

**James V. Fitzgerald ASBS Pollution Reduction Program
Upland BMPs: LID Projects
Approved by Selection Committee June 9, 2014**

LID Site #2 - Cooperator ID#: 202.0409.01

Site Information:

Property near Dean Creek, on the west side of Hwy 1, just north of the Fitzgerald Marine Reserve. This is a large property with two residential structures and water flows through the property directly to a roadside ditch that drains to the ASBS. This property is downslope of Hwy 1 and runoff from the highway flows onto the backyard and runs from the back of the property to the front.

Integrated Project BMPs

- Install a 100 foot long berm/swale feature along the backyard fence to filter and infiltrate highway runoff (5,700 square feet).
- Construct a 3-tiered rain garden system to further filter and clean highway runoff from the hedgerow swale/feature and runoff from property
- Install a 19x6 foot rain garden on east side of property to capture runoff from property roof and roof of second structure
- Install a 60 foot long vegetated swale that is connected to the east rain garden for further filtration

Treatment Description:

Roof runoff on the back half of the eastern building is directed through the existing gutters to a downspout that drains directly to a rain garden. The rain garden provides infiltration as primary treatment and will overflow into a treatment swale that flows to the public road. Roof runoff on the front half of the western building is directed through the existing gutters to a downspout that drains directly to a rain garden. The rain garden provides infiltration as primary treatment and will overflow through a rock weir to the public road. A treatment swale across the back of the property collects runoff from the adjacent public highway and directs it to a rain garden system. The rain garden system consists of three separate rain gardens that drain in series through a set of rock weirs. The overflow from this set of rain gardens flows into a drainage pipe that outlets to the rain garden in front of the western building.

Stormwater Capture/Treatment:

Highway Rain Garden/Swale System and West Rain Garden/Swale System: 41%
East Rain Garden/Swale System: 81%

PROJECT 202.0409.01

WATER QUALITY IMPROVEMENT PLAN

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH FINAL DESIGN DRAWINGS AND ATTACHED SPECIFICATIONS: 03 30 10 CONCRETE, 07 65 00 GUTTERS AND DOWNSPOUTS, 32 30 20 GRAVEL EROSION PROTECTION, 32 30 30 ROCK WEIR, 32 30 40 VEGETATED SWALE, 32 30 60 RAIN GARDEN, 32 80 20 IRRIGATION SYSTEM, 32 80 40 SUBMERSIBLE PUMP, 33 40 00 STORM DRAINAGE UTILITIES, 33 40 20 RAINWATER CATCHMENT CISTERN.
2. SAN MATEO RESOURCE CONSERVATION DISTRICT SHALL BE RESPONSIBLE FOR OBTAINING ANY NEEDED PERMITS, EASEMENTS, AND/OR RIGHT-OF-WAYS, AND MEETING ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL UTILITIES AND SHALL CALL NORTHERN CALIFORNIA UNDERGROUND SERVICE ALERT AT '811' AT LEAST 3 DAYS PRIOR TO START OF CONSTRUCTION. SPECIAL SAFETY PRECAUTIONS SHALL BE TAKEN WHEN WORKING IN THE VICINITY OF GAS, OIL, AND ELECTRICAL LINES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING LOCATIONS OF TEMPORARY ACCESS, STAGING AREAS, AND OTHER FACILITIES TO PRECONSTRUCTION CONDITION. DISTURBANCE OF EXISTING STRUCTURES AND VEGETATION MUST BE AVOIDED OR MINIMIZED TO THE FULLEST POSSIBLE EXTENT.
5. LANDOWNER SHALL BE RESPONSIBLE FOR THE SUCCESSFUL ESTABLISHMENT AND MAINTENANCE OF VEGETATION PRACTICES.
6. CONTRACTOR SHALL ENSURE THAT THE USE AND/OR STORAGE OF PETROLEUM POWERED EQUIPMENT SHALL BE ACCOMPLISHED IN A MANNER TO PREVENT THE POTENTIAL RELEASE OF PETROLEUM MATERIALS INTO WATERS OF THE STATE.
7. CAL-OSHA SAFETY REQUIREMENTS SHALL BE IN EFFECT DURING ALL CONSTRUCTION.
8. CONTACT THE SAN MATEO RESOURCE CONSERVATION DISTRICT AT LEAST 7 DAYS PRIOR TO START OF CONSTRUCTION. PHONE: (650) 726-4660.

AS-BUILT NOTES

1. THIS AS-BUILT PLAN REPRESENTS THE STATUS OF THE PROJECT AS INSTALLED IN THE FIELD. IT IS NOT A CERTIFICATION OF THE COMPLETENESS OF THE WORK OR THE CONSISTENCY OF THE WORK WITH THE ORIGINAL DESIGN DOCUMENTS. IN SOME CASES DEVIATIONS FROM THE ORIGINAL DESIGN DOCUMENTS MAY LEAD TO OPERATIONS OR MAINTENANCE ISSUES. THE ENGINEER ACCEPTS NO LIABILITY FOR FAILURES OR PROBLEMS ARISING FROM DEVIATIONS FROM THE ORIGINAL DESIGN DOCUMENTS.

