



2014
STORMWATER
(SW)
STANDARD
PLANS

***Adopted by the Salinas City Council per Resolution No. 20529 on
April 8, 2014.***



TO ALL USERS OF THE 2014 STORMWATER STANDARD PLANS:

These Stormwater Standard Plans were prepared by the Salinas Permit Center (CEDD), Engineering Services Section, based on the Low Impact Development Initiative (LIDI) Standard Details, City of Portland Oregon Stormwater Management Manual Typical Details and City of Salinas Permit Center Engineering Section produced details. They are to be used in conjunction with the latest edition of the City of Salinas Stormwater Development Standards (SWDS) and the latest edition of the City of Salinas Standard Specifications, Design Standards and Standard Plans. Designers shall consult with the project (record) geotechnical and civil engineer for review and use of these Standard Plans, clearances to structures, need for/extent of liners, subdrains, storm drain connections and similar appurtenances. Regardless of site infiltration rate, all projects will be required to filter storm water on site using biofiltration methods (Post-Construction Best Management Practices or PCBMPs) with infiltration through underlying soils being the preferred method. Every effort shall be made, to the Maximum Extent Practicable (MEP), to infiltrate stormwater on site unless alternative means are approved in accordance with the City's NPDES Permit requirements.

Immediately following this page we have included a 7 page publication prepared by USEPA titled "A Conceptual Guide to Effective Green Streets Design Solutions Green Streets". This document can be found online at the following web link: http://water.epa.gov/aboutow/eparecovery/upload/2009_09_10_eparecovery_EPA_ARRA_Green_Streets_FINAL.pdf . Go to this web link to see the pictures and diagrams at a more legible scale. This publication is included herewith to provide general information and guidance on Green Streets and how to implement them. The SWSPs which follow the Green Streets guidance contain detailed information for the construction of different components that comprise Green Streets, as well as for the different components of Post-Construction Best Management Practices (PCBMPs) to facilitate compliance with the City's Phase I Stormwater Permit and SWDS for site developments.

While the Green Streets Guidance contains much useful information, it does not address deviation from the street pavement cross slope requirements of City Standard Plan No. 3, especially when a road is constructed with a center median, to facilitate placement and use of PCBMPs. City SP No. 3 (2008 edition) shows a typical street cross-section with a crown located at the centerline. In order to facilitate the use of PCBMPs to the MEP as required by the Permit, the following deviations from a standard centerline crowned street will be allowed for the reasons stated:

1. The crown may be offset from street centerline to maximize use of PCBMPs and to minimize grading in development areas where the natural slope may be relatively

steep. Only two impervious traffic lanes may slope in one direction unless approved by the City Engineer. If the number of impervious traffic lanes exceed 2, the remainder of the traffic lanes above 2 shall be sloped in the opposite direction. Any combination of pervious pavement traffic lanes, bike lanes, parking or other pervious pavement areas may also be sloped in the same direction in addition to the two impervious traffic lanes. This is to limit the depth of water on the traffic lanes during intense storms.

2. In areas where the street is aligned parallel to the existing contours, and a substantial cut and/or fill would be required due to the existing slope gradient, the crown may be eliminated and the cross-slope may run from face of curb to face of curb. Only two impervious traffic lanes may slope in one direction unless approved by the City Engineer. If the number of impervious traffic lanes exceed 2 the remainder of the traffic lanes above 2 shall be sloped in the opposite direction. Any combination of pervious pavement traffic lanes, bike lanes, parking or other pervious pavement areas may also be sloped in the same direction in addition to the two impervious traffic lanes. This is to limit the depth of water on the traffic lanes during intense storms.
3. For streets with center medians, the lanes on either side of the median may be sloped toward the median. This is to allow the dual use of landscaping within the median island for landscaping and for stormwater management. Only two impervious traffic lanes may slope in one direction unless approved by the City Engineer. If the number of impervious traffic lanes exceed 2 the remainder of the traffic lanes above 2 shall be sloped in the opposite direction. Any combination of pervious pavement traffic lanes, bike lanes, parking or other pervious pavement areas may also be sloped in the same direction in addition to the two impervious traffic lanes. This is to limit the depth of water on the traffic lanes during intense storms.
4. For 1, 2 and 3 above, and for traditionally crowned streets, care should be taken to conform with the Caltrans Highway Design Manual (HDM), latest edition, as to allowable minimum traffic lane radii for the anticipated speed, especially when the superelevation is negative 0.02 as in traditionally crowned streets on the outside of a horizontal curve. Refer to figure 202.2 of the HDM <http://www.dot.ca.gov/hq/oppd/hdm/HDM-9-28-11.pdf> for allowable horizontal curve radii for different superelevation rates. The ultimate cross-section at build-out shall be the basis of determining the direction of the cross slope of combined pervious and impervious traffic lanes, bike lanes. The above restrictions shall not be applied to aisles within parking lots since the inherent speed is much lower.



GREEN
RESERVE

The American Recovery and Reinvestment Act (ARRA), Green Reserve of 2009, through the State Revolving Fund, provides funding for a wide variety of qualifying projects in the categories of: *green infrastructure, energy efficiency, water efficiency, and other innovative projects*. For more information on ARRA, to find out if your current or future planned project meets the necessary criteria, and how to apply, visit www.Recovery.gov.

A CONCEPTUAL GUIDE TO
EFFECTIVE GREEN STREETS
DESIGN SOLUTIONS

Green Streets

Residential Streets
Commercial Streets
Arterial Streets
Alleys



Green Street designs provide better environmental performance while creating attractive, safer environments.

A Green Street is a street that uses natural processes to manage stormwater runoff at its source.

Streets comprise a significant percentage of publicly owned land in most communities, and thus offer a unique opportunity to manage for environmental outcomes. A Green Street uses a natural systems approach to reduce stormwater flow, improve water quality, reduce urban heating, enhance pedestrian safety, reduce carbon footprints, and beautify neighborhoods.

Through various combinations of plants and soils, these objectives—and several others—can be met on different types of streets in many settings. Green Street features include vegetated curb extensions, sidewalk planters, landscaped medians, vegetated swales, permeable paving, and street trees. This guide provides an overview of different strategies that can be employed in transportation rights-of-way at the local or neighborhood scale.

Residential Streets

STORMWATER CURB EXTENSIONS
PERMEABLE PAVING
VEGETATED SWALES

Residential streets offer the greatest potential for building Green Streets in new neighborhoods or retrofitting existing streets because the streets are typically slower, less trafficked, and likely to already have some landscape elements.

These days, it is fairly common for homes to have rain gardens incorporated into their landscaping to collect and store stormwater runoff from rooftops, driveways, and patios. "Rain garden" is the general term used to describe stormwater strategies that use plants and soils to filter, absorb, and slow rainwater on the landscape surface.

Similar types of rain gardens can take various forms within the street right-of-way itself—the edges of the street can be built to allow stormwater to flow into a landscape area, or space within the paved area of the street can be converted to landscape, increasing permeability. Additionally, permeable

paving that is durable, load-bearing, and built with an underlying reservoir can temporarily store water prior to infiltration.

In new construction situations, Green Streets can be designed to handle significant volumes of water. In retrofit situations, they can typically handle all of the rain from small storms, while excess water from large storms can overflow into existing storm sewer systems.

Rain gardens are beautiful landscape features that naturally filter runoff and require less maintenance than turf grass.

STORMWATER CURB EXTENSIONS

Conventional curb extensions (also known as curb bulb outs, chokers, or chicanes) have been used for decades to enhance pedestrian safety and help in traffic calming.

A stormwater curb extension simply incorporates a rain garden into which runoff flows.



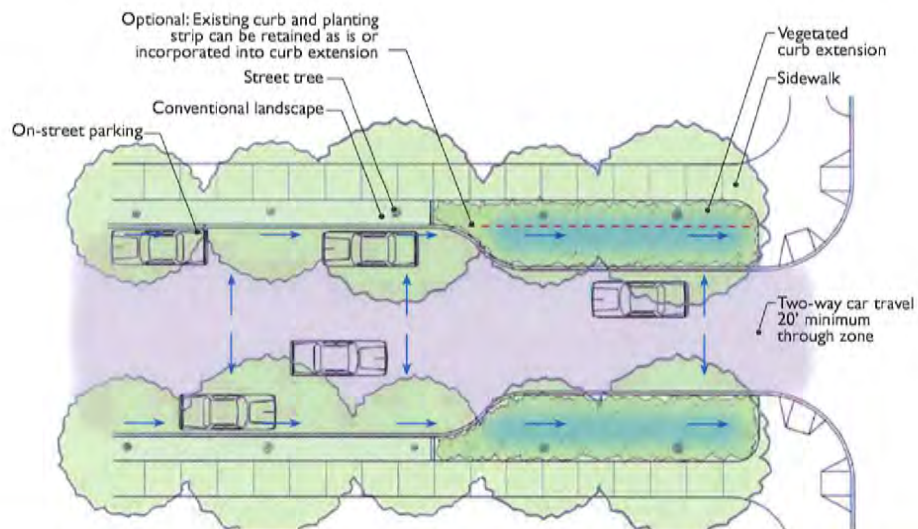
TYPICAL STREET



OPPORTUNITY



IMPLEMENTATION



PERMEABLE PAVING

Permeable paving (pavers, or porous asphalt and pervious concrete) in the parking lane converts impervious surfaces to allow stormwater to absorb into the ground, which reduces the amount of runoff without any loss of parking on the street.

The aesthetics of permeable paving can also give the illusion of a narrower street and therefore help calm traffic.



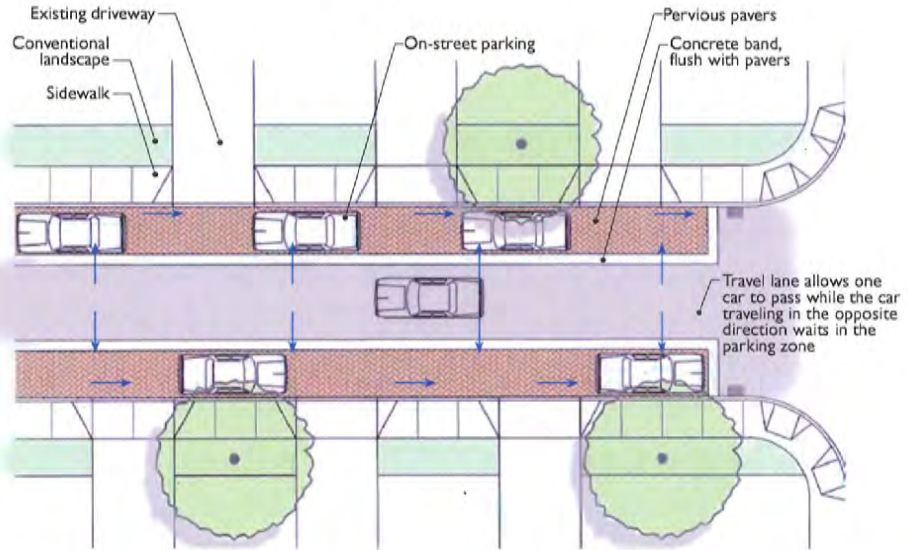
EXISTING



OPPORTUNITY



IMPLEMENTATION



VEGETATED SWALES

Swales are long, shallow vegetated depressions, with a slight longitudinal slope. As water flows through the swale, it is slowed by the interaction with plants and soil, allowing sediments and pollutants to settle out. Water soaks into the soil and is taken up by plants, and may infiltrate further into the ground if the soil is well-drained.



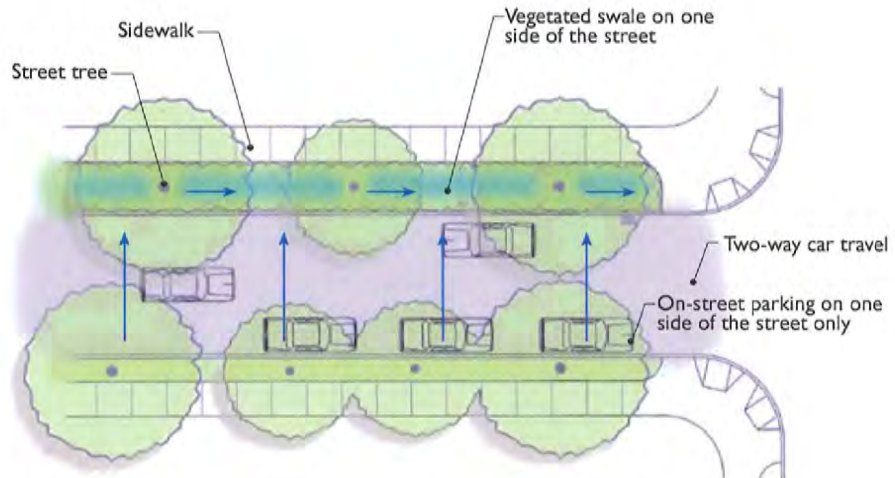
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OPPORTUNITY



IMPLEMENTATION



Commercial Streets

STORMWATER PLANTERS
STORMWATER CURB EXTENSIONS
PERMEABLE PAVING

Commercial streets in most urban areas need to accommodate a wide range of users and uses including pedestrians, drivers, bikers, transit riders, on-street parking, outdoor seating, lighting, trees, etc. Because of all these demands, finding space to collect and manage stormwater can at first appear challenging. There are, however, several design options that towns and cities can consider when integrating stormwater management into even their most active streets.

The key is thinking creatively in finding space that can accommodate multiple purposes in one space, such as a street tree pit designed to collect runoff, or the curb extensions (also known as "pedestrian bulb outs") at the corners designed to reducing crossing distances for pedestrians that can also contain a rain garden. These design options are more easily accommodated in new

streets where the location of underground utilities is considered from the start. More strategic design is necessary for streets with existing utilities. The pay-off of these efforts, though, is a more attractive, walkable street that considerably reduces polluted runoff.

A community's identity is often most evident on its commercial streets. Green Street techniques not only achieve environmental goals but can greatly improve the look and feel of a community.

STORMWATER PLANTERS

Planters are long, narrow landscaped areas with vertical walls and flat bottoms, typically open to the underlying soil. They allow for more storage volume than a swale in less space.

Water flows into the planter, absorbs into the plants and topsoil, fills to a predetermined level, and then, if necessary, overflows into a storm sewer system, if desired, planters can accommodate street trees.



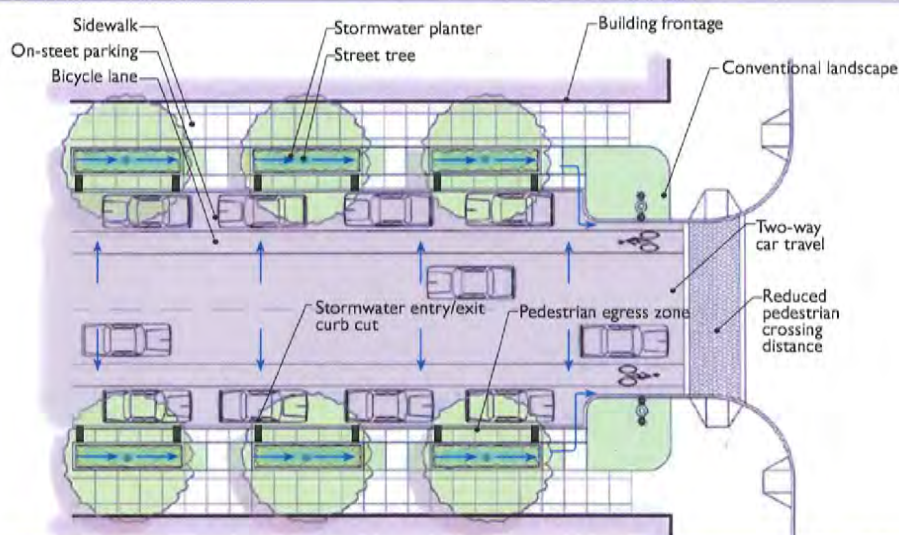
TYPICAL STREET



OPPORTUNITY



IMPLEMENTATION



STORMWATER CURB EXTENSIONS

Stormwater curb extensions on commercial streets are similar to those on residential streets. They are rain gardens typically located near the corners that can also provide the pedestrian with a more comfortable crossing.

Curb extensions can also be located mid-block by converting one or more parking spaces.



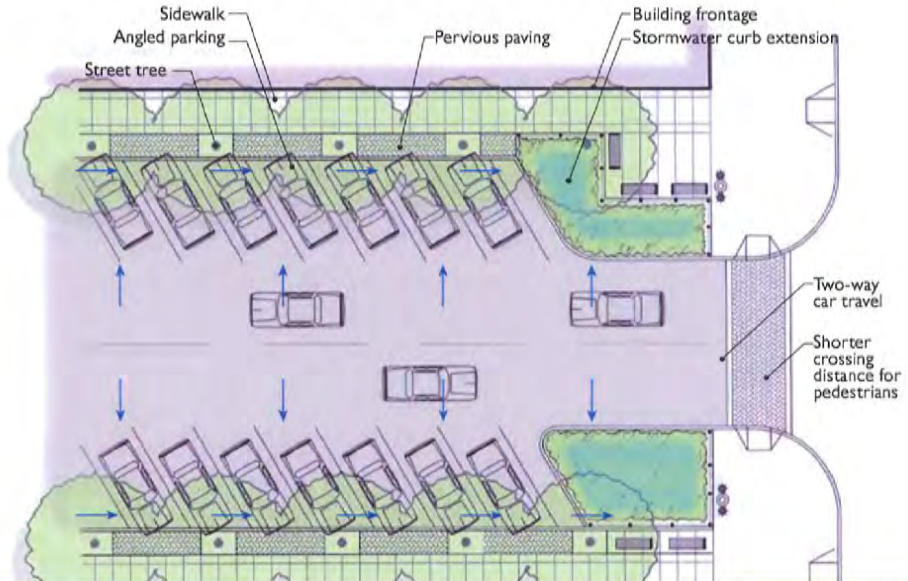
EXISTING



OPPORTUNITY



IMPLEMENTATION



PERMEABLE PAVING

Permeable paving on commercial streets can be incorporated into sidewalks and parking lanes.

Recent advances in permeable paving technologies now make many appropriate for higher speeds or where large, heavy vehicles are expected to be parked—areas such as loading zones and bus stops.



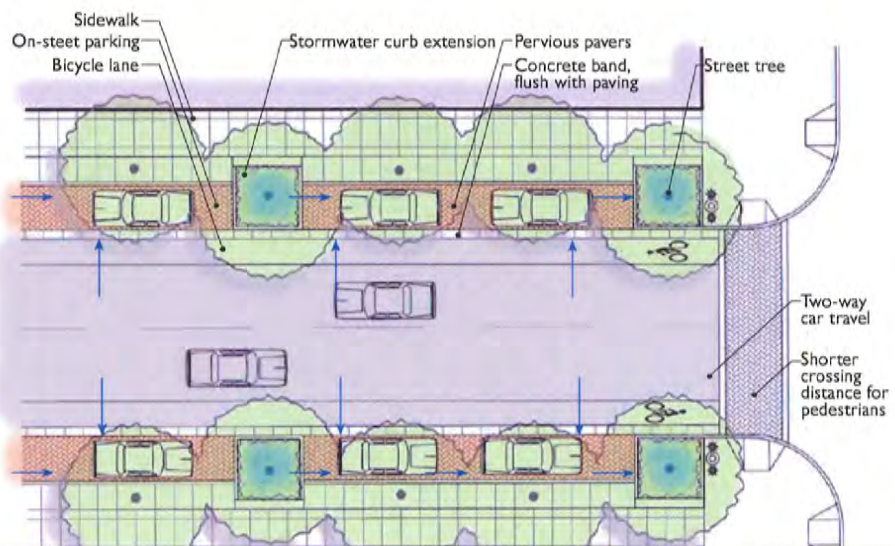
EXISTING



OPPORTUNITY



IMPLEMENTATION



Arterial Streets

VEGETATED SWALES

Arterial streets in towns and cities are often characterized by wide expanses of pavement, little greenery, and little to address pedestrian needs. Should an arterial street already have landscape areas adjacent to the roadway or within grassy medians, then retrofitting these areas to accommodate rainwater will significantly reduce runoff and help protect water quality.

Where adjacent landscape space does not exist, a process of “road dieting” can be undertaken. This involves determining just how much paved surface is necessary to safely manage travel, and how much can be converted to green space. In addition to managing runoff, this is also an opportunity to retrofit the functionality of arterial streets, making them more “multi-modal” by

incorporating sidewalks, on-street bike lanes, or landscape-separated bike greenways.

Again, as with residential and commercial streets, though it is easier to plan and design all of these uses into a roadway from the beginning, most arterials present opportunities to incorporate Green Street features, and can be highly successful.

Busy arterials need not only be a conduit for traffic. They have the potential to be attractive, green boulevards that reduce runoff and reinforce a community's identity.

VEGETATED SWALES

Like residential streets, arterial roadways are good street types for swales because they typically have long, linear stretches of uninterrupted space that can be used to manage stormwater.

Some arterials may not have landscape space in place but do have travel lanes or paved shoulders that can be narrowed to create space for swales.



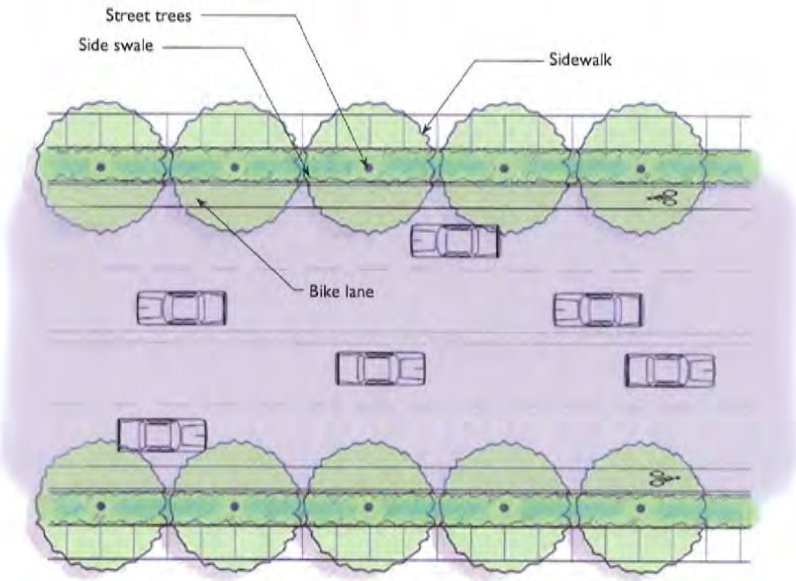
TYPICAL STREET



OPPORTUNITY



IMPLEMENTATION



Alleys

PERMEABLE PAVING
VEGETATED SWALES

In many towns and cities, alleys comprise a significant amount of impervious surface and are sometimes prone to flooding because they are often not connected to the sewer system. Green Street techniques like vegetated swales and permeable paving effectively reduce and treat runoff, alleviate flooding, and are far less expensive than installing connections to sewers.

Alleys are the "low-hanging fruit" of Green Street design—a good starting point for towns and cities to begin incorporating stormwater management.

PERMEABLE PAVING

Alleys are typically low-speed and low-trafficked streets and therefore suitable locations for using permeable paving. The entire surface could be permeable, or if heavier vehicles are anticipated for loading and unloading, or the alley is "reversed crowned" (sloping toward the center line), then only the middle section needs to be permeable.



TYPICAL ALLEY



OPPORTUNITY



IMPLEMENTATION

VEGETATED SWALES

If the alley is crowned in such a way that water flows to the side, then stormwater can be accommodated by simply greening edges of the alley with swales and planters.

If necessary, water can flow through pipes or covered trenches to allow vehicle access to garages and driveways.



TYPICAL ALLEY



OPPORTUNITY



IMPLEMENTATION

Illustrations and photographs used in this brochure are from the EPA publication *Stormwater Management Handbook—Implementing Green Infrastructure in Northern Kentucky Communities* and were created by Nevue Ngan Associates of Portland, Oregon.

This handbook, as well as other valuable resources, are available at both www.epa.gov/smartgrowth and www.epa.gov/greeninfrastructure.



STORMWATER (SW) STANDARD PLANS

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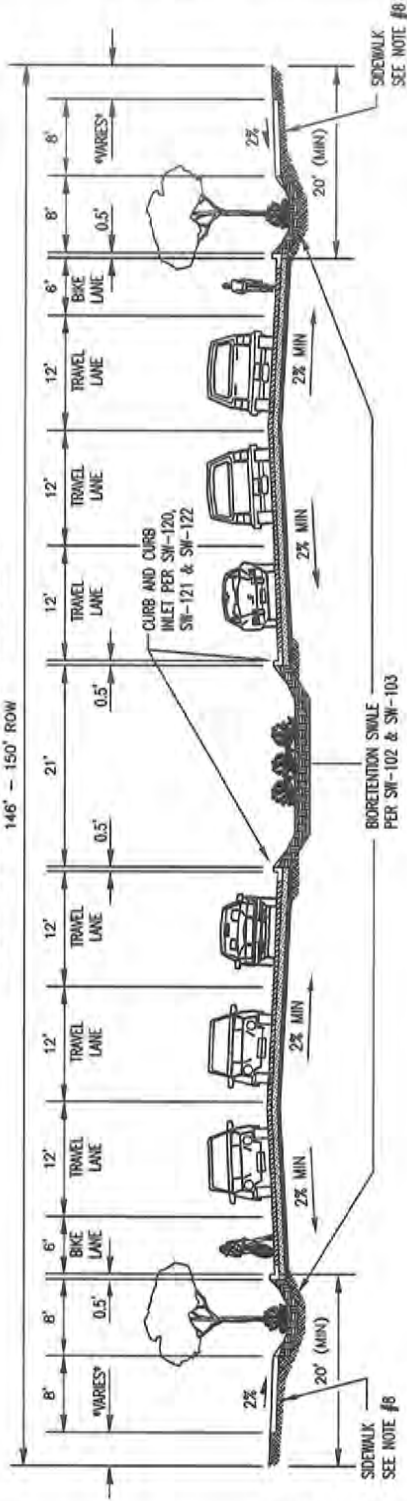
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MAJOR ARTERIAL/EXPRESSWAY TYPE II

146' - 150' ROW



DESIGNER INFORMATION

1. ADAPT EXAMPLE TO YOUR ENGINEERED DESIGN.
2. PROVIDE BEGINNING AND ENDING STATIONS FOR EACH FACILITY.
3. LONGITUDINAL SLOPE OF PLANTER MATCHES STREET.
4. SIDEWALK ELEVATIONS MUST BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET BEFORE SIDEWALK.
5. A MINIMUM 4 FOOT WIDE INTERIOR PLANTER IS REQUIRED FOR STREET TREES. MAXIMIZE PLANTER WIDTH.
6. EXISTING UTILITY LINES MUST BE SLEEVED OR RELOCATED.
7. AREA AND DEPTH OF FACILITY ARE BASED ON ENGINEERING CALCULATIONS AND RIGHT-OF-WAY CONSTRAINTS.
8. OPTIONAL: PERVIOUS SURFACING PER SW-11.

RELATED DETAILS AND RESOURCES

9. REFER TO DETAIL SW-100 OR SW-200 FOR STORMWATER PLANTER. FOR MINIMUM AREA SEE SALINAS SWDS SECTION 4.0. CHECK DAM DETAILS SW-130 AND SW-131.
10. PLANTER WALL DETAIL SW-110 OR SW-111.
11. INLET DETAILS SW-120, SW-121, AND SW-122.
12. SPECIAL REQUIREMENTS FOR WATER LINES, METERS, AND FIRE HYDRANTS DETAIL SW-41.
13. STORMWATER PLANTER PLANTING LIST DETAIL SW-160 & SW-161.
14. STORMWATER FACILITY CONSTRUCTION AND BSM REQUIREMENTS SEE CITY OF SALINAS SWDS APPENDIX D.

ENGINEERING & TRANSPORTATION DIVISION PUBLIC WORKS DEPARTMENT CITY OF SALINAS

TITLE: **MAJOR ARTERIAL | EXPRESSWAY TYPE II**

DESIGNED BY: STAFF
 CADD BY: STAFF
 PROJECT MANAGER: WALTER GRANT, P.E.

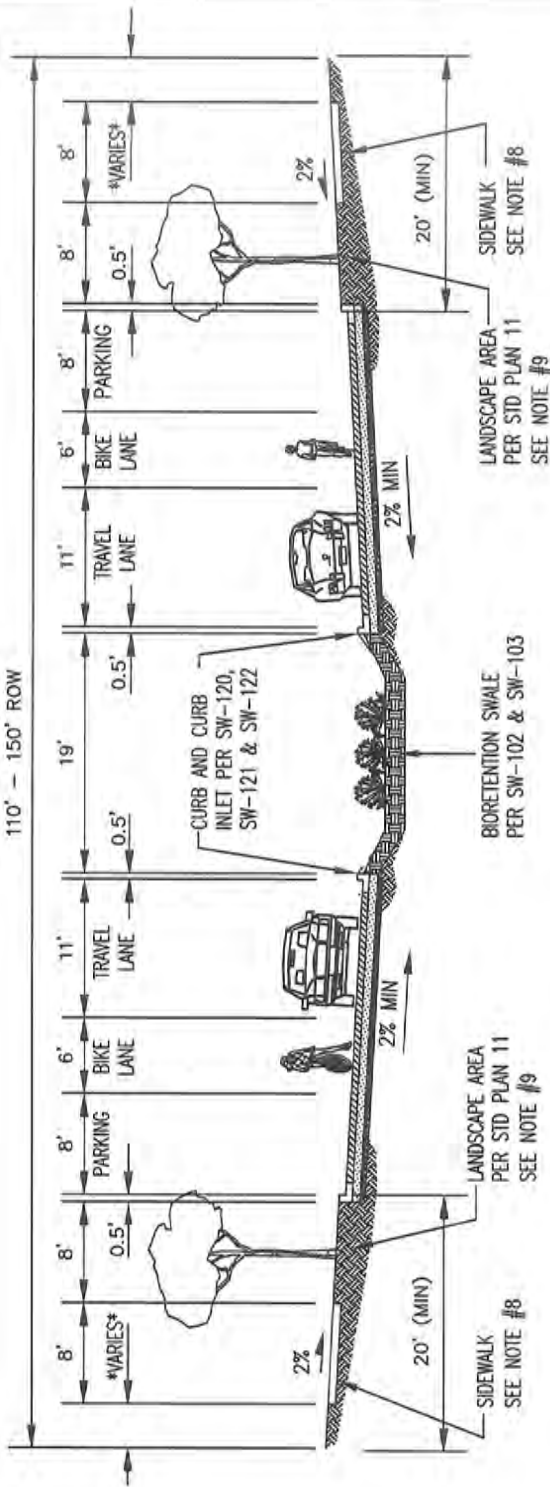
DATE: 4/22/15
 ROBERT C. RUSSELL, CITY ENGINEER
 R.C.E. 42871, EXPIRES 3-31-2014



STANDARD PLAN

1A

MINOR ARTERIAL
110' - 150' ROW



DESIGNER INFORMATION

1. ADAPT EXAMPLE TO YOUR ENGINEERED DESIGN.
2. PROVIDE BEGINNING AND ENDING STATIONS FOR EACH FACILITY. PROVIDE STATIONS AND/OR DIMENSIONS AND ELEVATIONS AT EACH INLET, OUTLET CHECK DAM, PLANTER CORNER, AND SIDEWALK NOTCH.
3. LONGITUDINAL SLOPE OF PLANTER MATCHES STREET.
4. SIDEWALK ELEVATIONS MUST BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET BEFORE SIDEWALK.
5. A MINIMUM 4 FOOT WIDE INTERIOR PLANTER IS REQUIRED FOR STREET TREES. MAXIMIZE PLANTER WIDTH. SEE SW-32.
6. EXISTING UTILITY LINES MUST BE SLEEVED OR RELOCATED.
7. AREA AND DEPTH OF FACILITY ARE BASED ON ENGINEERING CALCULATIONS AND RIGHT-OF-WAY CONSTRAINTS. SEE CITY OF SALINAS SWDS.
8. OPTIONAL: PERVIOUS SURFACING PER SW-11.
9. BIORETENTION SWALE PER SW-103 & SW-103 MAY BE USED IF REQUIRED TO MEET PERMIT REQUIREMENTS.

RELATED DETAILS AND RESOURCES

10. REFER TO SWDS-13 FOR STORMWATER PLANTER. FOR MINIMUM AREA SEE SWDS SECTION 4.0. CHECK DAM DETAILS SW-130 AND SW-131.
11. PLANTER WALL DETAIL SW-38.
12. INLET DETAILS SW-120, SW-121, AND SW-122.
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15. STORMWATER FACILITY CONSTRUCTION AND BSM REQUIREMENTS SEE CITY OF SALINAS SWDS APPENDIX C.

ENGINEERING & TRANSPORTATION DIVISION

PUBLIC WORKS DEPARTMENT

TITLE: **MINOR ARTERIAL**

CITY OF SALINAS

XXXX

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/22/15

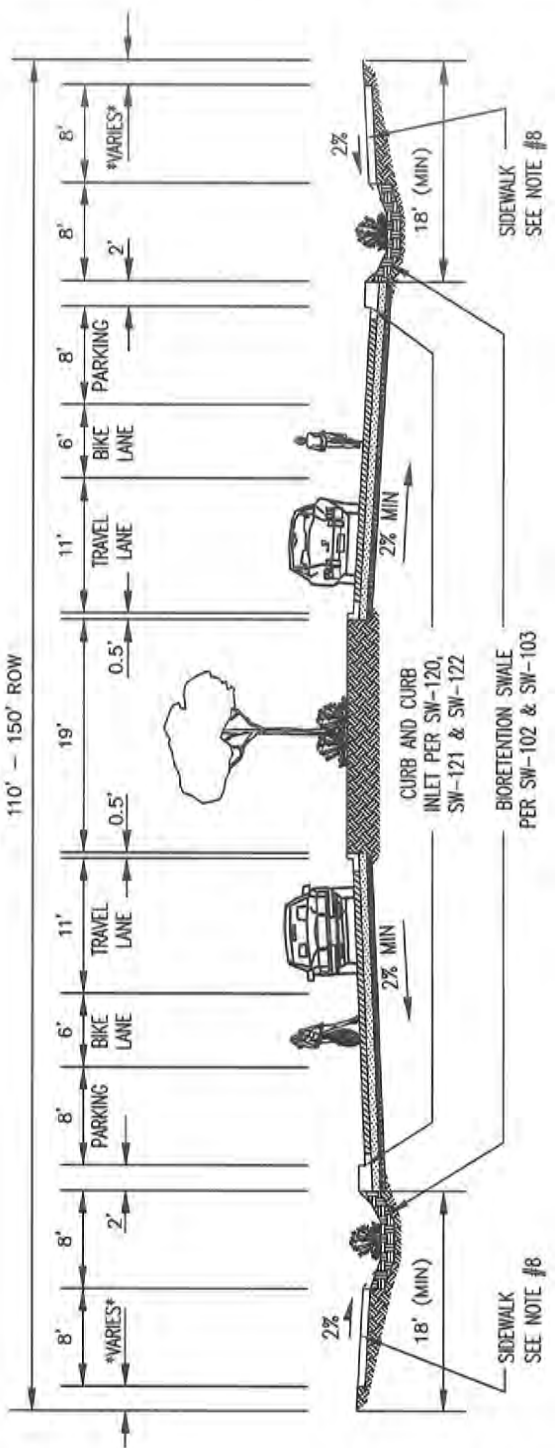
Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



STANDARD PLAN

1B

MINOR ARTERIAL
110' - 150' ROW



DESIGNER INFORMATION

1. ADAPT EXAMPLE TO YOUR ENGINEERED DESIGN.
2. PROVIDE BEGINNING AND ENDING STATIONS FOR EACH FACILITY. PROVIDE STATIONS AND/OR DIMENSIONS AND ELEVATIONS AT EACH INLET, OUTLET CHECK DAM, PLANTER CORNER, AND SIDEWALK NOTCH.
3. LONGITUDINAL SLOPE OF PLANTER MATCHES STREET.
4. SIDEWALK ELEVATIONS MUST BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET BEFORE SIDEWALK.
5. A MINIMUM 4 FOOT WIDE INTERIOR PLANTER IS REQUIRED FOR STREET TREES. MAXIMIZE PLANTER WIDTH.
6. EXISTING UTILITY LINES MUST BE SLEEVED OR RELOCATED.
7. PROPOSED UTILITY LINES TO BE LOCATED OUT OF FACILITY. AREA AND DEPTH OF FACILITY ARE BASED ON ENGINEERING CALCULATIONS AND RIGHT-OF-WAY CONSTRAINTS.
8. OPTIONAL: PERVIOUS SURFACING PER SW-11.

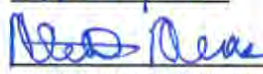
RELATED DETAILS AND RESOURCES

9. REFER TO DETAIL SW-100 OR SW-200 FOR STORMWATER PLANTER. FOR MINIMUM AREA SEE SALINAS SWDS SECTION 4.0. CHECK DAM DETAILS SW-130 AND SW-131.
10. PLANTER WALL DETAIL SW-110 OR SW-111.
11. INLET DETAILS SW-120, SW-121, AND SW-122.
12. SPECIAL REQUIREMENTS FOR WATER LINES, METERS, AND FIRE HYDRANTS DETAIL SW-41.
13. STORMWATER PLANTER PLANTING LIST DETAIL SW-160 & SW-161.
14. STORMWATER FACILITY CONSTRUCTION AND BSM REQUIREMENTS SEE CITY OF SALINAS SWDS APPENDIX D.

ENGINEERING & TRANSPORTATION DIVISION PUBLIC WORKS DEPARTMENT

TITLE: **MINOR ARTERIAL (EXISTING ROAD ALTERNATIVE)**

CITY OF SALINAS

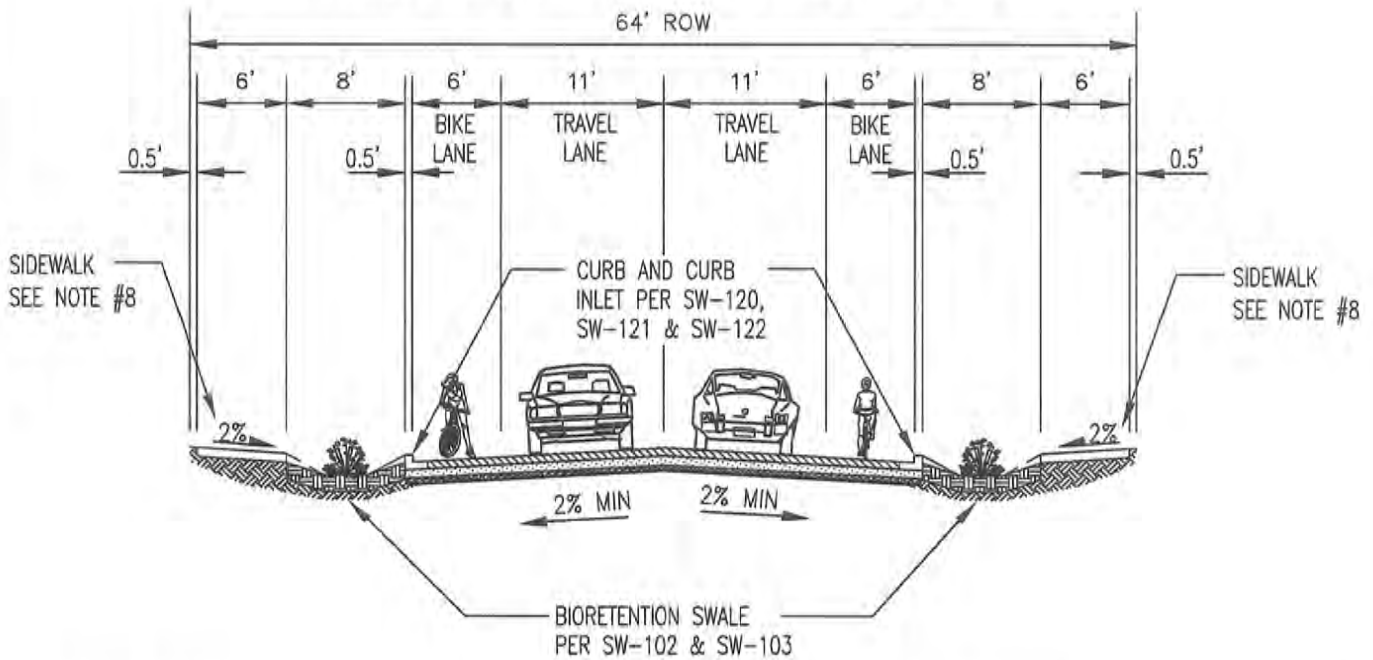
DESIGNED BY: STAFF	DATE <u>4/22/15</u>  ROBERT C. RUSSELL, CITY ENGINEER R.C.E. 42871, EXPIRES 3-31-2014
CADD BY: STAFF	
PROJECT MANAGER: WALTER GRANT, P.E.	



STANDARD PLAN

1C

COLLECTOR/CONNECTOR STREET TYPE III



DESIGNER INFORMATION

1. ADAPT EXAMPLE TO YOUR ENGINEERED DESIGN.
2. PROVIDE BEGINNING AND ENDING STATIONS FOR EACH FACILITY. PROVIDE STATIONS AND/OR DIMENSIONS AND ELEVATIONS AT EACH INLET, OUTLET CHECK DAM, PLANTER CORNER, AND SIDEWALK NOTCH.
3. LONGITUDINAL SLOPE OF PLANTER MATCHES STREET.
4. SIDEWALK ELEVATIONS MUST BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET BEFORE SIDEWALK.
5. A MINIMUM 4 FOOT WIDE INTERIOR PLANTER IS REQUIRED FOR STREET TREES. MAXIMIZE PLANTER WIDTH.
6. EXISTING UTILITY LINES MUST BE SLEEVED OR RELOCATED. PROPOSED UTILITY LINES TO BE LOCATED OUT OF FACILITY.
7. AREA AND DEPTH OF FACILITY ARE BASED ON ENGINEERING CALCULATIONS AND RIGHT-OF-WAY CONSTRAINTS.
8. OPTIONAL: PERVIOUS SURFACING PER SW-11.

RELATED DETAILS AND RESOURCES

9. REFER TO DETAIL SW-100 OR SW-200 FOR STORMWATER PLANTER. FOR MINIMUM AREA SEE SALINAS SWDS SECTION 4.0. CHECK DAM DETAILS SW-130 AND SW-131.
10. PLANTER WALL DETAIL SW-110 OR SW-111.
11. INLET DETAILS SW-120, SW-121, AND SW-122.
12. SPECIAL REQUIREMENTS FOR WATER LINES, METERS, AND FIRE HYDRANTS DETAIL SW-41.
13. STORMWATER PLANTER PLANTING LIST DETAIL SW-160 & SW-161.
14. STORMWATER FACILITY CONSTRUCTION AND BSM REQUIREMENTS SEE CITY OF SALINAS SWDS APPENDIX D.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **COLLECTOR / CONNECTOR STREET TYPE III**

CITY OF SALINAS

XXXX

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/22/15

[Signature]

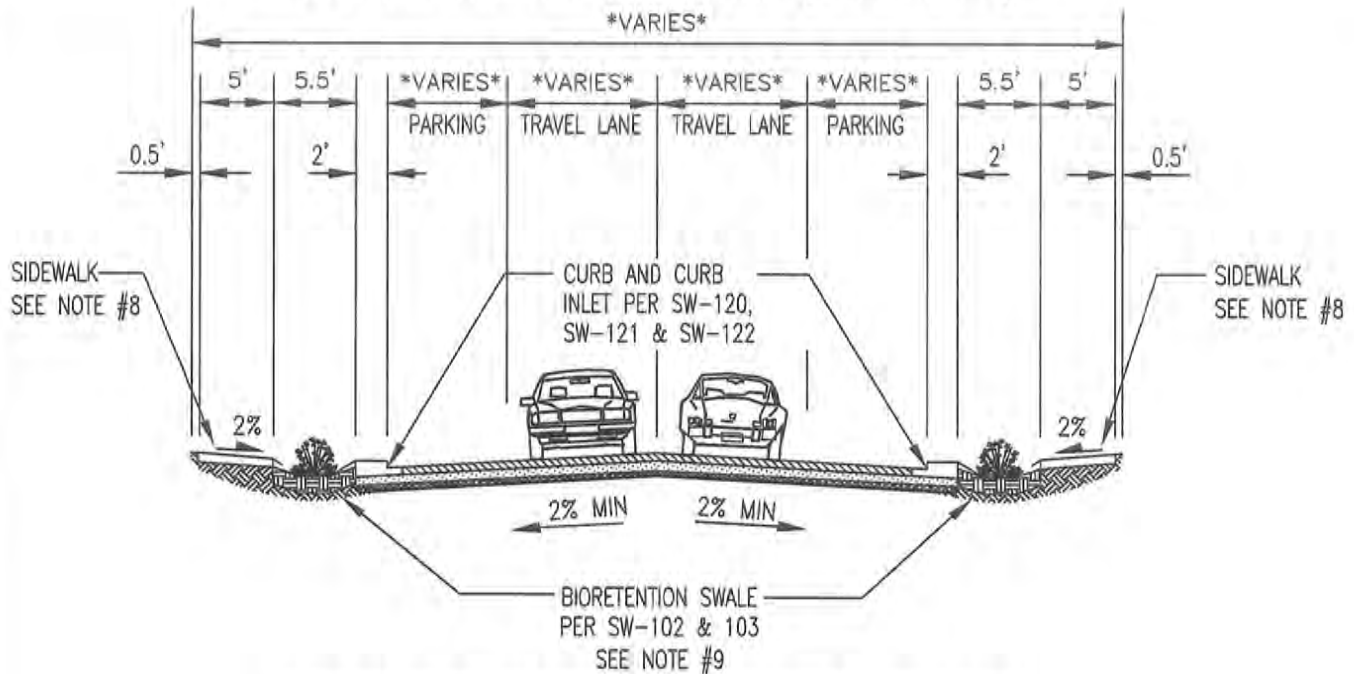
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



STANDARD PLAN

1D

LOCAL STREET RESIDENTIAL (ALL TYPES)



STREET TYPE	ROW	TRAVEL WAY	PARKING
LOCAL RESIDENTIAL I	58'	9'	7'
LOCAL RESIDENTIAL II	60'	9'	8'
LOCAL RESIDENTIAL III	62'	10'	8'

DESIGNER INFORMATION

1. ADAPT EXAMPLE TO YOUR ENGINEERED DESIGN.
2. PROVIDE BEGINNING AND ENDING STATIONS FOR EACH FACILITY. PROVIDE STATIONS AND/OR DIMENSIONS AND ELEVATIONS AT EACH INLET, OUTLET CHECK DAM, PLANTER CORNER, AND SIDEWALK NOTCH.
3. LONGITUDINAL SLOPE OF PLANTER MATCHES STREET.
4. SIDEWALK ELEVATIONS MUST BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET BEFORE SIDEWALK.
5. A MINIMUM 4 FOOT WIDE INTERIOR PLANTER IS REQUIRED FOR STREET TREES. MAXIMIZE PLANTER WIDTH. SEE SW-32.
6. EXISTING UTILITY LINES MUST BE SLEEVED OR RELOCATED. PROPOSED UTILITY LINES TO BE LOCATED OUT OF FACILITY.
7. AREA AND DEPTH OF FACILITY ARE BASED ON ENGINEERING CALCULATIONS AND RIGHT-OF-WAY CONSTRAINTS. SEE CITY OF SALINAS SWDS.
8. OPTIONAL: PERVIOUS SURFACING PER SW-11.
9. UTILIZE CELLULAR CONFINEMENT SYSTEMS (GEOCELLS) TO REINFORCE SIDE SLOPES IF DETAIL MAXIMUM SLOPES ARE EXCEEDED, AS APPROVED BY PROJECT GEOTECHNICAL ENGINEER.

