH SHALL BE USED ON ANY EXPOSED EARTH IN THE BIORETENTION AREAS.
3. 4"-6" COBBLE SHALL BE USED FOR ENERGY DISSIPATION WHERE NECESSARY.
4. THE 6" PERFORATED PVC UNDERDRAIN SHALL BE PLACED AT THE BOTTOM OF THE DRAIN ROCK LAYER WITH PERFORATIONS FACING DOWNWARD.
5. CONTRACTOR TO INSTALL AN UNDERDRAIN CLEANOUT WITH THE CLEANOUT CAP INSTALLED FLUSH WITH THE SOIL SURFACE.

FIGURE 7
TYPICAL
BIORETENTION
DETAIL
ELLISON PARK

CITY OF MILPITAS SANTA CLARA COUNTY CALIFORNIA

DATE: JUNE 2016

NOT TO SCALE

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