SHEET INDEX

1. TITLE SHEET AND GENERAL NOTES
2. LAYOUT PLAN
3. CONSTRUCTION DETAILS
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VICINITY MAP

NOT TO SCALE



DRAWN BY: **AS-BUILT**
 DESIGNED BY:
 APPROVED BY:

PROJECT 202.0409.01
 TITLE SHEET & GENERAL NOTES

PLAN DATE
2/26/16

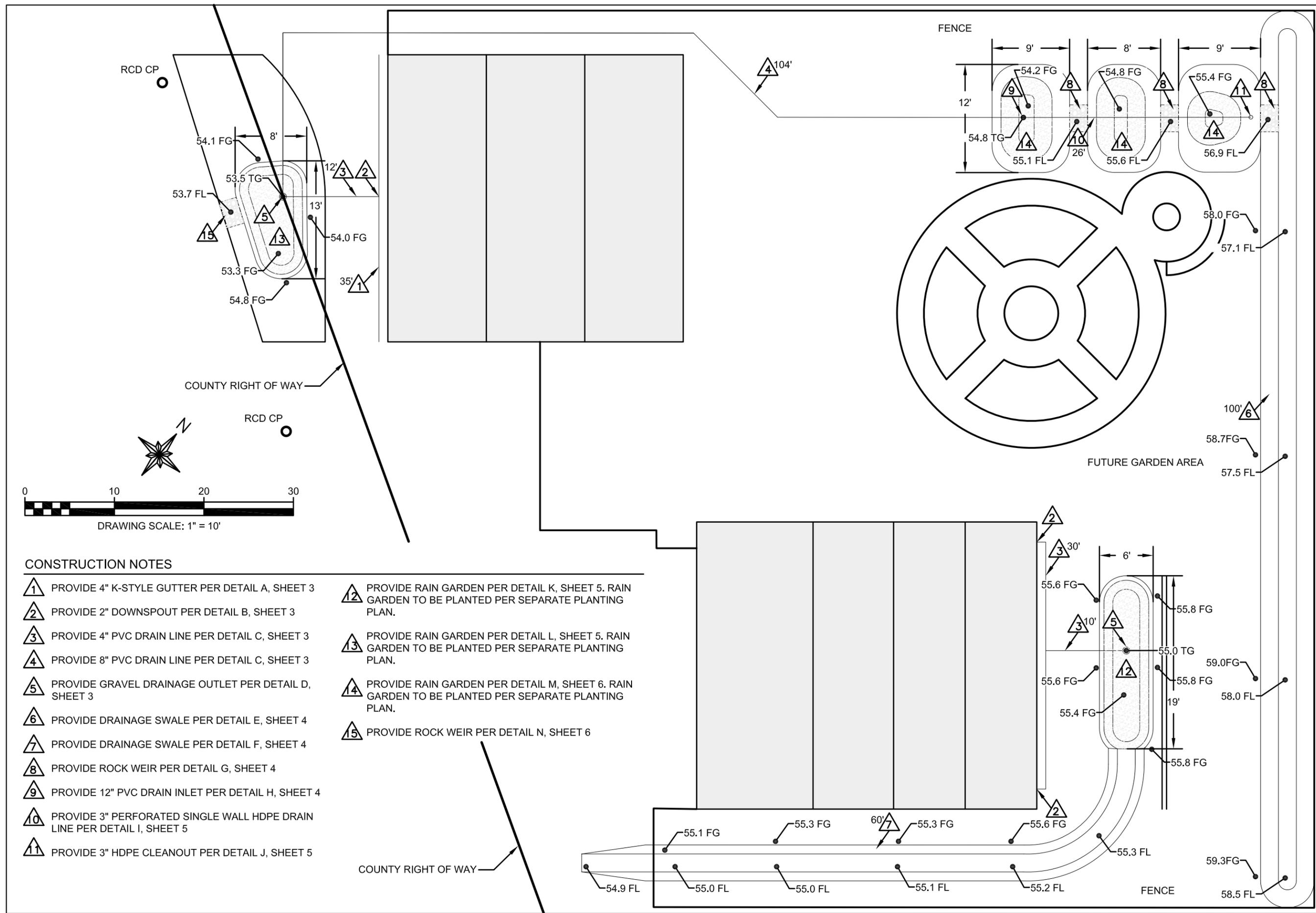
SHEET
01 OF 06

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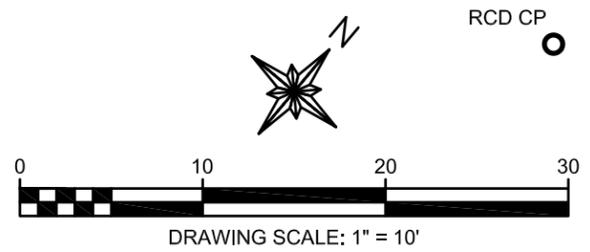
PROJECT 202.0409.01
 LAYOUT PLAN

