

LEGEND

- DRAINAGE AREA BOUNDARY
- DRAINAGE AREA
- DIRECTION OF FLOW
- OVERLAND RELEASE
- ROOF DOWNSPOUT

SIZING OF CURB OPENING FOR 2 YEAR

$Q = AV = 1.486/N \times R^{2/3} \times S^{1/2} \times A$

A = CROSS SECTIONAL AREA (CFS)
 V = FLOW VELOCITY (F/S)
 R = HYDRAULIC RADIUS
 S = SLOPE PER FT
 n = MANNING COEFFICIENT

A = 0.556 AC.
 S = 0.01
 $R = a/p = 1.5 / 4 = 0.375ft$
 n = 0.13
 $Q = 1.486/0.13 \times (0.375)^{2/3} \times (0.1)^{1/2} \times 0.556$
 Q = 8.96 CFS

STORMWATER QUALITY FLOW CALCULATIONS FOR HYDRAULIC DESIGN

Q = CIA
 C = 0.95 FOR COMMERCIAL/INDUSTRIAL PROPERTY
 I = 0.20 INCHES PER HOUR
 A = AREA, ACRES

AREA -1 0.556 AC
 $Q = 0.95 \times 0.20 \times 0.556 = 0.1056$ CFS

AREA -2 0.520 AC
 $Q = 0.95 \times 0.20 \times 0.520 = 0.0988$ CFS

MINIMUM TCMS AND BMPS FOR LAND USE OF CONCERN:

- GAS STATION OR EQUIPMENT FUELING FACILITIES:**
- ALL NEW FUELING STATIONS OR EXPANSION OF SUCH USES SHOULD INCLUDE THE FOLLOWING BMPS:
- INSTALL AND MAINTAIN A TREATMENT CONTROL MEASURE
 - PAVE THE FUELING AREA FLOORS WITH AN IMPERMEABLE SURFACE (I.E., PORTLAND CEMENT CONCRETE OR EQUIVALENT SMOOTH IMPERVIOUS SURFACE).
 - COVER THE FUELING AREAS WITH A CANOPY OR COVER THAT EXTENDS A MINIMUM OF TEN FEET IN EACH DIRECTION FROM EACH PUMP. ALTERNATIVELY, COVER THE FUELING AREAS WITH A CANOPY OR COVER THAT HAS MINIMUM DIMENSIONS EQUAL TO OR GREATER THAN THE AREA WITH THE GRADE BREAK OR FUEL DISPENSING AREA (THE FUEL DISPENSING AREA IS DEFINED AS THE AREA EXTENDING A MINIMUM OF 6.5 FEET FROM THE CORNER OF EACH FUEL DISPENSER OR THE LENGTH AT WHICH THE HOSE AND NOZZLE ASSEMBLY MAY BE OPERATED PLUS A MINIMUM OF ONE FOOT, WHICHEVER IS GREATER. IN NO CASE SHOULD THE CANOPY OR COVER DRAIN ONTO THE FUELING AREA.)
 - GRADE THE FUEL AREA TO PREVENT WATER DRAINING TOWARD THE FUELING AREA.
 - GRADE THE FUEL AREA WITH THE MINIMUM SLOPE NECESSARY TO PREVENT PONDING.
 - SEPARATE THE FUELING AREA FROM THE REST OF THE SITE BY A GRADE BREAK THAT PREVENTS RUN-ON OF STORM WATER TO THE MAXIMUM EXTENT PRACTICABLE.
 - DRY SWEEP THE FUELING AREA ROUTINELY.
 - STENCIL ALL ON-SITE STORM DRAINS IN CONFORMANCE WITH THE CITY'S REQUIREMENTS.
 - PREPARE A SPILL CLEANUP PLAN IN CONFORMANCE WITH THE CITY OF SAN JOSE FIRE CODE.

DESIGN CALCULATION FOR STORMWATER PLANTER

PLANTER-1

STEP 1: CALCULATE REFERENCE STORMWATER QUALITY DESIGN VOLUME (SQDVref) FOR IMPERVIOUS AREA TRIBUTARY TO LID STORMWATER PLANTER.