RELATED DETAILS AND RESOURCES

10. REFER TO SWDS-13 FOR STORMWATER PLANTER. FOR MINIMUM AREA SEE SWDS SECTION 4.0. CHECK DAM DETAILS SW-130 AND SW-131.
11. PLANTER WALL DETAIL SW-38.
12. INLET DETAILS SW-120, SW-121, AND SW-122.
13. SPECIAL REQUIREMENTS FOR WATER LINES, METERS, AND FIRE HYDRANTS DETAIL SW-41.
14. PLANTER PLANTING TEMPLATES SW-40.
15. STORMWATER FACILITY CONSTRUCTION AND BSM REQUIREMENTS SEE CITY OF SALINAS SWDS APPENDIX C.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **LOCAL STREET RESIDENTIAL (ALL TYPES)**

CITY OF SALINAS

XXXX

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE

4/22/15

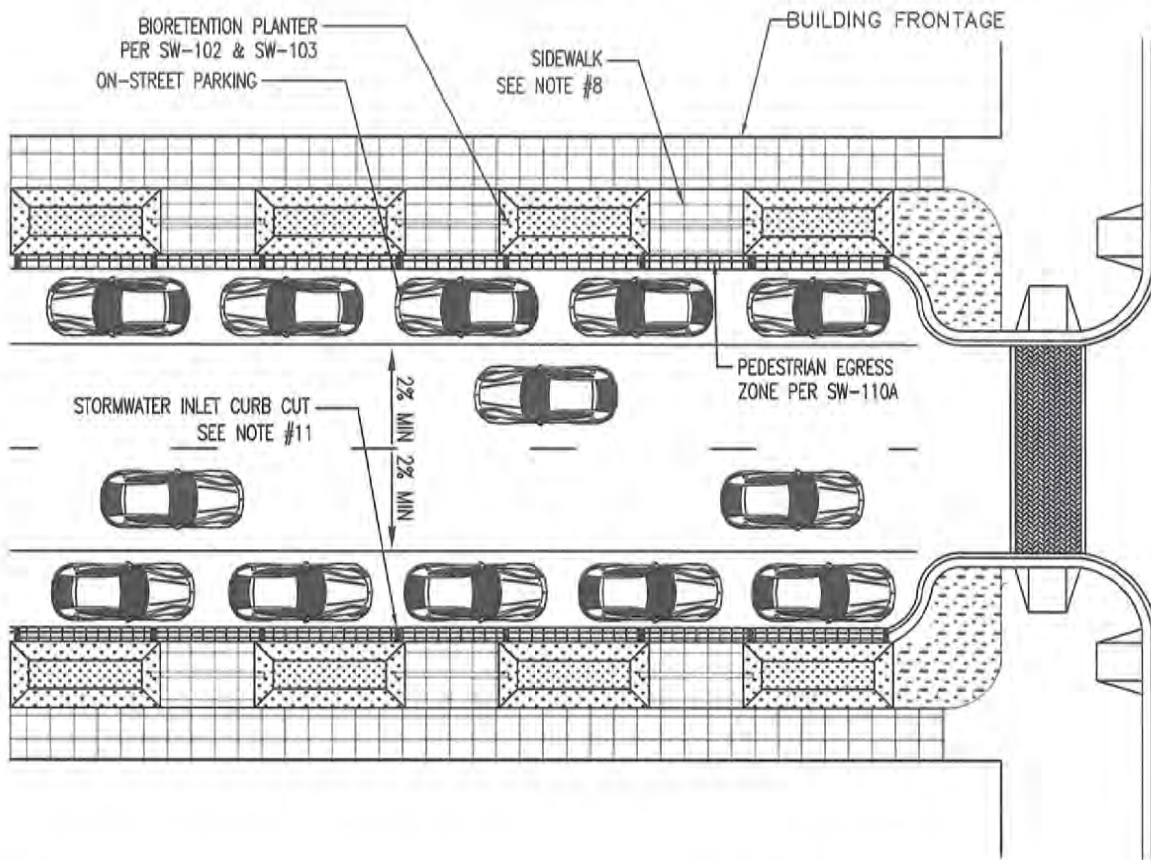
Robert C. Russell

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



STANDARD PLAN

1E



DESIGNER INFORMATION

1. ADAPT PLAN VIEW EXAMPLE TO YOUR ENGINEERED DESIGN.
2. PROVIDE BEGINNING AND ENDING STATIONS FOR EACH FACILITY. PROVIDE STATIONS AND/OR DIMENSIONS AND ELEVATIONS AT EACH INLET, OUTLET CHECK DAM, PLANTER CORNER, AND SIDEWALK NOTCH.
3. LONGITUDINAL SLOPE OF PLANTER MATCHES STREET.
4. SIDEWALK ELEVATIONS MUST BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET BEFORE SIDEWALK.
5. A MINIMUM 4 FOOT WIDE INTERIOR PLANTER IS REQUIRED FOR STREET TREES. MAXIMIZE PLANTER WIDTH. SEE SW-32.
6. EXISTING UTILITY LINES MUST BE SLEEVED OR RELOCATED. PROPOSED UTILITY LINES TO BE LOCATED OUT OF FACILITY.
7. AREA AND DEPTH OF FACILITY ARE BASED ON ENGINEERING CALCULATIONS AND RIGHT-OF-WAY CONSTRAINTS. SEE CITY OF SALINAS SWDS.
8. OPTIONAL: PERVIOUS SURFACING PER SW-11.

RELATED DETAILS AND RESOURCES

9. REFER TO SWDS-13 FOR STORMWATER PLANTER. FOR MINIMUM AREA SEE SWDS SECTION 4.0. CHECK DAM DETAILS SW-130 AND SW-131.
10. PLANTER WALL DETAIL SW-38.
11. INLET DETAILS SW-120, SW-121, AND SW-122.
12. SPECIAL REQUIREMENTS FOR WATER LINES, METERS, AND FIRE HYDRANTS DETAIL SW-41.
13. PLANTER PLANTING TEMPLATES SW-40.
14. STORMWATER FACILITY CONSTRUCTION AND BSM REQUIREMENTS SEE CITY OF SALINAS SWDS APPENDIX C.

PUBLIC WORKS DEPARTMENT
ENGINEERING & TRANSPORTATION DIVISION

TITLE: PLAN VIEW: LOCAL STREET COMMERCIAL (ALL TYPES)

CITY OF SALINAS

XXXX

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/22/15

Robert C. Russell

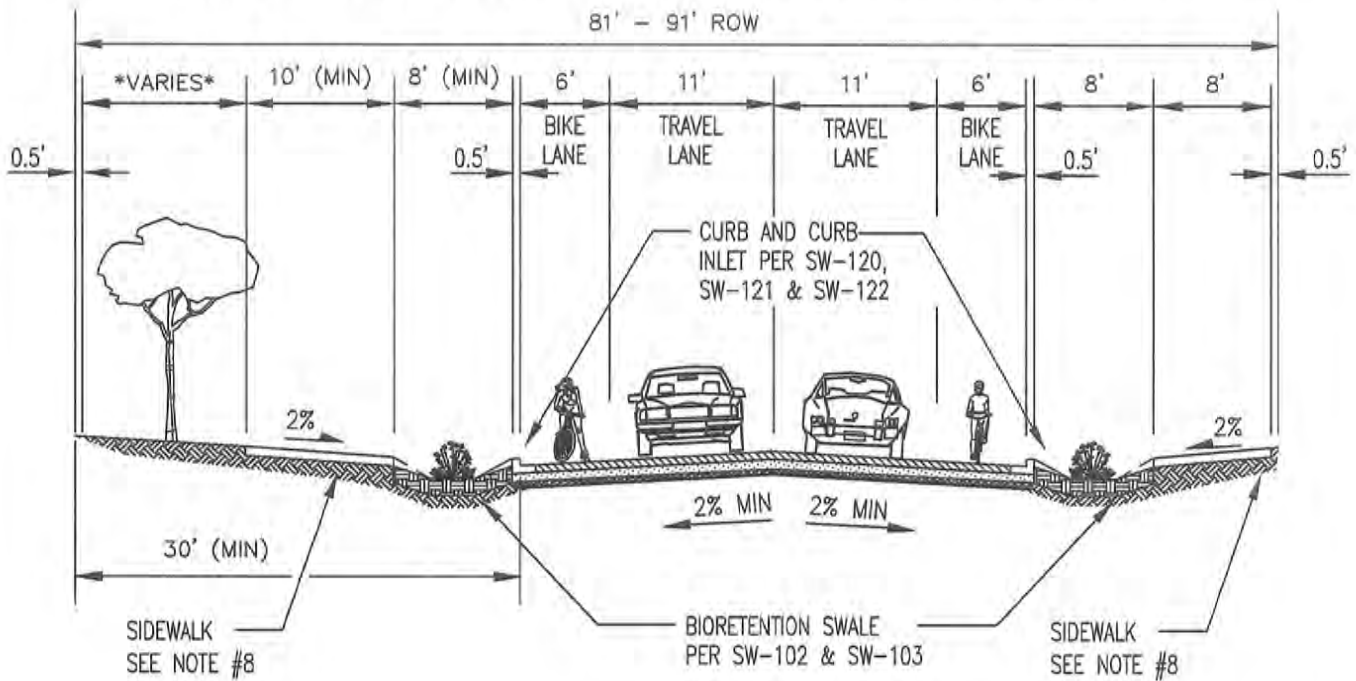
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



STANDARD PLAN

1E-1

(SOUTH SIDE) EAST/WEST COLLECTOR/CONNECTOR TYPE I



DESIGNER INFORMATION

1. ADAPT EXAMPLE TO YOUR ENGINEERED DESIGN.
2. PROVIDE BEGINNING AND ENDING STATIONS FOR EACH FACILITY. PROVIDE STATIONS AND/OR DIMENSIONS AND ELEVATIONS AT EACH INLET, OUTLET CHECK DAM, PLANTER CORNER, AND SIDEWALK NOTCH.
3. LONGITUDINAL SLOPE OF PLANTER MATCHES STREET.
4. SIDEWALK ELEVATIONS MUST BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET BEFORE SIDEWALK.
5. A MINIMUM 4 FOOT WIDE INTERIOR PLANTER IS REQUIRED FOR STREET TREES. MAXIMIZE PLANTER WIDTH.
6. EXISTING UTILITY LINES MUST BE SLEEVED OR RELOCATED. PROPOSED UTILITY LINES TO BE LOCATED OUT OF FACILITY.
7. AREA AND DEPTH OF FACILITY ARE BASED ON ENGINEERING CALCULATIONS AND RIGHT-OF-WAY CONSTRAINTS.
8. OPTIONAL: PERVIOUS SURFACING PER SW-11.

RELATED DETAILS AND RESOURCES

9. REFER TO DETAIL SW-100 OR SW-200 FOR STORMWATER PLANTER. FOR MINIMUM AREA SEE SALINAS SWDS SECTION 4.0. CHECK DAM DETAILS SW-130 AND SW-131.
10. PLANTER WALL DETAIL SW-110 OR SW-111.
11. INLET DETAILS SW-120, SW-121, AND SW-122.
12. SPECIAL REQUIREMENTS FOR WATER LINES, METERS, AND FIRE HYDRANTS DETAIL SW-41.
13. STORMWATER PLANTER PLANTING LIST DETAIL SW-160 & SW-161.
14. STORMWATER FACILITY CONSTRUCTION AND BSM REQUIREMENTS SEE CITY OF SALINAS SWDS APPENDIX D.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **(SOUTH SIDE) EAST | WEST COLLECTOR | CONNECTOR TYPE I** CITY OF SALINAS

XXXX

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

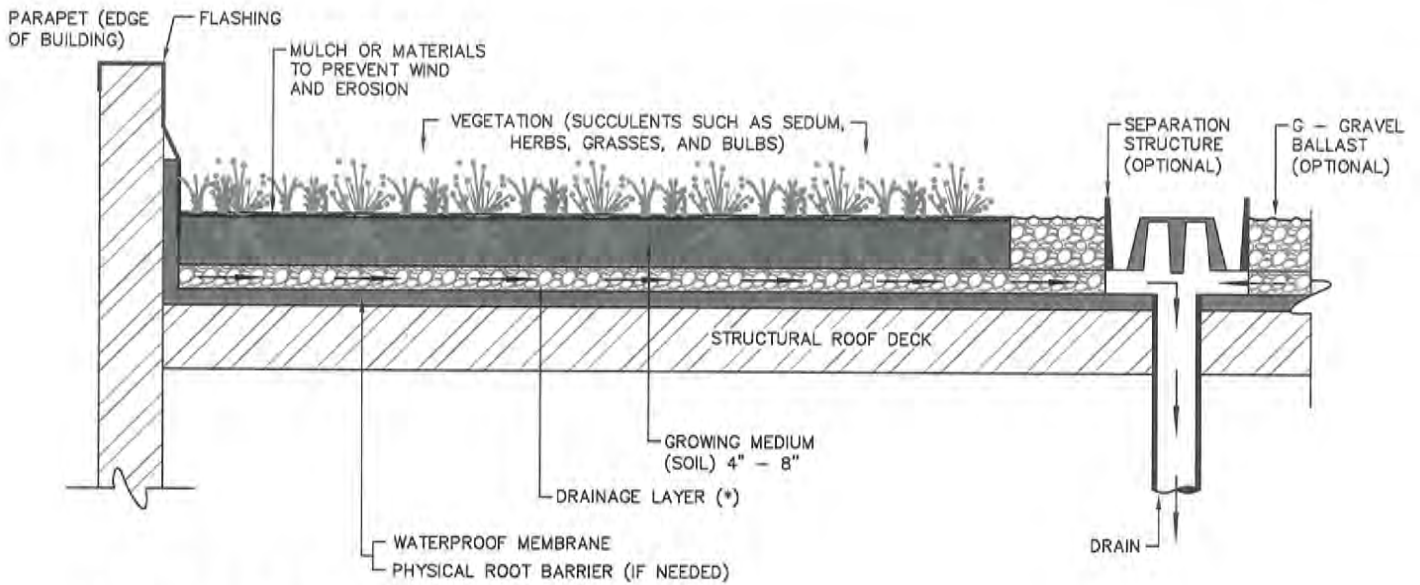
DATE 4/22/15

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



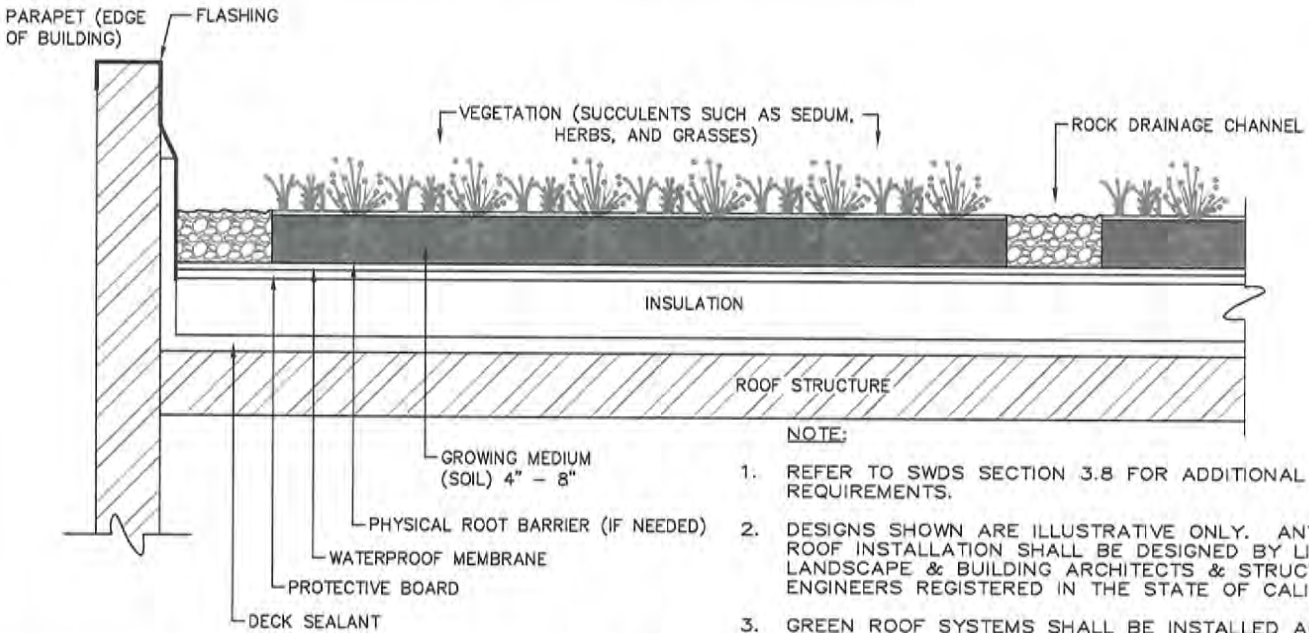
STANDARD PLAN

1F



* SEE OTHER DETAIL BELOW FOR OPTION.

GREEN ROOF WITH DRAINAGE LAYER



NOTE:

1. REFER TO SWDS SECTION 3.8 FOR ADDITIONAL REQUIREMENTS.
2. DESIGNS SHOWN ARE ILLUSTRATIVE ONLY. ANY GREEN ROOF INSTALLATION SHALL BE DESIGNED BY LICENSED LANDSCAPE & BUILDING ARCHITECTS & STRUCTURAL ENGINEERS REGISTERED IN THE STATE OF CALIFORNIA.
3. GREEN ROOF SYSTEMS SHALL BE INSTALLED ACCORDING TO MANUFACTURERS RECOMMENDATIONS.

GREEN ROOF WITH DRAINAGE CHANNELS

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **GREEN ROOF**

CITY OF SALINAS

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/3/14

Robert C. Russell

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2016



STANDARD PLAN No.
**SW
10**

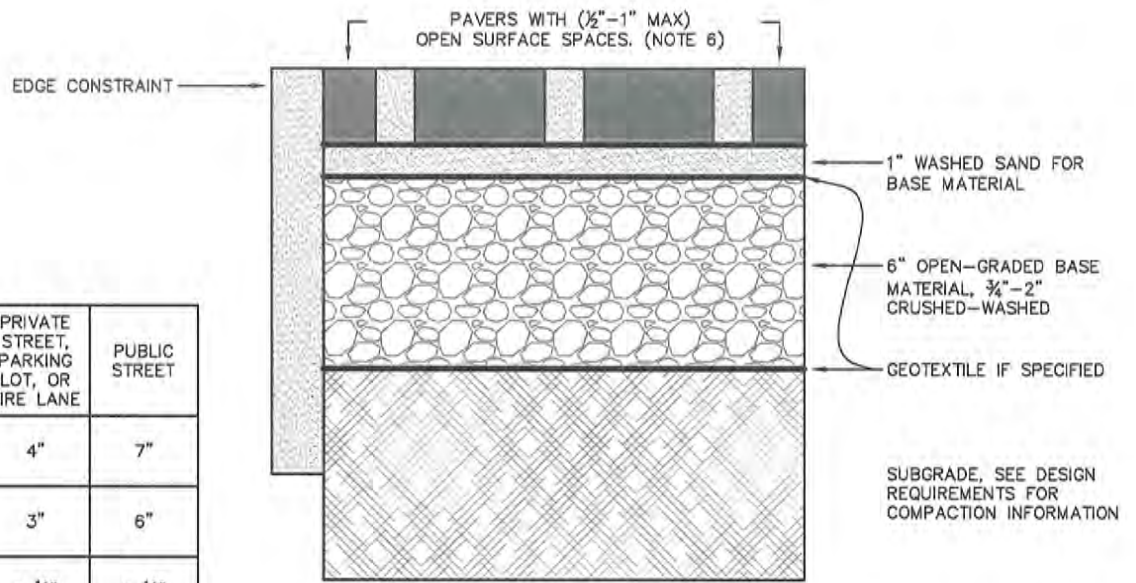
	RESIDENTIAL DRIVEWAY OR PEDESTRIAN ONLY	PRIVATE STREET, PARKING LOT, OR FIRE LANE	PUBLIC STREET
CONCRETE	4"	4"	7"
ASPHALT	2 1/2"	3"	6"
PAVERS	2 3/8"	3 1/8"	3 1/8"
ENGINEERING REQ'D	NO	YES	YES
COMPACTION REQ'D	NO	YES	95%

EXHIBIT 2-8

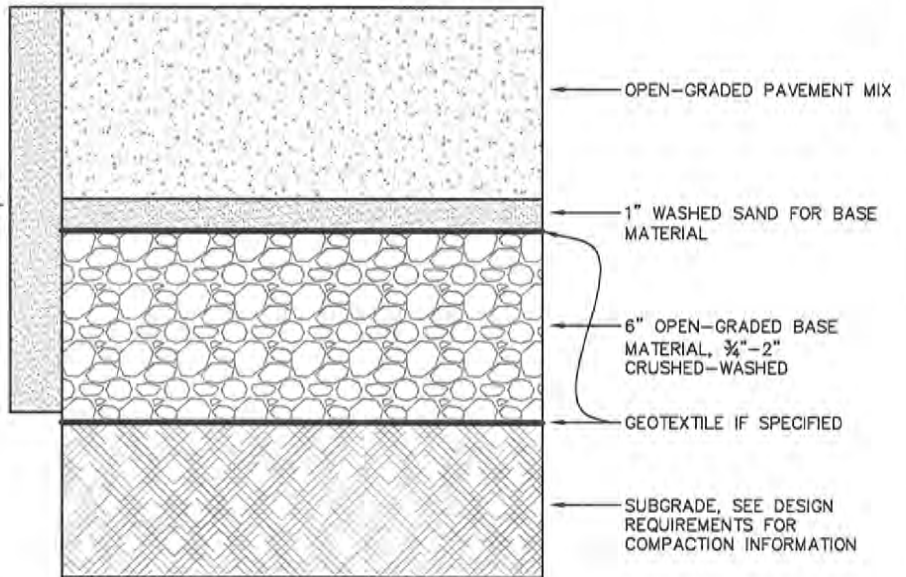
PERVIOUS PAVEMENT REQUIREMENTS FOR TOP LIFT DEPTH, ENGINEERING, AND COMPACTION.

NOTE:

1. PROVIDE SUBDRAIN WHERE SUBGRADE DESIGN INFILTRATION RATE IS LESS THAN 0.3"/HR.
2. DESIGNS PROVIDED SHALL BE SIGNED & STAMPED BY A GEOTECHNICAL &/OR CIVIL ENGINEER REGISTERED IN THE STATE OF CALIFORNIA.
3. REFER TO SWDS SECTION 3.5 FOR ADDITIONAL REQUIREMENTS.
4. GEOTEXTILE USE AND SELECTION SHALL BE DETERMINED BY A GEOTECHNICAL ENGINEER.
5. UNDER DRAIN AND ORIFICE CONFIGURATION SHALL BE BASED ON SWDS SECTION 4.0.
6. ADA COMPLIANCE REQUIREMENT # 302.3 MAY APPLY



PERMEABLE CONCRETE BLOCK OR "PAVERS" SYSTEMS



PERVIOUS (OPEN GRADED) CONCRETE AND ASPHALT SYSTEMS

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **PERVIOUS PAVEMENT**

CITY OF SALINAS

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

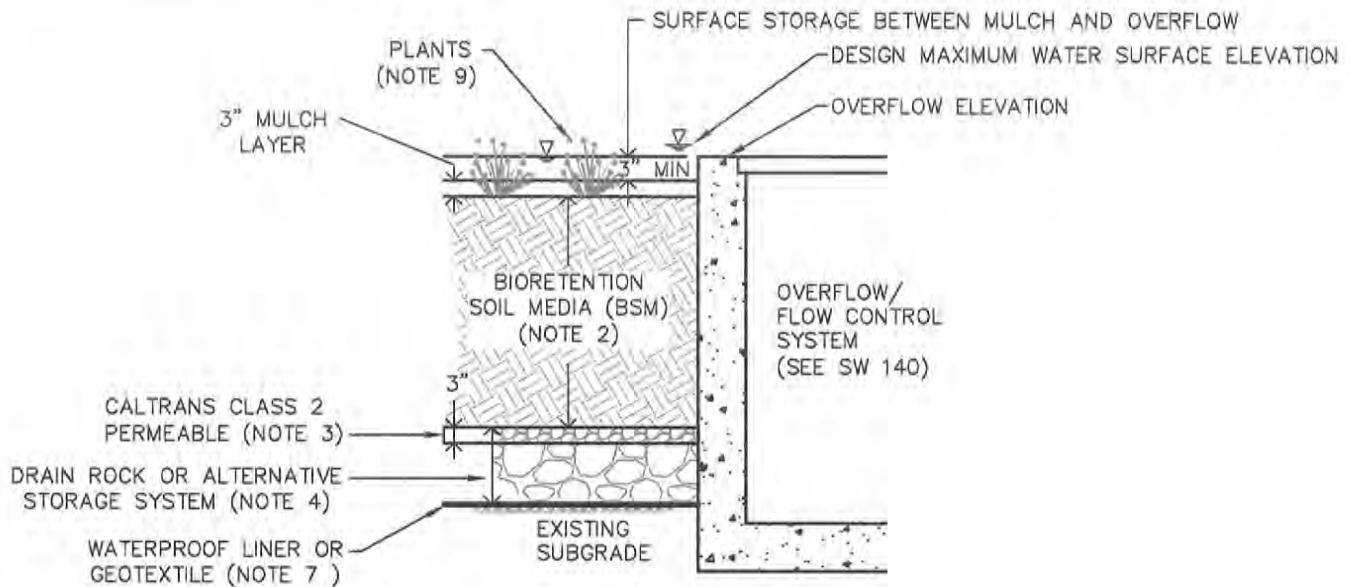
DATE 4/8/14

Robert C. Russell

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2016



STANDARD PLAN No.
**SW
11**



1. TYPICAL BIOFILTRATION SECTION APPLIES TO BIOFILTRATION BASINS AND STORMWATER PLANTERS THAT INCLUDE UNDERDRAINS, AND BIORETENTION BASINS THAT DO NOT INCLUDE UNDERDRAINS.
2. BSM THICKNESS SHALL BE 24 INCHES EXCEPT THAT A REDUCED THICKNESS OF 18 INCHES IS ALLOWED WHERE THE BSM IS USED TO FOR PRETREATMENT FOR INFILTRATION AND THE SYSTEM IS DESIGNED TO INFILTRATE 95% OF RAINFALL. SEE SWDS APPENDIX D FOR BSM SPECIFICATIONS.
3. A 3" THICK LAYER OF CALTRANS CLASS 2 PERMEABLE MATERIAL SHALL BE USED BELOW THE BSM UNLESS AN ALTERNATIVE FILTER SYSTEM IS RECOMMENDED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY ENGINEER.
4. TYPICAL MINIMUM THICKNESS OF DRAIN ROCK (INCLUDING CLASS 2 PERMEABLE MATERIAL) IS 12 INCHES. ALTERNATIVE CONFIGURATIONS THAT PROVIDE THE REQUIRED STORAGE VOLUME MAY BE USED.
5. EXCEPT WHERE INFILTRATION HAS BEEN ESTABLISHED AS BEING INFEASIBLE, BIOFILTRATION FACILITIES SHALL BE DESIGNED TO MEET INFILTRATION BMP DESIGN REQUIREMENTS IN SWDS SECTION 3.4.
6. BIOFILTRATION BMPS SHALL BE DESIGNED TO MEET THE REQUIREMENTS OF SWDS SECTION 3.6.
7. WATERPROOF LINER (30 MIL PVC OR EQUIVALENT) SHALL BE USED ONLY WHERE INFILTRATION HAS BEEN ESTABLISHED AS BEING INFEASIBLE. GEOTEXTILE, IF REQUIRED, SHALL BE PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
8. PROTECT AREAS DESIGNATED FOR INFILTRATION TO MINIMIZE COMPACTION TO THE EXTENT FEASIBLE. SCARIFY AREAS OF INCIDENTAL COMPACTION OF SUBGRADE TO PROMOTE INFILTRATION BEFORE BACKFILLING.

9. FOR A LIST OF ACCEPTABLE PLANTS, SEE SWDS APPENDIX D. PLANTING BELOW OVERFLOW ELEVATION SHALL BE CONSIDERED LOW ZONE AND PLANTING BETWEEN THE OVERFLOW ELEVATION AND THE DESIGN MAXIMUM WATER SURFACE ELEVATION SHALL BE CONSIDERED MID ZONE. NUMBER OF PLANTINGS PER 100 SF SHALL BE:
 - a. LOW ZONE: 115 HERBACEOUS PLANTS OF 100 HERBACEOUS PLANTS AND 4 SMALL SHRUBS.
 - b. MID ZONE: 1 TREE AND 3 LARGE SHRUBS/SMALL TREES AND 4 SMALL SHRUBS AND 1140 GROUNDCOVER PLANTS.
10. USE APPROPRIATE SPLASH BLOCKS AND/OR ROCK TO DISSIPATE ENERGY AT INFLOW LOCATIONS.

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **BIO FILTRATION SECTION**

CITY OF SALINAS

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/8/14

Robert C. Russell

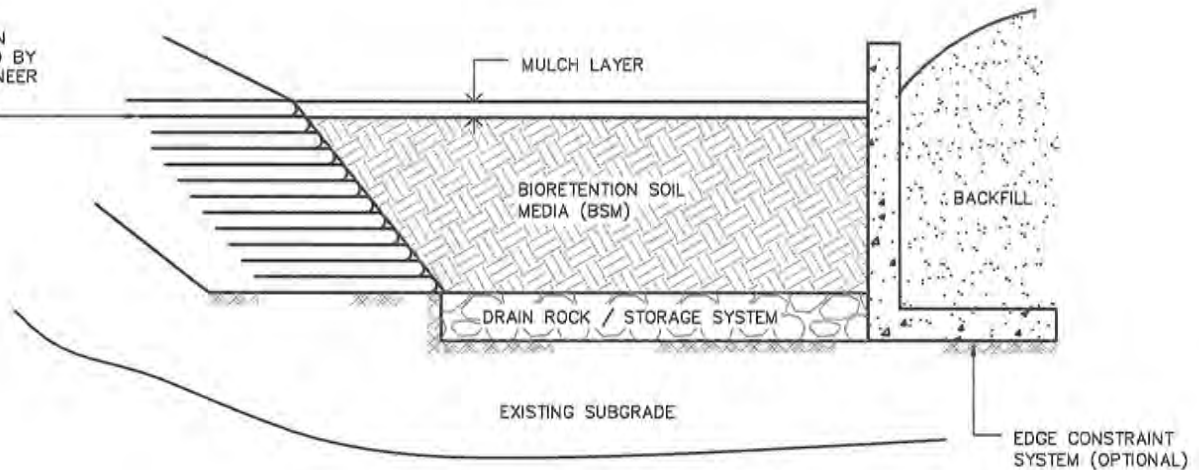
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2016



STANDARD PLAN No.

**SW
12**

SLOPE STABILIZATION SYSTEM IF REQUIRED BY GEOTECHNICAL ENGINEER SHOWN: GEOTEXTILE REINFORCED SLOPE



NOTE:

1. ALTERNATE BIORETENTION CONFIGURATION APPLIES TO BIORETENTION BASINS WITH AREA CONSTRAINED CONFIGURATIONS.
2. BSM THICKNESS SHALL BE 24 INCHES EXCEPT THAT A REDUCED THICKNESS OF 18 INCHES IS ALLOWED WHERE THE BSM IS USED TO FOR PRETREATMENT FOR INFILTRATION AND THE SYSTEM IS DESIGNED TO INFILTRATE 95% OF RAINFALL. SEE SWDS APPENDIX D FOR BSM SPECIFICATIONS.
3. A 3" THICK LAYER OF CALTRANS CLASS 2 PERMEABLE MATERIAL SHALL BE USED BELOW THE BSM UNLESS AN ALTERNATIVE FILTER SYSTEM IS RECOMMENDED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY ENGINEER.
4. TYPICAL MINIMUM THICKNESS OF DRAIN ROCK (INCLUDING CLASS 2 PERMEABLE MATERIAL) IS 12 INCHES. ALTERNATIVE CONFIGURATIONS THAT PROVIDE THE REQUIRED STORAGE VOLUME MAY BE USED.
5. EXCEPT WHERE INFILTRATION HAS BEEN ESTABLISHED AS BEING INFEASIBLE, BIOFILTRATION FACILITIES SHALL BE DESIGNED TO MEET INFILTRATION BMP DESIGN REQUIREMENTS IN SWDS SECTION 3.4.
6. BIOFILTRATION BMPS SHALL BE DESIGNED TO MEET THE REQUIREMENTS OF SWDS SECTION 3.6.
7. WATERPROOF LINER (30 MIL PVC OR EQUIVALENT) SHALL BE USED ONLY WHERE INFILTRATION HAS BEEN ESTABLISHED AS BEING INFEASIBLE. GEOTEXTILE, IF REQUIRED, SHALL BE PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. (SEE SW 150)
8. PROTECT AREAS DESIGNATED FOR INFILTRATION TO MINIMIZE COMPACTION TO THE EXTENT FEASIBLE. SCARIFY AREAS OF INCIDENTAL COMPACTION OF SUBGRADE TO PROMOTE INFILTRATION BEFORE BACKFILLING.
9. FOR A LIST OF ACCEPTABLE PLANTS, SEE SWDS APPENDIX D. PLANTING BELOW OVERFLOW ELEVATION SHALL BE CONSIDERED LOW ZONE AND PLANTING BETWEEN OVERFLOW ELEVATION AND THE DESIGN MAXIMUM WATER SURFACE ELEVATION SHALL BE CONSIDERED MID ZONE. NUMBER OF PLANTINGS PER 100 SF SHALL BE:
 - a. LOW ZONE: 115 HERBACEOUS PLANTS OF 100 HERBACEOUS PLANTS AND 4 SMALL SHRUBS.
 - b. MID ZONE: 1 TREE AND 3 LARGE SHRUBS/SMALL TREES AND 4 SMALL SHRUBS AND 140 GROUND COVER PLANTS.
10. USE APPROPRIATE SPLASH BLOCKS AND/OR ROCK TO DISSIPATE ENERGY AT INFLOW LOCATIONS.

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **ALTERNATIVE BIOFILTRATION SECTION**

CITY OF SALINAS

STANDARD PLAN No.

**SW
12B**

DESIGNED BY:
STAFF

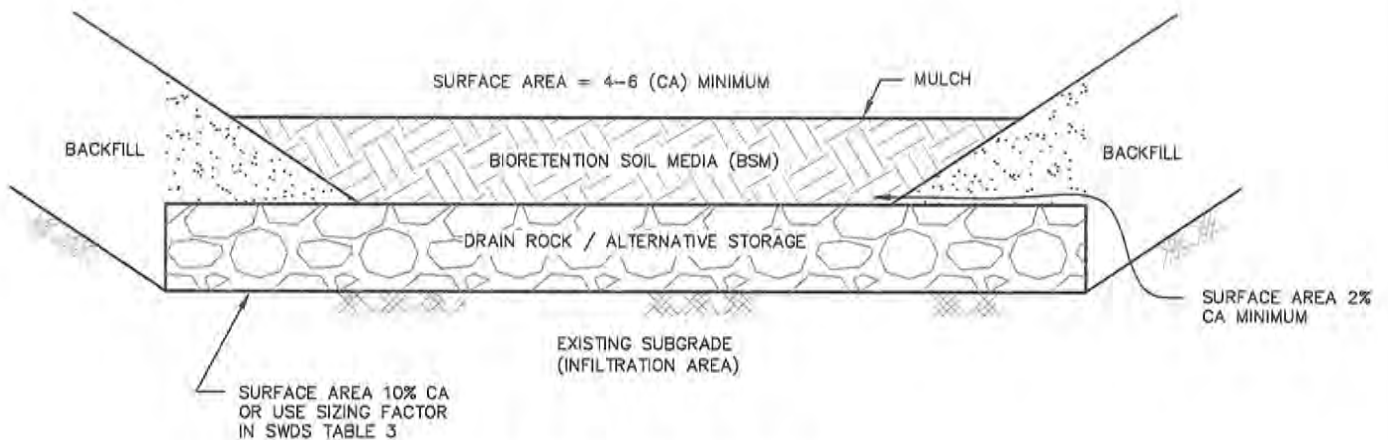
CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/3/14

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014





BIOFILTRATION SECTION

NOTE:

1. ALTERNATE BIORETENTION CONFIGURATION APPLIES TO BIORETENTION BASINS WITH AREA CONSTRAINED CONFIGURATIONS.
2. BSM THICKNESS SHALL BE 24 INCHES EXCEPT THAT A REDUCED THICKNESS OF 18 INCHES IS ALLOWED WHERE THE BSM IS USED TO FOR PRETREATMENT FOR INFILTRATION AND THE SYSTEM IS DESIGNED TO INFILTRATE 95% OF RAINFALL. SEE SWDS APPENDIX D FOR BSM SPECIFICATIONS.
3. A 3" THICK LAYER OF CALTRANS CLASS 2 PERMEABLE MATERIAL SHALL BE USED BELOW THE BSM UNLESS AN ALTERNATIVE FILTER SYSTEM IS RECOMMENDED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY ENGINEER.
4. TYPICAL MINIMUM THICKNESS OF DRAIN ROCK (INCLUDING CLASS 2 PERMEABLE MATERIAL) IS 12 INCHES. THE MINIMUM SURFACE AREA OF BOTTOM OF THE DRAIN ROCK LAYER SHALL BE 10% OF THE EFFECTIVE IMPERVIOUS AREA OR USE SIZING FACTOR IN SWDS TABLE 3. ALTERNATIVE CONFIGURATIONS THAT PROVIDE THE REQUIRED STORAGE VOLUME MAY BE USED.
5. EXCEPT WHERE INFILTRATION HAS BEEN ESTABLISHED AS BEING INFEASIBLE, BIOFILTRATION FACILITIES SHALL BE DESIGNED TO MEET INFILTRATION BMP DESIGN REQUIREMENTS IN SWDS SECTION 3.4.
6. BIOFILTRATION BMPS SHALL BE DESIGNED TO MEET THE REQUIREMENTS OF SWDS SECTION 3.6.
7. WATERPROOF LINER (30 MIL PVC OR EQUIVALENT) SHALL BE USED ONLY WHERE INFILTRATION HAS BEEN ESTABLISHED AS BEING INFEASIBLE. GEOTEXTILE, IF REQUIRED, SHALL BE PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. (SEE SW 150)
8. PROTECT AREAS DESIGNATED FOR INFILTRATION TO MINIMIZE COMPACTION TO THE EXTENT FEASIBLE. SCARIFY AREAS OF INCIDENTAL COMPACTION OF SUBGRADE TO PROMOTE INFILTRATION BEFORE BACKFILLING.
9. FOR A LIST OF ACCEPTABLE PLANTS, SEE SWDS APPENDIX D. PLANTING BELOW OVERFLOW ELEVATION SHALL BE CONSIDERED LOW ZONE AND PLANTING BETWEEN OVERFLOW ELEVATION AND THE DESIGN MAXIMUM WATER SURFACE ELEVATION SHALL BE CONSIDERED MID ZONE. NUMBER OF PLANTINGS PER 100 SF SHALL BE:
 - a. LOW ZONE: 115 HERBACEOUS PLANTS OF 100 HERBACEOUS PLANTS AND 4 SMALL SHRUBS.
 - b. MID ZONE: 1 TREE AND 3 LARGE SHRUBS/SMALL TREES AND 4 SMALL SHRUBS AND 140 GROUNDCOVER PLANTS.
10. USE APPROPRIATE SPLASH BLOCKS AND/OR ROCK TO DISSIPATE ENERGY AT INFLOW LOCATIONS.

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: ALTERNATIVE BIOFILTRATION SECTION

CITY OF SALINAS

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

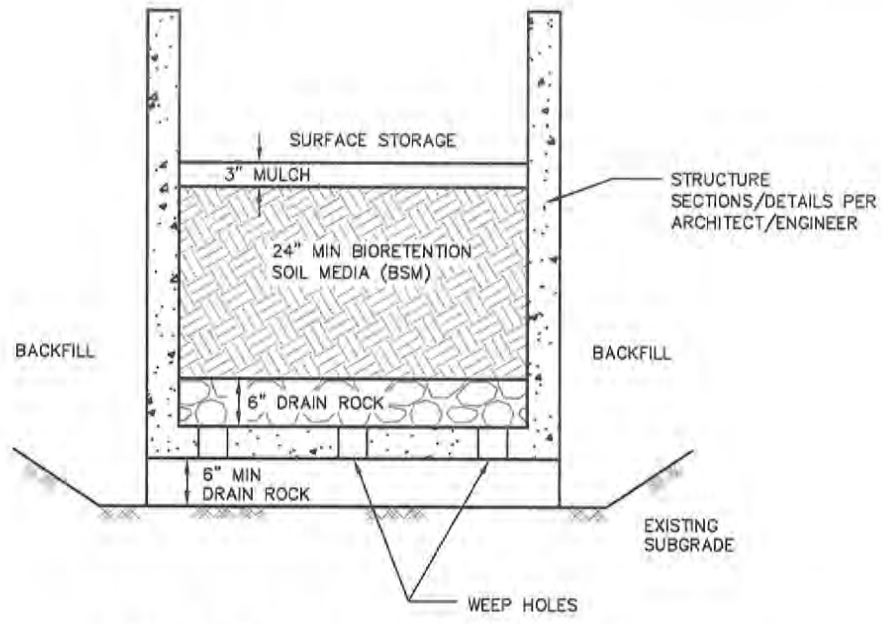
DATE 4/8/14

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



STANDARD PLAN No.