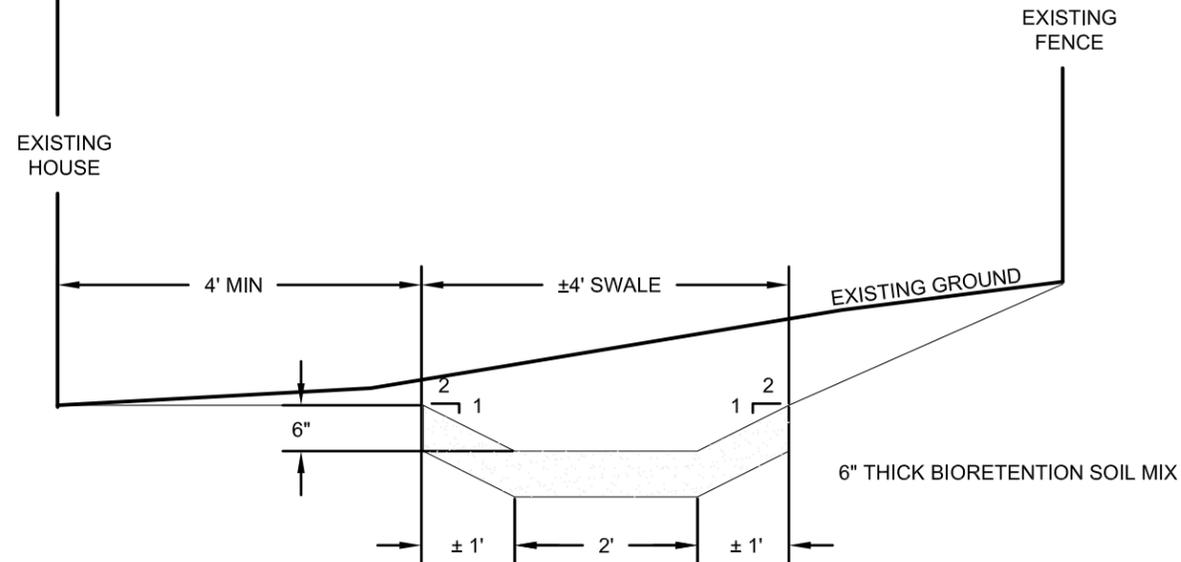
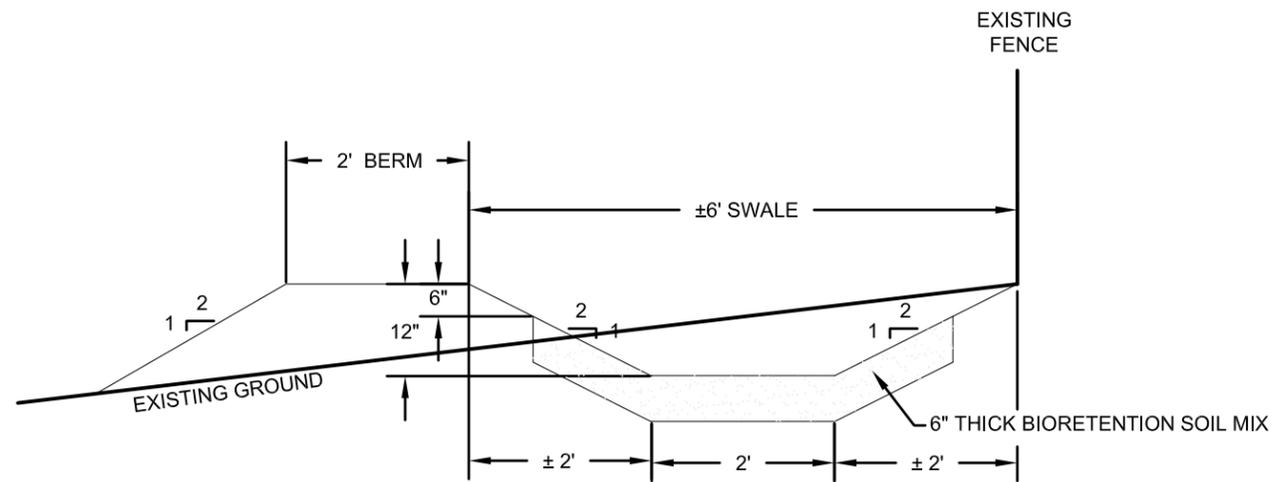
PLAN DATE
 2/26/16
 SHEET
 02 OF 06