$WQV = Vu \times (1 \text{ FT.} / 12 \text{ IN.}) \times \text{Aimp}$
 WQV : WATER QUALITY VOLUME, FT³
 Vu: UNIT BASIN STORAGE VOLUME, IN. (FIGURE 5-1 IMPERVIOUSNESS = 1 & 12-HR DRAWDOWN)
 Aimp: IMPERVIOUS AREA TRIBUTARY TO LID STORMWATER PLANTER, SF

$WQV = 0.42 \text{ IN.} \times 0.556 \text{ AC.} / 12 \text{ IN.}$
 WQV = 0.0195 AC.

STEP 2: DETERMINE DESIGN SURCHARGE STORAGE DEPTH (Ds) AND SURFACE AREA (Aplanter) OF LID STORMWATER PLANTER

Ds: DESIGN AVERAGE SURCHARGE DEPTH, FT.
 Aplanter: PLANTER SURFACE AREA PROVIDED, SF
 Ds = 0.5 FT.
 Aplanter = 1,857 SF

STEP 3: CALCULATE DESIGN PLANTER SURFACE AREA (As)

$As = WQV / Ds$
 $As = 0.0195 \text{ AC.} / 0.50$
 $As = 0.0389 \text{ AC.} \times (43560 \text{ SF} / 1 \text{ AC.})$
 $As = 1,695 \text{ FT}^2$

1,857 SF > 1,695 SF

PLANTER-2

STEP 1: CALCULATE REFERENCE STORMWATER QUALITY DESIGN VOLUME (SQDVref) FOR IMPERVIOUS AREA TRIBUTARY TO LID STORMWATER PLANTER.

$WQV = Vu \times (1 \text{ FT.} / 12 \text{ IN.}) \times \text{Aimp}$
 WQV : WATER QUALITY VOLUME, FT³
 Vu: UNIT BASIN STORAGE VOLUME, IN. (FIGURE 5-1 IMPERVIOUSNESS = 1 & 12-HR DRAWDOWN)
 Aimp: IMPERVIOUS AREA TRIBUTARY TO LID STORMWATER PLANTER, SF

$WQV = 0.42 \text{ IN.} \times 0.52 \text{ AC.} / 12 \text{ IN.}$
 WQV = 0.0182 AC.

STEP 2: DETERMINE DESIGN SURCHARGE STORAGE DEPTH (Ds) AND SURFACE AREA (Aplanter) OF LID STORMWATER PLANTER

Ds: DESIGN AVERAGE SURCHARGE DEPTH, FT.
 Aplanter: PLANTER SURFACE AREA PROVIDED, SF
 Ds = 0.5 FT.
 Aplanter = 1,678 SF

STEP 3: CALCULATE DESIGN PLANTER SURFACE AREA (As)

$As = WQV / Ds$
 $As = 0.0182 \text{ AC.} / 0.50$
 $As = 0.0364 \text{ AC.} \times (43560 \text{ SF} / 1 \text{ AC.})$
 $As = 1,586 \text{ SF}$