**SW
12C**



ALTERNATIVE BIOFILTRATION SECTION

NOTE:

1. ALTERNATE BIORETENTION CONFIGURATION APPLIES TO BIORETENTION BASINS WITH AREA CONSTRAINED CONFIGURATIONS. THIS CONFIGURATION CAN ALSO BE USED AS AN ALTERNATIVE STORMWATER PLANTER CONFIGURATION.
2. SUPPORT WALLS CAN BE CONSTRUCTED WITH CONCRETE. WEEP HOLES SHOULD BE INCLUDED AT THE BOTTOM OF THE STRUCTURE TO ALLOW WATER TO INFILTRATE.
3. BSM THICKNESS SHALL BE 24 INCHES EXCEPT THAT A REDUCED THICKNESS OF 18 INCHES IS ALLOWED WHERE THE BSM IS USED TO FOR PRETREATMENT FOR INFILTRATION AND THE SYSTEM IS DESIGNED TO INFILTRATE 95% OF RAINFALL. SEE SWDS APPENDIX D FOR BSM SPECIFICATIONS.
4. A 3" THICK LAYER OF CALTRANS CLASS 2 PERMEABLE MATERIAL SHALL BE USED BELOW THE BSM UNLESS AN ALTERNATIVE FILTER SYSTEM IS RECOMMENDED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY ENGINEER.
5. TYPICAL MINIMUM THICKNESS OF DRAIN ROCK (INCLUDING CLASS 2 PERMEABLE MATERIAL) IS 12 INCHES. THE DRAIN ROCK SECTION CAN BE SEPARATED INTO TWO SECTIONS WITH 6 INCHES BENEATH THE CONCRETE HOUSING AND 6 INCHES WITHIN THE CONCRETE SUPPORTS. ALTERNATIVE CONFIGURATIONS THAT PROVIDE THE REQUIRED STORAGE VOLUME MAY BE USED.
6. EXCEPT WHERE INFILTRATION HAS BEEN ESTABLISHED AS BEING INFEASIBLE, BIOFILTRATION FACILITIES SHALL BE DESIGNED TO MEET INFILTRATION BMP DESIGN REQUIREMENTS IN SWDS SECTION 3.4.
7. BIOFILTRATION BMPs SHALL BE DESIGNED TO MEET THE REQUIREMENTS OF SWDS SECTION 3.6.
8. WATERPROOF LINER (30 MIL PVC OR EQUIVALENT) SHALL BE USED ONLY WHERE INFILTRATION HAS BEEN ESTABLISHED AS BEING INFEASIBLE. GEOTEXTILE, IF REQUIRED, SHALL BE PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. (SEE SW 150)
9. PROTECT AREAS DESIGNATED FOR INFILTRATION TO MINIMIZE COMPACTION TO THE EXTENT FEASIBLE. SCARIFY AREAS OF INCIDENTAL COMPACTION OF SUBGRADE TO PROMOTE INFILTRATION BEFORE BACKFILLING.
10. FOR A LIST OF ACCEPTABLE PLANTS, SEE SWDS APPENDIX D. PLANTING BELOW OVERFLOW ELEVATION SHALL BE CONSIDERED LOW ZONE AND PLANTING BETWEEN OVERFLOW ELEVATION AND THE DESIGN MAXIMUM WATER SURFACE ELEVATION SHALL BE CONSIDERED MID ZONE. NUMBER OF PLANTINGS PER 100 SF SHALL BE:
 - a. LOW ZONE: 115 HERBACEOUS PLANTS OF 100 HERBACEOUS PLANTS AND 4 SMALL SHRUBS.
 - b. MID ZONE: 1 TREE AND 3 LARGE SHRUBS/SMALL TREES AND 4 SMALL SHRUBS AND 140 GROUNDCOVER PLANTS.
11. USE APPROPRIATE SPLASH BLOCKS AND/OR ROCK TO DISSIPATE ENERGY AT INFLOW LOCATIONS.

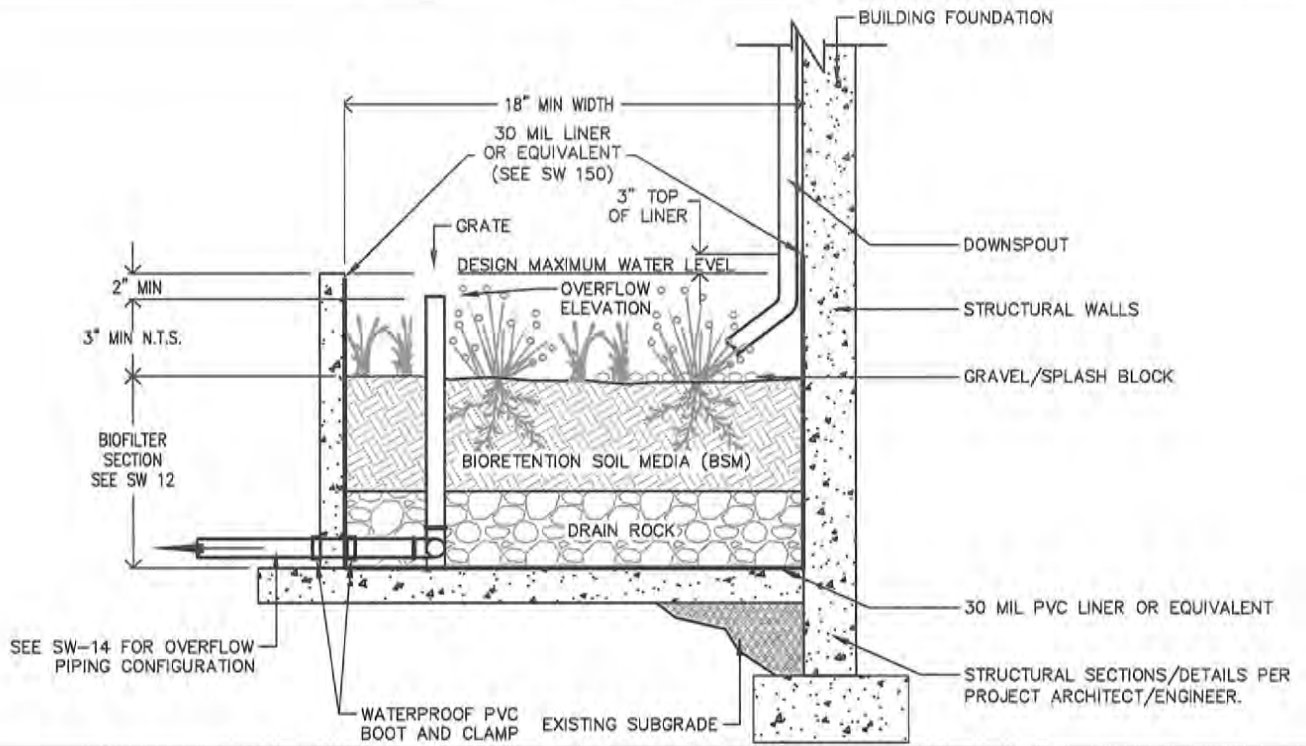
- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT
ENGINEERING & TRANSPORTATION DIVISION

TITLE: **ALTERNATIVE BIOFILTRATION SECTION** CITY OF SALINAS

DESIGNED BY: STAFF	DATE <u>4/8/14</u>	
CADD BY: STAFF	<u>Robert C. Russell</u>	
PROJECT MANAGER: WALTER GRANT, P.E.	ROBERT C. RUSSELL, CITY ENGINEER R.C.E. 42871, EXPIRES 3-31-2014	

STANDARD PLAN No.
SW
12D



1. DIMENSIONS:
 - a. WIDTH OF PLANTER: 18" MINIMUM.
 - b. MINIMUM AREA: SEE SWDS SECTION 4.0
2. OVERFLOW:
 - a. OVERFLOW REQUIRED.
 - b. INLET ELEVATION MUST ALLOW FOR 2" OF FREEBOARD, MINIMUM. GREATER FREEBOARD MAY BE NEEDED FOR TRIBUTARY AREA GREATER THAN 5000 SQ. FT.
3. PLANTER WALLS:
 - a. MATERIAL SHALL BE STONE, BRICK, CONCRETE, WOOD, OR OTHER DURABLE MATERIAL (NO CHEMICALLY TREATED WOOD).
 - b. CONCRETE, BRICK, OR STONE WALLS SHALL BE INCLUDED ON FOUNDATION PLANS.
 - c. SEPARATE PRE-CAST UNITS MAY BE SUBSTITUTED FOR POURED IN PLACE.
4. WATERPROOF LINER: SHALL BE 30 MIL PVC OR EQUIVALENT.
5. USE APPROPRIATE SPLASH BLOCKS AND/OR ROCK TO DISSIPATE ENERGY AT INFLOW LOCATIONS
6. REFER TO SWDS SECTION 3.6 FOR ADDITIONAL DETAILS.

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **STORM WATER PLANTER**

CITY OF SALINAS

STANDARD PLAN No.

**SW
13**

DESIGNED BY:
STAFF

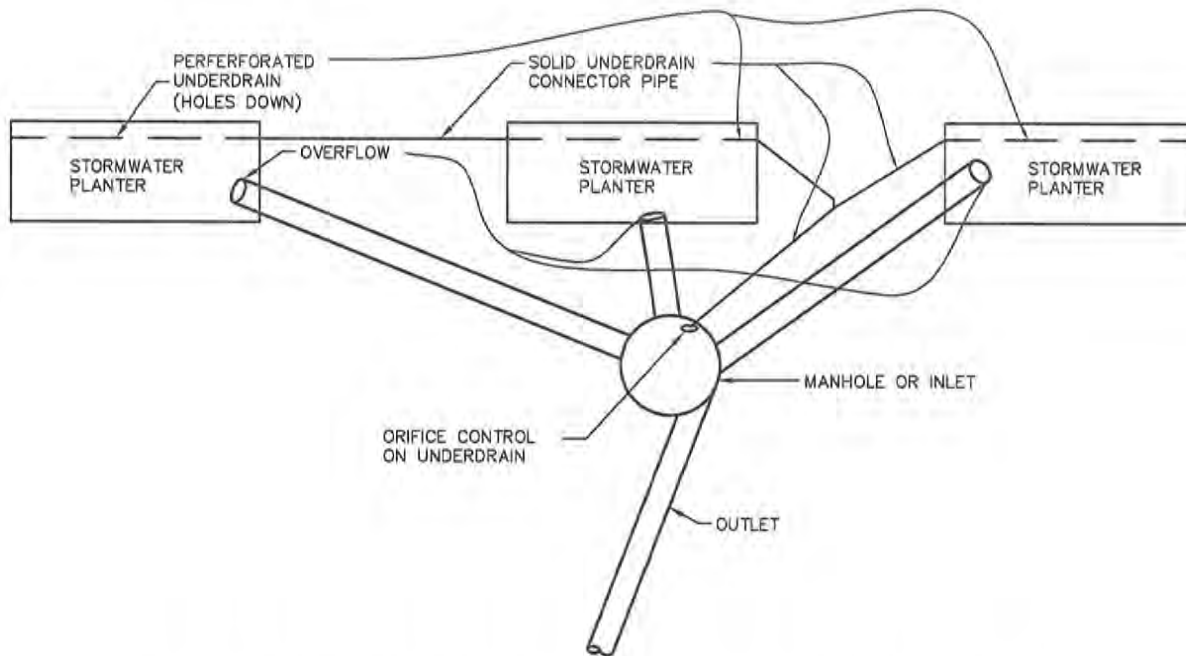
CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/18/14

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014





SMALL BIOFILTRATION BASINS/STORMWATER PLANTERS

NOTE:

1. UNDERDRAINS REQUIRE ORIFICE FLOW CONTROL. REFER TO SWDS SECTION 4.0 FOR ORIFICE SIZING PROCEDURES. (ALSO SEE THRESHOLD DETERMINATION AND BMP SIZING SPREADSHEET AVAILABLE FROM THE CITY.)
2. DO NOT ROUTE OVERFLOWS THROUGH ORIFICES TO PREVENT CLOGGING.
3. REFER TO SWDS SECTION 4.0 FOR REQUIRED STORAGE VOLUMES BELOW ORIFICE AND OVERFLOW.
4. PLACE BOTTOM OF INLET OR MANHOLE WITH ORIFICE AT LEAST 4 INCHES BELOW THE BOTTOM OF THE ORIFICE TO MINIMIZE CLOGGING AND TO FACILITATE MAINTENANCE.
5. PIPING SHALL BE MINIMUM ABS OR PVC SCH. 40 3" PIPE FOR DRAINAGE AREAS UP TO 1,500 SQ FT, 4" PIPE FOR DRAINAGE AREAS UP TO 5,000 SQ FT. CALCULATIONS FOR LARGER AREAS SHALL BE PROVIDED TO DEMONSTRATE ADEQUACY OF PIPE SIZES.
6. OVERFLOW PIPING SHALL BE SET AT A MINIMUM 1% SLOPE UPSTREAM FROM THE MANHOLE OR INLET.
7. UNDERDRAINS AND UNDERDRAIN CONNECTOR PIPES MAY BE PLACED LEVEL, BUT DO REQUIRED CLEANOUTS SO THAT EACH SEGMENT CAN BE MAINTAINED.
8. PERFORATED PIPE TO BE PLACED HOLES DOWN SURROUNDED BY A MINIMUM OF 4 INCHES OF DRAIN ROCK.

THIS TYPE OF CONFIGURATION IS FOR FLOW - THRU FACILITIES ONLY. SEE ALTERNATE DETAILS FOR BIORETENTION & BIORETENTION W/UNDERDRAIN

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: FACILITY OVERFLOW CONFIGURATIONS SMALL BIOFILTRATION BASINS / STORMWATER PLANTER

CITY OF SALINAS

STANDARD PLAN No.
SW
14

DESIGNED BY:
STAFF

CADD BY:
STAFF

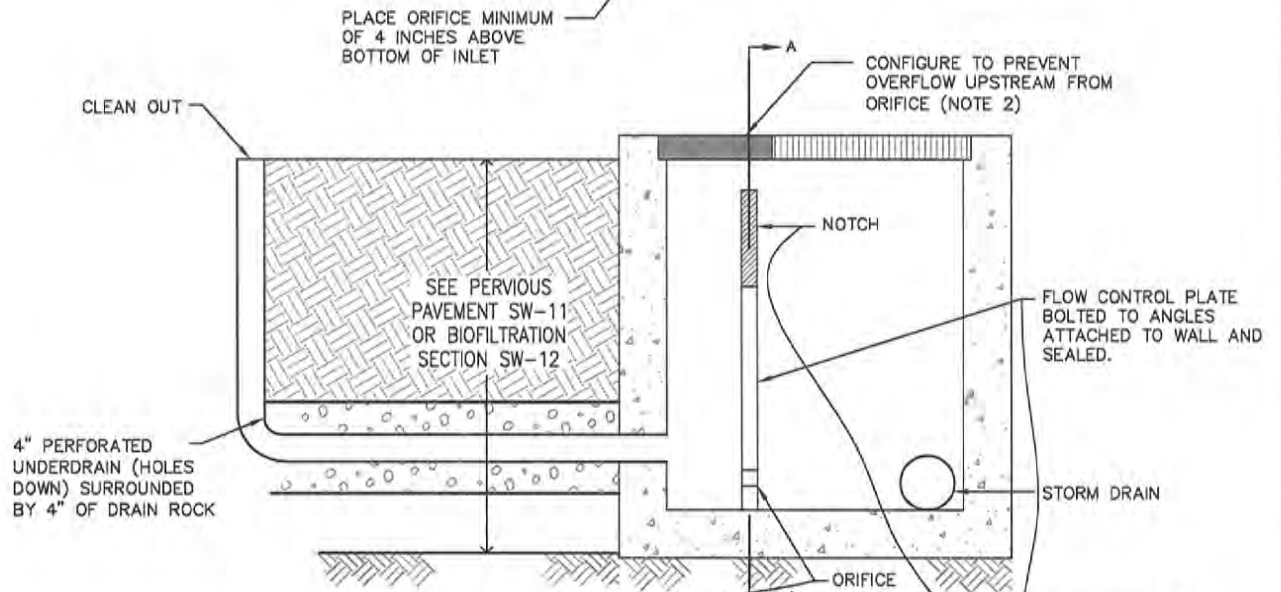
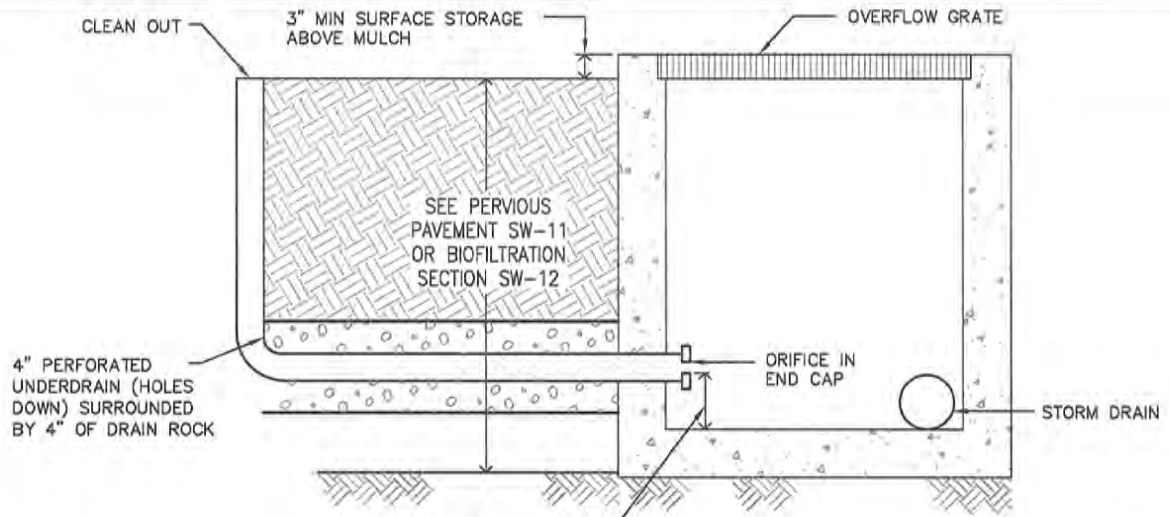
PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/8/14

Robert C. Russell

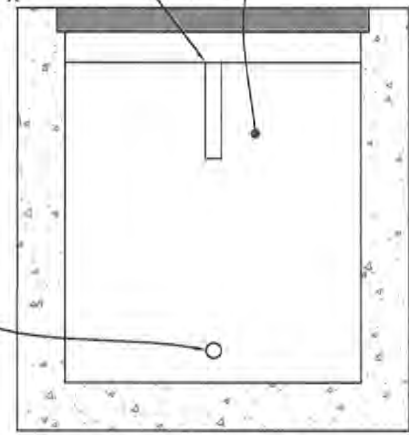
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014





NOTE:

1. ALTERNATIVE CONFIGURATIONS MAY BE PROPOSED SUBJECT TO REVIEW & APPROVAL OF THE CITY ENGINEER.
2. FLOW CONTROL RESTRICTION MAY BE REQUIRED TO LIMIT OVERFLOW LENGTH (SEE SW'S SECTION 4.0 FOR FLOW CONTROL REQUIREMENTS)



SECTION A-A

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: FACILITY OVERFLOW CONFIGURATION LARGE BIOFILTRATION BASIN AND PERVIOUS PAVEMENT

CITY OF SALINAS

STANDARD PLAN No.

**SW
15**

DESIGNED BY:
STAFF

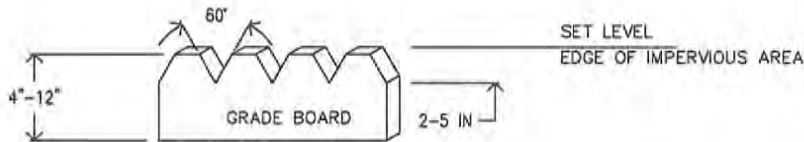
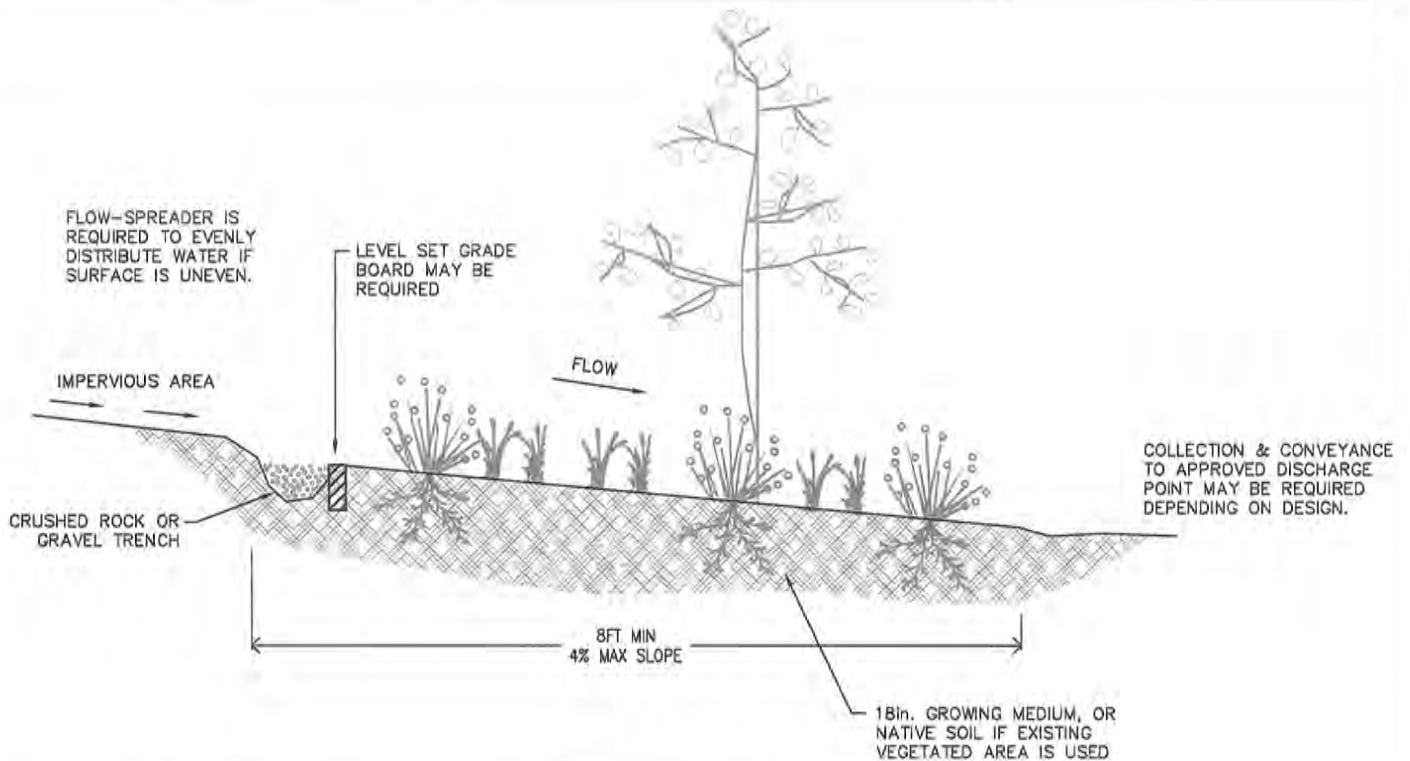
CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/8/14

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014





1. PROVIDE PROTECTION FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING, AS WELL AS FOOT TRAFFIC FOR PROPOSED INFILTRATION AREAS PRIOR TO AND DURING CONSTRUCTION.
2. DIMENSIONS:
 - a. FLOW LINE LENGTH: 8' MINIMUM.
 - b. SLOPES: 4% MAX. (2% - 4% PREFERRED)
3. SETBACKS (FROM BEGINNING OF FACILITY):
 - a. REFER TO SWDS SECTION 3.4 TABLE 1
 - b. AS REQUIRED BY PROJECT GEOTECHNICAL ENGINEER IF GREATER.
4. OVERFLOW: COLLECTION FROM FILTER STRIP SHALL BE SPECIFIED ON PLANS TO APPROVED DISCHARGE POINT.
5. GROWING MEDIUM: UNLESS EXISTING VEGETATED AREAS ARE USED FOR THE FILTER STRIP, GROWING MEDIUM SHALL BE USED WITHIN THE TOP 18". SEE SWDS APPENDIX D FOR BSM.
6. VEGETATION: THE ENTIRE FILTER STRIP MUST HAVE 100% COVERAGE BY NATIVE GRASSES, NATIVE WILDFLOWER BLENDS, NATIVE GROUND COVERS, OR ANY COMBINATION THEREOF.
7. LEVEL SPREADERS: A GRADE BOARD OR SAND/GRAVEL TRENCH MAY BE REQUIRED TO DISPERSE THE RUNOFF EVENLY ACROSS THE FILTER STRIP TO PREVENT A POINT OF DISCHARGE. THE TOP OF THE LEVEL SPREADER

- MUST BE HORIZONTAL AND AT AN APPROPRIATE HEIGHT TO PROVIDE SHEETFLOW DIRECTLY TO THE SOIL WITHOUT SCOUR. LEVEL SPREADERS SHALL NOT HOLD A PERMANENT VOLUME OF RUNOFF. GRADE BOARDS CAN BE MADE OF ANY MATERIAL THAT WILL WITHSTAND WEATHER AND SOLAR DEGRADATION. TRENCHES USED AS LEVEL SPREADERS CAN BE FILLED WITH WASHED CRUSHED ROCK, PEA GRAVEL, OR SAND
8. REFER TO SWDS SECTION 3.10 FOR ADDITIONAL REQUIREMENTS.
 9. INSTALL TOP OF VEGETATED FILTER STRIP 2 - 5 INCHES LOWER THAN THE IMPERVIOUS SURFACE THAT IS BEING DRAINED

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION


TITLE: **VEGETATED FILTER STRIP**

CITY OF SALINAS

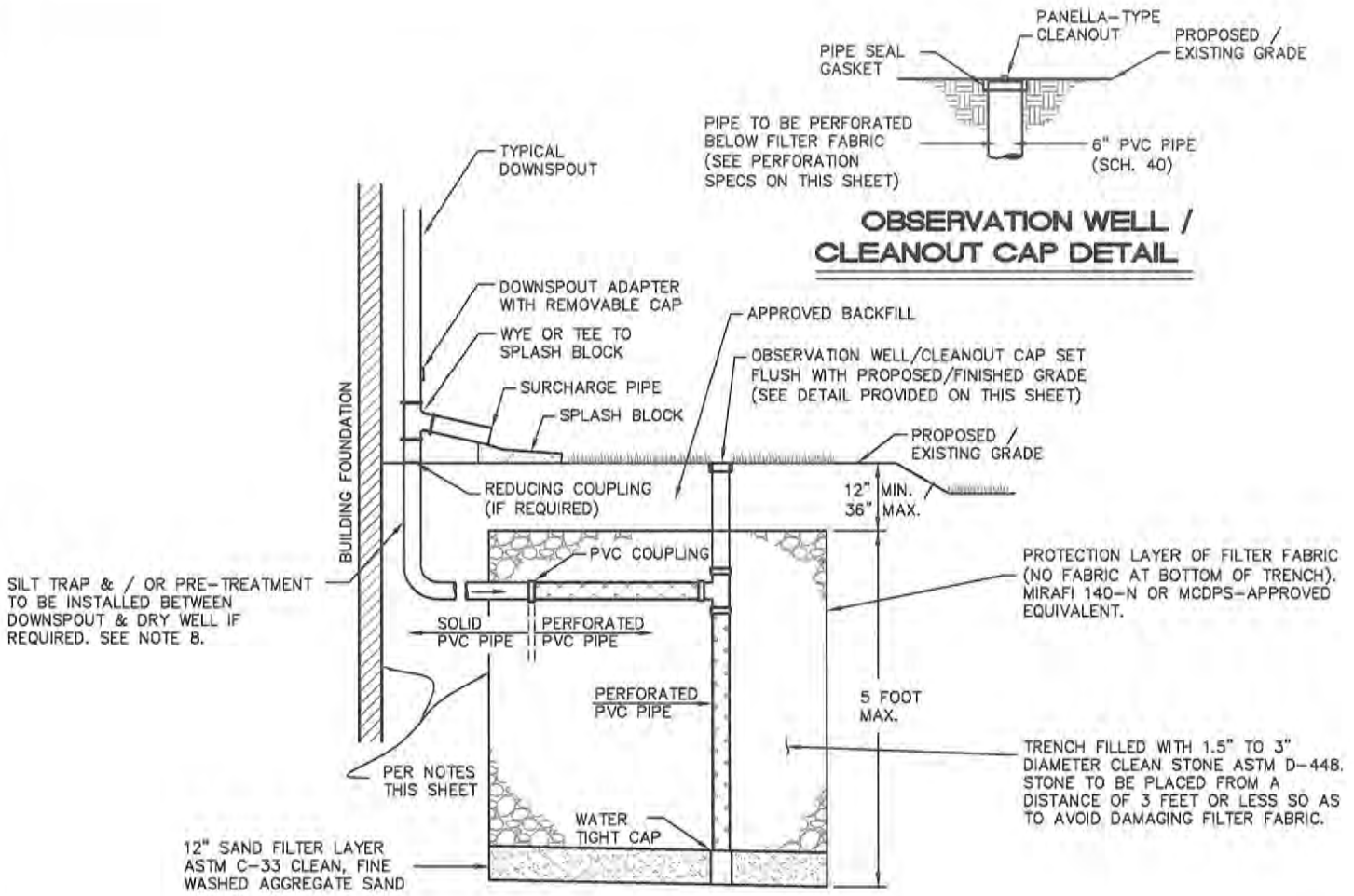
STANDARD PLAN No.

**SW
16**

DESIGNED BY: STAFF
CADD BY: STAFF
PROJECT MANAGER: WALTER GRANT, P.E.

DATE <u>4/6/14</u>

ROBERT C. RUSSELL, CITY ENGINEER R.C.E. 42871, EXPIRES 3-31-2014





SECTION VIEW

NOTE:

1. PROVIDE PROTECTION FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING, AND FOOT TRAFFIC IN PROPOSED INFILTRATION AREAS PRIOR TO, DURING AND AFTER CONSTRUCTION.
2. SITING CRITERIA: GRAVELLY SAND, GRAVELLY LOAMY SAND, OR OTHER EQUALLY POROUS MATERIAL MUST OCCUR IN A CONTINUOUS 5' DEEP STRATUM WITHIN 12' OF THE GROUND SURFACE WITH INFILTRATION RATE BETWEEN 0.5" TO 3"/HR.
3. SIZING: PROJECT ENGINEER TO PROVIDE SIZING REQUIREMENTS.
4. DRYWELL SHALL NOT BE INSTALLED WHERE BASE OF FACILITY HAS LESS THAN 10' OF SEPARATION TO WATER TABLE.
5. TOP OF DRYWELL MUST BE 2' BELOW MIN. LOWEST FINISHED FLOOR.
6. SETBACKS (FROM CENTER OF FACILITY):
 - a. REFER TO SWDS SECTION 3.4 TABLE 1.
 - b. AS REQUIRED BY GEOTECHNICAL/ENGINEER
7. PIPING SHALL BE ABS SCH40, CAST IRON, OR PVC SCH40. 3" PIPE MUST BE USED FOR UP TO 1500SF OF IMPERVIOUS AREA, OTHERWISE 4" MINIMUM. PIPING MUST HAVE 1% GRADE AND MUST FOLLOW CURRENT UNIFORM PLUMBING CODE.
8. PROVIDE ADEQUATE TREATMENT OF STORM WATER UPSTREAM OF WELLS. SYSTEM ACCEPTABILITY DETERMINED ON A CASE BY CASE BASIS. SEE DETAIL A, SW-18 FOR SILT TRAP.

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **DRYWELL (DIRECT INFILTRATION)**

CITY OF SALINAS

STANDARD PLAN No.
SW 17

DESIGNED BY:
STAFF

CADD BY:
STAFF

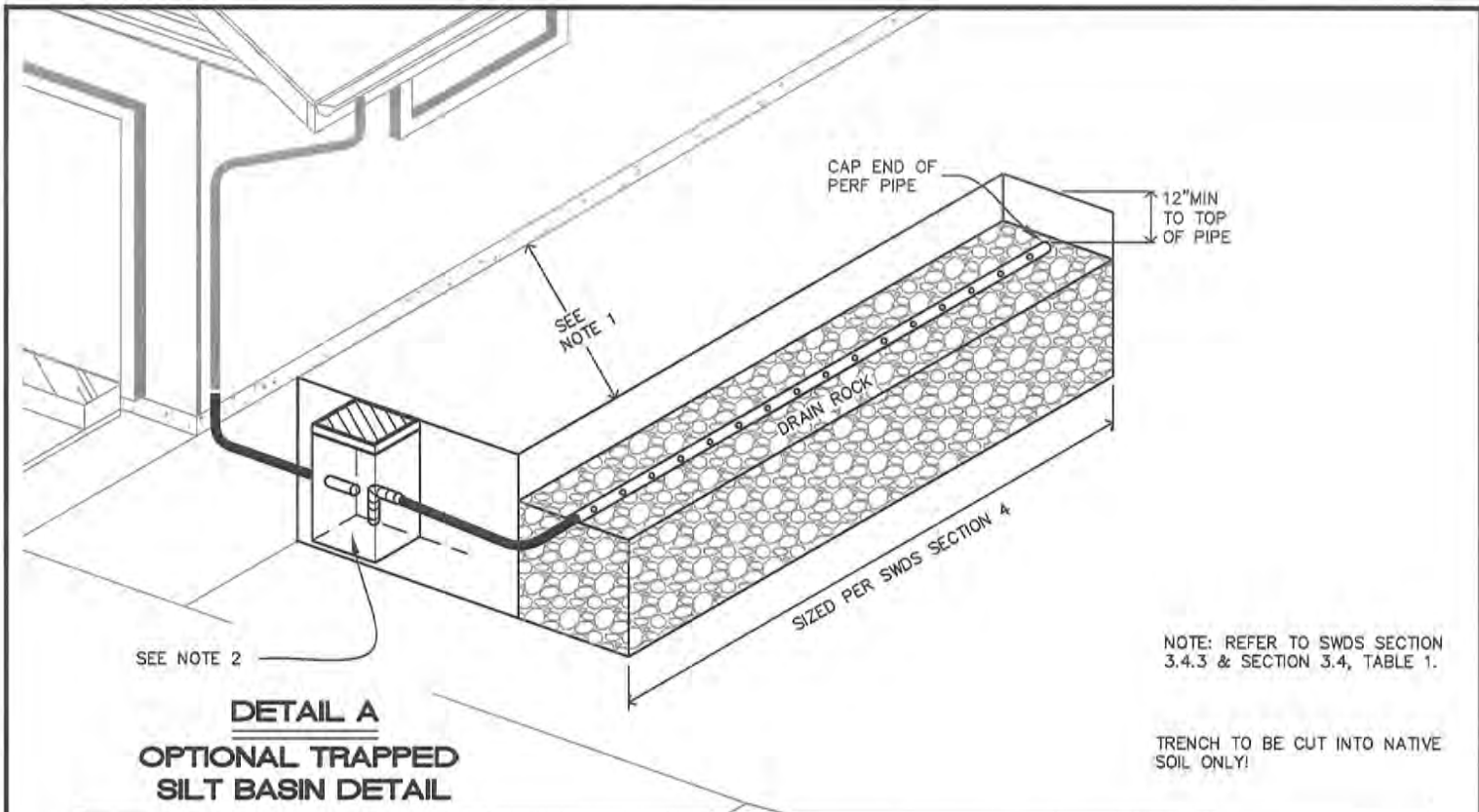
PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/8/14

Robert C. Russell

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R.C.E. 42871, EXPIRES 3-31-2014





SEE NOTE 2

DETAIL A
OPTIONAL TRAPPED
SILT BASIN DETAIL

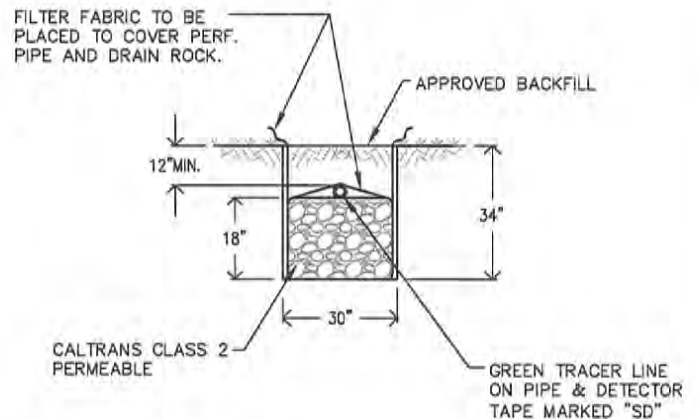
NOTE: REFER TO SWDS SECTION 3.4.3 & SECTION 3.4, TABLE 1.

TRENCH TO BE CUT INTO NATIVE SOIL ONLY!

NOTE:

1. REFER TO SWDS SECTION 3.4 TABLE 1 FOR SETBACKS OR PER PROJECT GEOTECHNICAL ENGINEER, WHICHEVER IS GREATER.
2. ADEQUATE PRE-TREATMENT REQUIRED. PRE-TREATMENT SYSTEM SHALL BE INCLUDED UPSTREAM OF INFILTRATION TRENCH. SYSTEM ACCEPTABILITY DETERMINED ON A CASE BY CASE BASIS.

DETAIL B
INFILTRATION TRENCH
CONSTRUCTION



ADD 18" OF DRAIN ROCK. PLACE PERF. PIPE AND COVER ALL.

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **INFILTRATION TRENCH**

CITY OF SALINAS

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/8/14

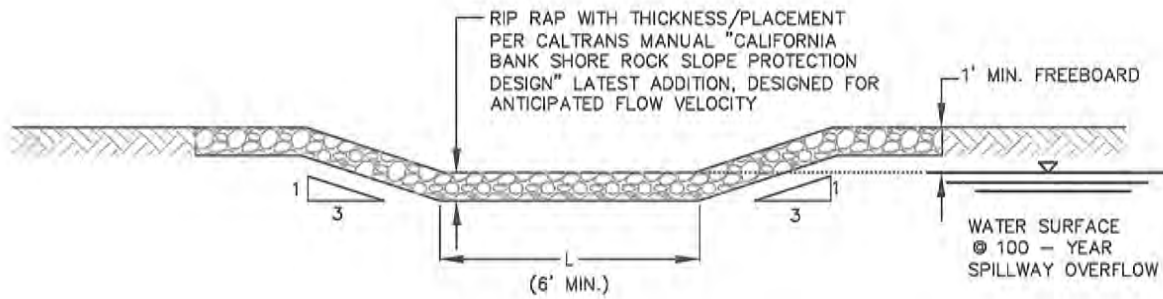
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R.C.E. 42871, EXPIRES 3-31-2014



STANDARD PLAN No.

SW
18



- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **DETENTION/RETENTION POND - EMERGENCY OVERFLOW SPILLWAY WEIR**

CITY OF SALINAS

STANDARD PLAN No.
**SW
23A**

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

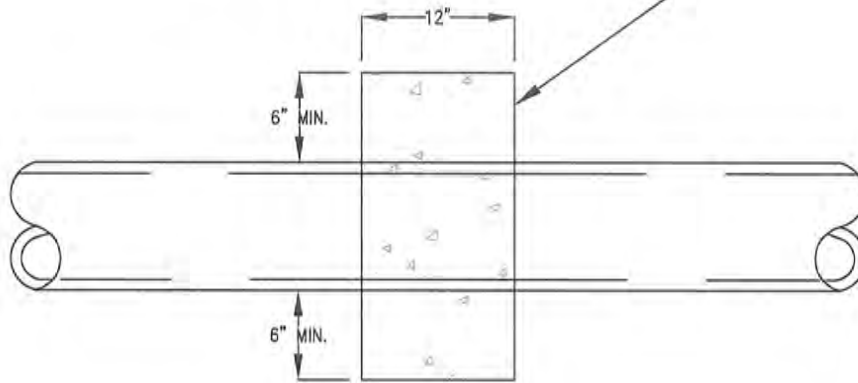
DATE 4/8/14

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014

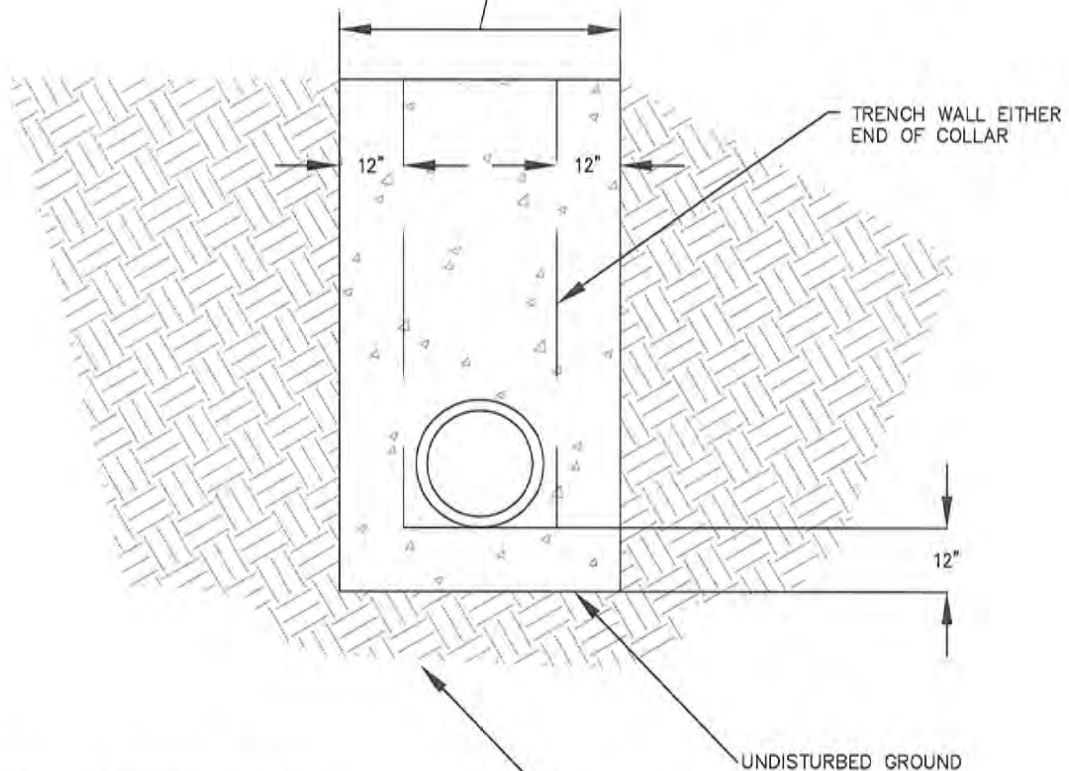


NOTE: REFER TO SW15 FOR BASIN OUTLET CONFIGURATION.

CALTRANS CLASS 2 CONCRETE



TRENCH WIDTH PLUS 12" PAST EACH SIDE



TRENCH WALL EITHER END OF COLLAR

UNDISTURBED GROUND

NATIVE SOIL

NOTE: PROJECT GEOTECHNICAL ENGINEER TO VERIFY ADEQUACY OF EXTENT OF COLLAR & INCREASE THE EXTENT IF THE SITE CONDITIONS REQUIRE IT.

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE:

**DETENTION/RETENTION POND -
INLET/OUTLET ANTI-SEEPAGE COLLAR**

CITY OF SALINAS

STANDARD PLAN No.

**SW
23B**

DESIGNED BY:
STAFF

CADD BY:
STAFF

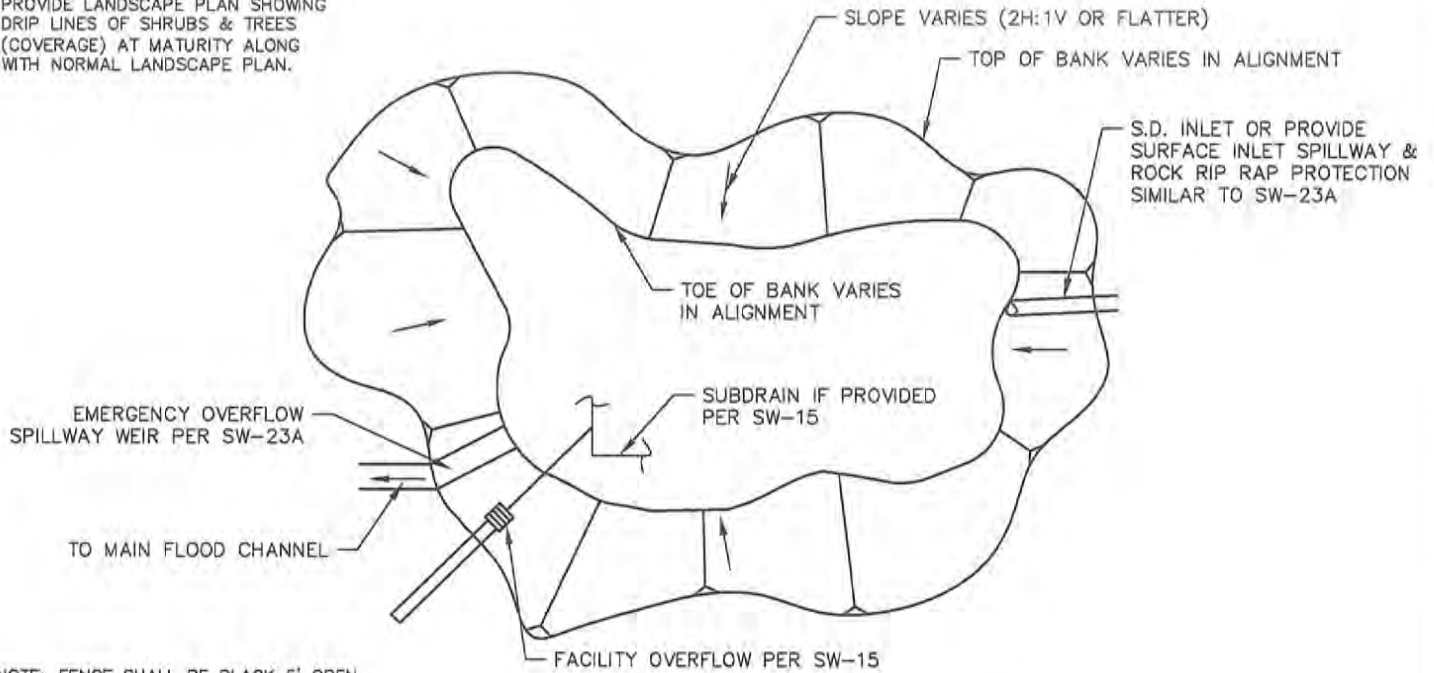
PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/8/14

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2016



PROVIDE LANDSCAPE PLAN SHOWING DRIP LINES OF SHRUBS & TREES (COVERAGE) AT MATURITY ALONG WITH NORMAL LANDSCAPE PLAN.