CONSTRUCTION NOTES

- | | |
|---|--|
| <p>1 PROVIDE 4" K-STYLE GUTTER PER DETAIL A, SHEET 3</p> <p>2 PROVIDE 2" DOWNSPOUT PER DETAIL B, SHEET 3</p> <p>3 PROVIDE 4" PVC DRAIN LINE PER DETAIL C, SHEET 3</p> <p>4 PROVIDE 8" PVC DRAIN LINE PER DETAIL C, SHEET 3</p> <p>5 PROVIDE GRAVEL DRAINAGE OUTLET PER DETAIL D, SHEET 3</p> <p>6 PROVIDE DRAINAGE SWALE PER DETAIL E, SHEET 4</p> <p>7 PROVIDE DRAINAGE SWALE PER DETAIL F, SHEET 4</p> <p>8 PROVIDE ROCK WEIR PER DETAIL G, SHEET 4</p> <p>9 PROVIDE 12" PVC DRAIN INLET PER DETAIL H, SHEET 4</p> <p>10 PROVIDE 3" PERFORATED SINGLE WALL HDPE DRAIN LINE PER DETAIL I, SHEET 5</p> <p>11 PROVIDE 3" HDPE CLEANOUT PER DETAIL J, SHEET 5</p> | <p>12 PROVIDE RAIN GARDEN PER DETAIL K, SHEET 5. RAIN GARDEN TO BE PLANTED PER SEPARATE PLANTING PLAN.</p> <p>13 PROVIDE RAIN GARDEN PER DETAIL L, SHEET 5. RAIN GARDEN TO BE PLANTED PER SEPARATE PLANTING PLAN.</p> <p>14 PROVIDE RAIN GARDEN PER DETAIL M, SHEET 6. RAIN GARDEN TO BE PLANTED PER SEPARATE PLANTING PLAN.</p> <p>15 PROVIDE ROCK WEIR PER DETAIL N, SHEET 6</p> |
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SCALE
1" = 2'

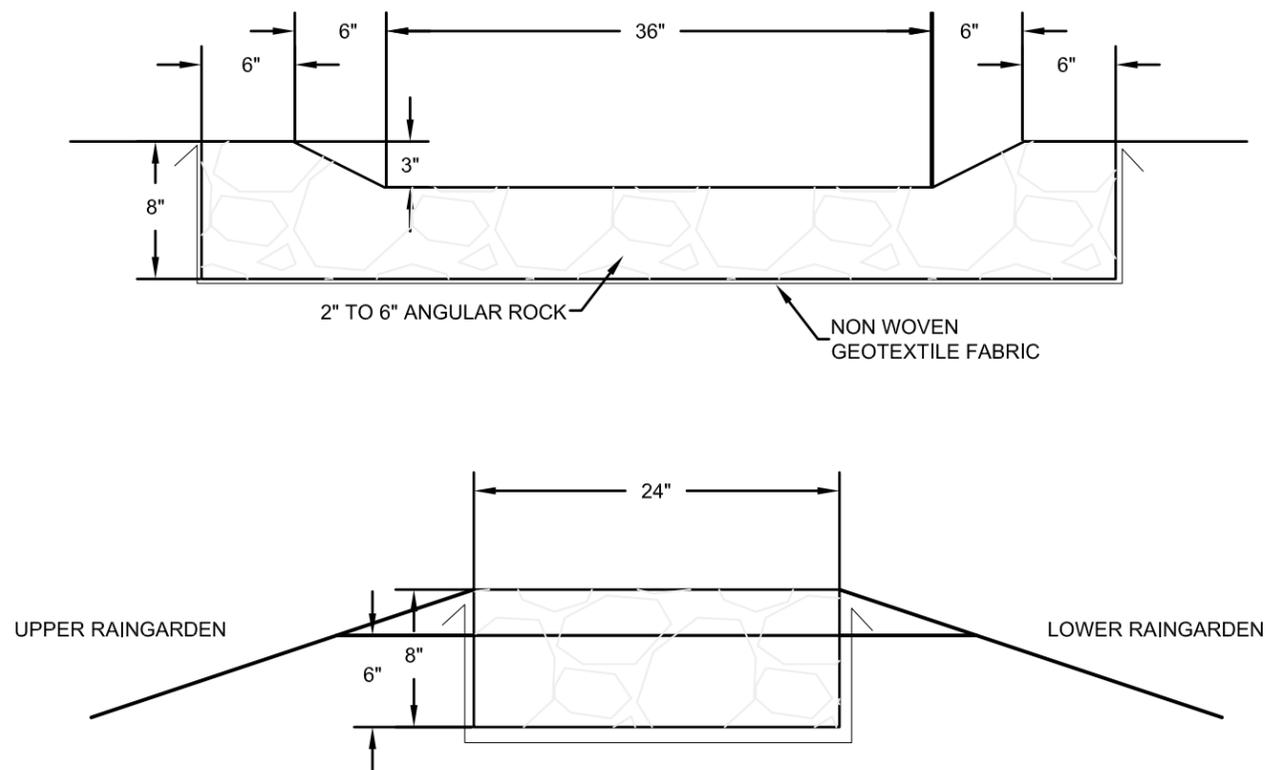
TYPICAL DRAINAGE SWALE DETAIL

DETAIL E
SHEET 2

SCALE
1" = 2'