1,678 SF > 1,586 SF

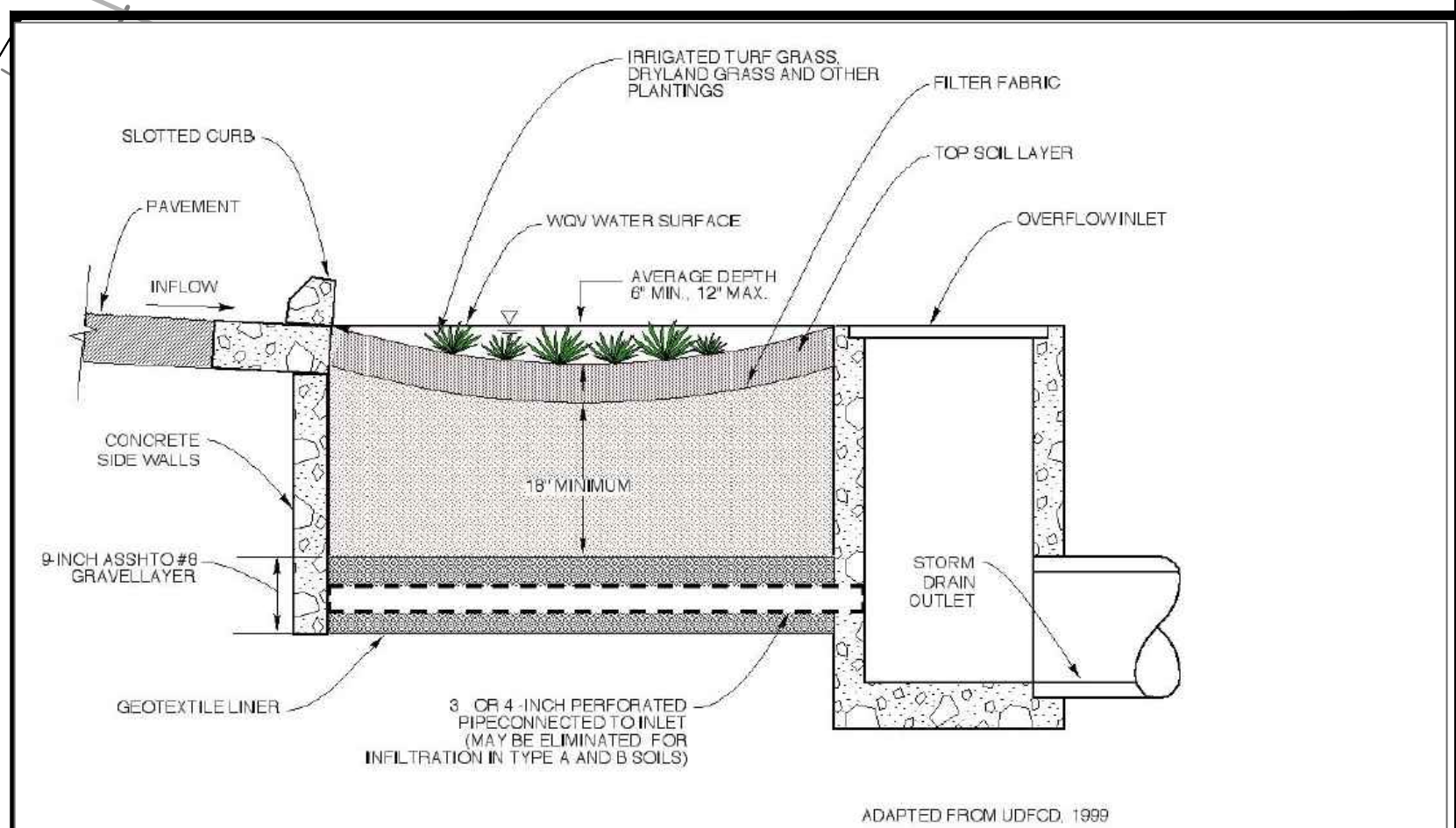
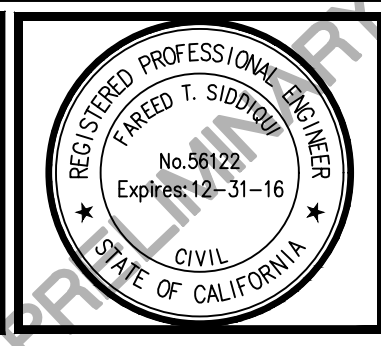


Figure SP-1. Infiltration Stormwater Planter Configuration
 (other media mix and overflow design options may be allowed; check with permitting agency for verification)

BENCHMARK ELEV. _____
 FIELD BOOK NO. _____ PG. _____

STUKAM CONSULTING ENGINEERS, INC.
 11344 COLOMA RD. SUITE 235C
 GOLD RIVER, CALIFORNIA 95670
 (916) 858-8241 PHONE (916) 988-6316 FAX

DESIGNED: FTS	SCALE: 1"=20'
DRAWN: FTS	
CHECKED: FTS	
SUBMITTED: FAREED T. SIDDIQUI	RCE: 56122



NO	REVISION	APPROVAL BY:	DATE

PRELIMINARY STORMWATER CONTROL PLAN
4701 FIDDYMENT RD.
 CONVENIENCE STORE & GAS STATION
 APN: 492-001-031
 CITY OF ROSEVILLE
 PLACER COUNTY
 CALIFORNIA

DATE: 01/09/19
 SHEET
C2
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