PLAN VIEW

NOTE: FENCE SHALL BE BLACK 5' OPEN METAL PICKET WROUGHT IRON STYLE WITH MAINTENANCE ACCESS GATES

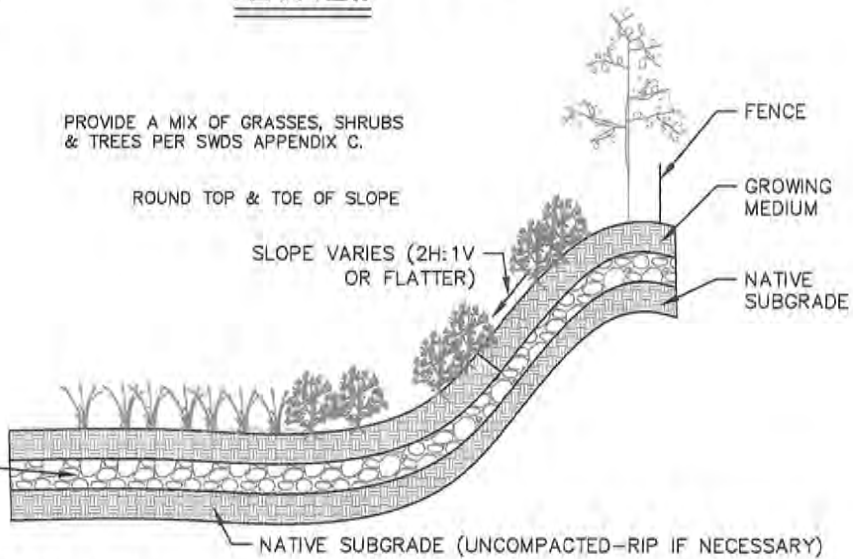
PROVIDE A MIX OF GRASSES, SHRUBS & TREES PER SWDS APPENDIX C.

ROUND TOP & TOE OF SLOPE

SLOPE VARIES (2H:1V OR FLATTER)

NOTE: REFER TO SWDS SECTION 3.3 FOR OTHER REQUIREMENTS.

DRAIN ROCK/SUBDRAIN IF PROVIDED



NOTE: LARGE PONDS/BASINS CAN ONLY BE USED AS AN ALTERNATE MEANS IF NO OTHER PARCEL BASED PCBMP IS POSSIBLE IF APPROVED BY THE CITY ENGINEER.

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **DETENTION/RETENTION POND
LARGE**

CITY OF SALINAS

STANDARD PLAN No.

**SW
24**

DESIGNED BY:
STAFF

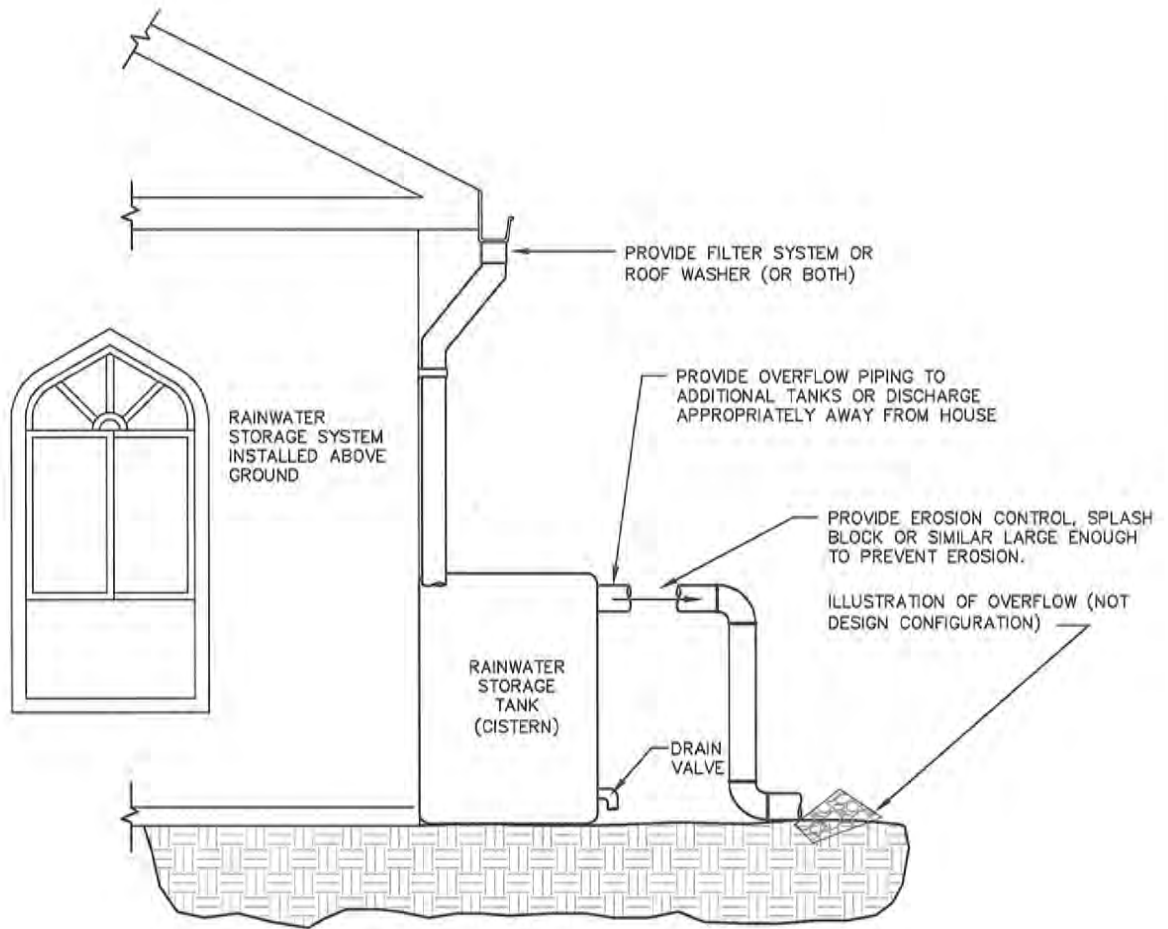
CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/8/14

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2016





NOTE:

1. REFER TO SWDS SECTION 3.4 TABLE 1 FOR SETBACKS OR PER PROJECT GEOTECHNICAL ENGINEER, WHICHEVER IS GREATER. TANKS LOCATED WITHIN 10 FEET OF THE STRUCTURE NEED TO BE RESTRAINED TO PREVENT DAMAGE IN THE EVENT OF AN EARTHQUAKE.
2. TANKS SHALL BE DESIGNED TO DRAIN IN 48 TO 72 HOURS OVER A LANDSCAPED AREA EQUAL TO ATLEAST 25% OF IMPERVIOUS TRIBUTARY AREA.

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **RAINWATER CISTERN**

CITY OF SALINAS

DESIGNED BY:
STAFF

CADD BY:
STAFF

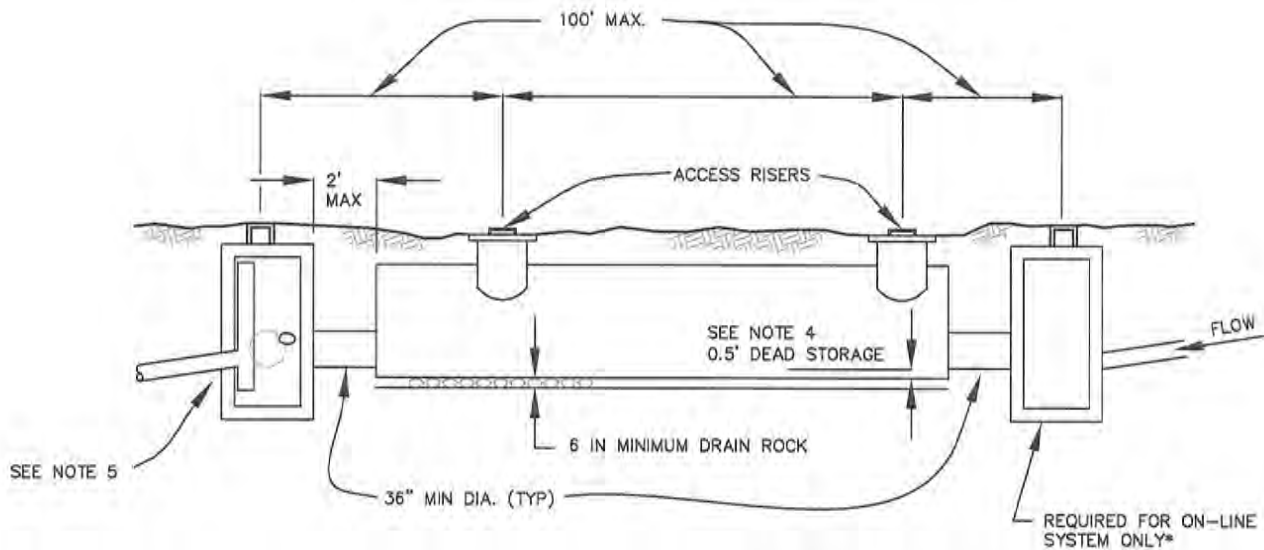
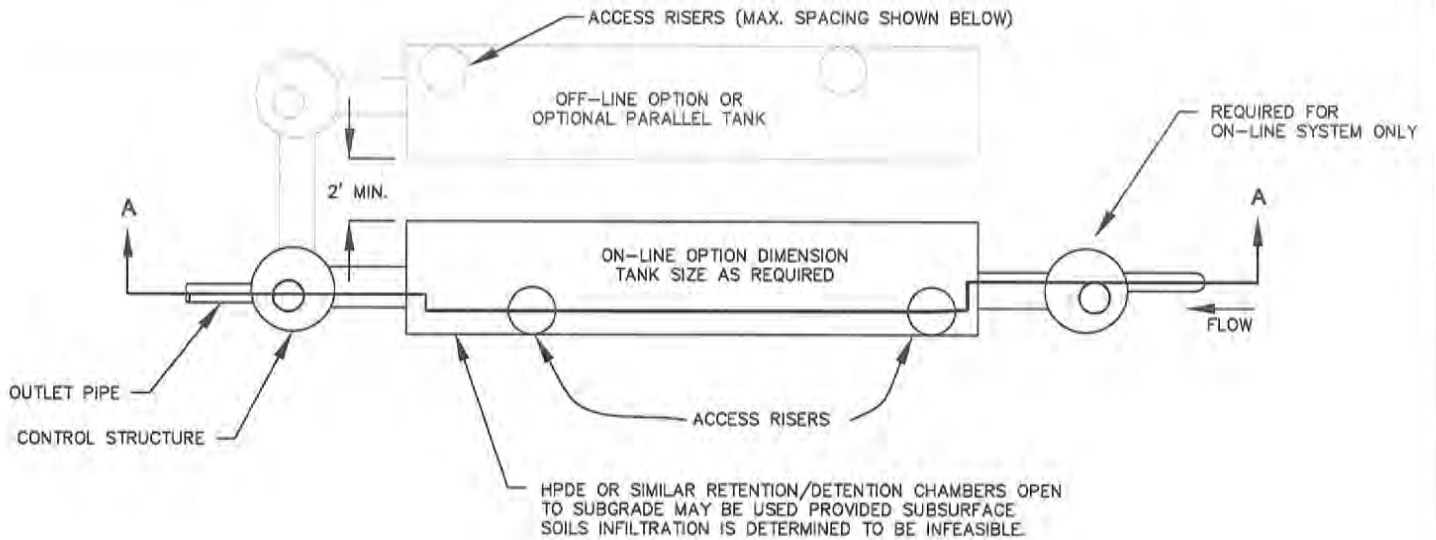
PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/2/14

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2016



STANDARD PLAN No.
SW ✓
25



- NOTE:
- REFER TO SWDS SECTION 3.4 TABLE 1 FOR SETBACKS OR PER PROJECT GEOTECHNICAL ENGINEER, WHICHEVER IS GREATER.
 - PRE-TREATMENT OF INFLOW IS REQUIRED IF INFILTRATION IS FEASIBLE, IF INFILTRATION IS INFEASIBLE, FLOW CAN BE TREATED WHEN FLOW IS RELEASED FROM DETENTION TANK.
 - IF INFILTRATION IS INFEASIBLE AND THE PROJECT IS SUBJECT TO REQUIREMENT 5, TREAT RUNOFF STORED IN DETENTION TANKS AND RELEASE AT THE DESIRED RATE (SEE SWDS SECTION 2).
 - DEAD STORAGE REQUIRED IF SYSTEM IS CONFIGURED TO LET UNTREATED FLOWS ENTER THE FACILITY. IF THE FLOWS ARE TREATED BEFORE ENTERING THE SYSTEM, DEAD STORAGE IS NOT REQUIRED.
 - CONTROL CONFIGURATION ON SW-15 CAN BE INSTALLED IN A MANHOLE RATHER THAN WITH A GRATE INLET.

* PROVIDE WEEPHOLES TO SUBGRADE AT BOTTOM OF STRUCTURE UNLESS PROHIBITED BY PROJECT GEOTECHNICAL ENGINEER.

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **DETENTION TANK/UNDERGROUND INFILTRATION CHAMBER** CITY OF SALINAS

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

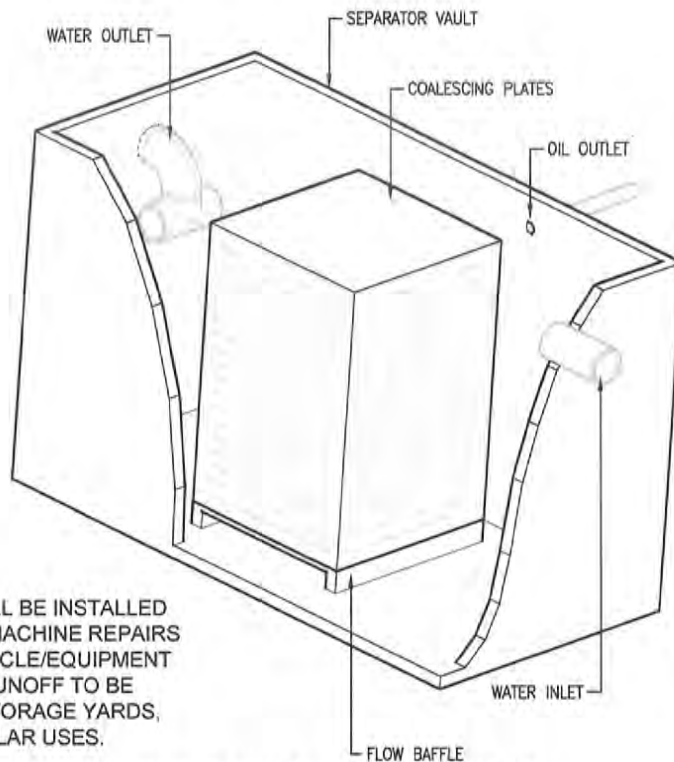
DATE 4/8/14

Robert C. Russell

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2016

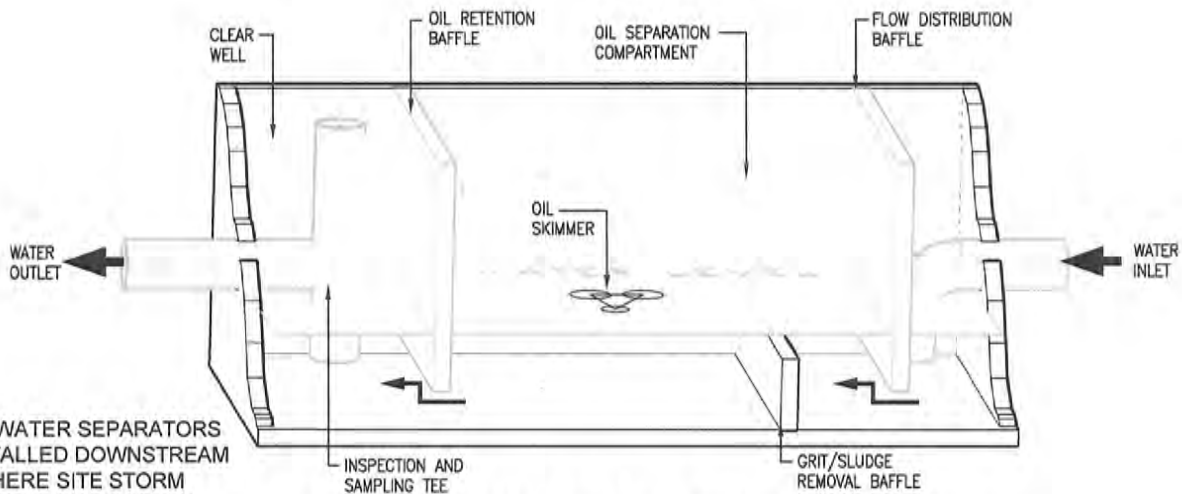


STANDARD PLAN No.
**SW
26**



NOTE: OIL-WATER SEPARATORS SHALL BE INSTALLED FOR ANY SITE WHERE AUTOMOTIVE/MACHINE REPAIRS OCCUR OR A HIGH INSTANCE OF VEHICLE/EQUIPMENT STORAGE COULD CAUSE SURFACE RUNOFF TO BE CONTAMINATED SUCH AS VEHICLE STORAGE YARDS, AUTO SALES AND/OR REPAIR OR SIMILAR USES.

COALESCING PLATE (CP) SEPARATOR



NOTE: OIL-WATER SEPARATORS TO BE INSTALLED DOWNSTREAM OF SITE WHERE SITE STORM DRAIN LATERAL ENTERS CITY STORM DRAIN SYSTEM & SHALL BE SIZED FOR UPSTREAM TRIBUTARY AREAS. SEE MANUFACTURER'S RECOMMENDATIONS FOR SIZING.

AMERICAN PETROLEUM TYPE (API) SEPARATOR

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **OIL-WATER SEPARATORS**

CITY OF SALINAS

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/2/14

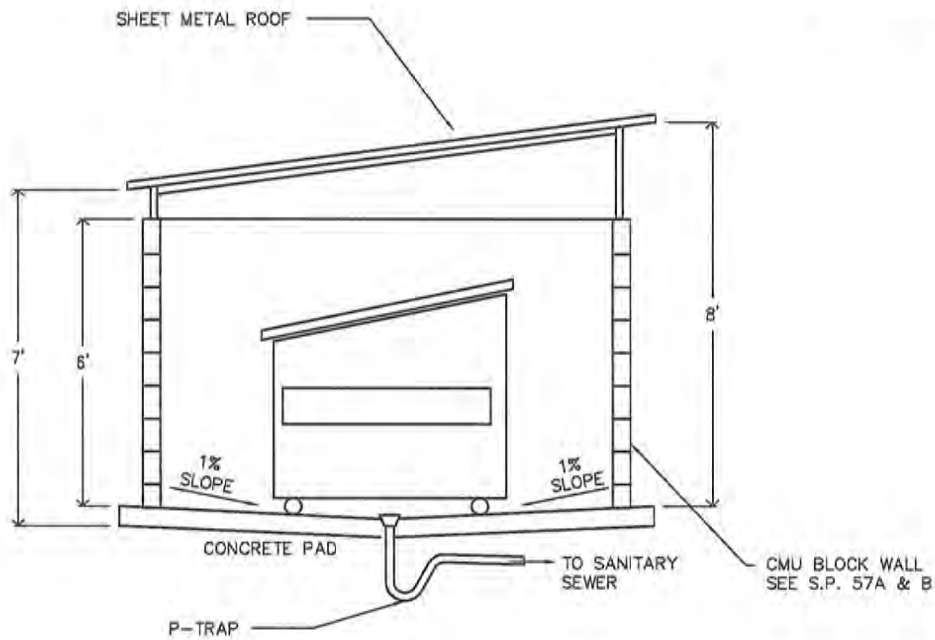
Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2016



STANDARD PLAN No.

**SW
27**

NOTE: ROOFING MATERIALS AND ENCLOSURE DIMENSIONS ARE SHOWN FOR REFERENCE ONLY." PROVIDE PROJECT SPECIFIC DETAILS FOR ALL ELEMENTS.



NOTE: REFER TO CITY STANDARD PLANS NO. 57A & 57B FOR ADDITIONAL TRASH ENCLOSURE REQUIREMENTS & ALTERNATIVES TO A ROOFED ENCLOSURE (PROVIDE PLANTER & DRAIN TO IT). CONTACT REPUBLIC SERVICES AND OBTAIN APPROVAL LETTER AND PROVIDE TO CITY PRIOR TO CITY APPROVAL OF PERMIT (RELATES TO ENCLOSURE DIMENSIONS, LOCATION AND TRUCK ACCESS). COMPLY WITH APPLICABLE CODES.

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **COVERED TRASH ENCLOSURE**

CITY OF SALINAS

STANDARD PLAN No.

**SW
28**

DESIGNED BY:

STAFF

CADD BY:

STAFF

PROJECT MANAGER:

WALTER GRANT, P.E.

DATE

4/8/19

Robert C. Russell

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R.C.E. 42871, EXPIRES 3-31-2019



Pollution Control

IN THE EVENT OF A SPILL

USE Safety Precautions

- Wear protective gear
- Keep vehicles and people out of spill
- Contain materials with the spill kit
 - 1) Seal off drains
 - 2) Berm to contain the spill
 - 3) Clean up with absorbent materials

- ① Turn off valve located at _____
(your location, ie: NE corner of parking lot)
- ② CALL: Site Supervisor @
XXX XXX-XXXX

SAMPLE



Pollution Control

IN THE EVENT OF A SPILL

- ① Turn off valve located at _____
(your location, ie: NE corner of parking lot)
- ② CALL: Site Supervisor @
XXX XXX-XXXX

SAMPLE

USE Safety Precautions

- Wear protective gear
- Keep vehicles and people out of spill
- Contain materials with the spill kit
 - 1) Seal off drains
 - 2) Berm to contain the spill
 - 3) Clean up with absorbent materials

1. ANY SITES TRIBUTARY TO & UPSTREAM OF A CENTRAL STORM WATER RETENTION/DETENTION BASIN ARE REQUIRED TO HAVE VALVED OUTLETS TO THE OFF-SITE STORM DRAIN SYSTEM TO ISOLATE SPILLS AND KEEP THE DOWNSTREAM SYSTEM AND BASIN FREE OF CONTAMINATION.
2. ANY SITES WHERE ALL DETENTION AND RETENTION IS PROVIDED ON SITE AND ALL AREAS SUBJECT TO SPILLS DRAIN THROUGH FILTERING BMPs AND/OR OIL/WATER SEPERATORS ARE NOT REQUIRED TO PROVIDE ISOLATION VALVES.
3. ALL SITES WITH PUBLIC PARKING WILL BE REQUIRED TO POST SIGNS SIMILAR TO THOSE SHOWN HEREON NEAR DRAIN INLETS.

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **SITE SPILL CONTROL**

CITY OF SALINAS

DESIGNED BY: STAFF
CADD BY: STAFF
PROJECT MANAGER: WALTER GRANT, P.E.

DATE 4/8/14

Robert C. Russell

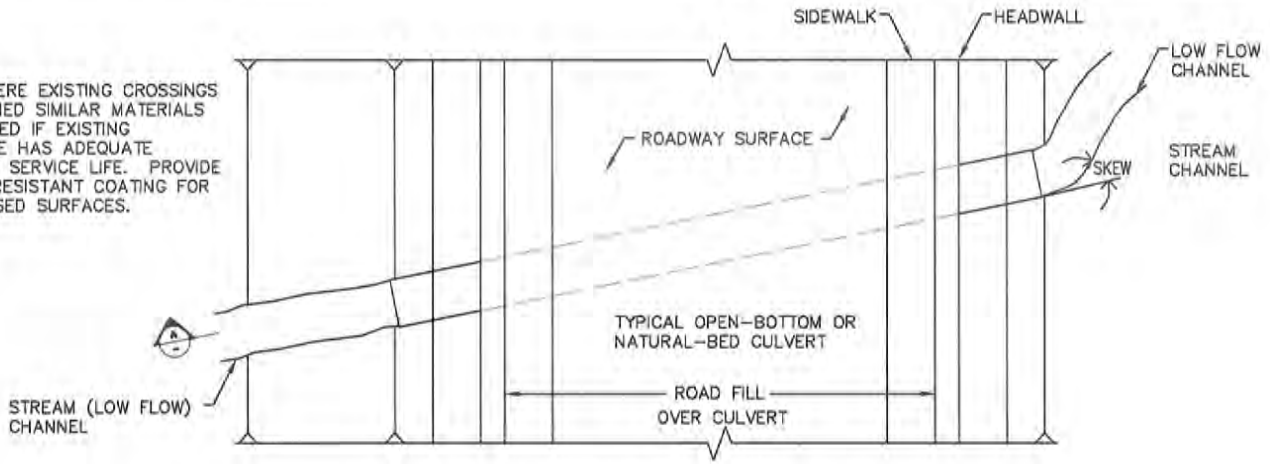
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2016

STANDARD PLAN No.

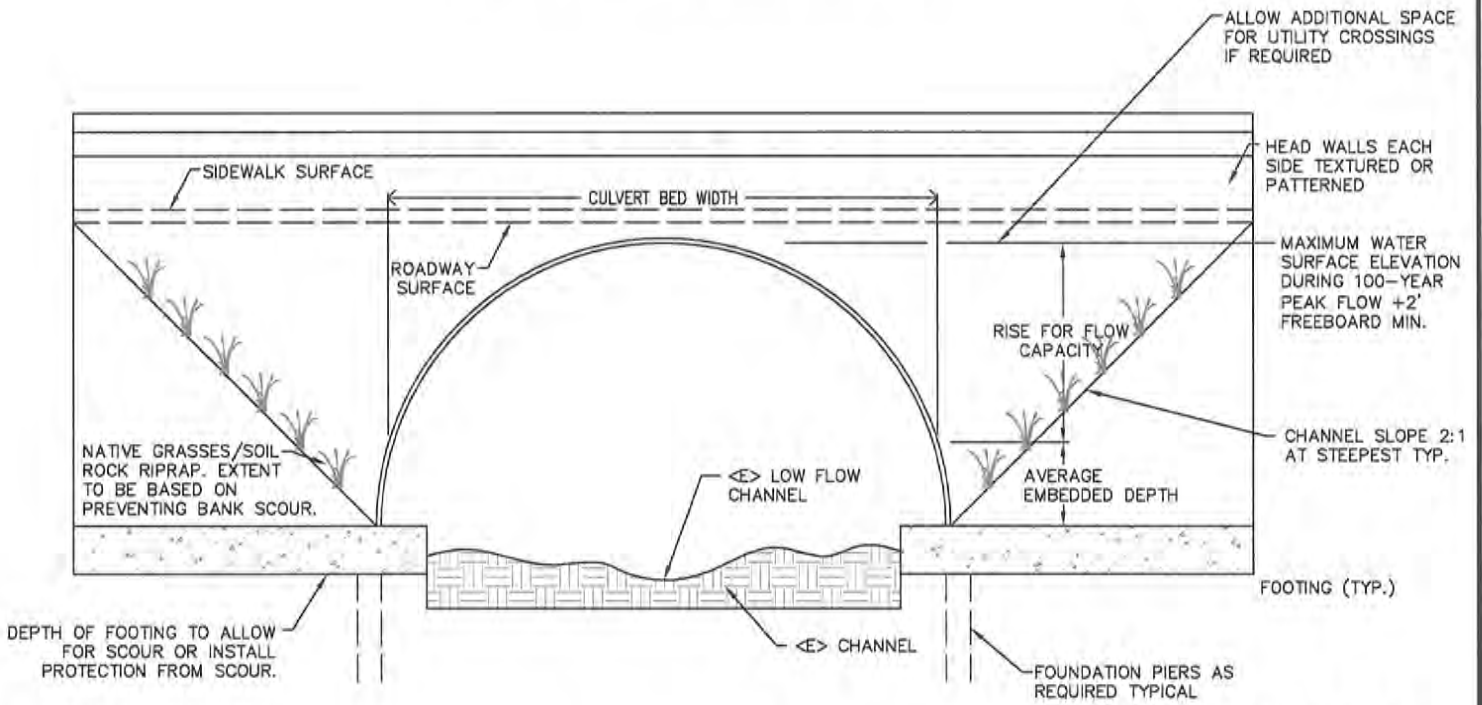
SW

29

NOTE: WHERE EXISTING CROSSINGS ARE WIDENED SIMILAR MATERIALS MAYBE USED IF EXISTING STRUCTURE HAS ADEQUATE REMAINING SERVICE LIFE. PROVIDE GRAFFITI RESISTANT COATING FOR ALL EXPOSED SURFACES.



TYPICAL OPEN-BOTTOM CULVERT



TYPICAL OPEN-BOTTOM ARCH CULVERT

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **ROADWAY AND CULVERT-STREAM CROSSING**

CITY OF SALINAS

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

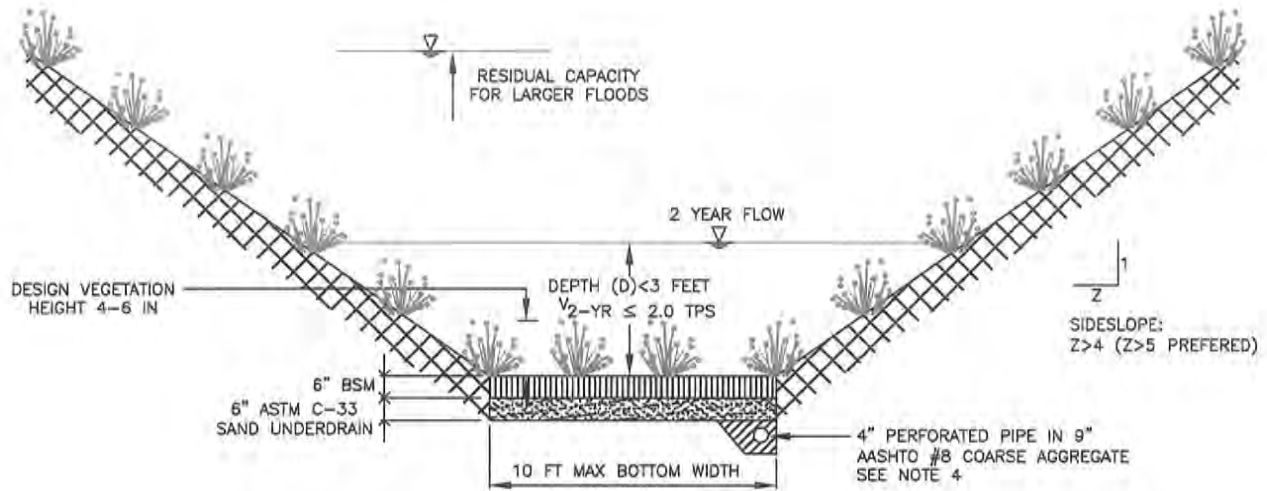
DATE 4/8/19

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



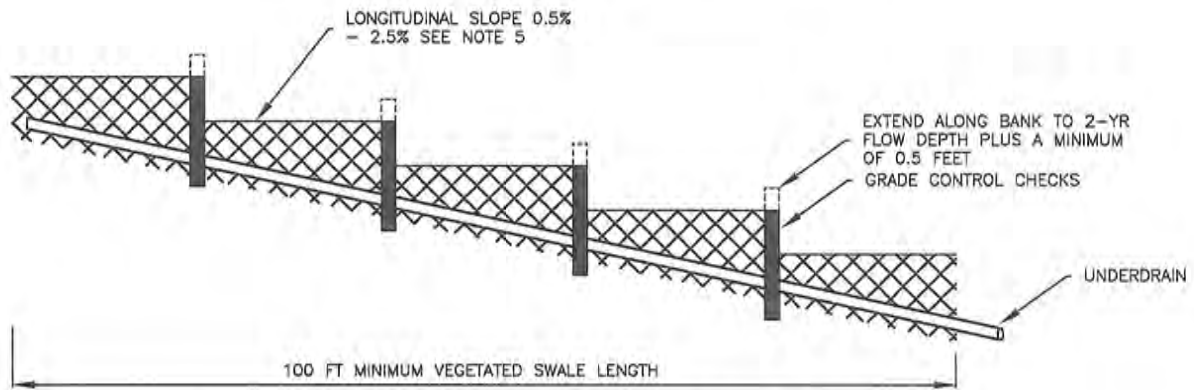
STANDARD PLAN No.

**SW
30**



TRAPEZOIDAL GRASS-LINED SWALE SECTION

NOT TO SCALE



GRASS-LINED SWALE PROFILE

NOT TO SCALE

NOTE:

1. REFER TO SWDS SECTION 3.4 TABLE 1 FOR SETBACKS OR PER PROJECT GEOTECHNICAL ENGINEER, WHICHEVER IS GREATER.
2. MAXIMUM SWALE TRIBUTARY AREA IS 10 ACRES.
3. SWALE MUST NOT HOLD STANDING WATER FOR MORE THAN 72 HOURS TO PREVENT VECTOR PROBLEMS.
4. A MINIMUM 4 INCH DIAMETER PERFORATED PVC UNDER DRAIN PIPE SHALL BE PROVIDED WHERE UNDERLYING SOILS HAVE INFILTRATION RATES LESS THAN 0.5 IN/HR. IF LONGITUDINAL SLOPES LESS THAN 1% INSTALL UNDERDRAIN SYSTEM TO PREVENT STANDING WATER.
5. LONGITUDINAL SLOPES BETWEEN 2.5% AND 5% MAY BE ALLOWED IF CHECK DAMS ARE INSTALLED TO REDUCE RUNOFF VELOCITY TO 2.5 FEET.
6. DESIGN WITH FLOW HEIGHT ONE INCH BELOW DESIGN GRASS HEIGHT FOR WQ_f .
7. DO NOT APPLY IN AREAS WITH ADJACENT SLOPES OF 5% OR GREATER OR IN AREAS WITH HIGHLY ERODIBLE SOILS.

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **VEGETATED SWALES**

CITY OF SALINAS

STANDARD PLAN No.
**SW
31**

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/8/14

Robert C. Russell

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2016



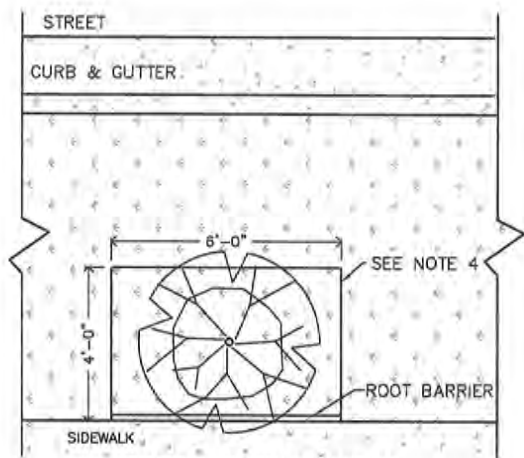
REFER TO SWDS APPENDIX C FOR ALLOWABLE STREET TREES. ALTERNATES MAY BE PROPOSED BY LANDSCAPE ARCHITECT PROVIDED IT IS SUITABLE FOR THE ZONE IN WHICH IT IS PLANTED & IT IS APPROVED BY URBAN FORESTRY

DESIGNER INFORMATION

1. DISTANCE BETWEEN TREES VARIES: 20FT-30FT ON CENTER.
2. STORMWATER FACILITY CONSTRUCTION AND TOPSOIL REQUIREMENTS, SEE CITY OF SALINAS SWDS APPENDIX D.
3. USE OF TREE SPECIES MUST BE APPROVED BY URBAN FORESTRY CONTACT VICTOR BAEZ 831-758-7958.
4. INCLUDE TREE WELL AND STREET TREE VIEWS ON PLANS.
5. DIMENSION TOPSOIL AND ROCK LAYERS ON NON-TREE SIDE TO CORRESPOND TO SW12 OR SW 31.

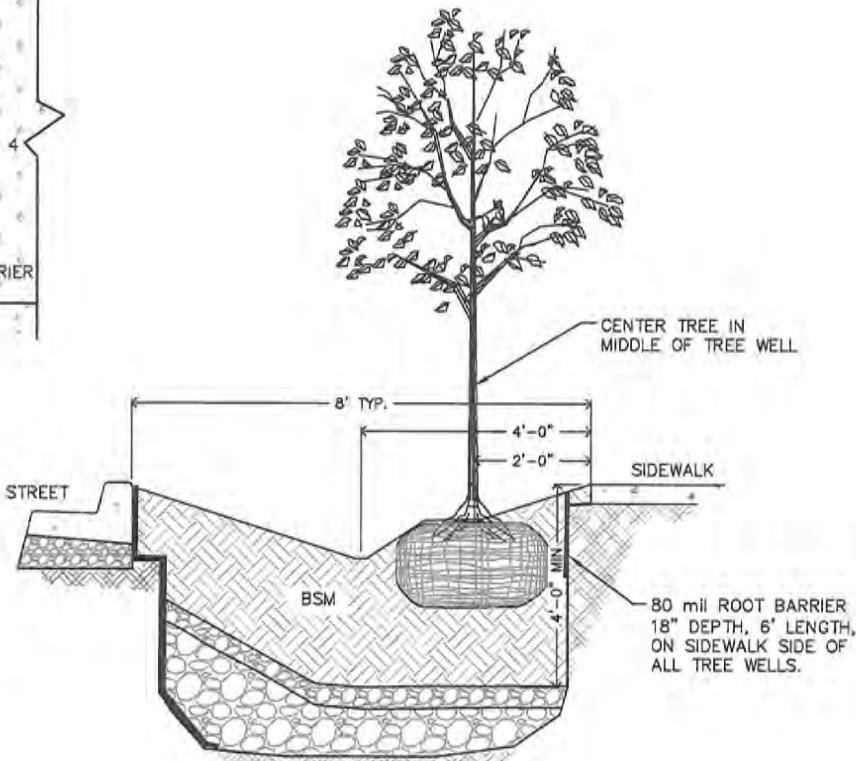
CONSTRUCTION NOTES

1. CONTACT URBAN FORESTRY VICTOR BAEZ FOR TREE INSTALLATION ASSISTANCE AND PERMITTING AT (831) 758-7958.
2. REMOVE WIRE AND BURLAP FROM ROOT BALL PRIOR TO BACKFILLING.
3. SET TOP OF ROOT BALL 1"-2" ABOVE TOPSOIL SURFACE.
4. DEEPEN SOIL SECTION MINIMUM; 4FT WIDE, 6FT LONG, 4FT DEEP.



TREE WELL PLAN VIEW

IMPORTANT: LOCATION OF TREES MUST MEET CLEARANCE REQUIREMENTS ESTABLISHED BY THE CITY OF SALINAS. UTILITY CONFLICTS AND EXISTING CONDITIONS CAN AFFECT TREE PLACEMENT. LOCATE UTILITIES PRIOR TO INSTALLING TREES.



STREET TREE IN SWALE

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **STREET TREE DETAIL - WITHIN WATER QUALITY FEATURE**

CITY OF SALINAS

DESIGNED BY:
STAFF
CADD BY:
STAFF
PROJECT MANAGER:
WALTER GRANT, P.E.

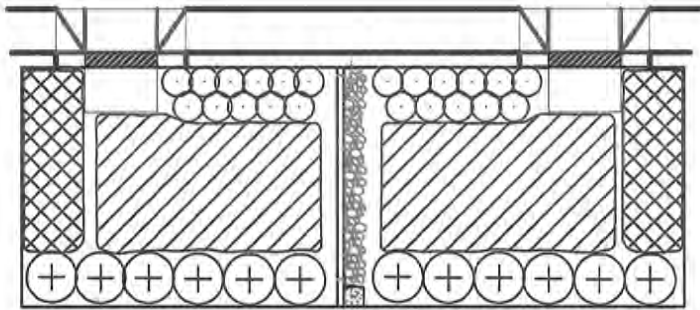
DATE 4/31/14

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014

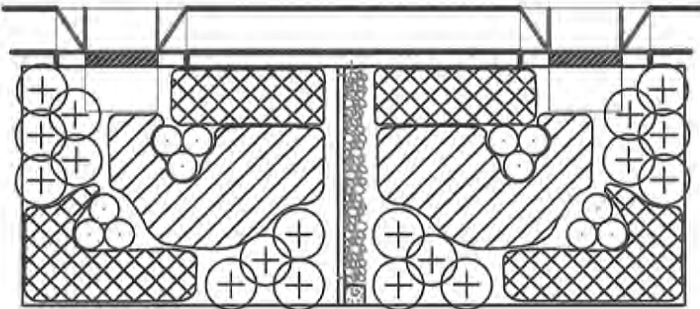


STANDARD PLAN No.

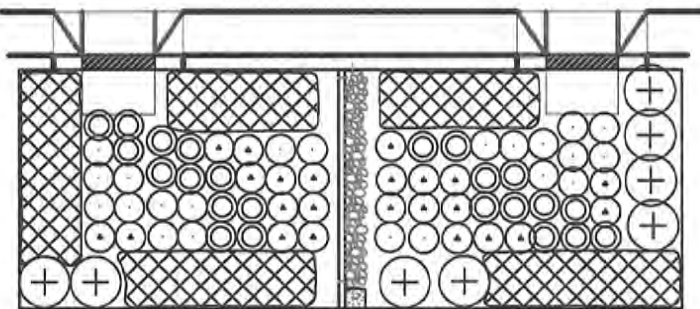
SW 32



TEMPLATE 1



TEMPLATE 2



TEMPLATE 3

INSTRUCTIONS

1. PROVIDE TEMPLATES AND ALTER THEM TO VARY THE DESIGN APPEARANCE.
2. PLANT LISTS AND QUANTITY REQUIREMENTS ARE FOUND IN SALINAS SWDS APPENDIX C.
3. PLANTING TABLE REQUIRED. STATE PLANT SPECIES, SPACING, AND QUANTITIES PER ZONE A AND ZONE B AND PER SWALE. INCLUDE THE SQUARE FOOTAGE OF ZONE A AND B. ALTERNATES TO SWDS APPENDIX C MAY BE USED PROVIDED THEY ARE SUITABLE FOR THE ZONE IN WHICH THEY ARE PLACED.

PLANT LEGEND 1

Symbol	Botanical Name
	Common Name
ZONE A	
ZONE B	

PLANT LEGEND 2

Symbol	Botanical Name
	Common Name
ZONE A	
ZONE B	

PLANT LEGEND 3

Symbol	Botanical Name
	Common Name
ZONE A	
ZONE B	

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: LANDSCAPE PLANTING TEMPLATES - VEGETATED SWALES

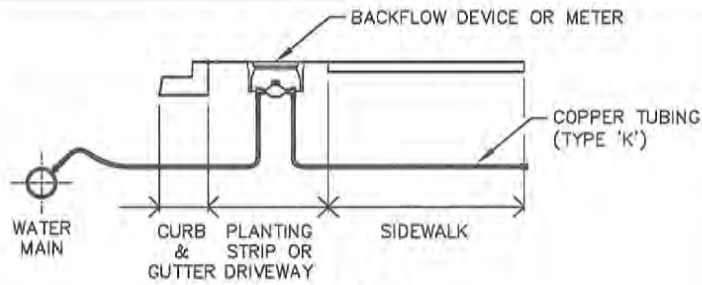
CITY OF SALINAS

STANDARD PLAN No.

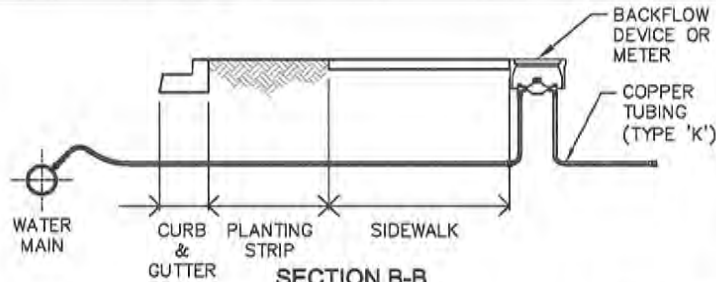
SW
33

DESIGNED BY: STAFF
CADD BY: STAFF
PROJECT MANAGER: WALTER GRANT, P.E.