TYPICAL DRAINAGE SWALE DETAIL

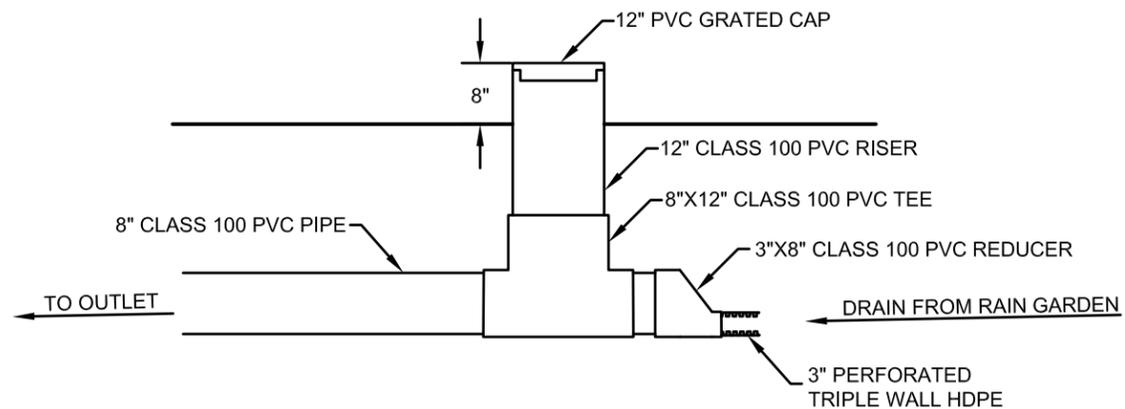
DETAIL F
SHEET 2



SCALE
1" = 1'

ROCK WEIR DETAIL

DETAIL G
SHEET 2



SCALE
1" = 2'

DRAIN INLET DETAIL

DETAIL H
SHEET 2

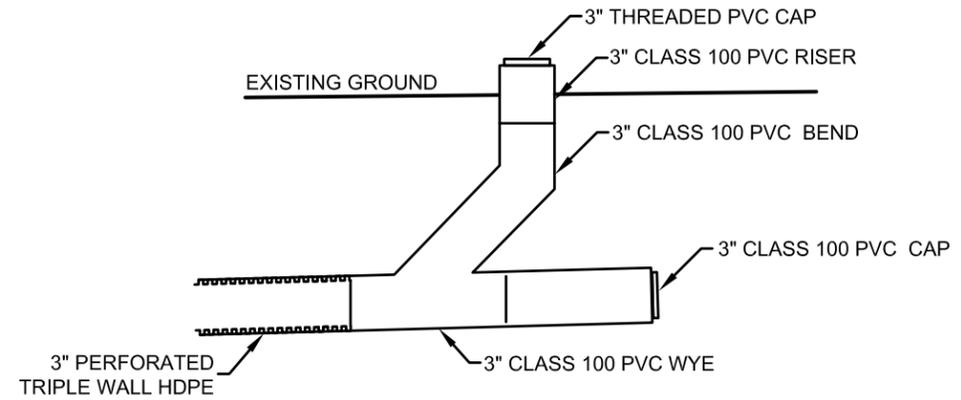
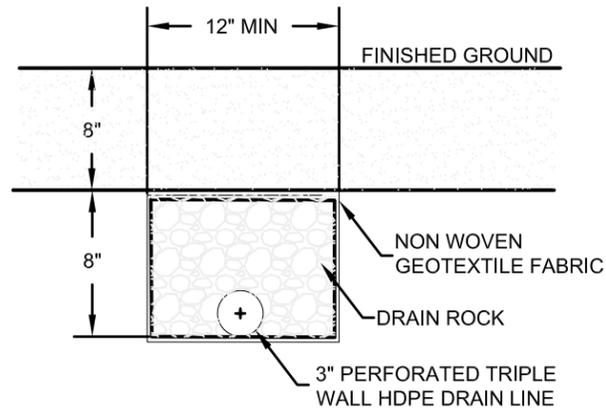
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PROJECT 202.0409.01
CONSTRUCTION DETAILS

PLAN DATE
2/26/16

SHEET
04 OF 06



SCALE
1" = 1'

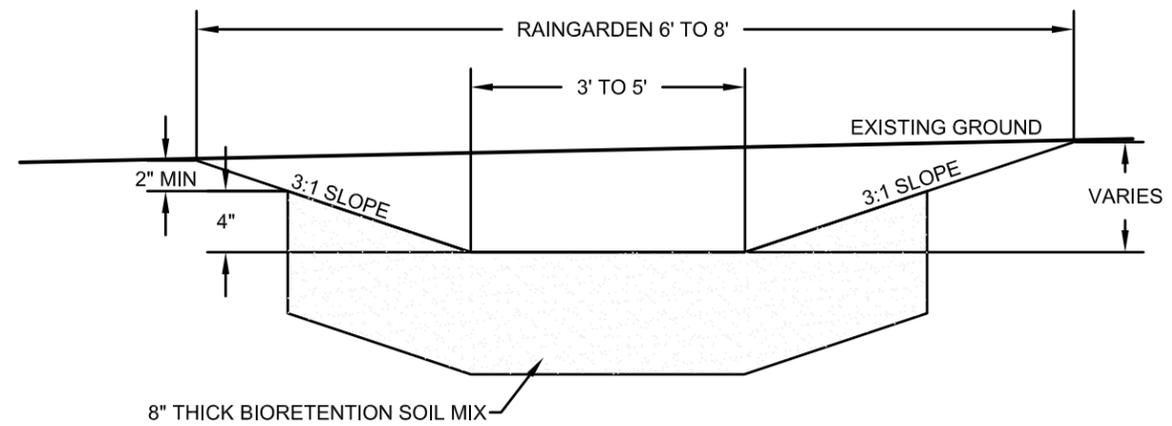
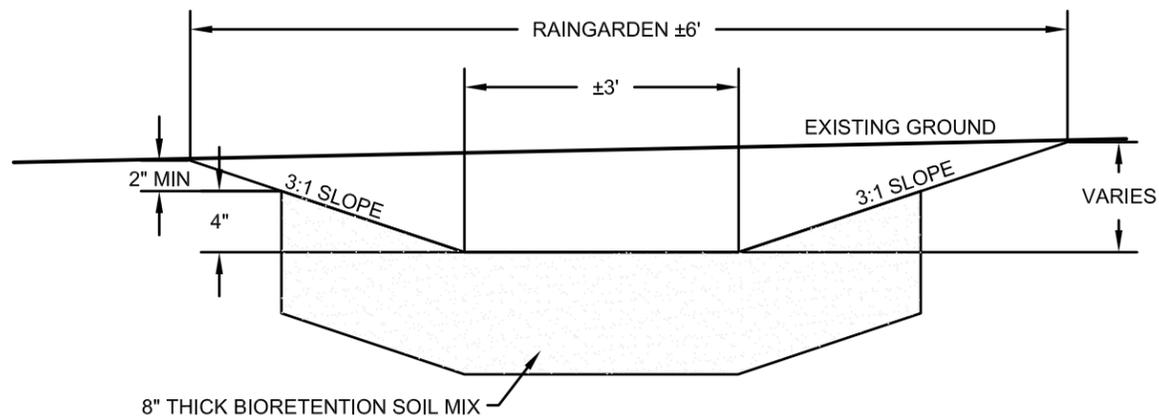
PERFORATED DRAIN LINE TYPICAL TRENCH SECTION