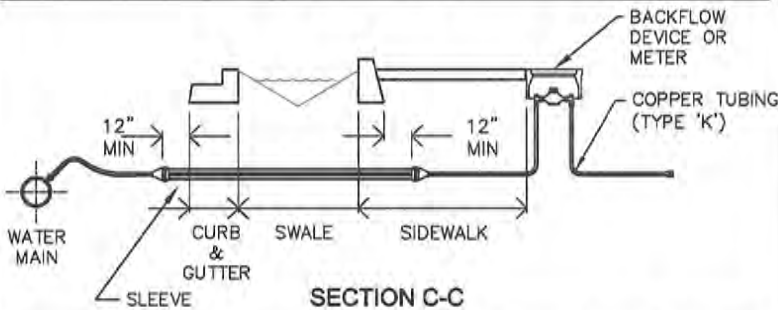
DATE <u>1/20/14</u>	
<u>Robert C. Russell</u> ROBERT C. RUSSELL, CITY ENGINEER R.C.E. 42871, EXPIRES 3-31-2014	



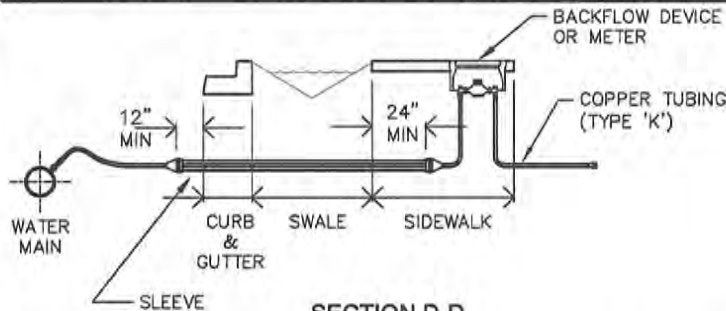
SECTION A-A



SECTION B-B



SECTION C-C

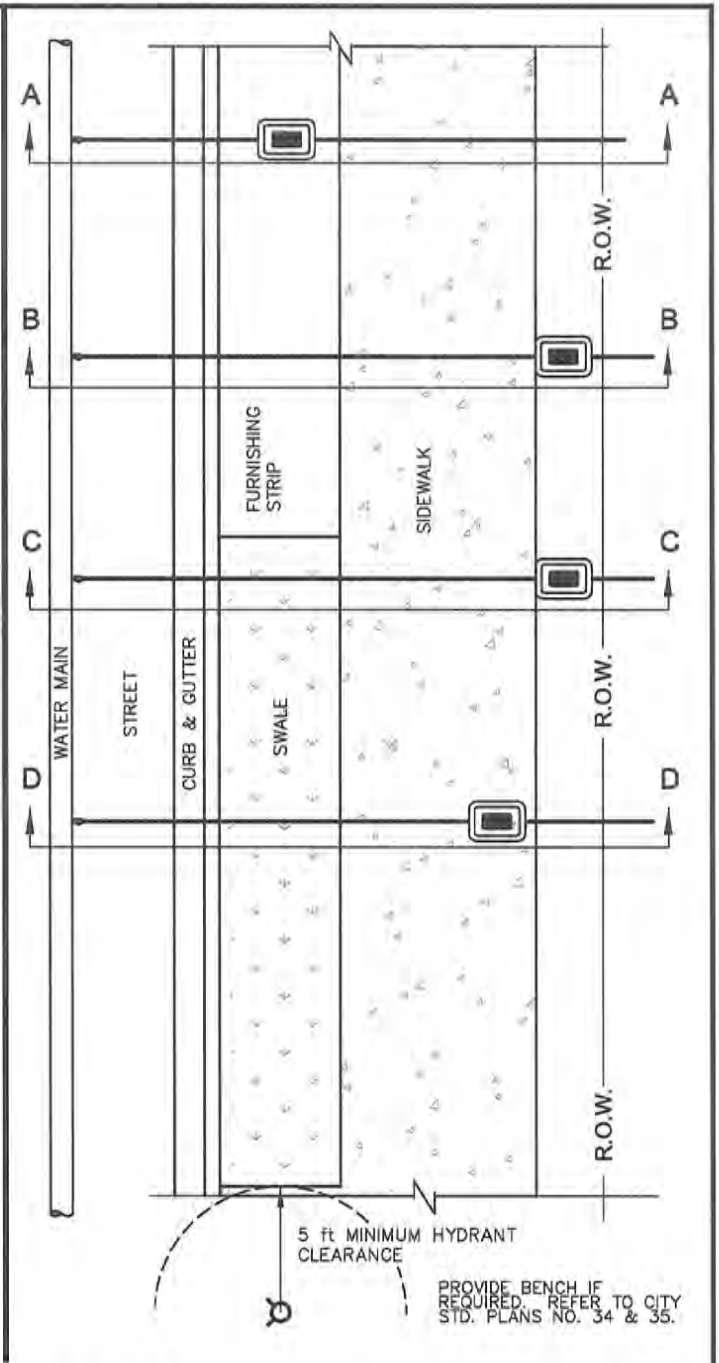


SECTION D-D

INSTRUCTIONS

1. REFER TO CITY STANDARD PLANS NO. 34 & 35. CENTER OF HYDRANTS MUST HAVE MIN 5 FT CLEARANCE TO THE OUTSIDE EDGE OF STORMWATER FACILITY.
2. STANDARD METER LOCATION IS OPTION A. OPTION B OR C CAN BE USED ONLY IF THE METER BOX IS FULLY WITHIN THE RIGHT-OF-WAY. OPTION D CAN ONLY BE USED FOR AN EXISTING SERVICE AND WHEN OTHER OPTIONS ARE INFEASIBLE.
3. REFER TO CALIFORNIA WATER SERVICE CO. OR ALCO STDS. DEPENDING ON FRANCHISE AREA.
4. IF WATER MAIN IS UNDER OR BEHIND PROPOSED CURB, THE WATER MAIN MUST BE RELOCATED UNLESS OTHERWISE APPROVED BY THE CITY OF SALINAS. VERIFICATION OF WATER MAIN DEPTH IS REQUIRED PRIOR TO CITY APPROVAL.
5. CROSS-SECTION VIEWS ARE REQUIRED ON CONSTRUCTION PLANS.
6. REFER TO SWDS 31 FOR VEGETATED SWALE DETAIL. FOR MINIMUM AREA SEE SWDS SECTION 4.0.

- DRAWING NOT TO SCALE -



PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: BACKFLOW, METER & HYDRANT LOCATIONS -VEGETATED SWALES CITY OF SALINAS

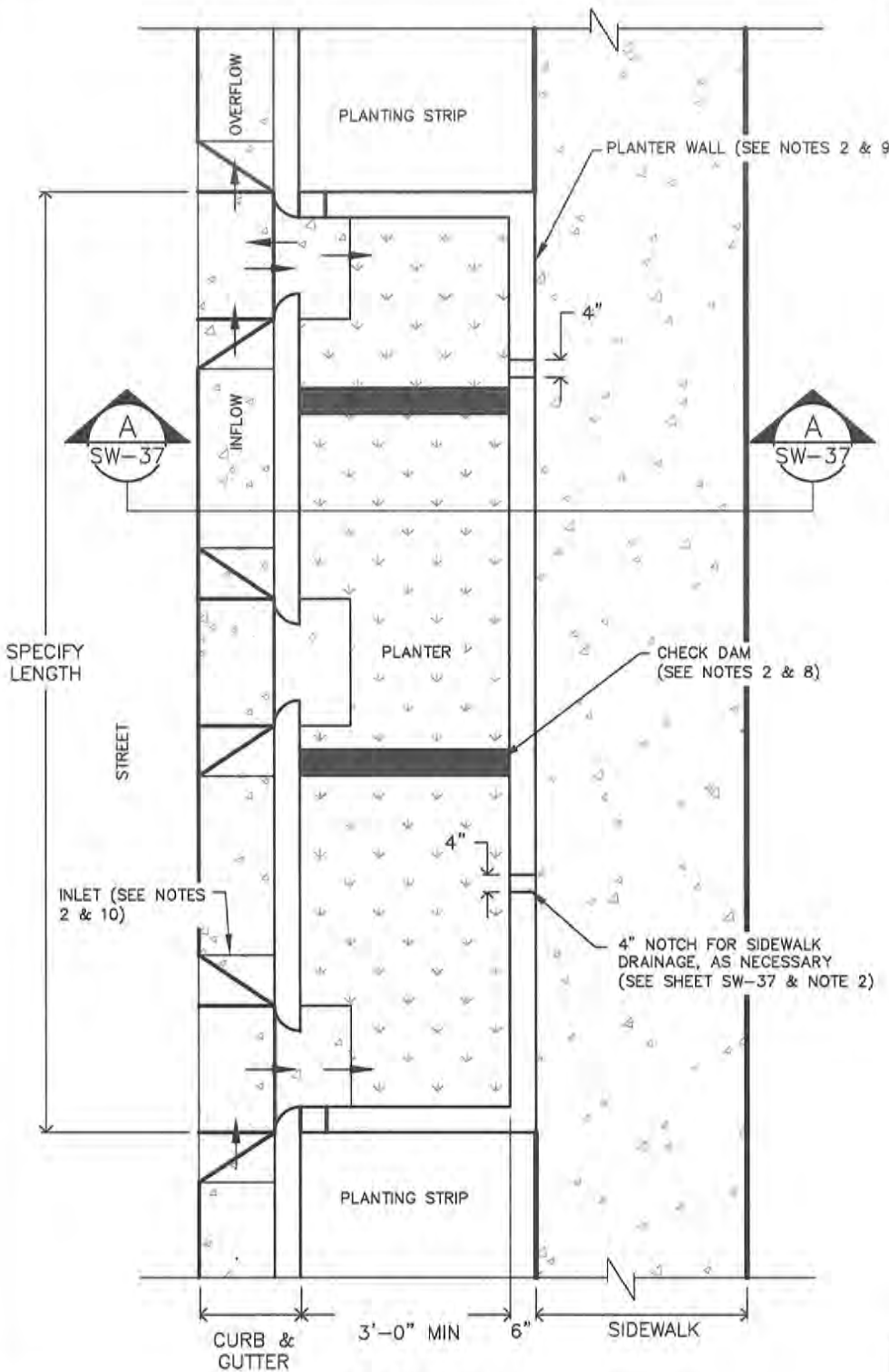
DESIGNED BY: STAFF	DATE: <u>10/17</u>		STANDARD PLAN No. SW 34
CADD BY: STAFF			
PROJECT MANAGER: WALTER GRANT, P.E.	ROBERT C. RUSSELL, CITY ENGINEER R.C.E. 42871, EXPIRES 3-31-2014		

DESIGNER INFORMATION

1. ADAPT PLAN VIEW EXAMPLE TO YOUR ENGINEERED DESIGN.
2. PROVIDE BEGINNING AND ENDING STATIONS FOR EACH FACILITY. PROVIDE STATIONS AND/OR DIMENSIONS AND ELEVATIONS AT EACH INLET, OUTLET, CHECK DAM, PLANTER CORNERS, AND SIDEWALK NOTCHES.
3. LONGITUDINAL SLOPE OF PLANTER MATCHES ROAD.
4. SIDEWALK ELEVATIONS MUST BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET BEFORE SIDEWALK.
5. MINIMUM INTERIOR PLANTER WIDTH IS 3 FEET. A MINIMUM 4 FEET INTERIOR PLANTER WIDTH IS REQUIRED FOR STREET TREES IN PLANTER. MAXIMIZE PLANTER WIDTH. SEE SW-32.
6. EXISTING UTILITY LINES MUST BE SLEEVED OR RELOCATED. PROPOSED UTILITY LINES TO BE LOCATED OUT OF FACILITY.
7. AREA AND DEPTH OF FACILITY ARE BASED UPON ENGINEERING CALCULATIONS AND RIGHT-OF-WAY CONSTRAINTS. SEE CITY OF SALINAS SWDS.

RELATED DETAILS AND RESOURCES

8. REFER TO SWDS 13 FOR STORMWATER PLANTER. FOR MINIMUM AREA SEE SWDS SECTION 4.0. CHECK DAM DETAILS SW-130 AND SW-131.
9. PLANTER WALL DETAIL SW-38.
10. INLET DETAILS SW-120 AND SW-122.
11. SPECIAL REQUIREMENTS FOR WATER LINES, METERS, AND FIRE HYDRANTS DETAIL SW-41.
12. PLANTER PLANTING TEMPLATES SW-40.
13. STORMWATER FACILITY CONSTRUCTION AND BSM REQUIREMENTS, SEE CITY OF SALINAS SWDS APPENDIX C.



PLAN VIEW

- DRAWING NOT TO SCALE -

IMPORTANT: UTILITY CONFLICTS AND EXISTING CONDITIONS CAN CREATE MAJOR DESIGN VARIABLES. LOCATE UTILITIES AND SURVEY EXISTING CONDITIONS PRIOR TO BEGINNING DESIGN WORK AND INCLUDE INFORMATION ON DESIGN DRAWINGS. ISOLATE UTILITY TRENCH SAND BACKFILL FROM PLANTER TO PREVENT UTILITY BOXES FROM FLOODING.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: PLAN VIEW WITHOUT PARKING - IN STREET STORMWATER PLANTERS

CITY OF SALINAS

STANDARD PLAN No.

**SW
35**

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/12/14

Robert C. Russell

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014

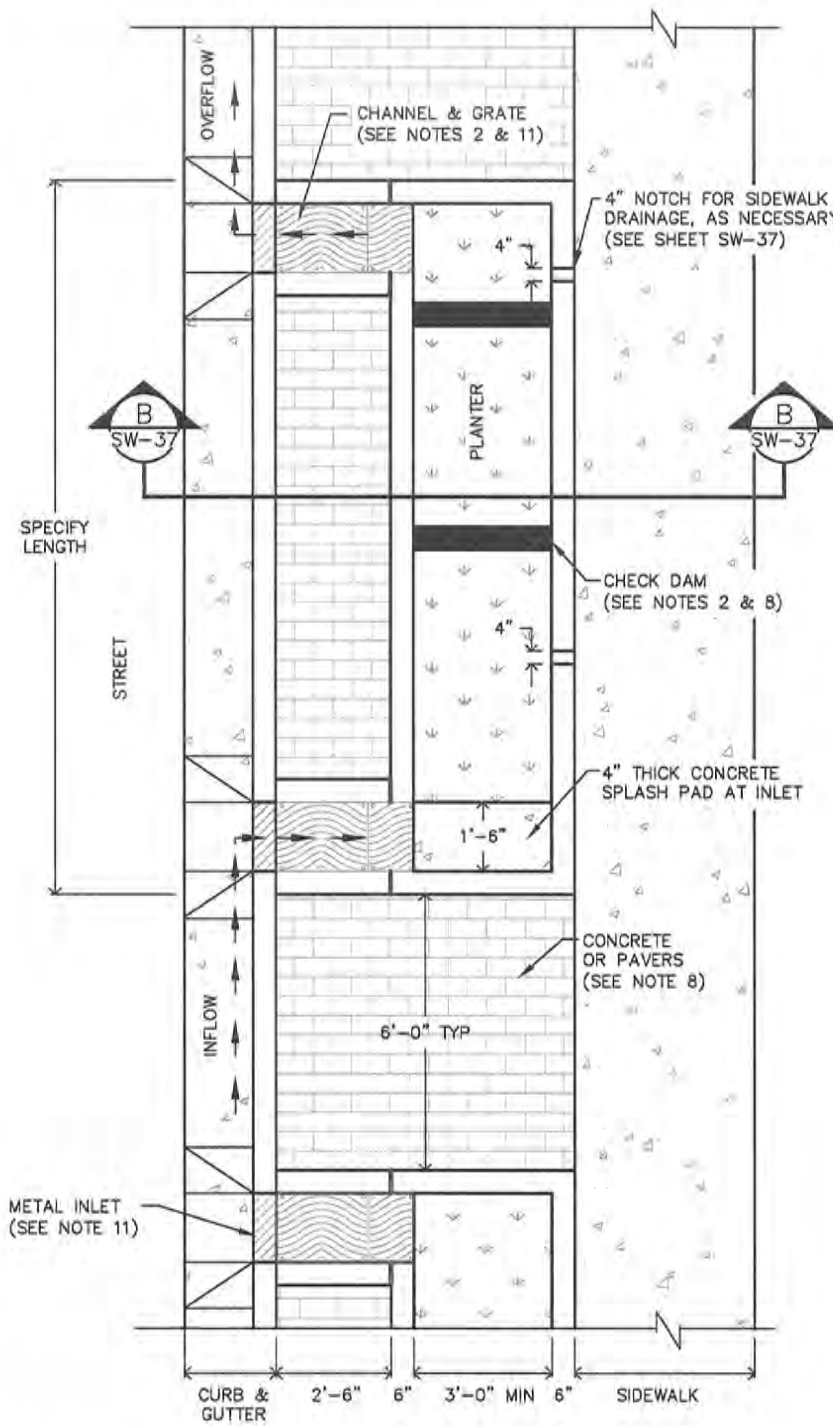


DESIGNER INFORMATION

1. ADAPT PLAN VIEW EXAMPLE TO YOUR ENGINEERED DESIGN.
2. PROVIDE BEGINNING AND ENDING STATIONS FOR EACH FACILITY. PROVIDE STATIONS AND/OR DIMENSIONS AND ELEVATIONS AT EACH INLET, OUTLET, CHECK DAM, PLANTER CORNERS, AND SIDEWALK NOTCHES.
3. LONGITUDINAL SLOPE OF PLANTER MATCHES ROAD.
4. SIDEWALK ELEVATIONS MUST BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET BEFORE SIDEWALK.
5. MINIMUM INTERIOR PLANTER WIDTH IS 3 FEET. A MINIMUM 4 FEET INTERIOR PLANTER WIDTH IS REQUIRED FOR STREET TREES IN PLANTER. MAXIMIZE PLANTER WIDTH. SEE SW-32.
6. EXISTING UTILITY LINES MUST BE SLEEVED OR RELOCATED. PROPOSED UTILITY LINES TO BE LOCATED OUT OF FACILITY.
7. AREA AND DEPTH OF FACILITY ARE BASED UPON ENGINEERING CALCULATIONS AND RIGHT-OF-WAY CONSTRAINTS. SEE CITY OF SALINAS SWDS.

RELATED DETAILS AND RESOURCES

8. REFER TO SWDS 13 FOR STORMWATER PLANTER. FOR MINIMUM AREA SEE SWDS SECTION 4.0. CHECK DAM DETAILS SW-130 AND SW-131.
9. PLANTER WALL DETAIL SW-38.
10. INLET DETAILS SW-47 AND SW-123.
11. SPECIAL REQUIREMENTS FOR WATER LINES, METERS, AND FIRE HYDRANTS DETAIL SW-41.
12. PLANTER PLANTING TEMPLATES SW-40.
13. STORMWATER FACILITY CONSTRUCTION AND BSM REQUIREMENTS, SEE CITY OF SALINAS SWDS APPENDIX C.



PLAN VIEW

- DRAWING NOT TO SCALE -

IMPORTANT: UTILITY CONFLICTS AND EXISTING CONDITIONS CAN CREATE MAJOR DESIGN VARIABLES. LOCATE UTILITIES AND SURVEY EXISTING CONDITIONS PRIOR TO BEGINNING DESIGN WORK AND INCLUDE INFORMATION ON DESIGN DRAWINGS. ISOLATE UTILITY TRENCH SAND BACKFILL FROM PLANTER TO PREVENT UTILITY BOXES FROM FLOODING.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **PLAN VIEW WITH PARKING - IN STREET STORMWATER PLANTERS**

CITY OF SALINAS

STANDARD PLAN No.
SW 36

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/18/14

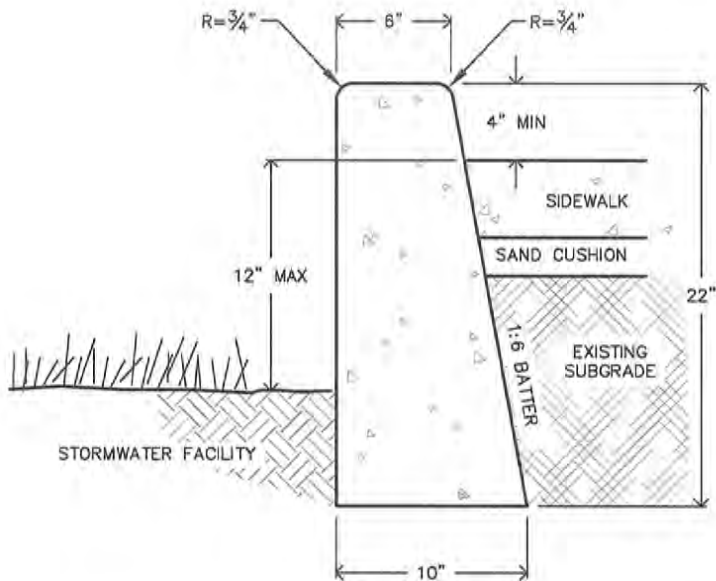
Robert C. Russell

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



DESIGNER INFORMATION

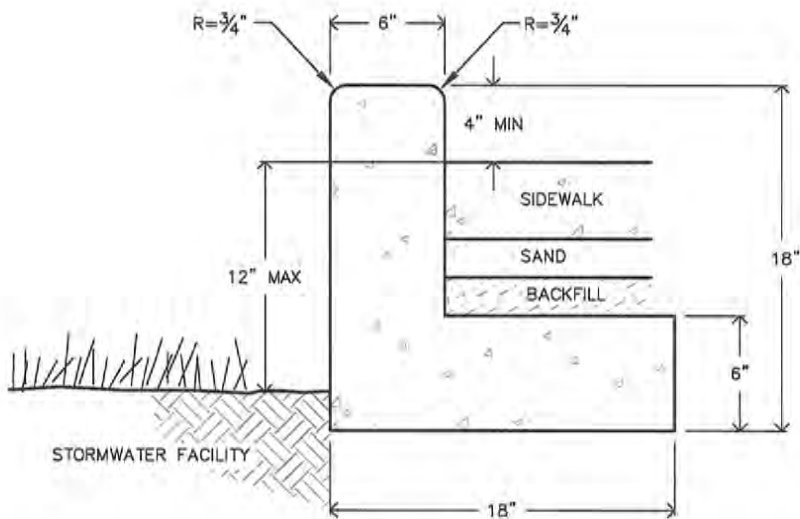
1. SPECIAL DESIGN CONSIDERATIONS OR STRUCTURAL REVIEW MAY BE REQUIRED FOR LONGER PLANTER WALL SPANS. STEEL REINFORCEMENT OR ADDITIONAL CONCRETE CHECK DAMS MAY BE NEEDED FOR STABILITY.
2. MAINTAIN 1:6 BATTER FOR WALLS AND 4" MINIMUM TO TOP OF CURB.
3. IF LINER IS USED WITH L-SHAPED WALL, WALL HEIGHT MUST BE INCREASED. THREE INCHES OF CONCRETE REQUIRED ON ALL SIDES OF ATTACHMENT (SEE SW-150).



CONSTRUCTION NOTE

FINISH ALL EXPOSED CONCRETE SURFACE.

FOR ALTERNATIVE EDGE CONFIGURATIONS SEE SW-12D



- DRAWING NOT TO SCALE -

IMPORTANT: ISOLATE UTILITY TRENCH SAND BACKFILL FROM PLANTER TO PREVENT UTILITY BOXES FROM FLOODING.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **BIORETENTION EDGE CONFIGURATIONS**

CITY OF SALINAS

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/18/14

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



STANDARD PLAN No.

SW 38

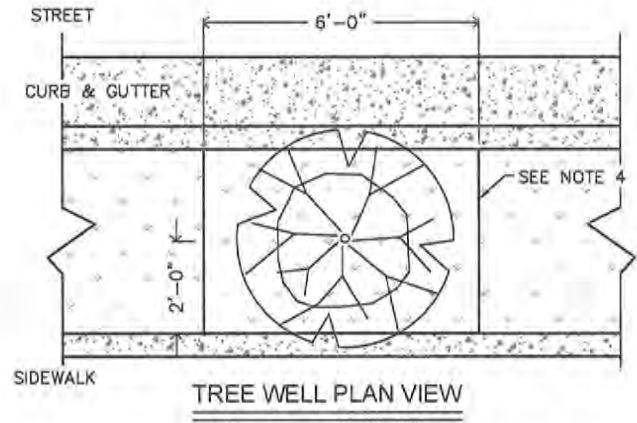
REFER TO SWDS APPENDIX C FOR ALLOWABLE STREET TREES. ALTERNATES MAY BE PROPOSED BY LANDSCAPE ARCHITECT PROVIDED IT IS SUITABLE FOR THE ZONE IN WHICH IT IS PLANTED & IT IS APPROVED BY URBAN FORESTRY

DESIGNER INFORMATION

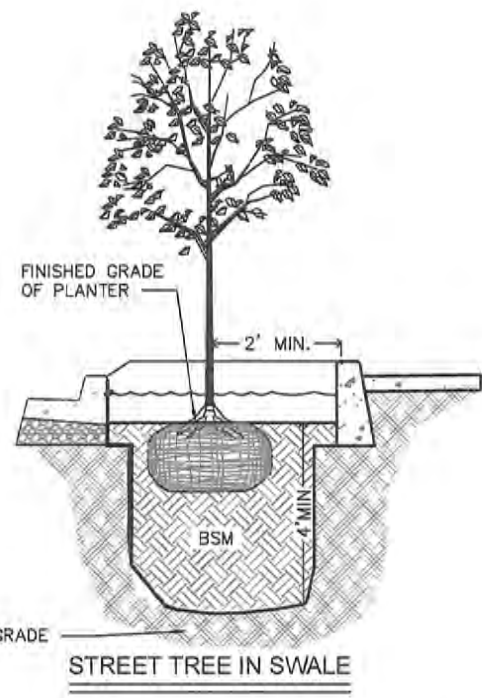
1. DISTANCE BETWEEN TREES VARIES: 20FT-30FT ON CENTER.
2. STORMWATER FACILITY CONSTRUCTION AND TOPSOIL REQUIREMENTS, SEE CITY OF SALINAS SWDS APPENDIX D.
3. USE OF TREE SPECIES MUST BE APPROVED BY URBAN FORESTRY CONTACT VICTOR BAEZ 831-758-7958.
4. INCLUDE TREE WELL AND STREET TREE VIEWS ON PLANS.
5. DIMENSION TOPSOIL AND ROCK LAYERS ON NON-TREE SIDE TO CORRESPOND TO SWALE SECTION.
6. INCLUDE LINER AND CALL-OUT IF USED, SEE SWALE SECTION SW-37.

CONSTRUCTION NOTE

1. CONTACT URBAN FORESTRY VICTOR BAEZ FOR TREE INSTALLATION ASSISTANCE AND PERMITTING AT (831) 758-7958.
2. REMOVE WIRE AND BURLAP FROM ROOT BALL PRIOR TO BACKFILLING.
3. SET TOP OF ROOT BALL 1"-2" ABOVE TOPSOIL SURFACE.
4. DEEPEN SOIL SECTION MINIMUM; 4FT WIDE, 8FT LONG, 4FT DEEP.



IMPORTANT: LOCATION OF TREES MUST MEET CLEARANCE REQUIREMENTS ESTABLISHED BY THE CITY OF SALINAS. UTILITY CONFLICTS AND EXISTING CONDITIONS CAN AFFECT TREE PLACEMENT. LOCATE UTILITIES PRIOR TO INSTALLING TREES.



- DRAWING NOT TO SCALE -

IMPORTANT: ISOLATE UTILITY TRENCH SAND BACKFILL FROM PLANTER TO PREVENT UTILITY BOXES FROM FLOODING.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **STREET TREE DETAILS - IN STREET STORMWATER PLANTERS**

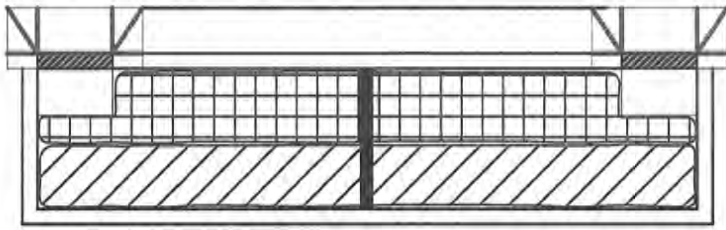
CITY OF SALINAS

STANDARD PLAN No.
SW 39

DESIGNED BY: STAFF
CADD BY: STAFF
PROJECT MANAGER: WALTER GRANT, P.E.



DATE: 4/8/14
Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014

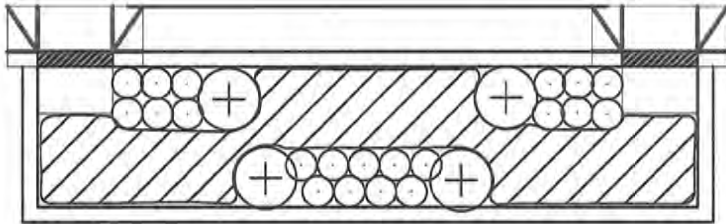




TEMPLATE 1




PLANT LEGEND 1

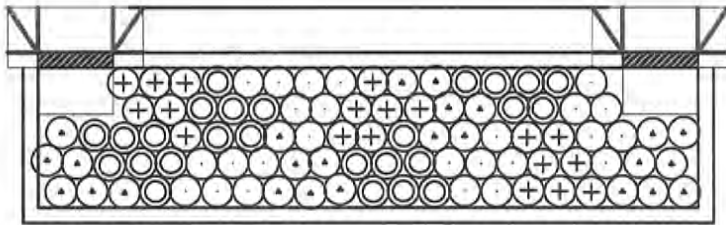
SYMBOL	BOTANICAL NAME
	COMMON NAME
	
	



TEMPLATE 2





PLANT LEGEND 2

SYMBOL	BOTANICAL NAME
	COMMON NAME
	
	
	



TEMPLATE 3

PLANT LEGEND 3

SYMBOL	BOTANICAL NAME
	COMMON NAME
	
	
	
	

INSTRUCTIONS

1. PROVIDE TEMPLATES FOR SUBMITTAL GUIDANCE

- DRAWING NOT TO SCALE -

IMPORTANT: ISOLATE UTILITY TRENCH SAND BACKFILL FROM PLANTER TO PREVENT UTILITY BOXES FROM FLOODING.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE:

**LANDSCAPE PLANTING TEMPLATES
IN STREET STORMWATER PLANTERS**

CITY OF SALINAS

STANDARD PLAN No.

**SW
40**

DESIGNED BY:
STAFF

CADD BY:
STAFF

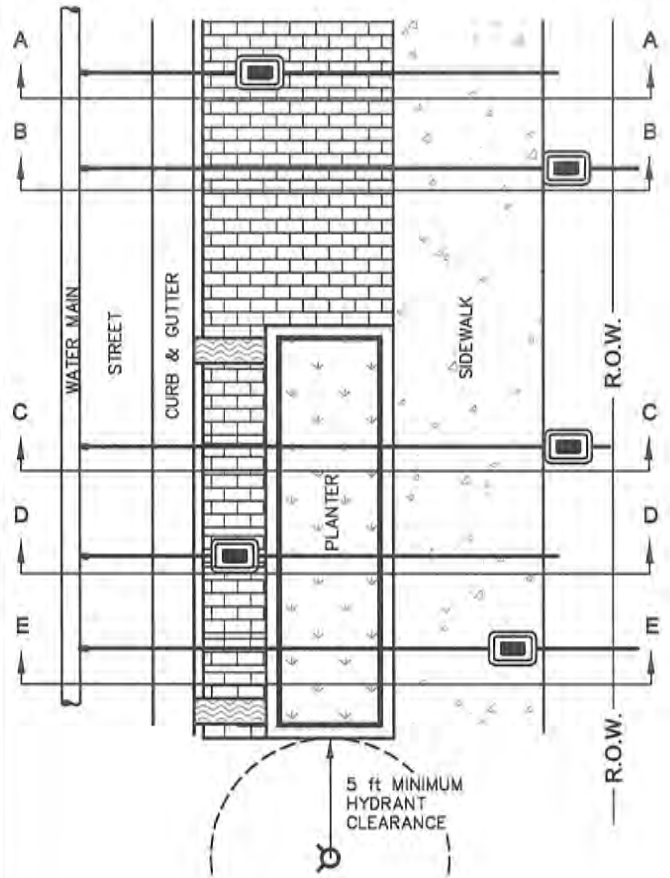
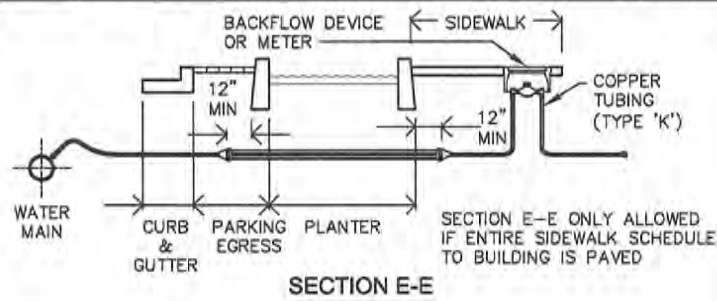
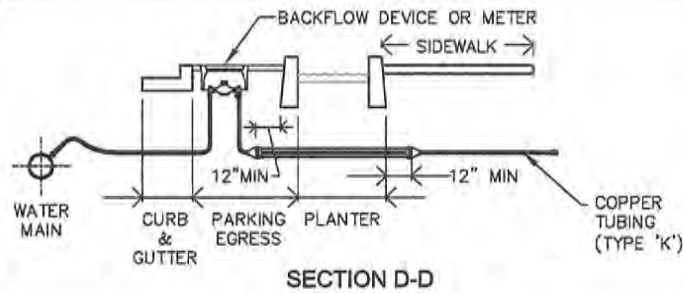
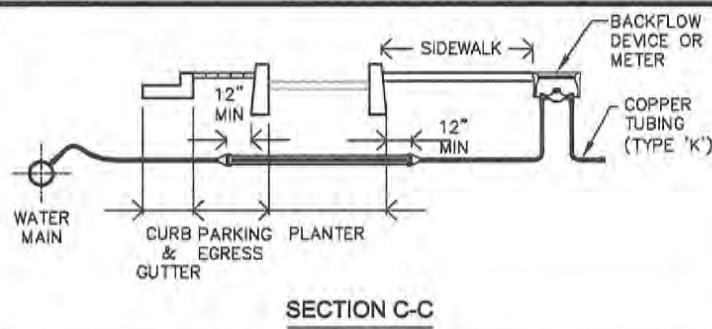
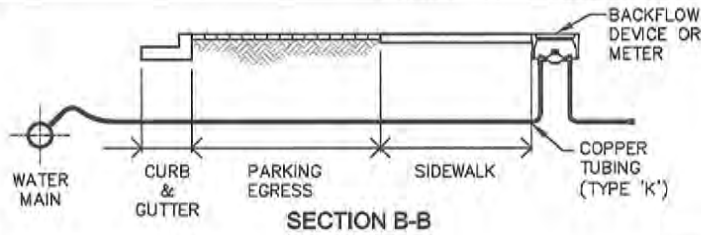
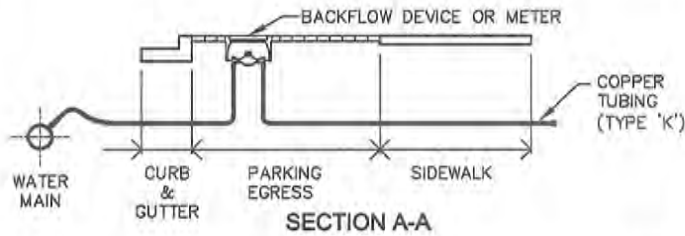
PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/8/14

Robert C. Russell

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014





DESIGNER INFORMATION

1. REFER TO CITY STD. PLANS NO. 33 & 34 FOR DETAIL. CENTER OF HYDRANTS MUST HAVE MIN 5 FT CLEARANCE TO THE OUTSIDE EDGE OF STORMWATER FACILITY.
2. STANDARD METER LOCATION IS OPTION A. OPTION B OR C CAN BE USED ONLY IF THE METER BOX IS FULLY WITHIN THE RIGHT-OF-WAY. OPTION D CAN ONLY BE USED WITHIN PARKING EGRESS ZONE THAT IS A MINIMUM OF 40" WIDE. OPTION E CAN ONLY BE USED FOR AN EXISTING SERVICE AND WHEN OTHER OPTIONS ARE INFEASIBLE OR WHERE ENTIRE RIGHT OF WAY IS PAVED.
3. REFER TO CALIFORNIA WATER SERVICE & ALCO STANDARDS.
4. IF WATER MAIN IS UNDER OR BEHIND PROPOSED CURB, THE WATER MAIN MUST BE RELOCATED UNLESS OTHERWISE APPROVED BY THE CITY OF SALINAS. VERIFICATION OF WATER MAIN DEPTH IS REQUIRED PRIOR TO CITY APPROVAL.
5. CROSS-SECTION VIEWS ARE NOT REQUIRED ON CONSTRUCTION PLANS.

- DRAWING NOT TO SCALE -

IMPORTANT: ISOLATE UTILITY TRENCH SAND BACKFILL FROM PLANTER TO PREVENT UTILITY BOXES FROM FLOODING.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **BACKFLOW, METER AND HYDRANT LOCATIONS IN STREET STORMWATER PLANTERS**

CITY OF SALINAS

STANDARD PLAN No.

**SW
41**

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/8/14

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014

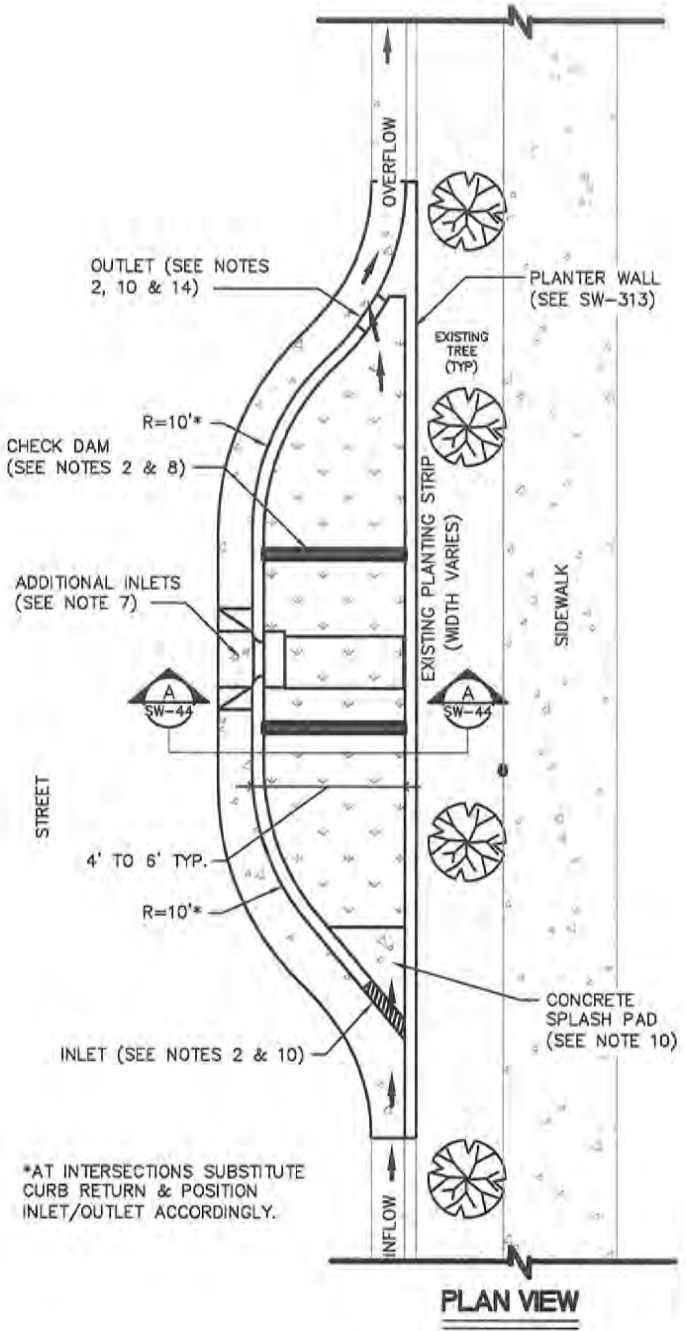


DESIGNER INFORMATION

1. ADAPT PLAN VIEW EXAMPLE TO YOUR ENGINEERED DESIGN.
2. PROVIDE BEGINNING AND ENDING STATIONS FOR EACH FACILITY. PROVIDE STATIONS AND/OR DIMENSIONS AND ELEVATIONS AT EACH INLET, OUTLET, CHECK DAM, PLANTER CORNERS, AND SIDEWALK NOTCHES.
3. LONGITUDINAL SLOPE OF PLANTER MATCHES ROAD.
4. SIDEWALK ELEVATIONS MUST BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET BEFORE SIDEWALK.
5. EXISTING UTILITY LINES MUST BE SLEEVED OR RELOCATED. PROPOSED UTILITY LINES TO BE LOCATED OUT OF FACILITY.
6. AREA AND DEPTH OF FACILITY ARE BASED ON ENGINEERING CALCULATIONS AND RIGHT-OF-WAY CONSTRAINTS. SEE CITY OF SALINAS SWDS.
7. PROVIDE ADDITIONAL INLETS IN FACILITIES OVER 25 FT IN LENGTH, OR PER SITE SPECIFIC NEEDS.

RELATED DETAILS AND RESOURCES

8. CHECK DAM DETAILS SW-130 AND SW-131.
9. PLANTER WALL DETAIL SW-38.
10. INLET DETAILS SW-120 THRU SW-123 AND SW-47 THRU SW-49.
11. SPECIAL REQUIREMENTS FOR WATER LINES, METERS, AND FIRE HYDRANTS DETAIL SW-46.
12. PLANTER PLANTING TEMPLATES SW-45.
13. STORMWATER FACILITY CONSTRUCTION AND TOPSOIL REQUIREMENTS, SEE CITY OF SALINAS SWDS.
14. INSTALL OVERFLOW PER SW-140 CONNECT TO STORM DRAIN SYSTEM IF AVAILABLE. OR IF AT LOW POINT PROVIDE INLET EACH END & INSTALL OVERFLOW AT LOW POINT PER SW-140.



*AT INTERSECTIONS SUBSTITUTE CURB RETURN & POSITION INLET/OUTLET ACCORDINGLY.

PLAN VIEW

- DRAWING NOT TO SCALE -

IMPORTANT: UTILITY CONFLICTS AND EXISTING CONDITIONS CAN CREATE MAJOR DESIGN VARIABLES. LOCATE UTILITIES AND SURVEY EXISTING CONDITIONS PRIOR TO BEGINNING DESIGN WORK AND INCLUDE INFORMATION ON DESIGN DRAWINGS. ISOLATE UTILITY TRENCH SAND BACKFILL FROM PLANTER TO PREVENT UTILITY BOXES FROM FLOODING.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: PLAN VIEW CURB EXTENSIONS WITH IN-STREET STORMWATER PLANTERS

CITY OF SALINAS

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/8/14

Robert C. Russell

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



STANDARD PLAN No.

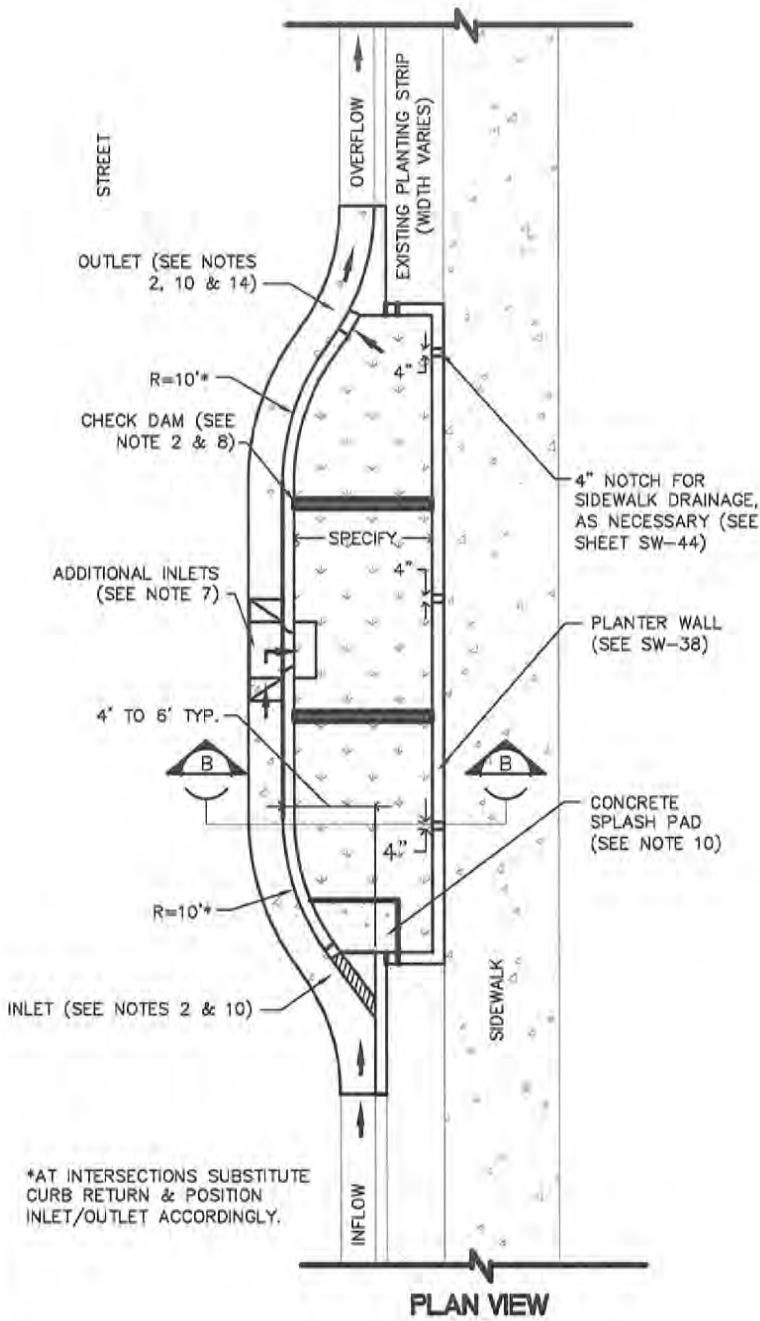
SW 42

DESIGNER INFORMATION

1. ADAPT PLAN VIEW EXAMPLE TO YOUR ENGINEERED DESIGN.
2. PROVIDE BEGINNING AND ENDING STATIONS FOR EACH FACILITY. PROVIDE STATIONS AND/OR DIMENSIONS AND ELEVATIONS AT EACH INLET, OUTLET, CHECK DAM, PLANTER CORNERS, AND SIDEWALK NOTCHES.
3. LONGITUDINAL SLOPE OF PLANTER MATCHES ROAD.
4. SIDEWALK ELEVATIONS MUST BE SET ABOVE CHECK DAM AND INLET/OUTLET ELEVATIONS TO ALLOW OVERFLOW TO DRAIN TO STREET BEFORE SIDEWALK.
5. EXISTING UTILITY LINES MUST BE SLEEVED OR RELOCATED. PROPOSED UTILITY LINES TO BE LOCATED OUT OF FACILITY.
6. AREA AND DEPTH OF FACILITY ARE BASED ON ENGINEERING CALCULATIONS AND RIGHT-OF-WAY CONSTRAINTS. SEE CITY OF SALINAS SWDS.
7. PROVIDE ADDITIONAL INLETS IN FACILITIES OVER 25 FT IN LENGTH, OR PER SITE SPECIFIC NEEDS.

RELATED DETAILS AND RESOURCES

8. CHECK DAM DETAILS SW-130 AND SW-131.
9. PLANTER WALL DETAIL SW-38.
10. INLET DETAILS SW-120 AND SW-47 THRU SW-49.
11. SPECIAL REQUIREMENTS FOR WATER LINES, METERS, AND FIRE HYDRANTS DETAIL SW-46.
12. CURB EXTENSION PLANTING TEMPLATES SW-45.
13. STORMWATER FACILITY CONSTRUCTION AND TOPSOIL REQUIREMENTS, SEE CITY OF SALINAS SWDS.
14. INSTALL OVERFLOW PER SW-140 CONNECT TO STORM DRAIN SYSTEM IF AVAILABLE. OR IF AT LOW POINT PROVIDE INLET EACH END & INSTALL OVERFLOW AT LOW POINT PER SW-140.



*AT INTERSECTIONS SUBSTITUTE CURB RETURN & POSITION INLET/OUTLET ACCORDINGLY.

PLAN VIEW

IMPORTANT: UTILITY CONFLICTS AND EXISTING CONDITIONS CAN CREATE MAJOR DESIGN VARIABLES. LOCATE UTILITIES AND SURVEY EXISTING CONDITIONS PRIOR TO BEGINNING DESIGN WORK AND INCLUDE INFORMATION ON DESIGN DRAWINGS. ISOLATE UTILITY TRENCH SAND BACKFILL FROM PLANTER TO PREVENT UTILITY BOXES FROM FLOODING.

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE:

PLAN VIEW-CURB EXTENSIONS WITH IN-STREET STORMWATER PLANTER

CITY OF SALINAS

STANDARD PLAN No.

**SW
43**

DESIGNED BY:
STAFF

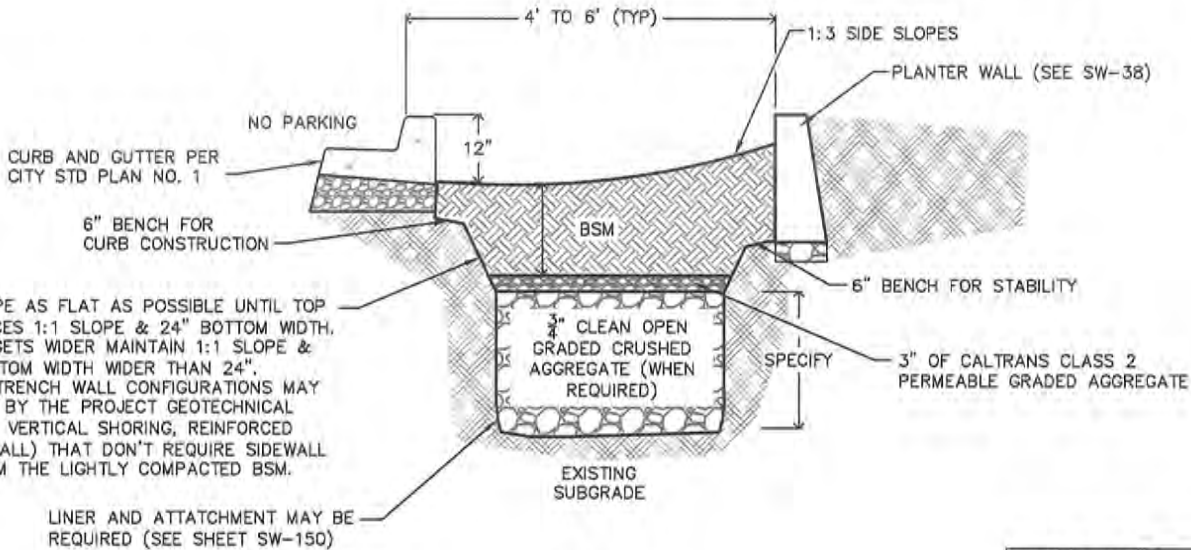
CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/18/14

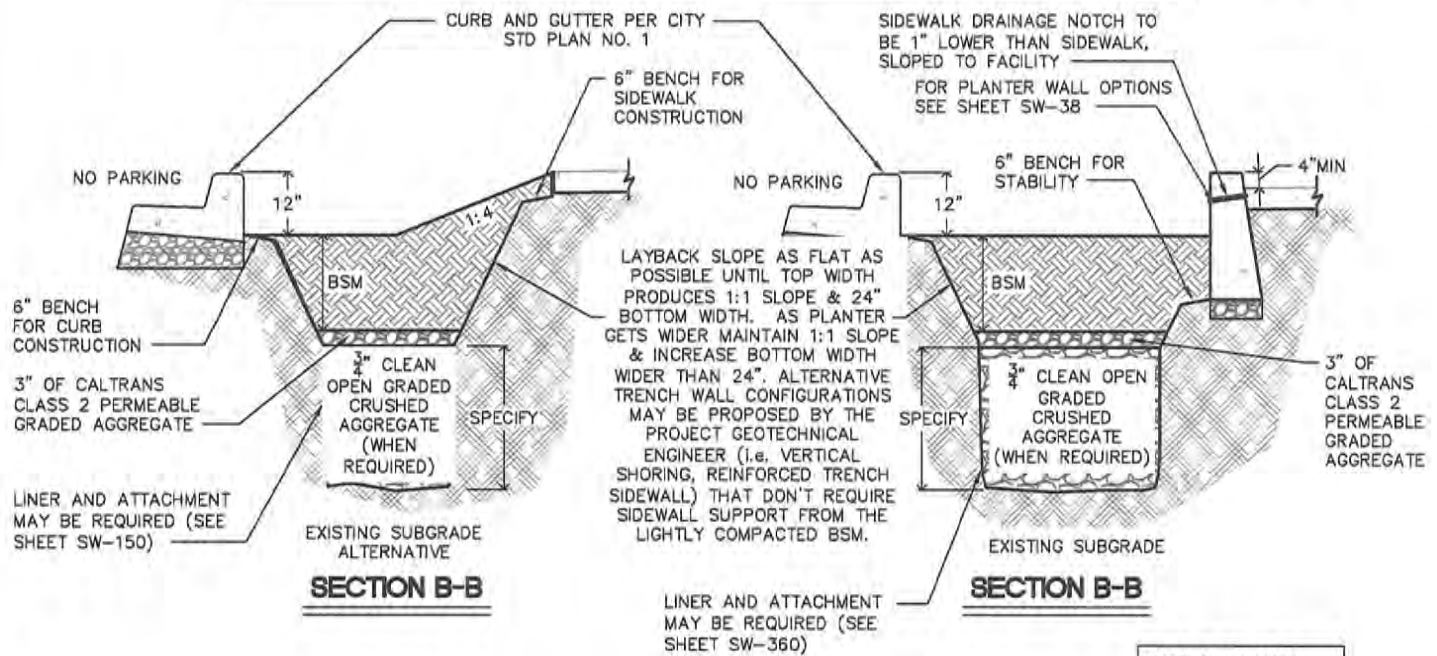
Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014





SECTION A-A

FOR PLAN VIEW
REFER TO SW-42



SECTION B-B

SECTION B-B

FOR PLAN VIEW
REFER TO SW-43

CONSTRUCTION NOTE

SCARIFY THE NATIVE SOIL FOLLOWING THE INITIAL EXCAVATION AND BEFORE INSTALLING TOPSOIL OR ROCK.

NOTE: INSTALL OVERFLOW RISER, SUBDRAIN & CONNECTION TO STORM DRAIN SYSTEM WHERE REQUIRED.

IMPORTANT: ISOLATE UTILITY TRENCH SAND BACKFILL FROM PLANTER TO PREVENT UTILITY BOXES FROM FLOODING.

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

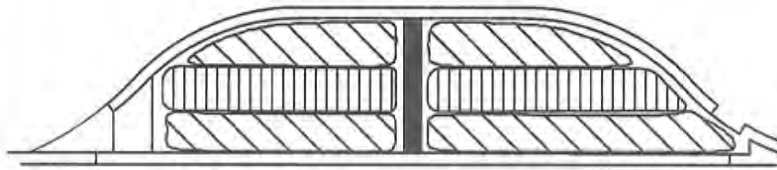
TITLE: SECTION VIEWS-CURB EXTENSIONS WITH STORMWATER PLANTERS

CITY OF SALINAS

STANDARD PLAN No. SW 44



DESIGNED BY: STAFF	DATE: <u>4/10/14</u>
CADD BY: STAFF	<u>Robert C. Russell</u>
PROJECT MANAGER: WALTER GRANT, P.E.	ROBERT C. RUSSELL, CITY ENGINEER R.C.E. 42871, EXPIRES 3-31-2014

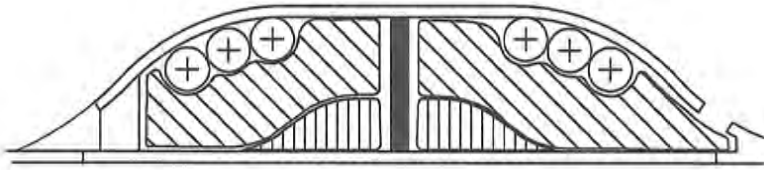




TEMPLATE 1




PLANT LEGEND 1

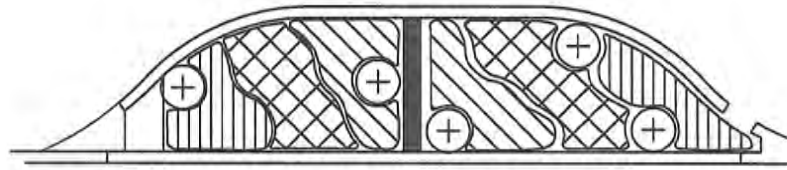
SYMBOL	BOTANICAL NAME
	COMMON NAME
	
	



TEMPLATE 2


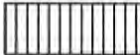


PLANT LEGEND 2

SYMBOL	BOTANICAL NAME
	COMMON NAME
	
	
	



TEMPLATE 3

PLANT LEGEND 3

SYMBOL	BOTANICAL NAME
	COMMON NAME
	
	
	
	

INSTRUCTIONS

1. PROVIDE TEMPLATES AND ALTER THEM TO VARY THE DESIGN APPEARANCE.
2. PLANT LISTS AND QUANTITY REQUIREMENTS ARE FOUND IN SALINAS SWDS APPENDIX C.
3. PLANTING TABLE REQUIRED. STATE PLANT SPECIES, SPACING, AND QUANTITIES PER ZONE AND PER SWALE. INCLUDE THE SQUARE FOOTAGE OF EACH ZONE.

IMPORTANT: ISOLATE UTILITY TRENCH SAND BACKFILL FROM PLANTER TO PREVENT UTILITY BOXES FROM FLOODING.

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE:

LANDSCAPE PLANTING TEMPLATES-CURB EXTENSIONS WITH STORMWATER PLANTERS

CITY OF SALINAS

STANDARD PLAN No.

**SW
45**

DESIGNED BY:

STAFF

CADD BY:

STAFF

PROJECT MANAGER:

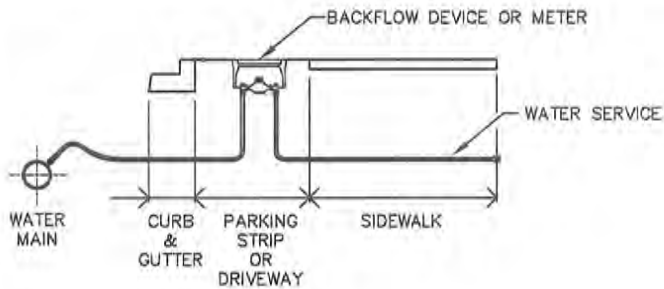
WALTER GRANT, P.E.

DATE 4/8/14

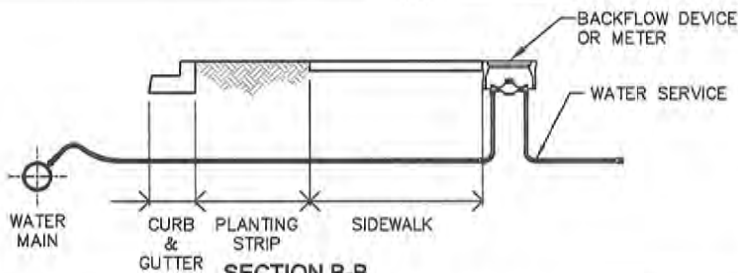
Robert C. Russell

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014

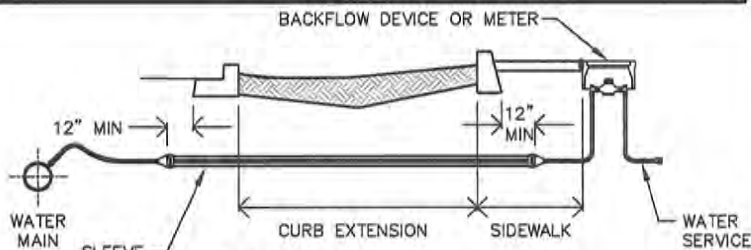




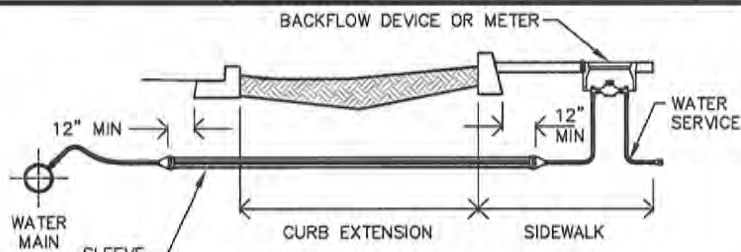
SECTION A-A



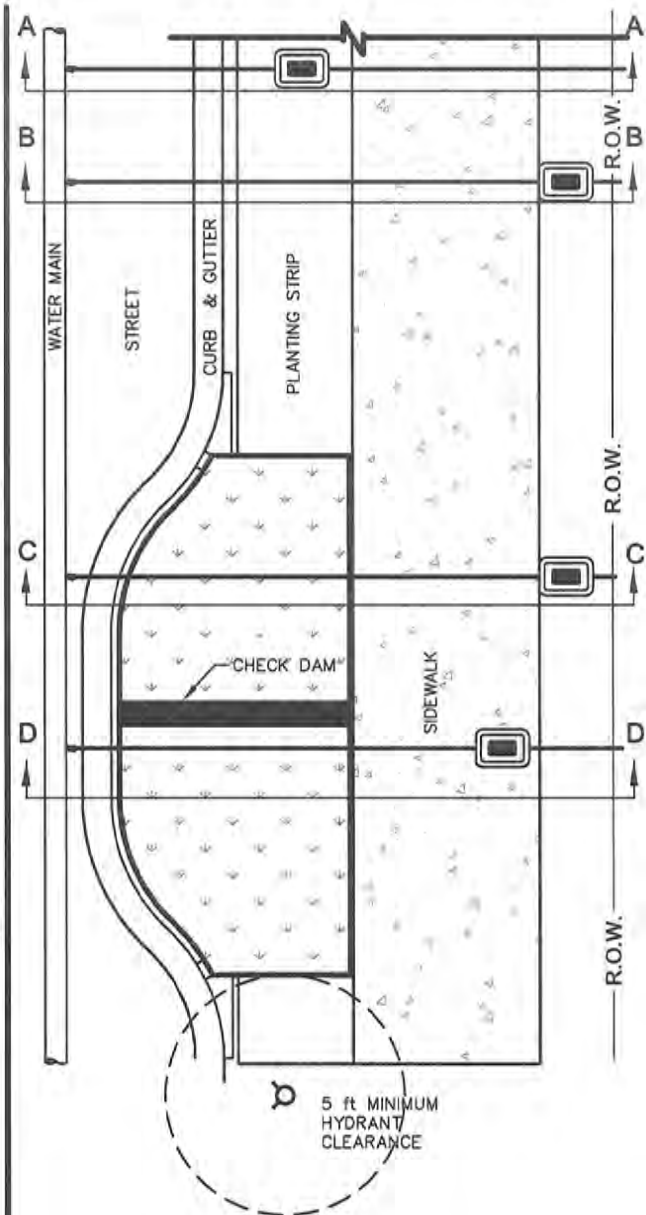
SECTION B-B



SECTION C-C



SECTION D-D



IMPORTANT: ISOLATE UTILITY TRENCH SAND BACKFILL FROM PLANTER TO PREVENT UTILITY BOXES FROM FLOODING.

INSTRUCTIONS

- REFER TO CITY STANDARD PLANS NO. 34 & 35 FOR ADDITIONAL REQUIREMENTS. CENTER OF HYDRANTS MUST HAVE MIN 5 FT CLEARANCE TO THE OUTSIDE EDGE OF STORMWATER FACILITY.
- STANDARD METER LOCATION IS OPTION A. OPTION B OR C CAN BE USED ONLY IF THE METER BOX IS FULLY WITHIN THE RIGHT-OF-WAY. OPTION D CAN ONLY BE USED FOR AN EXISTING SERVICE AND WHEN OTHER OPTIONS ARE INFEASIBLE & THE ENTIRE R/W-S/W IS PAVED.
- REFER TO CALIFORNIA WATER SERVICE CO. OR ALCO STDS.
- IF WATER MAIN IS UNDER OR BEHIND PROPOSED CURB, THE WATER MAIN MUST BE RELOCATED UNLESS OTHERWISE APPROVED BY THE CITY OF SALINAS. VERIFICATION OF WATER MAIN DEPTH IS REQUIRED PRIOR TO CITY APPROVAL.
- CROSS-SECTION VIEWS ARE NOT REQUIRED ON CONSTRUCTION PLANS.

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: BACKFLOW, METER & HYDRANT LOCATIONS- CURB EXTENSIONS WITH STORMWATER PLANTERS

CITY OF SALINAS

STANDARD PLAN No. SW 46

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/8/14

Robert C. Russell

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014

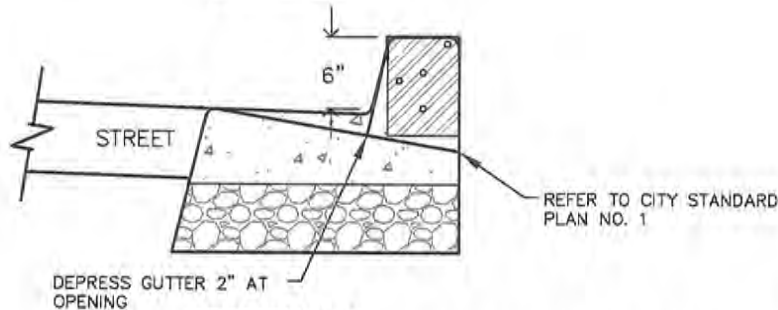
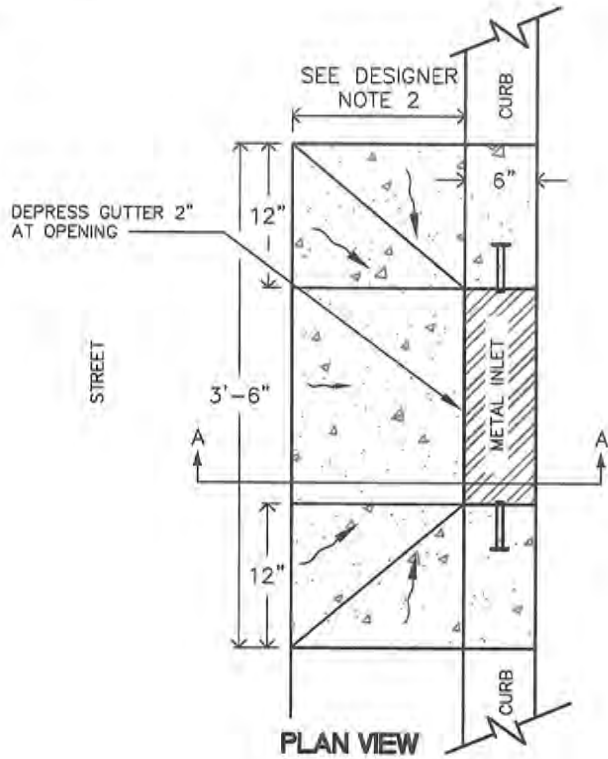


DESIGNER INFORMATION

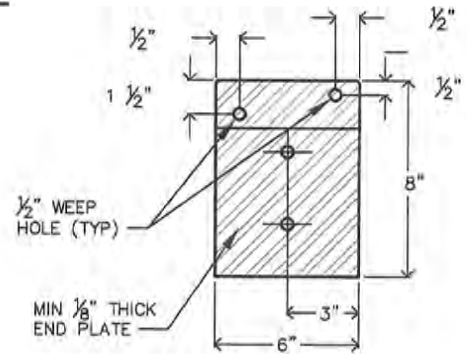
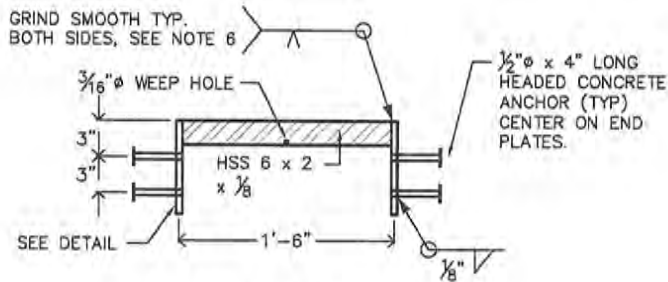
1. METAL INLETS REQUIRED ON HIGH TRAFFIC STREETS.
2. CURB AND GUTTER, USE CITY STANDARD PLAN NO. 1
3. METAL INLET ASSEMBLY USED WITH SW-120, SW-121, AND SW-50.
4. WHEN USING WITH SW-120, MODIFY CURB FOR METAL INLET ASSEMBLY.
5. DESIGN VERTICAL WHEEL LOAD IS 8.5 KIPS (1/2 OF TANDEM AXLES WEIGHT SPECIFIED IN FHWA-HOP-06-105.
6. METAL INLET WIDTH CAN BE MODIFIED TO 2FT IF SITE CONDITIONS REQUIRE A 2 FT INTERIOR INLET WIDTH.

RELATED DETAILS AND RESOURCES

1. HEADED CONCRETE ANCHORS SHALL MEET THE REQUIREMENTS OF ASTM A-108.
2. HSS 6 x 2 x 1/8 CHANNEL SHALL MEET THE REQUIREMENTS OF ASTM A-500 GRADE B.
3. END PLATES SHALL MEET THE REQUIREMENTS OF ASTM A-36.
4. ENTIRE ASSEMBLY SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A-123.
5. SINGLE BEVEL GROOVE WELD.



- METAL INLET ASSEMBLY -



FRONT

SIDE

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **METAL INLET-CURB INLETS**

CITY OF SALINAS

STANDARD PLAN No.
SW 47

DESIGNED BY:
STAFF

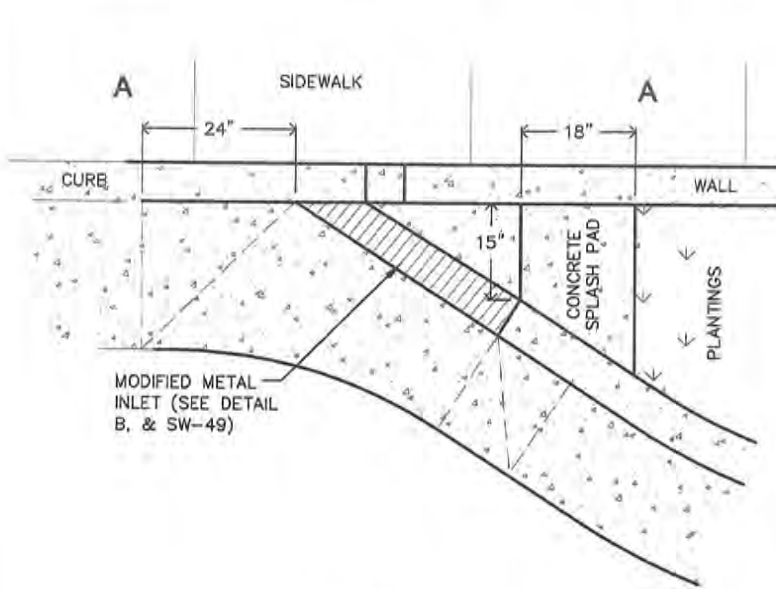
CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

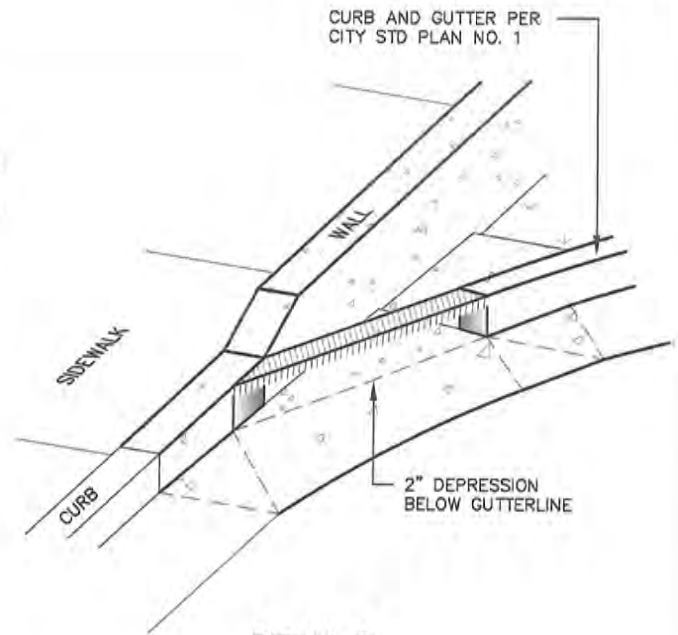
DATE 4/5/14

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014

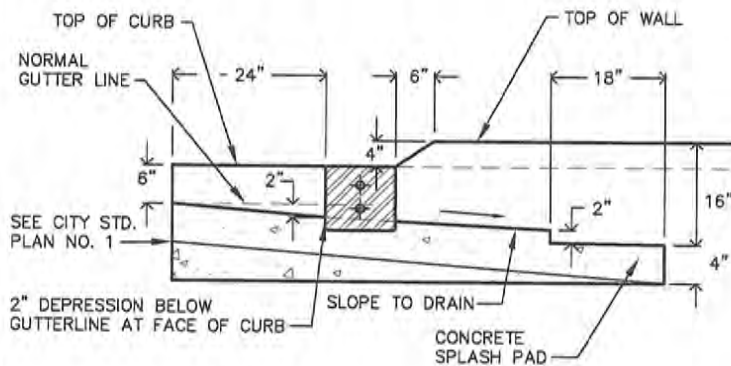




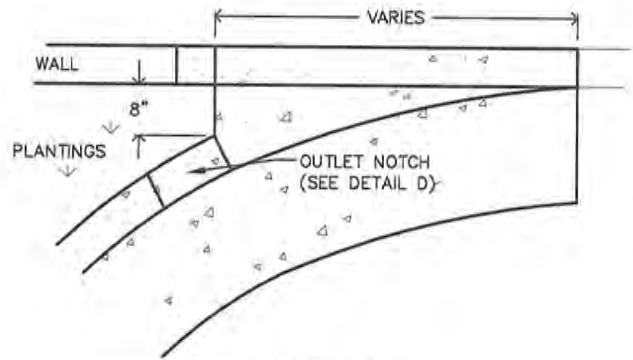
DETAIL A
INLET PLAN VIEW



DETAIL B
INLET PERSPECTIVE VIEW



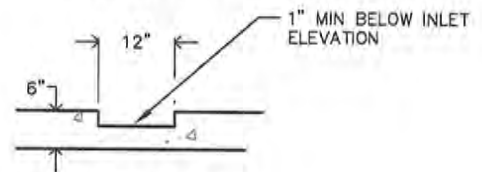
DETAIL A



DETAIL C
OUTLET NOTCH PLAN

DESIGNER INFORMATION

1. ADDITIONAL INLETS CAN BE ADDED IF NECESSARY (PREFERABLY IMMEDIATELY DOWNSTREAM OF EACH CHECK DAM TO MINIMIZE POTENTIAL BACK FLOW).
2. SAWCUT BEYOND FACILITY AND TRANSITION EXISTING CURB TO NEW CURB AND GUTTER AT 1" PER FOOT AS NECESSARY.
3. INLET MAY BE MODIFIED TO MAXIMIZE FLOW ENTRY TO STORMWATER FACILITY.



DETAIL D
OUTLET NOTCH PROFILE

- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **INLET & OUTLET FOR CURB EXTENSIONS-
CURB INLETS**

CITY OF SALINAS

DESIGNED BY:
STAFF

DATE 4/10/14

CADD BY:
STAFF

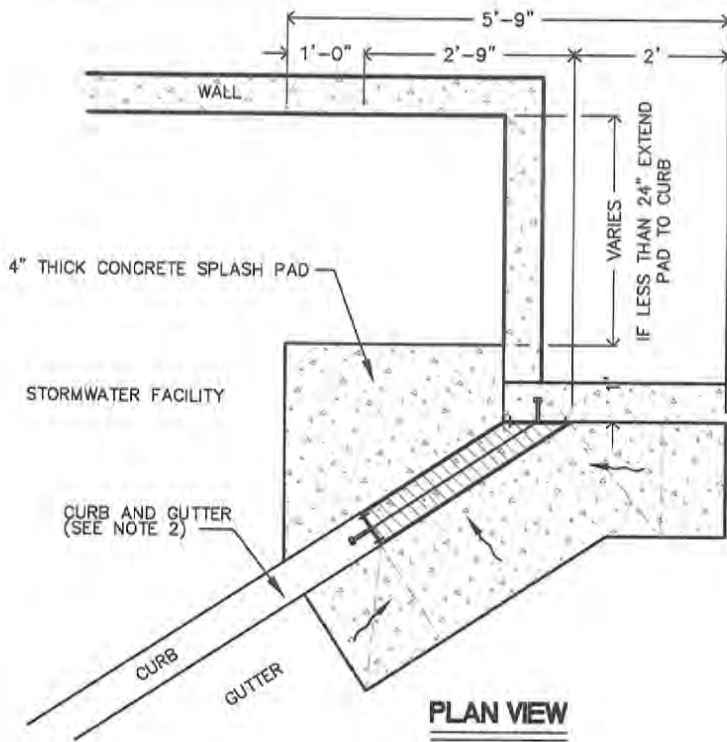
Robert C. Russell

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2016



PROJECT MANAGER:
WALTER GRANT, P.E.

STANDARD PLAN No.
**SW
48**

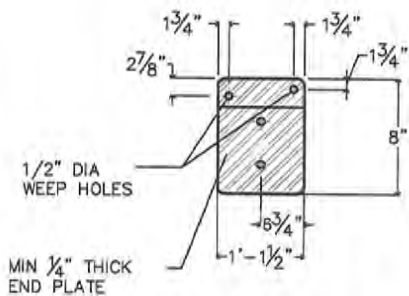
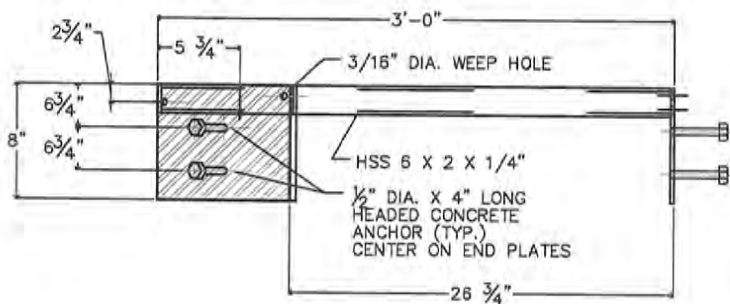
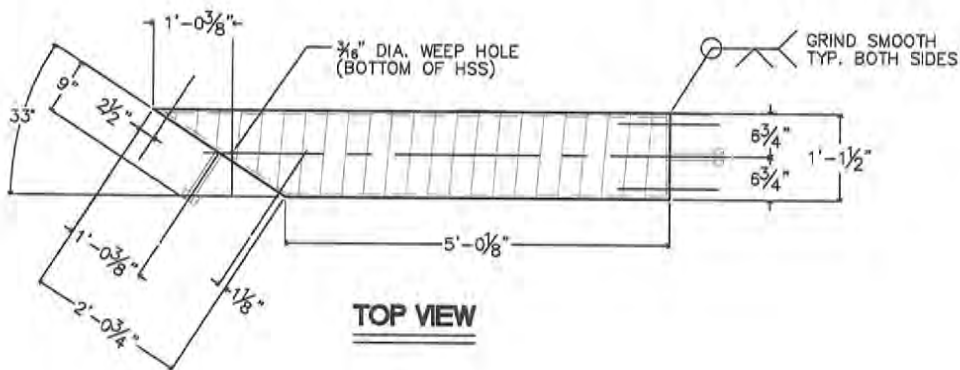


DESIGNER INFORMATION

1. SPLASH PAD ARE REQUIRED AT ALL INLETS.
2. REFER TO CITY STD. PLAN NO. 1, MATCH GUTTER PAN OF ADJACENT CURB AND GUTTER.
3. DESIGN VERTICAL WHEEL LOAD IS 8.5KIPS (1/2 OF TANDEM AXLE WEIGHT SPECIFIED IN FHWA-HOP-06-105).

RELATED DETAILS AND RESOURCES

1. HEADED CONCRETE ANCHORS SHALL MEET THE REQUIREMENTS OF ASTM A-108.
2. HSS 6 x 2 x 1/4 CHANNEL SHALL MEET THE REQUIREMENTS OF ASTM A-500 GRADE B.
3. END PLATES SHALL MEET THE REQUIREMENTS OF ASTM A-36.
4. ENTIRE ASSEMBLY SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A-123.
5. SINGLE BEVEL GROOVE WELD.



- DRAWING NOT TO SCALE -

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **MODIFIED METAL INLET ASSEMBLY-CURB INLETS**

CITY OF SALINAS

DESIGNED BY:
STAFF

DATE 4/8/14

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



STANDARD PLAN No.

**SW
49**



AUTOMATIC RETRACTABLE INLET SCREEN – ONE PIECE



AUTOMATIC RETRACTABLE INLET SCREEN – "WING GATE"

NOTES

1. AUTOMATIC RETRACTABLE CURB INLET SCREENS SHOWN ARE MANUFACTURED BY UNITED STORMWATER INC. PROVIDE UNITED STORM WATER INC. OR EQUIVALENT AUTOMATIC RETRACTABLE INLET SCREENS (I.E. AMERICAN STORMWATER) FOR ALL CURB INLETS. PROVIDE CATALOG CUTS FOR ALL AUTOMATIC RETRACTABLE CURB INLET EQUIVALENTS TO CITY INSPECTOR FOR CITY ENGINEER APPROVAL PRIOR TO ORDERING UNITS.
2. CURB BULB-OUTS AND SIMILAR CONFIGURATIONS WITH BIORETENTION PLANTERS OR OTHER POST-CONSTRUCTION BEST MANAGEMENT PRACTICES (PCBMPs) SHALL BE PROVIDED WHERE TECHNICALLY FEASIBLE IN ALL DEVELOPMENTS IN LIEU OF SCREENING DEVICES. AUTOMATIC RETRACTABLE CURB INLET SCREENS ARE REQUIRED ON ALL CURB INLETS WHERE BIORETENTION PLANTERS/BASINS ARE NOT TECHNICALLY FEASIBLE. INLINE SCREENING DEVICES (CATCH BASIN BASKETS, LINEAR RADIAL SCREENS, BAR RACKS AND HORIZONTAL SCREENS) MAY BE CONSIDERED BY THE CITY ENGINEER FOR APPROVAL IN LIEU OF AUTOMATIC RETRACTABLE CURB INLET SCREENS DEPENDING UPON THE STORM DRAIN SYSTEM CONFIGURATION AND ONLY IF A SOURCE OF FUNDING FOR MAINTENANCE IS READILY AVAILABLE FOR THE LIFE OF THE INSTALLATION (I.E. MAINTENANCE DISTRICT).
3. ALL NEW/EXISTING CATCH BASINS/DRAIN INLETS MUST DRAIN TO/THROUGH A TRASH SCREENING DEVICE PRIOR TO DISCHARGE INTO THE CITY STORM DRAIN SYSTEM OR DISCHARGE FROM CITY OUTFALL.
4. FIXED/MANUAL INLET SCREENS ARE NOT ALLOWED UNLESS PART OF A RETROFIT PROJECT BY CITY MAINTENANCE CREWS/CIP PROJECT TO MEET NPDES PERMIT REQUIREMENTS FOR TRASH REDUCTION.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **CURB INLET SCREENS**

CITY OF SALINAS

STANDARD PLAN No.

**SW
50**

DESIGNED BY:
STAFF

CADD BY:
STAFF

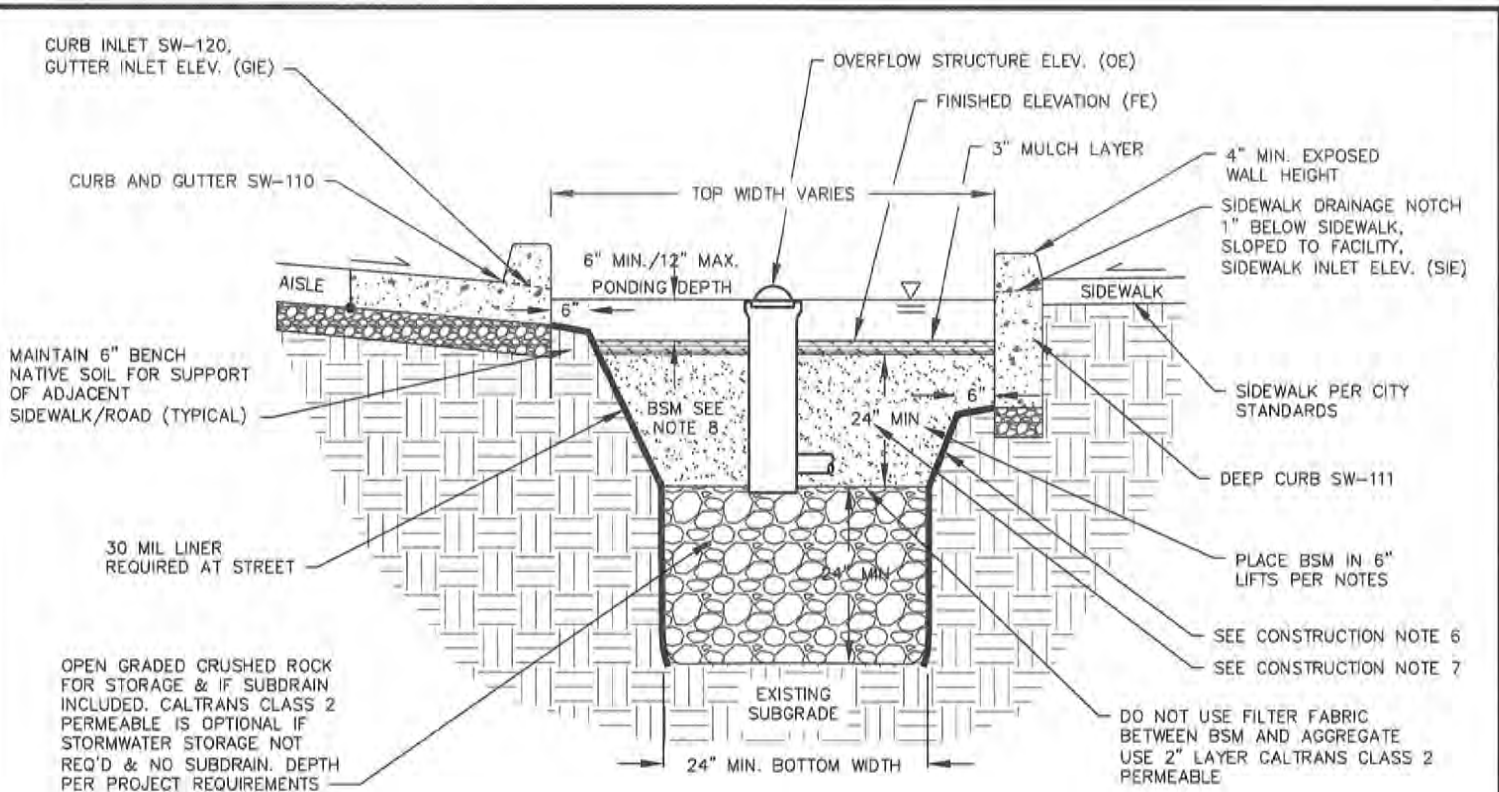
PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 9/17/2014

Robert C. Russell

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014





DESIGNER NOTES

- ADDITIONAL DESIGN GUIDANCE PROVIDED IN BIORETENTION TECHNICAL SPECIFICATIONS DOCUMENT SW-163.
- OVERFLOW STRUCTURE REQUIRED FOR IN-LINE SYSTEMS WITHOUT OVERFLOW BYPASS, SW-140.
- PROVIDE SPOT ELEVATIONS AT INLETS ON CIVIL PLANS (FE, OE, GIE, SIE). SEE SW-120.
- EDGE CONDITION WILL VARY FOR NEW AND RETROFIT PROJECTS. CURB, WALL, AND SIDEWALK DETAILS MAY BE MODIFIED FOR PROJECT BY CIVIL AND GEOTECHNICAL ENGINEERS SUBJECT TO APPROVAL BY THE CITY ENGINEER.
- IF CHECK DAMS ARE NEEDED, SEE CONCRETE CHECK DAM SW-131.
- PROVIDE MONITORING WELL IN EACH FACILITY, PER BIORETENTION TECHNICAL SPECIFICATIONS.
- IF CALTRANS CLASS 2 PERMEABLE IS NOT AVAILABLE, SUBSTITUTE CLASS 3 PERMEABLE WITH AN OVERLYING 3" DEEP LAYER OF 3/4" (NO. 4) OPEN-GRADED AGGREGATE.
- BIORETENTION SOIL MEDIA (BSM) SPECIFICATION PER SWDS APPENDIX D.
- PLANTING DESIGN AND IRRIGATION PER BIORETENTION TECHNICAL SPECIFICATIONS.
- MULCH PER BIORETENTION TECHNICAL SPECIFICATIONS.
- LOCATE ENERGY DISSIPATION COBBLE ONLY AS SPECIFIED IN INLET DETAILS - AVOID DECORATIVE USE.

CONSTRUCTION NOTES

- SCARIFY SUBGRADE BEFORE INSTALLING BIORETENTION AREA AGGREGATE AND BSM.
- FACILITY EXCAVATION TO ALLOW FOR SPECIFIED SOIL AND MULCH DEPTHS TO ACHIEVE FINISHED ELEVATIONS ON CIVIL PLANS.
- COMPACT EACH 6" LIFT OF BSM WITH LANDSCAPE ROLLER OR BY LIGHTLY WETTING. IF WETTING, ALLOW TO DRY OVERNIGHT BEFORE PLANTING.
- DO NOT WORK WITHIN BIORETENTION AREA DURING RAIN OR UNDER WET CONDITIONS.
- KEEP HEAVY MACHINERY OUTSIDE BIORETENTION AREA LIMITS.
- LAYBACK SLOPE AS FLAT AS POSSIBLE UNTIL TOP WIDTH PRODUCES 1:1 SLOPE & 24" BOTTOM WIDTH. AS PLANTER GETS WIDER MAINTAIN 1:1 SLOPE & INCREASE BOTTOM WIDTH WIDER THAN 24". ALTERNATIVE TRENCH WALL CONFIGURATIONS MAY BE PROPOSED BY THE PROJECT GEOTECHNICAL ENGINEER (I.E. VERTICAL SHORING, REINFORCED TRENCH SIDEWALL) THAT DON'T REQUIRE SIDEWALL SUPPORT FROM THE LIGHTLY COMPACTED BSM.
- 18" THICKNESS IS ALLOWED WHERE BSM IS USED FOR PRETREATMENT FOR INFILTRATION & THE SYSTEM IS DESIGNED TO INFILTRATE 95% OF RAINFALL. 24" THICKNESS REQUIRED ALL OTHER CASES.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **PARKING LOT BIORETENTION FACILITY (FLAT/PLANTER, NO AISLE PARKING, SIDEWALK, WITHOUT UNDERDRAIN*)**

CITY OF SALINAS

*INFILTRATION RATE=0.5"/HR. OR GREATER

STANDARD PLAN No.