DETAIL I
SHEET 2

SCALE
1" = 1'

PERFORATED DRAIN LINE CLEANOUT DETAIL

DETAIL J
SHEET 2



SCALE
1" = 1'

TYPICAL RAIN GARDEN SECTION

DETAIL K
SHEET 2

SCALE
1" = 1'

TYPICAL RAIN GARDEN SECTION

DETAIL L
SHEET 2

DRAWN BY: _____
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 APPROVED BY: _____

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 2/26/16
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 05 OF 06

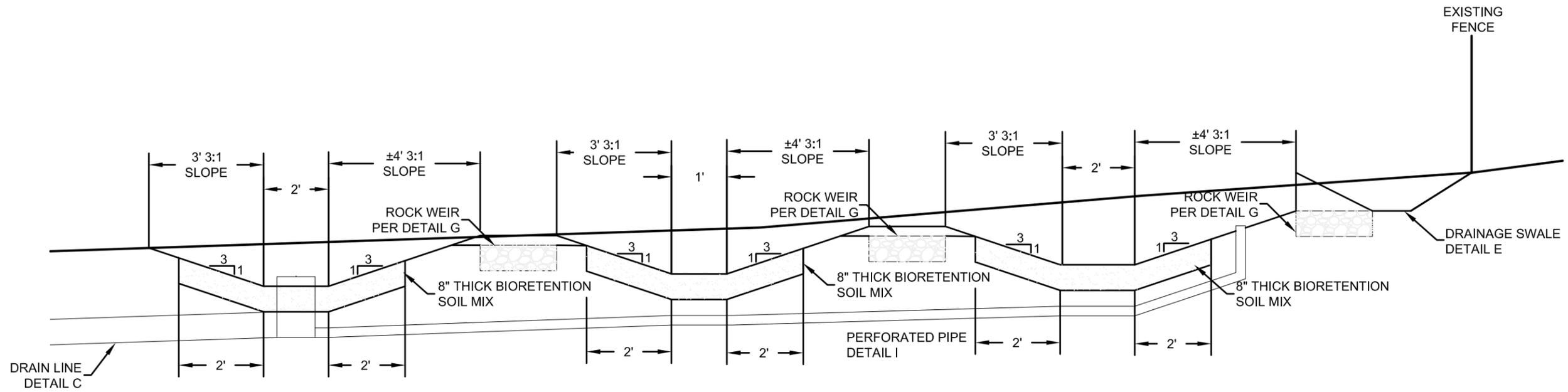
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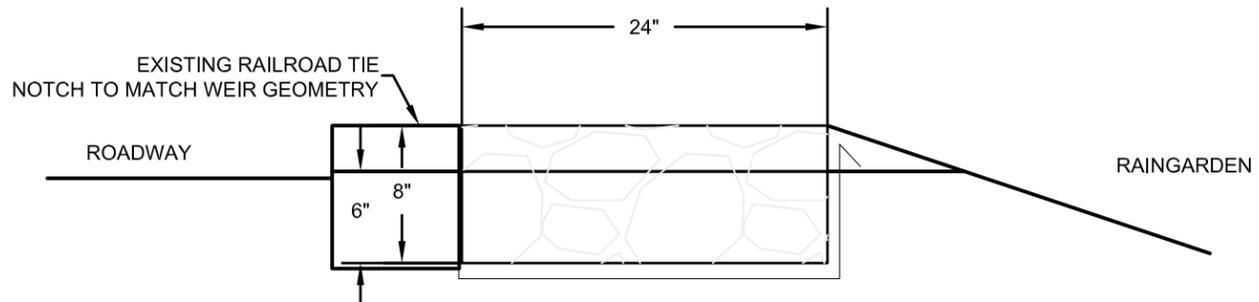
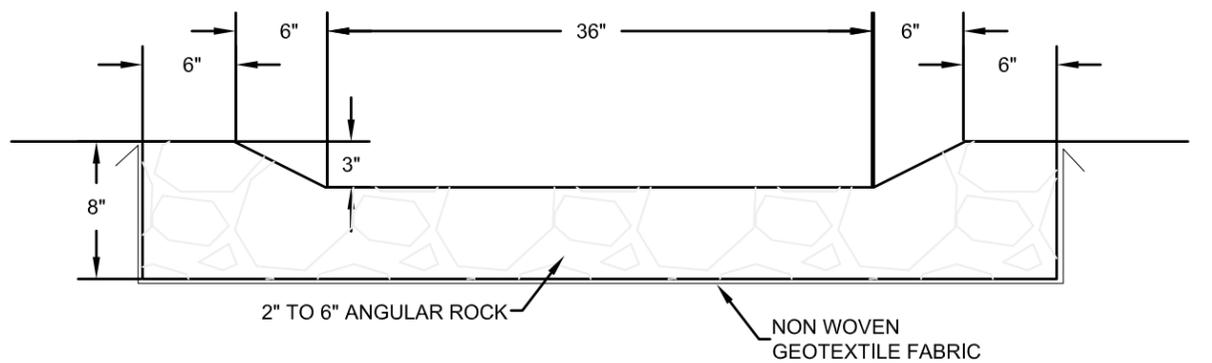
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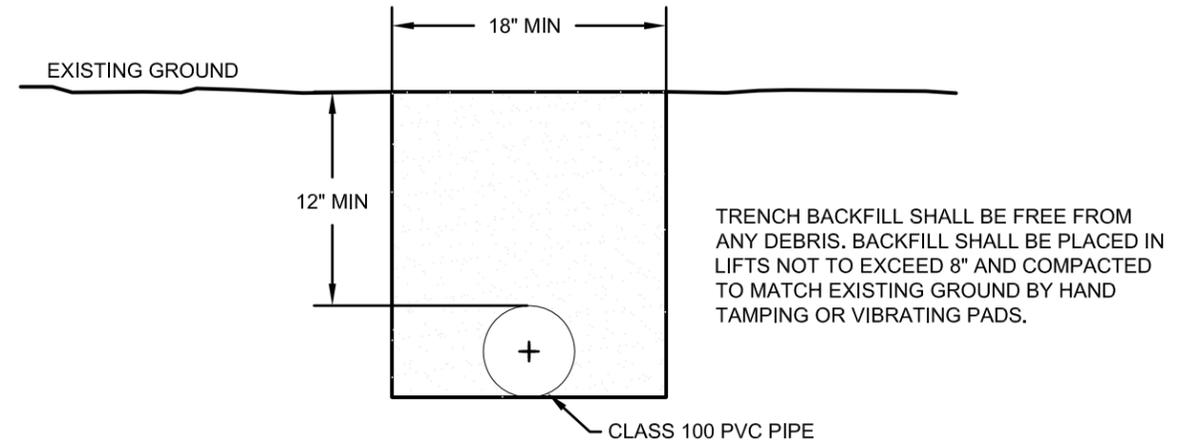
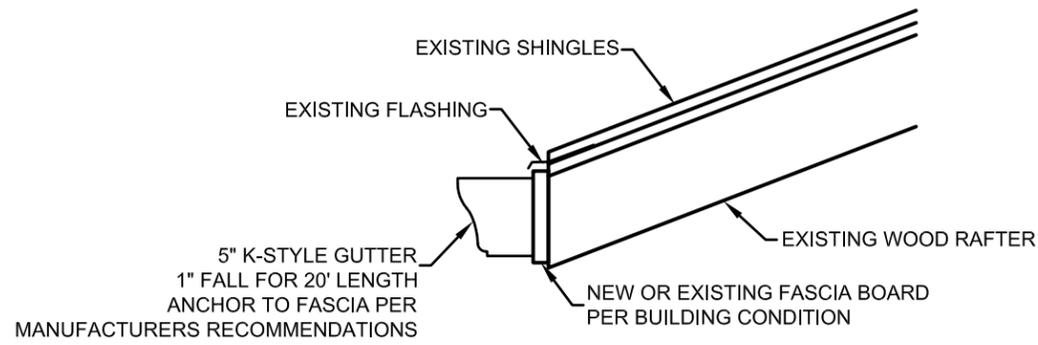
SHEET
06 OF 06



SCALE	RAIN GARDEN DETAIL	DETAIL M
1" = 3'		SHEET 2



SCALE	ROCK WEIR DETAIL	DETAIL N
1" = 1'		SHEET 2



SCALE
1" = 1'