**SW
100**

DESIGNED BY:
STAFF

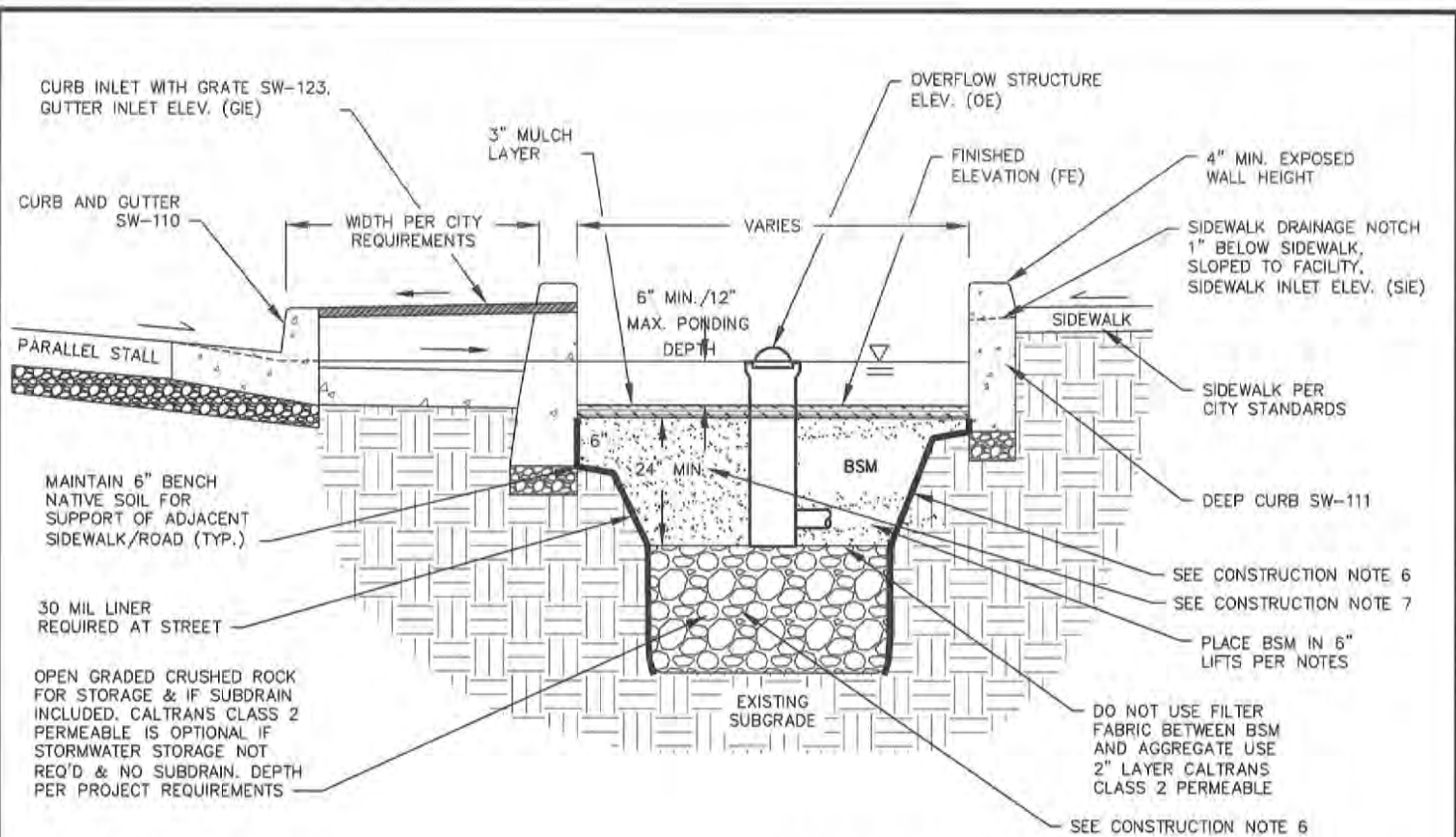
CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 9/16/2014

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014





DESIGNER NOTES

1. ADDITIONAL DESIGN GUIDANCE PROVIDED IN BIORETENTION TECHNICAL SPECIFICATIONS DOCUMENT.
2. OVERFLOW STRUCTURE REQUIRED FOR IN-LINE SYSTEMS WITHOUT OVERFLOW BYPASS, S.P. SW 140.
3. PROVIDE SPOT ELEVATIONS AT INLETS ON CIVIL PLANS (FE, OE, GIE, SIE). SEE S.P. SW 120.
4. EDGE CONDITION WILL VARY FOR NEW AND RETROFIT PROJECTS. CURB, WALL, AND SIDEWALK DETAILS MAY BE MODIFIED FOR PROJECT BY CIVIL AND GEOTECHNICAL ENGINEERS SUBJECT TO APPROVAL BY THE CITY ENGINEER.
5. IF CHECK DAMS ARE NEEDED, SEE CONCRETE CHECK DAM S.P. SW 131.
6. PROVIDE MONITORING WELL IN EACH FACILITY, PER BIORETENTION TECHNICAL SPECIFICATIONS.
7. USE CALTRANS CLASS 2 PERMEABLE. IF CALTRANS CLASS 2 PERMEABLE IS NOT AVAILABLE, SUBSTITUTE CLASS 3 PERMEABLE WITH AN OVERLYING 3" DEEP LAYER OF 3/4" (NO. 4) OPEN-GRADED AGGREGATE.
8. BIORETENTION SOIL MEDIA (BSM) SPECIFICATION PER SWDS APPENDIX D.
9. PLANTING DESIGN AND IRRIGATION PER BIORETENTION TECHNICAL SPECIFICATIONS.
10. MULCH (OPTIONAL) PER BIORETENTION TECHNICAL SPECIFICATIONS.
11. LOCATE ENERGY DISSIPATION COBBLE ONLY AS SPECIFIED IN INLET DETAILS - AVOID DECORATIVE USE.

CONSTRUCTION NOTES

1. SCARIFY SUBGRADE BEFORE INSTALLING BIORETENTION AREA AGGREGATE AND BSM.
2. FACILITY EXCAVATION TO ALLOW FOR SPECIFIED SOIL AND MULCH DEPTHS TO ACHIEVE FINISHED ELEVATIONS ON CIVIL PLANS.
3. COMPACT EACH 6" LIFT OF BSM WITH LANDSCAPE ROLLER OR BY LIGHTLY WETTING. IF WETTING, ALLOW TO DRY OVERNIGHT BEFORE PLANTING.
4. DO NOT WORK WITHIN BIORETENTION AREA DURING RAIN OR UNDER WET CONDITIONS.
5. KEEP HEAVY MACHINERY OUTSIDE BIORETENTION AREA LIMITS.
6. LAYBACK SLOPE AS FLAT AS POSSIBLE UNTIL TOP WIDTH PRODUCES 1:1 SLOPE & 24" BOTTOM WIDTH. AS PLANTER GETS WIDER MAINTAIN 1:1 SLOPE & INCREASE BOTTOM WIDTH WIDER THAN 24". ALTERNATIVE TRENCH WALL CONFIGURATIONS MAY BE PROPOSED BY THE PROJECT GEOTECHNICAL ENGINEER (i.e. VERTICAL SHORING, REINFORCED TRENCH SIDEWALL) THAT DON'T REQUIRE SIDEWALL SUPPORT FROM THE LIGHTLY COMPACTED BSM.
7. 18" THICKNESS IS ALLOWED WHERE BSM IS USED FOR PRETREATMENT FOR INFILTRATION & THE SYSTEM IS DESIGNED TO INFILTRATE 95% OF RAINFALL. 24" THICKNESS REQUIRED ALL OTHER CASES.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: PARKING LOT BIORETENTION FACILITY (FLAT/PLANTER, ADJACENT AISLE PARKING, SIDEWALK, WITHOUT UNDERDRAIN*)

CITY OF SALINAS

*INFILTRATION RATE=0.5"/HR. OR GREATER

STANDARD PLAN No.

**SW
101**

DESIGNED BY:
STAFF

CADD BY:
STAFF

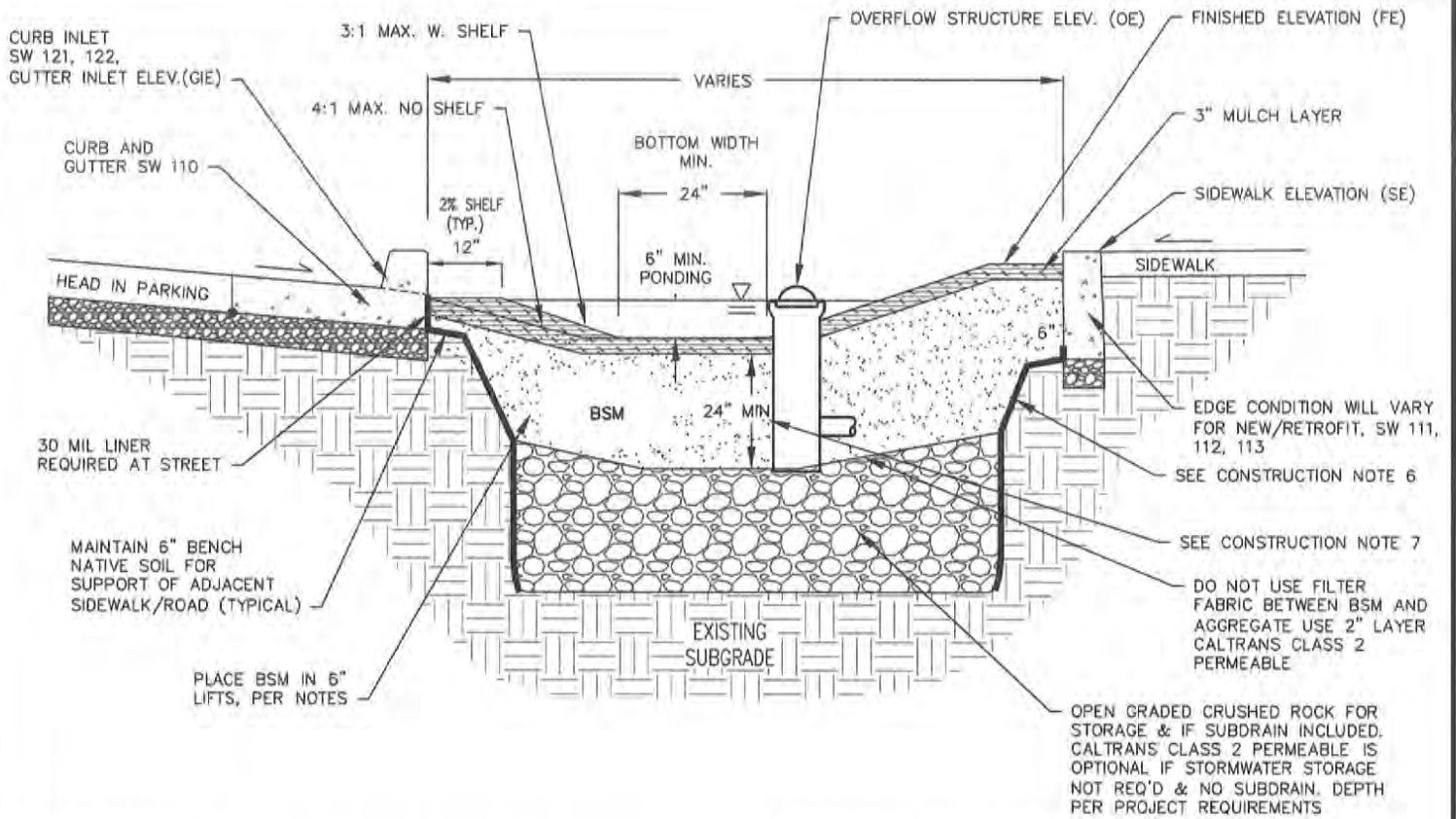
PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 9/16/2014

Robert C. Russell

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014





DESIGNER NOTES

- ADDITIONAL DESIGN GUIDANCE PROVIDED IN BIORETENTION TECHNICAL SPECIFICATIONS DOCUMENT.
- OVERFLOW STRUCTURE REQUIRED FOR IN-LINE SYSTEMS WITHOUT OVERFLOW BYPASS, SW 140.
- PROVIDE SPOT ELEVATIONS AT INLETS ON CIVIL PLANS (FE, OE, GIE, SE). SEE SW 121, 122.
- MAX. LONGITUDINAL SLOPE 6% WITH CHECK DAMS. SEE SW 130, 131.
- EDGE CONDITION WILL VARY FOR NEW AND RETROFIT PROJECTS. CURB AND SIDEWALK DETAILS MAY BE MODIFIED FOR PROJECT BY CIVIL AND GEOTECHNICAL ENGINEERS SUBJECT TO APPROVAL BY THE CITY ENGINEER.
- PROVIDE MONITORING WELL IN EACH FACILITY, PER BIORETENTION TECHNICAL SPECIFICATIONS.
- IF CALTRANS CLASS 2 PERMEABLE IS NOT AVAILABLE, SUBSTITUTE CLASS 3 PERMEABLE WITH AN OVERLYING 3" DEEP LAYER OF 3/4" (NO. 4) OPEN-GRADED AGGREGATE.
- BIORETENTION SOIL MEDIA (BSM) SPECIFICATION PER SWDS APPENDIX D.
- PLANTING DESIGN AND IRRIGATION PER BIORETENTION TECHNICAL SPECIFICATIONS.
- MULCH PER BIORETENTION TECHNICAL SPECIFICATIONS.
- LOCATE ENERGY DISSIPATION COBBLE ONLY AS SPECIFIED IN INLET DETAILS - AVOID DECORATIVE USE.

CONSTRUCTION NOTES

- SCARIFY SUBGRADE BEFORE INSTALLING BIORETENTION AREA AGGREGATE AND BSM.
- FACILITY EXCAVATION TO ALLOW FOR SPECIFIED SOIL AND MULCH DEPTHS TO ACHIEVE FINISHED ELEVATIONS ON CIVIL PLANS.
- COMPACT EACH 6" LIFT OF BSM WITH LANDSCAPE ROLLER OR BY LIGHTLY WETTING. IF WETTING, ALLOW TO DRY OVERNIGHT BEFORE PLANTING.
- DO NOT WORK WITHIN BIORETENTION AREA DURING RAIN OR UNDER WET CONDITIONS.
- KEEP HEAVY MACHINERY OUTSIDE BIORETENTION AREA LIMITS.
- LAYBACK SLOPE AS FLAT AS POSSIBLE UNTIL TOP WIDTH PRODUCES 1:1 SLOPE & 24" BOTTOM WIDTH. AS PLANTER GETS WIDER MAINTAIN 1:1 SLOPE & INCREASE BOTTOM WIDTH WIDER THAN 24". ALTERNATIVE TRENCH WALL CONFIGURATIONS MAY BE PROPOSED BY THE PROJECT GEOTECHNICAL ENGINEER (i.e. VERTICAL SHORING, REINFORCED TRENCH SIDEWALL) THAT DON'T REQUIRE SIDEWALL SUPPORT FROM THE LIGHTLY COMPACTED BSM.
- 18" THICKNESS IS ALLOWED WHERE BSM IS USED FOR PRETREATMENT FOR INFILTRATION & THE SYSTEM IS DESIGNED TO INFILTRATE 95% OF RAINFALL. 24" THICKNESS REQUIRED ALL OTHER CASES.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **PARKING LOT BIORETENTION FACILITY (SLOPE SIDED, NO HEAD IN PARKING, SIDEWALK, WITHOUT UNDERDRAIN*)** CITY OF SALINAS

*INFILTRATION RATE=0.5"/HR. OR GREATER

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

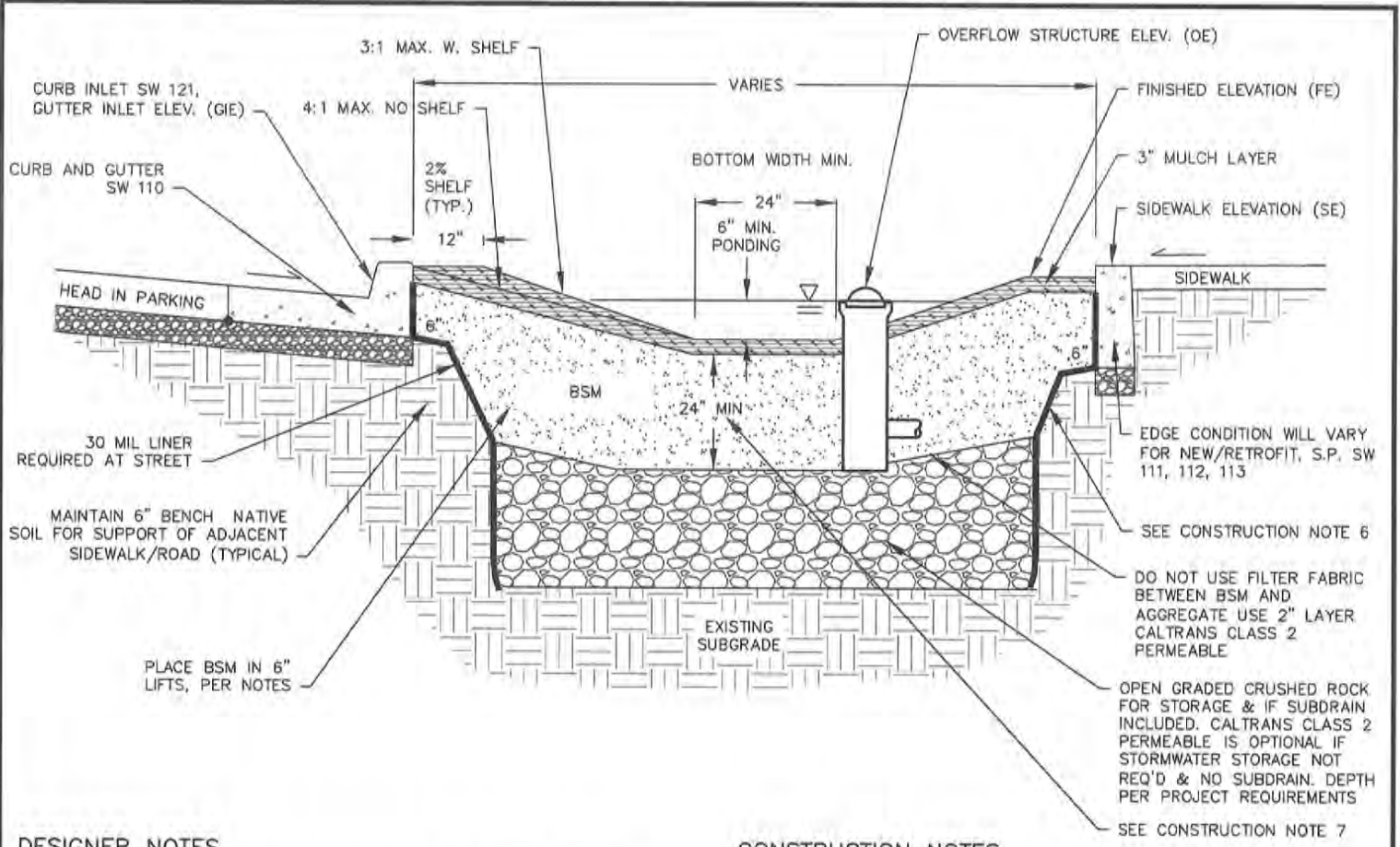
DATE 9/16/2014

Robert C. Russell

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



STANDARD PLAN No.
SW 102



DESIGNER NOTES

1. ADDITIONAL DESIGN GUIDANCE PROVIDED IN BIORETENTION TECHNICAL SPECIFICATIONS DOCUMENT.
2. OVERFLOW STRUCTURE REQUIRED FOR IN-LINE SYSTEMS WITHOUT OVERFLOW BYPASS, SW 140.
3. PROVIDE SPOT ELEVATIONS AT INLETS ON CIVIL PLANS (FE, OE, GIE, SE). SEE SW 121.
4. MAX. LONGITUDINAL SLOPE 6% WITH CHECK DAMS. SEE SW 130, 131.
5. EDGE CONDITION WILL VARY FOR NEW AND RETROFIT PROJECTS. CURB AND SIDEWALK DETAILS MAY BE MODIFIED FOR PROJECT BY CIVIL AND GEOTECHNICAL ENGINEERS SUBJECT TO APPROVAL BY THE CITY ENGINEER.
6. PROVIDE MONITORING WELL IN EACH FACILITY, PER BIORETENTION TECHNICAL SPECIFICATIONS.
7. IF CALTRANS CLASS 2 PERMEABLE IS NOT AVAILABLE, SUBSTITUTE CLASS 3 PERMEABLE WITH AN OVERLYING 3" DEEP LAYER OF 3/4" (NO. 4) OPEN-GRADED AGGREGATE.
8. BIORETENTION SOIL MEDIA (BSM) SPECIFICATION PER SWDS APPENDIX D.
9. PLANTING DESIGN AND IRRIGATION PER BIORETENTION TECHNICAL SPECIFICATIONS.
10. MULCH PER BIORETENTION TECHNICAL SPECIFICATIONS.
11. LOCATE ENERGY DISSIPATION COBBLE ONLY AS SPECIFIED IN INLET DETAILS - AVOID DECORATIVE USE.

CONSTRUCTION NOTES

1. SCARIFY SUBGRADE BEFORE INSTALLING BIORETENTION AREA AGGREGATE AND BSM.
2. FACILITY EXCAVATION TO ALLOW FOR SPECIFIED SOIL AND MULCH DEPTHS TO ACHIEVE FINISHED ELEVATIONS ON CIVIL PLANS.
3. COMPACT EACH 6" LIFT OF BSM WITH LANDSCAPE ROLLER OR BY LIGHTLY WETTING. IF WETTING, ALLOW TO DRY OVERNIGHT BEFORE PLANTING.
4. DO NOT WORK WITHIN BIORETENTION AREA DURING RAIN OR UNDER WET CONDITIONS.
5. KEEP HEAVY MACHINERY OUTSIDE BIORETENTION AREA LIMITS.
6. LAYBACK SLOPE AS FLAT AS POSSIBLE UNTIL TOP WIDTH PRODUCES 1:1 SLOPE & 24" BOTTOM WIDTH. AS PLANTER GETS WIDER MAINTAIN 1:1 SLOPE & INCREASE BOTTOM WIDTH WIDER THAN 24". ALTERNATIVE TRENCH WALL CONFIGURATIONS MAY BE PROPOSED BY THE PROJECT GEOTECHNICAL ENGINEER (i.e. VERTICAL SHORING, REINFORCED TRENCH SIDEWALL) THAT DON'T REQUIRE SIDEWALL SUPPORT FROM THE LIGHTLY COMPACTED BSM.
7. 18" THICKNESS IS ALLOWED WHERE BSM IS USED FOR PRETREATMENT FOR INFILTRATION & THE SYSTEM IS DESIGNED TO INFILTRATE 95% OF RAINFALL. 24" THICKNESS REQUIRED ALL OTHER CASES.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: PARKING LOT BIORETENTION FACILITY (SLOPED SIDED, WITH HEAD IN PARKING, SIDEWALK, WITHOUT UNDERDRAIN*) CITY OF SALINAS

*INFILTRATION RATE=0.5"/HR. OR GREATER

STANDARD PLAN No.
SW
103

DESIGNED BY:
STAFF

CADD BY:
STAFF

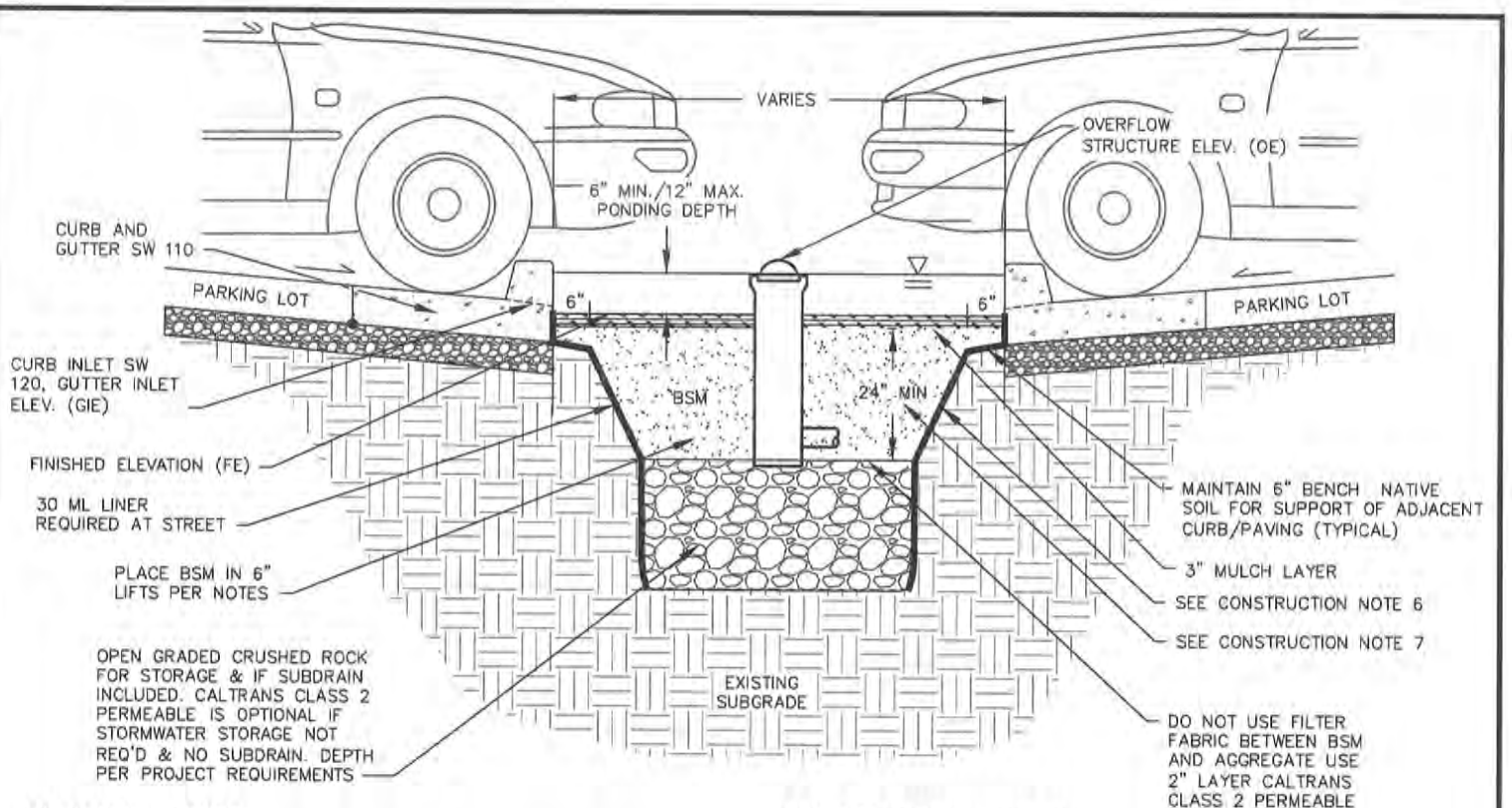
PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 9/16/2014

Robert C. Russell



ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



DESIGNER NOTES

1. ADDITIONAL DESIGN GUIDANCE PROVIDED IN BIORETENTION TECHNICAL SPECIFICATIONS DOCUMENT.
2. OVERFLOW STRUCTURE REQUIRED FOR IN-LINE SYSTEMS WITHOUT OVERFLOW BYPASS, SW 140.
3. PROVIDE SPOT ELEVATIONS AT INLETS ON CIVIL PLANS (FE, OE, GIE, SE). SEE SW 120.
4. EDGE CONDITION WILL VARY FOR PARKING LOT PROJECTS. SEE PARKING LOT EDGE OPTIONS S.P. SW 114. CURB AND FLUSH EDGE DETAILS MAY BE MODIFIED FOR PROJECT BY CIVIL AND GEOTECHNICAL ENGINEERS SUBJECT TO APPROVAL BY THE CITY ENGINEER.
5. IF CHECK DAMS ARE NEEDED, SEE CONCRETE CHECK DAM SW 131.
6. PROVIDE MONITORING WELL IN EACH FACILITY, PER BIORETENTION TECHNICAL SPECIFICATIONS.
7. IF CALTRANS CLASS 2 PERMEABLE IS NOT AVAILABLE, SUBSTITUTE CLASS 3 PERMEABLE WITH AN OVERLYING 3" DEEP LAYER OF 3/4" (NO. 4) OPEN-GRADED AGGREGATE.
8. BIORETENTION SOIL MEDIA (BSM) SPECIFICATION PER SWDS APPENDIX D.
9. PLANTING DESIGN AND IRRIGATION PER BIORETENTION TECHNICAL SPECIFICATIONS.
10. MULCH PER BIORETENTION TECHNICAL SPECIFICATIONS.
11. LOCATE ENERGY DISSIPATION COBBLE ONLY AS SPECIFIED IN INLET DETAILS - AVOID DECORATIVE USE.

CONSTRUCTION NOTES

1. SCARIFY SUBGRADE BEFORE INSTALLING BIORETENTION AREA AGGREGATE AND BSM.
2. FACILITY EXCAVATION TO ALLOW FOR SPECIFIED SOIL AND MULCH DEPTHS TO ACHIEVE FINISHED ELEVATIONS ON CIVIL PLANS.
3. COMPACT EACH 6" LIFT OF BSM WITH LANDSCAPE ROLLER OR BY LIGHTLY WETTING. IF WETTING, ALLOW TO DRY OVERNIGHT BEFORE PLANTING.
4. DO NOT WORK WITHIN BIORETENTION AREA DURING RAIN OR UNDER WET CONDITIONS.
5. KEEP HEAVY MACHINERY OUTSIDE BIORETENTION AREA LIMITS.
6. LAYBACK SLOPE AS FLAT AS POSSIBLE UNTIL TOP WIDTH PRODUCES 1:1 SLOPE & 24" BOTTOM WIDTH. AS PLANTER GETS WIDER MAINTAIN 1:1 SLOPE & INCREASE BOTTOM WIDTH WIDER THAN 24". ALTERNATIVE TRENCH WALL CONFIGURATIONS MAY BE PROPOSED BY THE PROJECT GEOTECHNICAL ENGINEER (i.e. VERTICAL SHORING, REINFORCED TRENCH SIDEWALL) THAT DON'T REQUIRE SIDEWALL SUPPORT FROM THE LIGHTLY COMPACTED BSM.
7. 18" THICKNESS IS ALLOWED WHERE BSM IS USED FOR PRETREATMENT FOR INFILTRATION & THE SYSTEM IS DESIGNED TO INFILTRATE 95% OF RAINFALL. 24" THICKNESS REQUIRED ALL OTHER CASES.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE:

PARKING LOT BIORETENTION FACILITY (FLAT/PLANTER, WITHOUT UNDERDRAIN*)

CITY OF SALINAS

*INFILTRATION RATE=0.5"/HR. OR GREATER

STANDARD PLAN No.

SW 104

DESIGNED BY:
STAFF

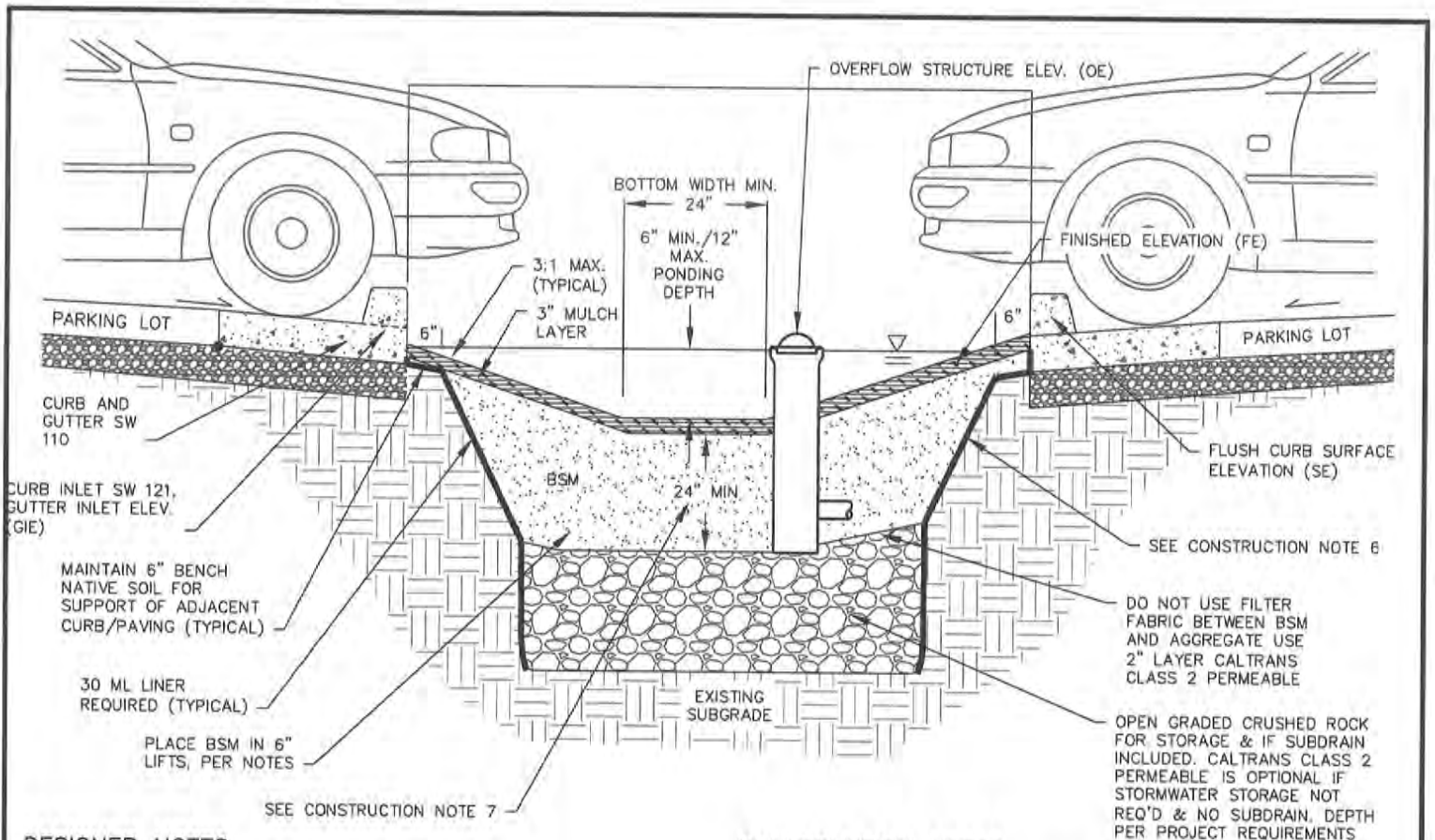
DATE 9/16/2014

CADD BY:
STAFF

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



PROJECT MANAGER:
WALTER GRANT, P.E.



DESIGNER NOTES

1. ADDITIONAL DESIGN GUIDANCE PROVIDED IN BIORETENTION TECHNICAL SPECIFICATIONS DOCUMENT.
2. OVERFLOW STRUCTURE REQUIRED FOR IN-LINE SYSTEMS WITHOUT OVERFLOW BYPASS, SW 140.
3. PROVIDE SPOT ELEVATIONS AT INLETS ON CIVIL PLANS (FE, OE, GIE, SE). SEE SW 121.
4. MAX. LONGITUDINAL SLOPE 6% WITH CHECK DAMS. SEE SW 130, 131.
5. EDGE CONDITION WILL VARY FOR PARKING LOT PROJECTS. SEE PARKING LOT EDGE OPTIONS SW 114. CURB AND FLUSH EDGE DETAILS MAY BE MODIFIED FOR PROJECT BY CIVIL AND GEOTECHNICAL ENGINEERS SUBJECT TO APPROVAL BY THE CITY ENGINEER.
6. PROVIDE MONITORING WELL IN EACH FACILITY, PER BIORETENTION TECHNICAL SPECIFICATIONS.
7. IF CALTRANS CLASS 2 PERMEABLE IS NOT AVAILABLE, SUBSTITUTE CLASS 3 PERMEABLE WITH AN OVERLYING 3" DEEP LAYER OF 3/4" (NO. 4) OPEN-GRADED AGGREGATE.
8. BIORETENTION SOIL MEDIA (BSM) SPECIFICATION PER SWDS APPENDIX D.
9. PLANTING DESIGN AND IRRIGATION PER BIORETENTION TECHNICAL SPECIFICATIONS.
10. MULCH PER BIORETENTION TECHNICAL SPECIFICATIONS.
11. LOCATE ENERGY DISSIPATION COBBLE ONLY AS SPECIFIED IN INLET DETAILS - AVOID DECORATIVE USE.

CONSTRUCTION NOTES

1. SCARIFY SUBGRADE BEFORE INSTALLING BIORETENTION AREA AGGREGATE AND BSM.
2. FACILITY EXCAVATION TO ALLOW FOR SPECIFIED SOIL AND MULCH DEPTHS TO ACHIEVE FINISHED ELEVATIONS ON CIVIL PLANS.
3. COMPACT EACH 6" LIFT OF BSM WITH LANDSCAPE ROLLER OR BY LIGHTLY WETTING. IF WETTING, ALLOW TO DRY OVERNIGHT BEFORE PLANTING.
4. DO NOT WORK WITHIN BIORETENTION AREA DURING RAIN OR UNDER WET CONDITIONS.
5. KEEP HEAVY MACHINERY OUTSIDE BIORETENTION AREA LIMITS.
6. LAYBACK SLOPE AS FLAT AS POSSIBLE UNTIL TOP WIDTH PRODUCES 1:1 SLOPE & 24" BOTTOM WIDTH. AS PLANTER GETS WIDER MAINTAIN 1:1 SLOPE & INCREASE BOTTOM WIDTH WIDER THAN 24". ALTERNATIVE TRENCH WALL CONFIGURATIONS MAY BE PROPOSED BY THE PROJECT GEOTECHNICAL ENGINEER (i.e. VERTICAL SHORING, REINFORCED TRENCH SIDEWALL) THAT DON'T REQUIRE SIDEWALL SUPPORT FROM THE LIGHTLY COMPACTED BSM.
7. 18" THICKNESS IS ALLOWED WHERE BSM IS USED FOR PRETREATMENT FOR INFILTRATION & THE SYSTEM IS DESIGNED TO INFILTRATE 95% OF RAINFALL. 24" THICKNESS REQUIRED ALL OTHER CASES.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **PARKING LOT BIORETENTION FACILITY (SLOPED SIDED, WITHOUT UNDERDRAIN*)**

CITY OF SALINAS

STANDARD PLAN No.
SW
105

DESIGNED BY:
STAFF

DATE 9/16/2014

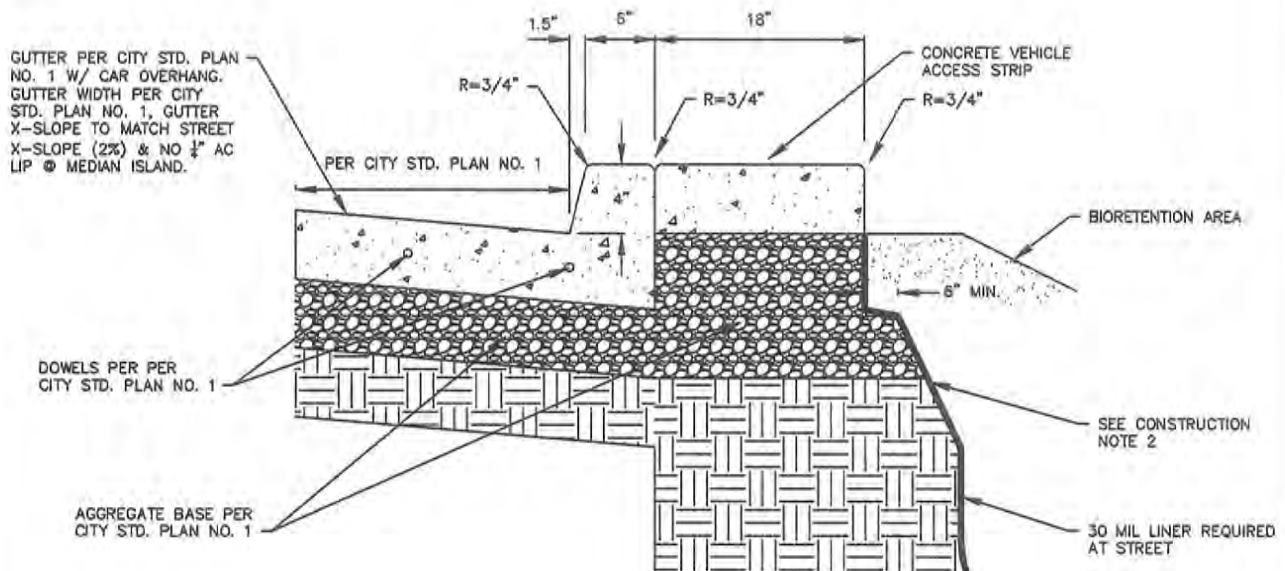
CADD BY:
STAFF

Robert C. Russell

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



PROJECT MANAGER:
WALTER GRANT, P.E.



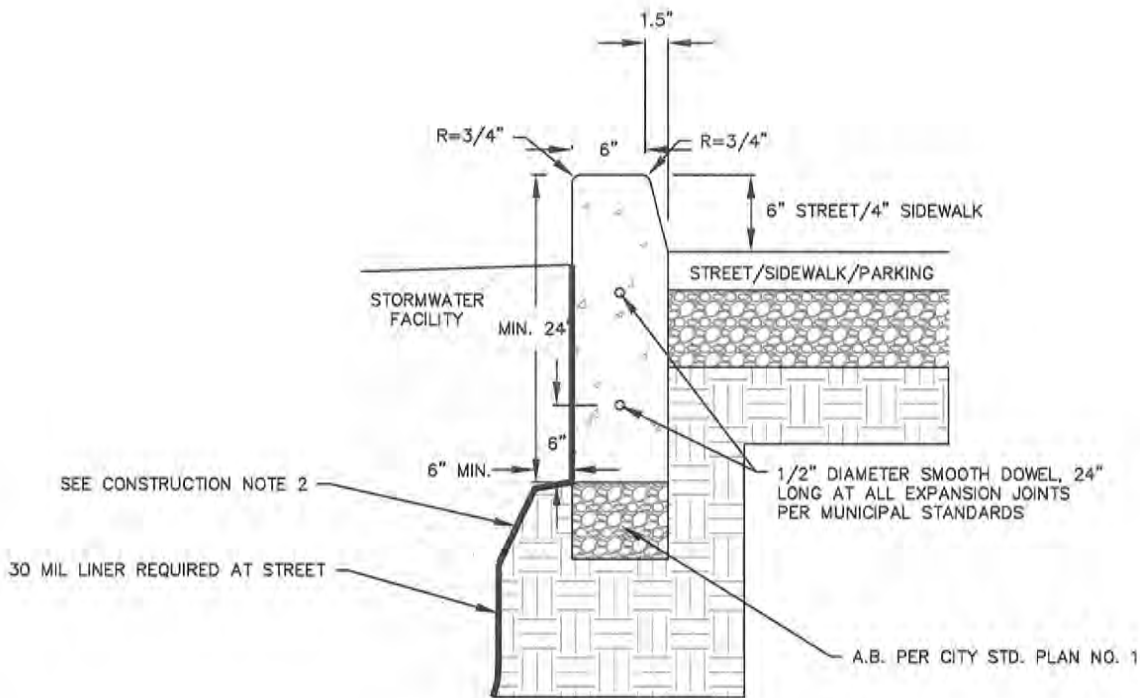
DESIGN NOTES

1. CONCRETE AND EXPANSION JOINTS SHALL MEET THE REQUIREMENTS OF THE CITY OF SALINAS STD. PLAN NO. 1.
2. PROVIDE OPENINGS IN CURB (12" WDE) TO ALLOW FOR SURFACE DRAINAGE TO BIORETENTION AREAS IF DEDICATED INLET NOT USED. SPACING TO BE DETERMINED BY PROJECT ENGINEER BASED ON DESIGN STORM TO MINIMIZE PONDING AGAINST CURB FOR MEDIAN ISLAND APPLICATION.

CONSTRUCTION NOTES

1. FINISH ALL EXPOSED CONCRETE SURFACES.
2. LAY BACK SLOPE AS FLAT AS POSSIBLE UNTIL TOP WIDTH PRODUCES 1:1 SLOPE & 24" BOTTOM WIDTH. AS PLANTER GETS WIDER MAINTAIN 1:1 SLOPE & INCREASE BOTTOM WIDTH WIDER THAN 24". ALTERNATIVE TRENCH WALL CONFIGURATIONS MAY BE PROPOSED BY THE PROJECT GEOTECHNICAL ENGINEER (i.e. VERTICAL SHORING, REINFORCED TRENCH SIDEWALL) THAT DON'T REQUIRE SIDEWALL SUPPORT FROM THE LIGHTLY COMPACTED BSM.