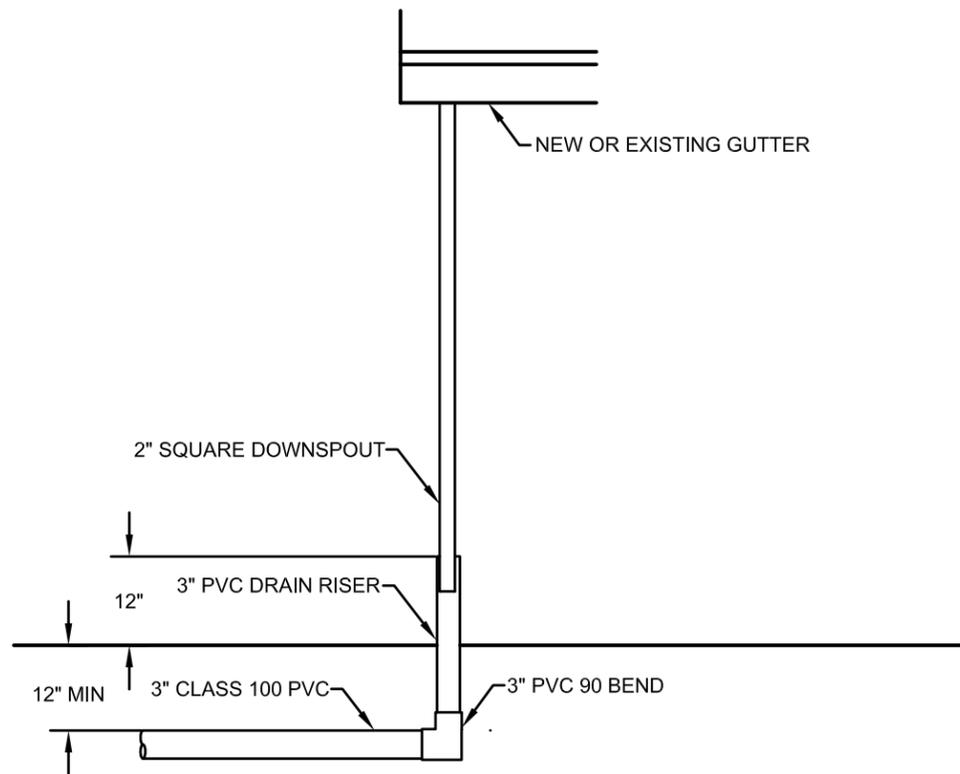
TYPICAL GUTTER DETAIL

DETAIL A
SHEET 2

SCALE
1" = 1'

TYPICAL DRAIN PIPE SECTION

DETAIL C
SHEET 2



SCALE
1" = 2'

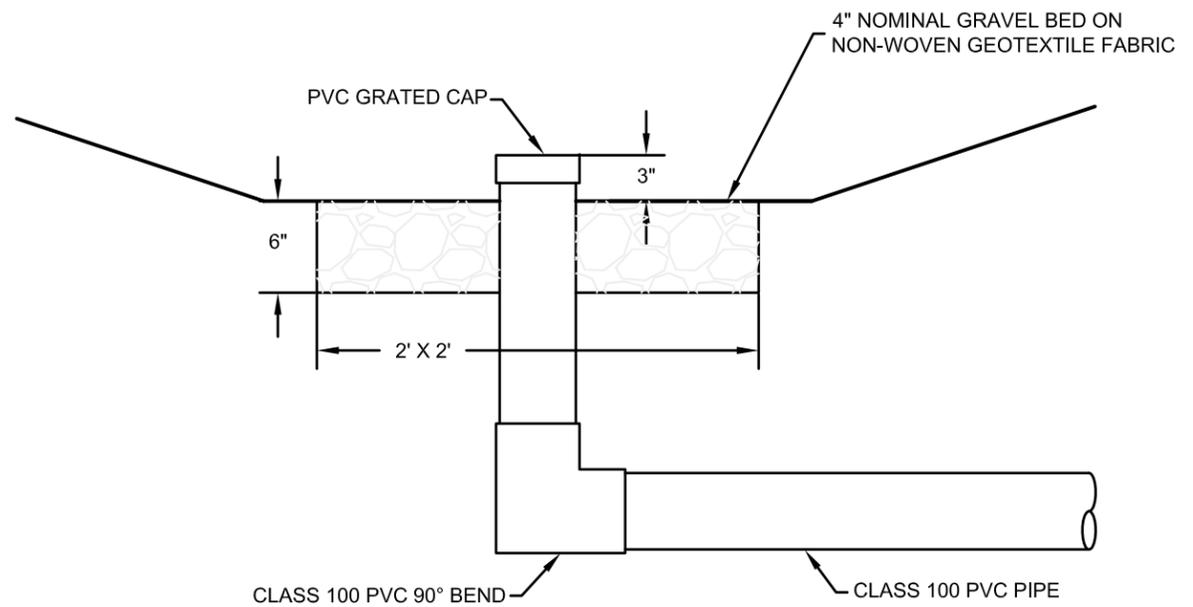
TYPICAL FIRST FLUSH SYSTEM DETAIL

DETAIL B
SHEET 2

SCALE
1" = 1'

GRAVEL DRAINAGE OUTLET DETAIL

DETAIL D
SHEET 2



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 APPROVED BY: _____

PROJECT 202.0409.01
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PLAN DATE
2/26/16
 SHEET
03 OF 06