PUBLIC WORKS DEPARTMENT	
ENGINEERING & TRANSPORTATION DIVISION	
TITLE: CURB AND GUTTER WITH VEHICLE ACCESS STRIP	CITY OF SALINAS
DESIGNED BY: STAFF	DATE: <u>4/22/15</u>
CADD BY: STAFF	<i>Robert C. Russell</i>
PROJECT MANAGER: WALTER GRANT, P.E.	 <p>ROBERT C. RUSSELL, CITY ENGINEER R.C.E. 42871, EXPIRES 3-31-2014</p>
STANDARD PLAN No. SW 110A	



DESIGN NOTES

1. SPECIAL DESIGN CONSIDERATION OR STRUCTURAL REVIEW MAY BE REQUIRED FOR LONGER SWALE EDGE SPANS. STEEL REINFORCEMENT OR ADDITIONAL CONCRETE CHECK DAMS MAY BE NEEDED FOR STABILITY.
2. WHEN SIDEWALK DRAINS TO PLANTER, PROVIDE 4" - 6" WIDE NOTCH OPENINGS, 1" BELOW SIDEWALK, SLOPED TO FACILITY, PER BIORETENTION PLANTER DETAILS. SPACE OPENINGS TO CONVEY FLOWS. PROVIDE MINIMUM 2" COVER BETWEEN DRAINAGE NOTCH OPENING AND DOWELS.
3. CONCRETE AND EXPANSION JOINTS SHALL MEET THE REQUIREMENTS OF THE CITY OF SALINAS STD. PLAN NO. 1.

CONSTRUCTION NOTES

1. FINISH ALL EXPOSED CONCRETE SURFACES. PER CITY STD. PLAN NO. 1
2. LAYBACK SLOPE AS FLAT AS POSSIBLE UNTIL TOP WIDTH PRODUCES 1:1 SLOPE & 24" BOTTOM WIDTH. AS PLANTER GETS WIDER MAINTAIN 1:1 SLOPE & INCREASE BOTTOM WIDTH WIDER THAN 24". ALTERNATIVE TRENCH WALL CONFIGURATIONS MAY BE PROPOSED BY THE PROJECT GEOTECHNICAL ENGINEER (i.e. VERTICAL SHORING, REINFORCED TRENCH SIDEWALL) THAT DON'T REQUIRE SIDEWALL SUPPORT FROM THE LIGHTLY COMPACTED BSM.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **DEEP CURB @ STORMWATER FACILITY**

CITY OF SALINAS

STANDARD PLAN No.

**SW
111**

DESIGNED BY:
STAFF

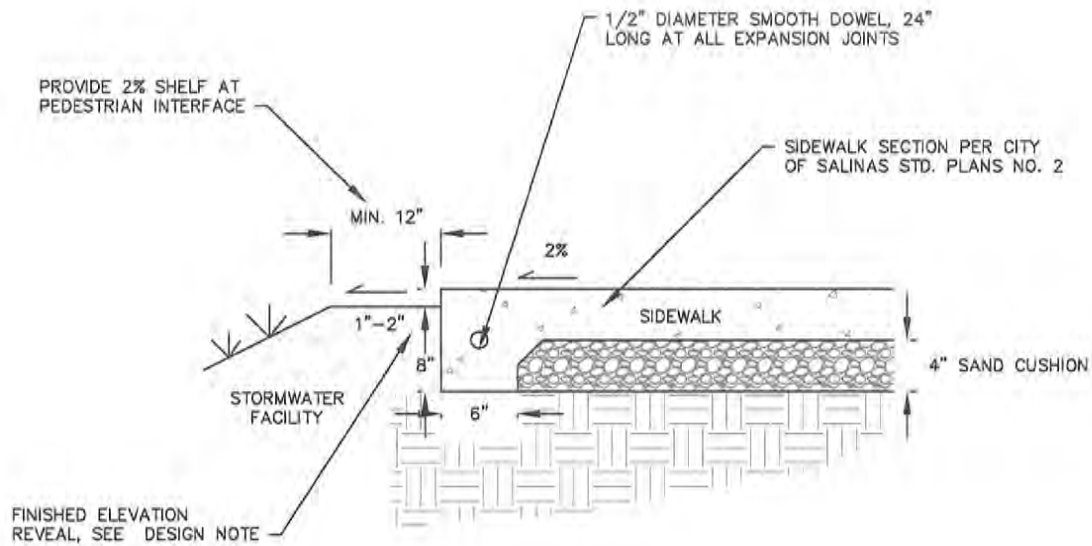
CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 1/8/14

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014





DESIGN NOTES

1. SPECIAL DESIGN CONSIDERATION OR STRUCTURAL REVIEW MAY BE REQUIRED FOR LONGER FACILITY EDGE SPANS. STEEL REINFORCEMENT OR ADDITIONAL CONCRETE CHECK DAMS MAY BE NEEDED FOR STABILITY.
3. FINISHED ELEVATION REVEAL - WHERE SIDEWALK CONVEYS SHEET FLOW TO FACILITY, A 1"-2" REVEAL SHOULD BE MAINTAINED BETWEEN SIDEWALK AND FACILITY FINISHED GRADE TO AVOID MULCH OR PLANT BUILDUP FROM BLOCKING FLOWS.
4. CONCRETE AND EXPANSION JOINTS SHALL MEET THE REQUIREMENTS OF CITY OF SALINAS STD. PLAN NO. 2.

CONSTRUCTION NOTES

1. FINISH ALL EXPOSED CONCRETE SURFACES PER CITY STD. PLAN NO. 2.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **THICKENED EDGE SIDEWALK
@ STORMWATER PLANTER**

CITY OF SALINAS

STANDARD PLAN No.

**SW
112**

DESIGNED BY:
STAFF

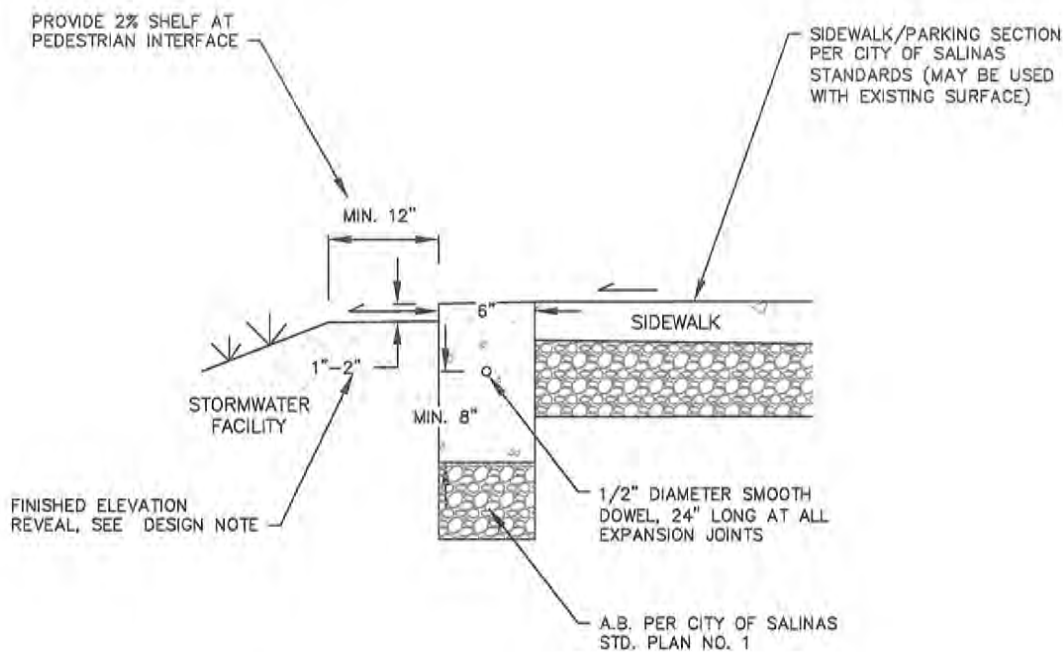
CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/13/14

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014





DESIGN NOTES

1. SPECIAL DESIGN CONSIDERATION OR STRUCTURAL REVIEW MAY BE REQUIRED FOR LONGER FACILITY EDGE SPANS. STEEL REINFORCEMENT OR ADDITIONAL CONCRETE CHECK DAMS MAY BE NEEDED FOR STABILITY.
2. EDGE CONDITION WILL VARY FOR PROJECTS. CURB DETAILS MAY BE MODIFIED BY CIVIL AND GEOTECHNICAL ENGINEERS SUBJECT TO APPROVAL BY THE CITY ENGINEER.
3. CONCRETE AND EXPANSION JOINTS SHALL MEET THE REQUIREMENTS OF THE CITY OF SALINAS.
4. FINISHED ELEVATION REVEAL AT SIDEWALK - WHERE SIDEWALK CONVEYS SHEET FLOW TO FACILITY, A 1"-2" REVEAL SHOULD BE MAINTAINED BETWEEN SIDEWALK AND FACILITY FINISHED GRADE TO AVOID MULCH OR PLANT BUILDUP FROM BLOCKING FLOWS AND REDUCE DROP AT PEDESTRIAN INTERFACE.

CONSTRUCTION NOTES

1. FINISH ALL EXPOSED CONCRETE SURFACES.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **FLUSH CURB AT SIDEWALK @ STORMWATER FACILITY**

CITY OF SALINAS

STANDARD PLAN No.
SW 113

DESIGNED BY:
STAFF

CADD BY:
STAFF

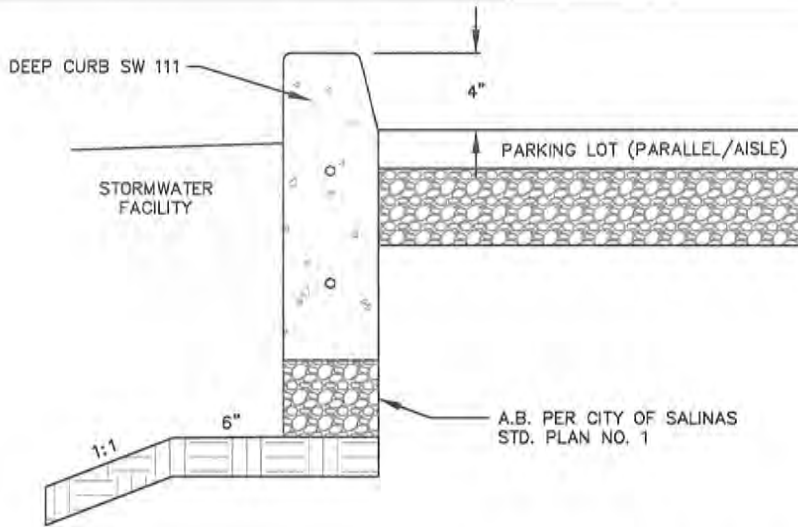
PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/8/19

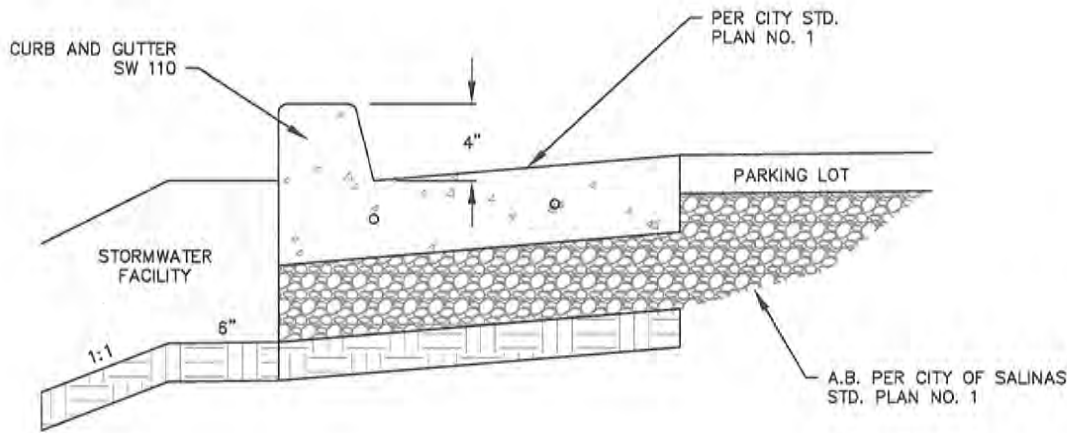
Robert C. Russell

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2016

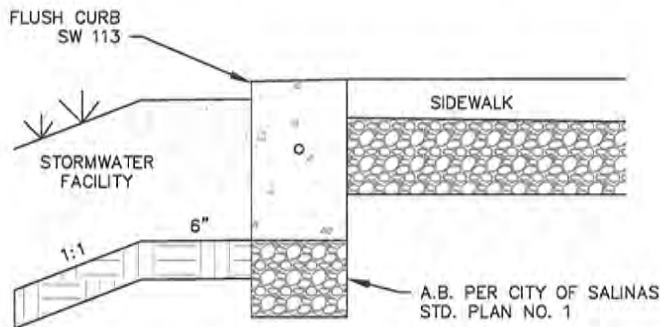




DEEP CURB



CURB AND GUTTER



FLUSH EDGE/WHEEL STOPS

DESIGN NOTES

1. VEHICLE OVERHANG CAN BE USED TO REDUCE IMPERVIOUS PAVEMENT AREA.
2. WHERE VEHICLE OVERHANG IS UTILIZED SELECT LOW GROWING PLANTS THAT WILL TOLERATE SHADING.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **PARKING LOT EDGE OPTIONS @ STORMWATER FACILITY**

CITY OF SALINAS

STANDARD PLAN No.

**SW
114**

DESIGNED BY:
STAFF

CADD BY:
STAFF

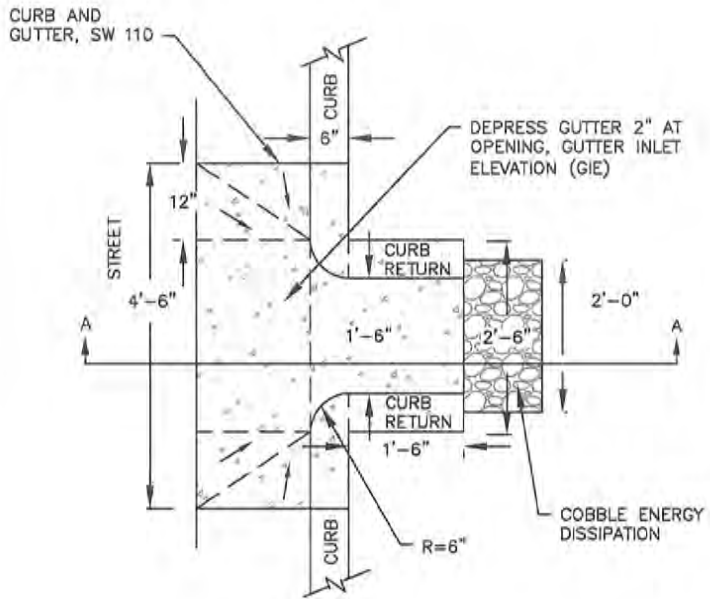
PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/8/14

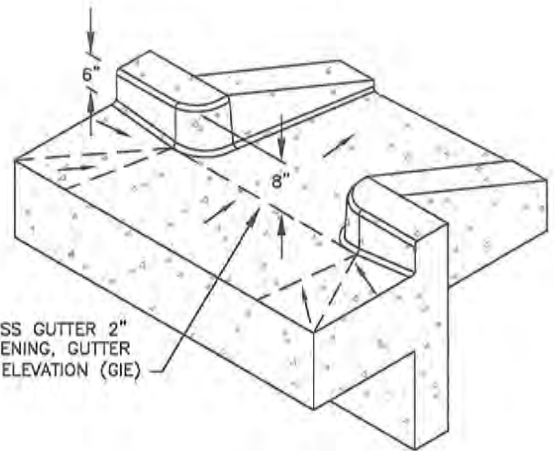
Robert C. Russell

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014

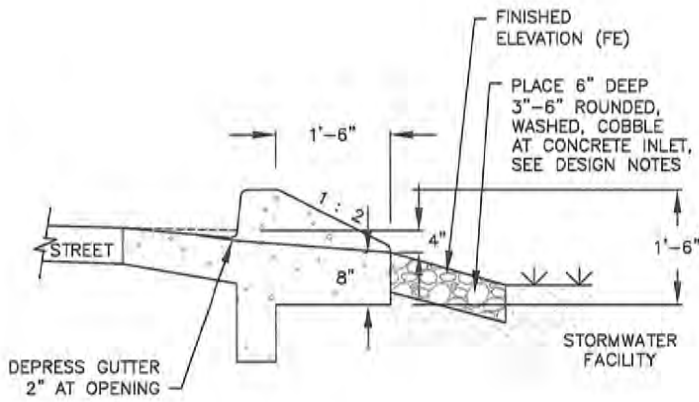




PLAN VIEW



PERSPECTIVE VIEW



SECTION A-A

BIORETENTION DESIGN NOTES

1. FOR USE WITH STORMWATER FACILITIES WITH SIDE SLOPES.
2. PROVIDE SPOT ELEVATIONS ON PLANS (FE, OE, GIE, IE). SEE SW 100.
3. CURB AND WALL DETAILS MAY BE MODIFIED BY CIVIL AND GEOTECHNICAL ENGINEERS.
4. WHERE INLET FLOW VELOCITY IS HIGH, EXTEND COBBLE INTO FACILITY, BUT AVOID EXCESSIVE USE.
5. CURB HEIGHT MAY BE REDUCED TO 4-INCHES WHERE ADJACENT TO A SIDEWALK. SEE SW 110 & 111.

CONSTRUCTION NOTES

1. AFTER CONSTRUCTION PLACE SAND BAGS AT GUTTER OPENINGS TO KEEP STORM FLOWS FROM ENTERING FACILITY UNTIL VEGETATION IS ESTABLISHED.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **CURB CUT INLET FOR SIDE SLOPES
(RAIN GARDEN OR SWALE)**

CITY OF SALINAS

DESIGNED BY:
STAFF

CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

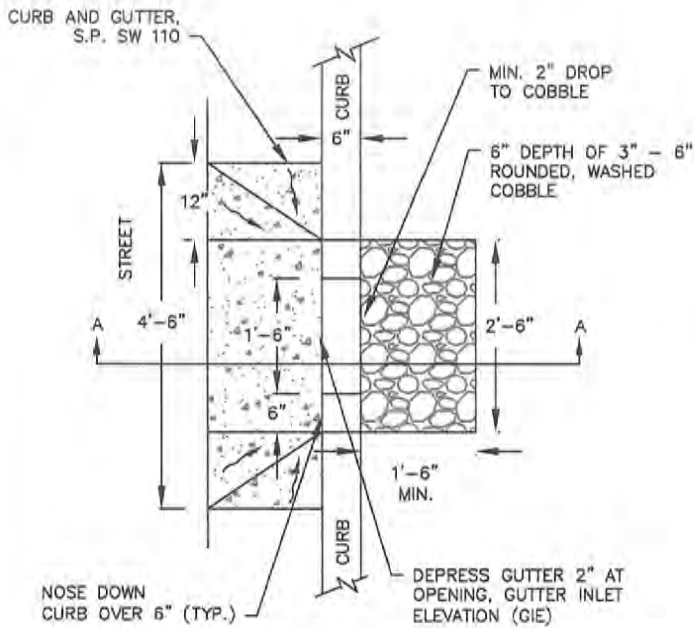
DATE 4/8/14

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014

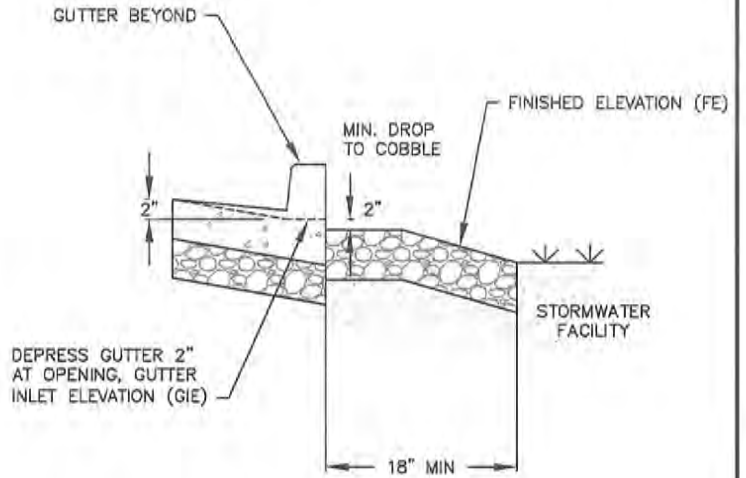


STANDARD PLAN No.

**SW
121**



PLAN VIEW



SECTION A-A

BIORETENTION DESIGN NOTES

1. FOR USE WITH STORMWATER FACILITIES WITH SLOPED SIDES OR FLAT BOTTOMS.
2. PROVIDE SPOT ELEVATIONS ON PLANS (FE, OE, GIE, IE). SEE S.P. SW 100, 101.
3. DROP FROM INLET TO AGGREGATE PAD WILL BE GREATER FOR PLANTERS.
4. CURB AND WALL DETAILS MAY BE MODIFIED BY CIVIL AND GEOTECHNICAL ENGINEERS SUBJECT TO APPROVAL OF THE CITY ENGINEER.
5. WHERE INLET FLOW VELOCITY IS HIGH, EXTEND COBBLE INTO FACILITY, BUT AVOID EXCESSIVE USE.

CONSTRUCTION NOTES

1. AFTER CONSTRUCTION PLACE SAND BAGS AT GUTTER OPENINGS TO KEEP STORM FLOWS FROM ENTERING FACILITY UNTIL VEGETATION IS ESTABLISHED.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **CURB CUT INLET WITH GRAVEL ENERGY DISSIPATION**

CITY OF SALINAS

STANDARD PLAN No.

**SW
122**

DESIGNED BY:
STAFF

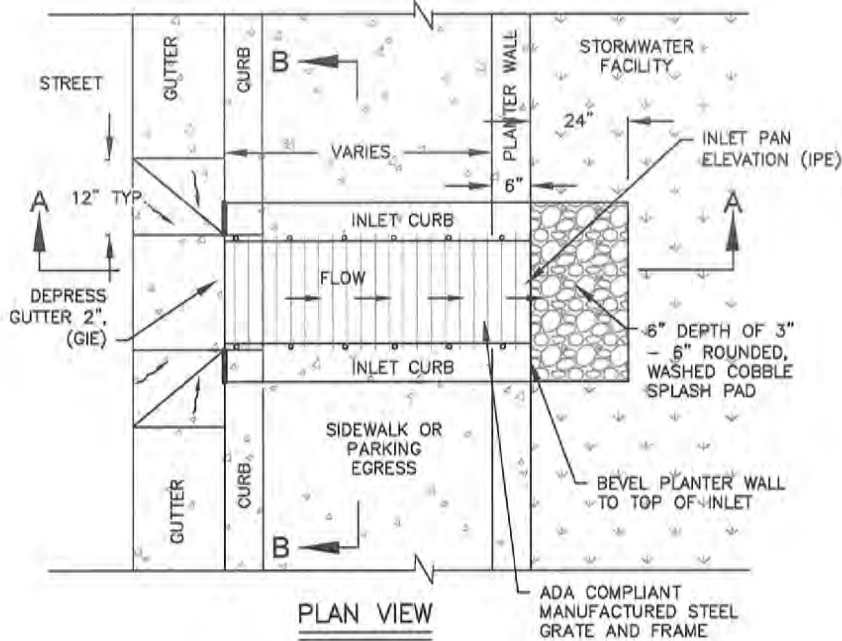
CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

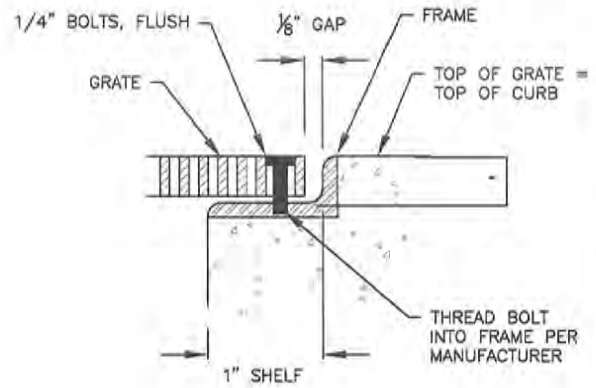
DATE 4/0/14

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014

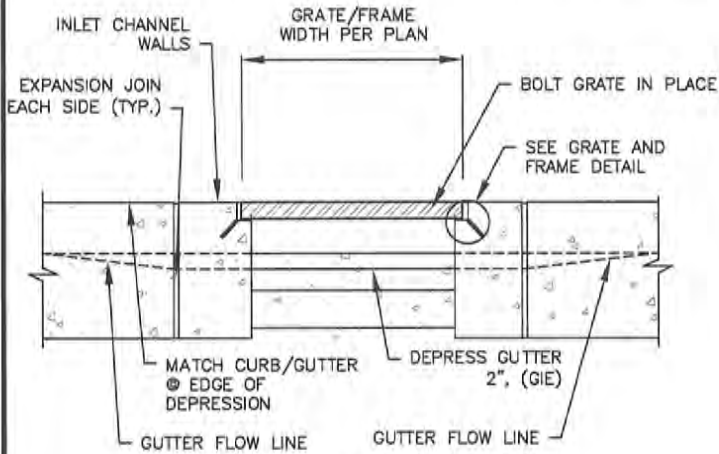




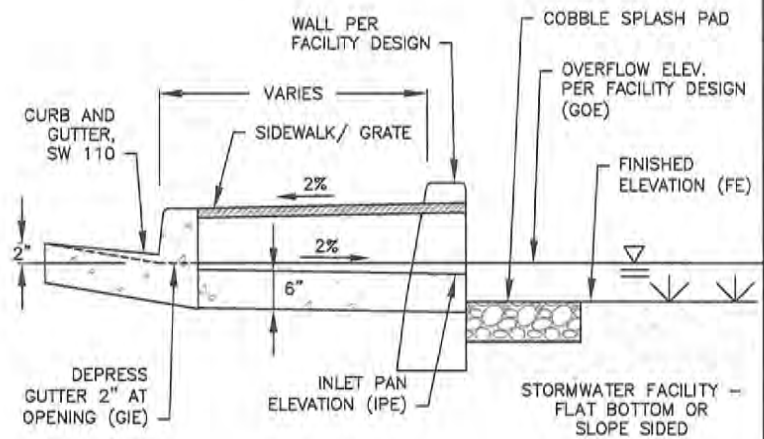
PLAN VIEW



GRATE AND FRAME



SECTION B-B



SECTION A-A

BIORETENTION DESIGN NOTES

1. FOR USE WITH STORMWATER FACILITIES WITH SLOPED SIDES OR FLAT BOTTOMS.
2. PROVIDE SPOT ELEVATIONS ON PLANS (FE, OE, GIE, IPE). SEE SW 100, 101.
3. REFER TO MUNICIPAL STANDARD DRAWINGS AND MATCH GUTTER PAN OF ADJACENT CURB AND GUTTER.
4. IF SLOPED SIDES, WHERE INLET FLOW VELOCITY IS HIGH, EXTEND COBBLE INTO FACILITY, BUT AVOID EXCESSIVE USE.
5. BASE MATERIAL FOR CURB, GUTTER, AND SIDEWALK PER MUNICIPAL STANDARDS.

CONSTRUCTION NOTES

1. AFTER CONSTRUCTION PLACE SAND BAGS AT GUTTER OPENINGS TO KEEP STORM FLOWS FROM ENTERING FACILITY UNTIL VEGETATION IS ESTABLISHED.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **INLET WITH GRATE @ SIDEWALK**

CITY OF SALINAS

STANDARD PLAN No.

SW 123

DESIGNED BY: STAFF

CADD BY: STAFF

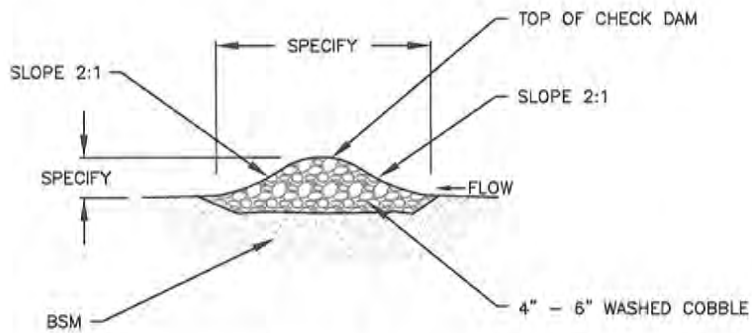
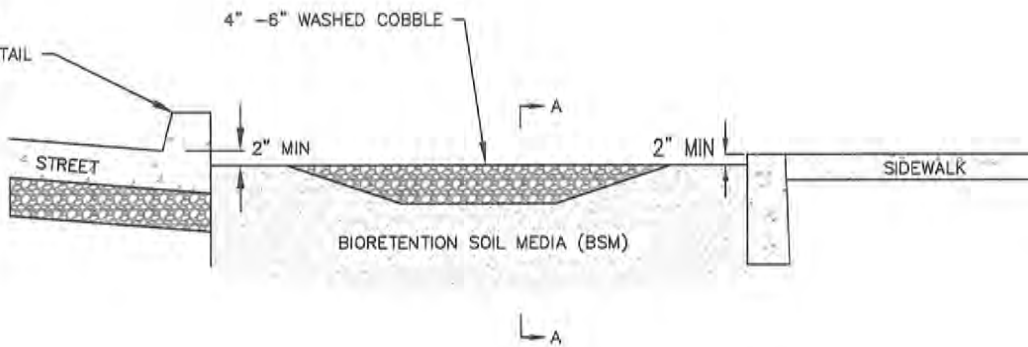
PROJECT MANAGER: WALTER GRANT, P.E.

DATE 4/3/14

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



CURB AND GUTTER
PER BIORETENTION
WITH SIDESLOPE DETAIL



SECTION A-A

BIORETENTION DESIGN NOTES

1. FOR USE WITH STORMWATER FACILITIES WITH SLOPED SIDES.
2. BEST SUITED FOR FACILITIES WITH \leq OR \leq THAN 2% LONGITUDINAL SLOPE.
3. PROVIDE ELEVATIONS AND STATIONING AND/OR DIMENSIONING FOR CHECK DAMS.
4. SPACE CHECK DAMS TO MAXIMIZE PONDING ACROSS ENTIRE CELL.
5. ENSURE THAT CHECK DAM ELEVATIONS DO NOT CAUSE STORMWATER TO OVERFLOW TO SIDEWALK.

CONSTRUCTION NOTES

1. DO NOT WORK DURING RAIN OR UNDER WET CONDITIONS.
2. KEEP ALL HEAVY MACHINERY OUTSIDE BIORETENTION AREA LIMITS.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **GRAVEL CHECK DAM**

CITY OF SALINAS

DESIGNED BY:
STAFF

CADD BY:
STAFF

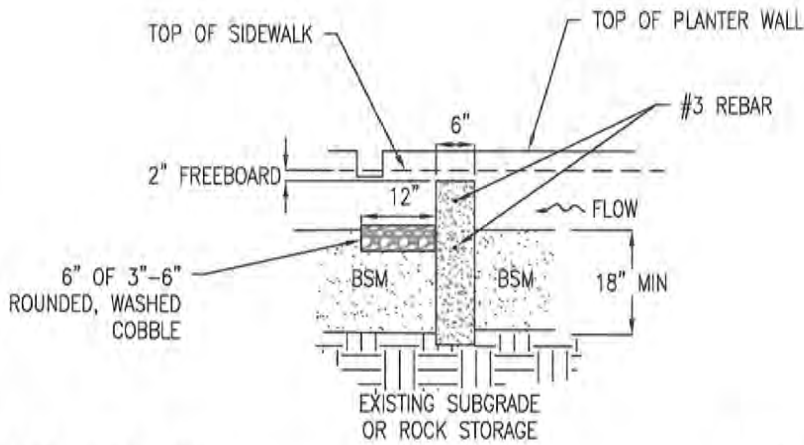
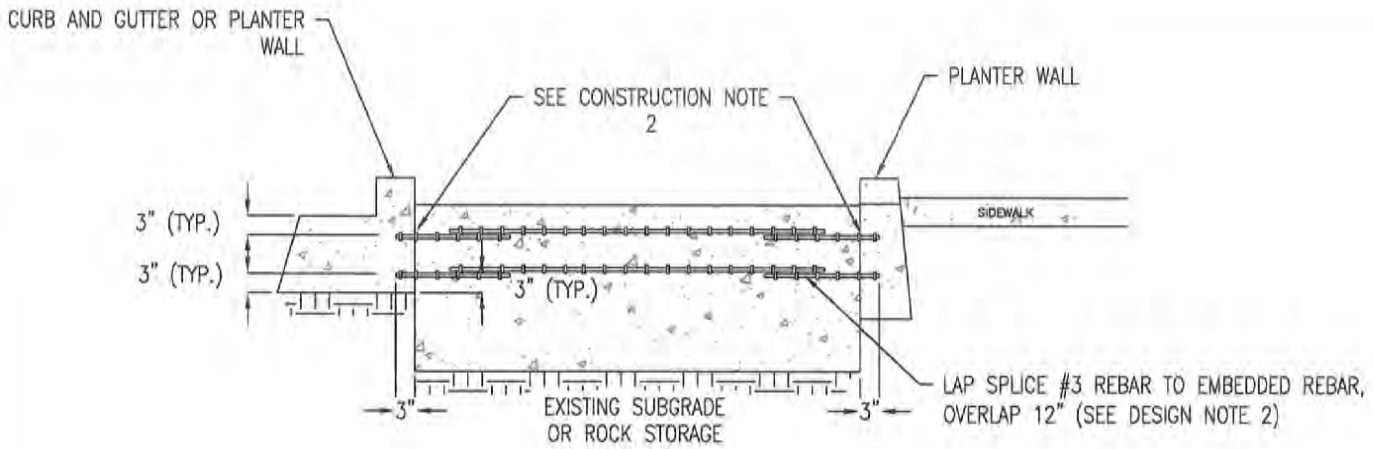
PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/8/14

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



STANDARD PLAN No.
**SW
130**



BIORETENTION DESIGN NOTES

1. FOR USE WITH BIORETENTION PLANTERS OR SLOPED SIDED SWALES/RAIN GARDENS.
2. FOR CHECK DAMS LONGER THAN 12' SPECIFY REBAR OVERLAP LENGTH.
3. SPACE CHECK DAMS TO MAXIMIZE PONDING ACROSS CELLS.
4. PROVIDE ELEVATIONS AND STATIONING AND/OR DIMENSIONING FOR CHECK DAMS.
5. ENSURE THAT CHECK DAM ELEVATIONS DO NOT CAUSE STORMWATER TO OVERFLOW TO SIDEWALK.
6. SHOW PLANTER WALL EMBEDDED IN EXISTING SUBGRADE OR DRAINROCK.

CONSTRUCTION NOTES

1. EMBED #3 REBAR 3" INTO CURB AND PLANTER WALL.
2. DO NOT WORK DURING RAIN OR UNDER WET CONDITIONS.
3. KEEP ALL HEAVY MACHINERY OUTSIDE BIORETENTION AREA LIMITS.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **CONCRETE CHECK DAM**

CITY OF SALINAS

DESIGNED BY:
STAFF

CADD BY:
STAFF

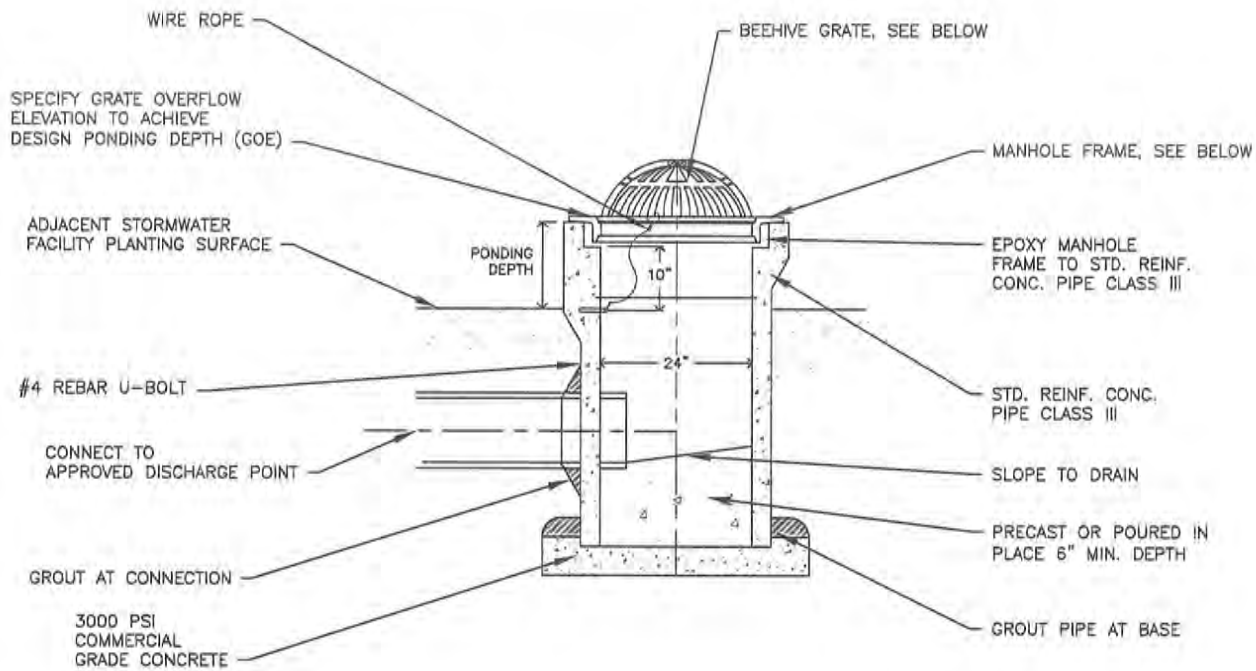
PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 9/10/14

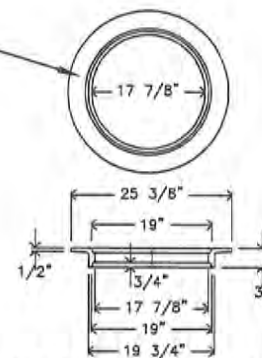
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



STANDARD PLAN No.
SW
131



MANHOLE RING AND BEEHIVE GRATE MH25BH BY OLYMPIC FOUNDRY OR APPROVED EQUAL



24"x4" REVERSIBLE MANHOLE FRAME

BIORETENTION DESIGN NOTES

1. PROVIDE GRATE OVERFLOW ELEVATION ON PLANS.
2. TO INCORPORATE FLEXIBILITY INTO DESIGN OVERFLOW ELEVATION OR CORRECT ELEVATION OF AN EXISTING STRUCTURE, INSTALL OVERFLOW COLLAR, PER SW 141.
3. IN PRIVATE SITES NOT IN CITY R/W THE PROJECT CIVIL ENGINEER MAY PROPOSE ALTERNATES FOR GRATE INSTALLATIONS USING ALTERNATIVE MANUFACTURER'S PRODUCT/CONFIGURATION.

CONSTRUCTION NOTES

1. DO NOT ADJUST OVERFLOW GRATE ELEVATION, CONSTRUCT AS SHOWN ON PLANS.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **OVERFLOW STRUCTURE W/ BEEHIVE GRATE**

CITY OF SALINAS

DESIGNED BY:
STAFF

CADD BY:
STAFF

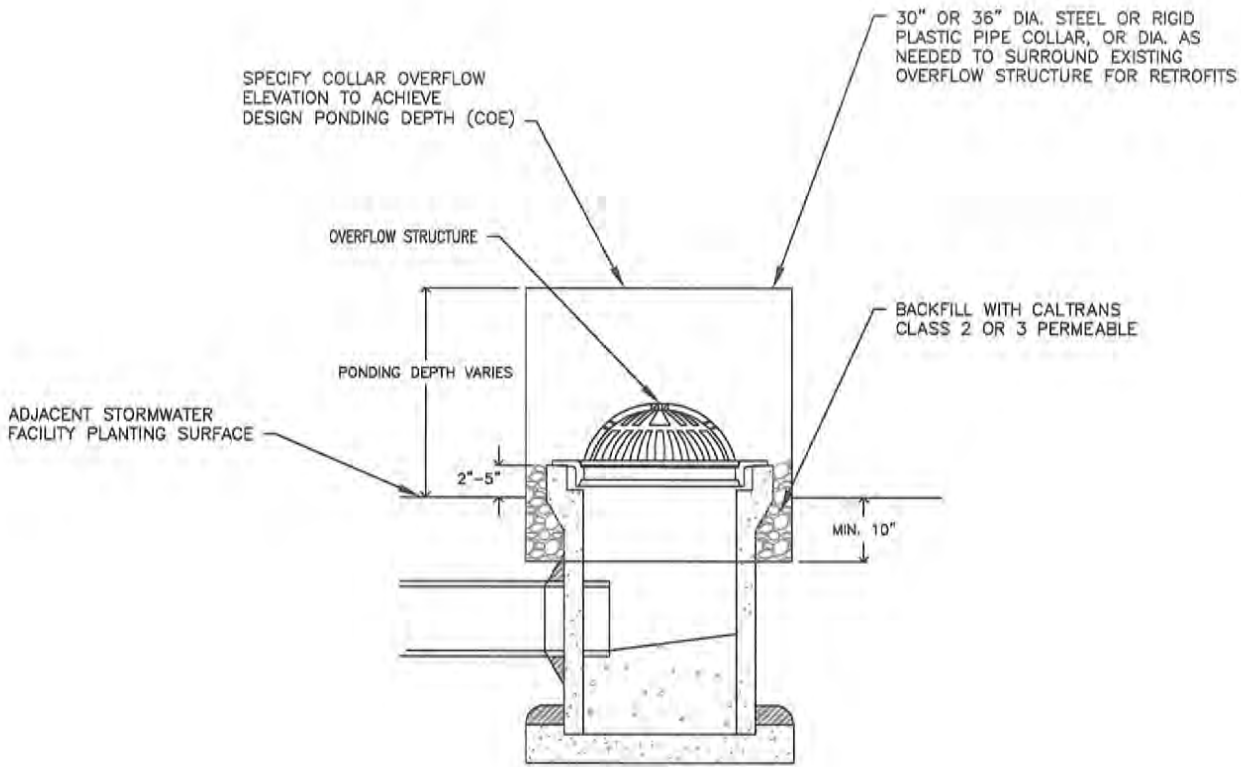
PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/8/14

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



STANDARD PLAN No.
SW 140



BIORETENTION DESIGN NOTES

1. MAY BE USED IN CONJUNCTION WITH OVERFLOW STRUCTURES TO ALLOW FOR FIELD ADJUSTMENT OF OVERFLOW ELEVATION, OR AS RETROFIT TO CORRECT EXISTING STRUCTURE THAT DOES NOT ALLOW PONDING TO OCCUR.
2. PROVIDE COLLAR OVERFLOW ELEVATION (COE) ON PLANS.
3. PCC PIPE RISER EXTENSIONS MAY BE UTILIZED IN LIEU OF OVERFLOW STRUCTURE COLLAR.

CONSTRUCTION NOTES

1. CENTER COLLAR ON OVERFLOW GRATE.

PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE:

OVERFLOW STRUCTURE COLLAR FOR RETROFIT PURPOSES

CITY OF SALINAS

STANDARD PLAN No.

**SW
141**

DESIGNED BY:
STAFF

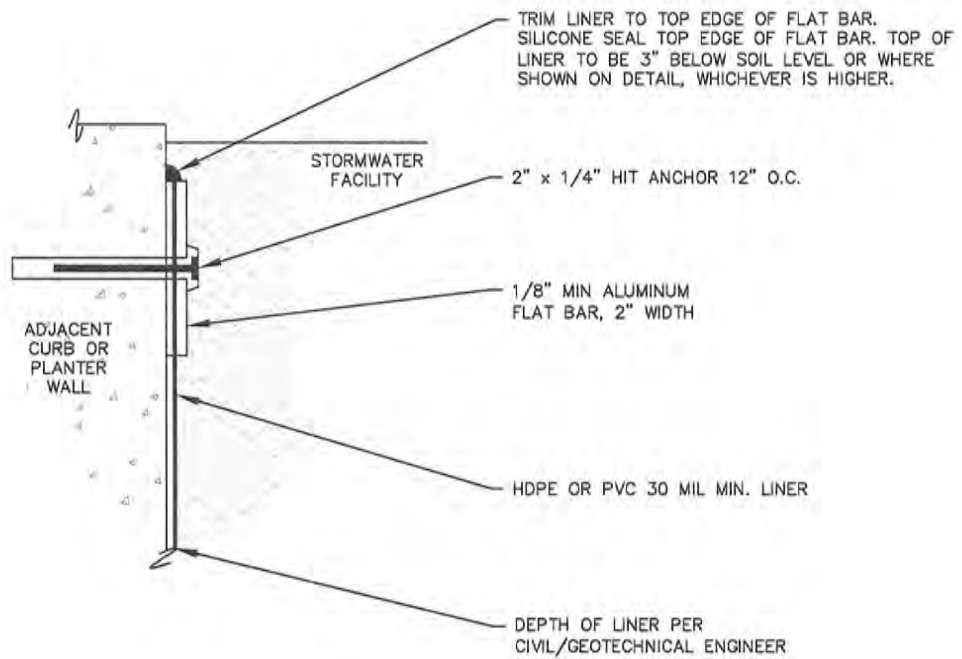
CADD BY:
STAFF

PROJECT MANAGER:
WALTER GRANT, P.E.

DATE 4/8/14

ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014





PUBLIC WORKS DEPARTMENT

ENGINEERING & TRANSPORTATION DIVISION

TITLE: **LINER FASTENING @ STRUCTURE**

CITY OF SALINAS

STANDARD PLAN No.
**SW
150**

DESIGNED BY:
STAFF

DATE 7/2/14

CADD BY:
STAFF

Robert C. Russell
ROBERT C. RUSSELL, CITY ENGINEER
R.C.E. 42871, EXPIRES 3-31-2014



PROJECT MANAGER:
WALTER GRANT, P.E.