SCVURPPP C.3 Workshop
April 1, 2026

Preparing Stormwater Control Plans – Regulatory Requirements and How to Avoid Common Mistakes

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Santa Clara Valley Urban Runoff Pollution Prevention Program

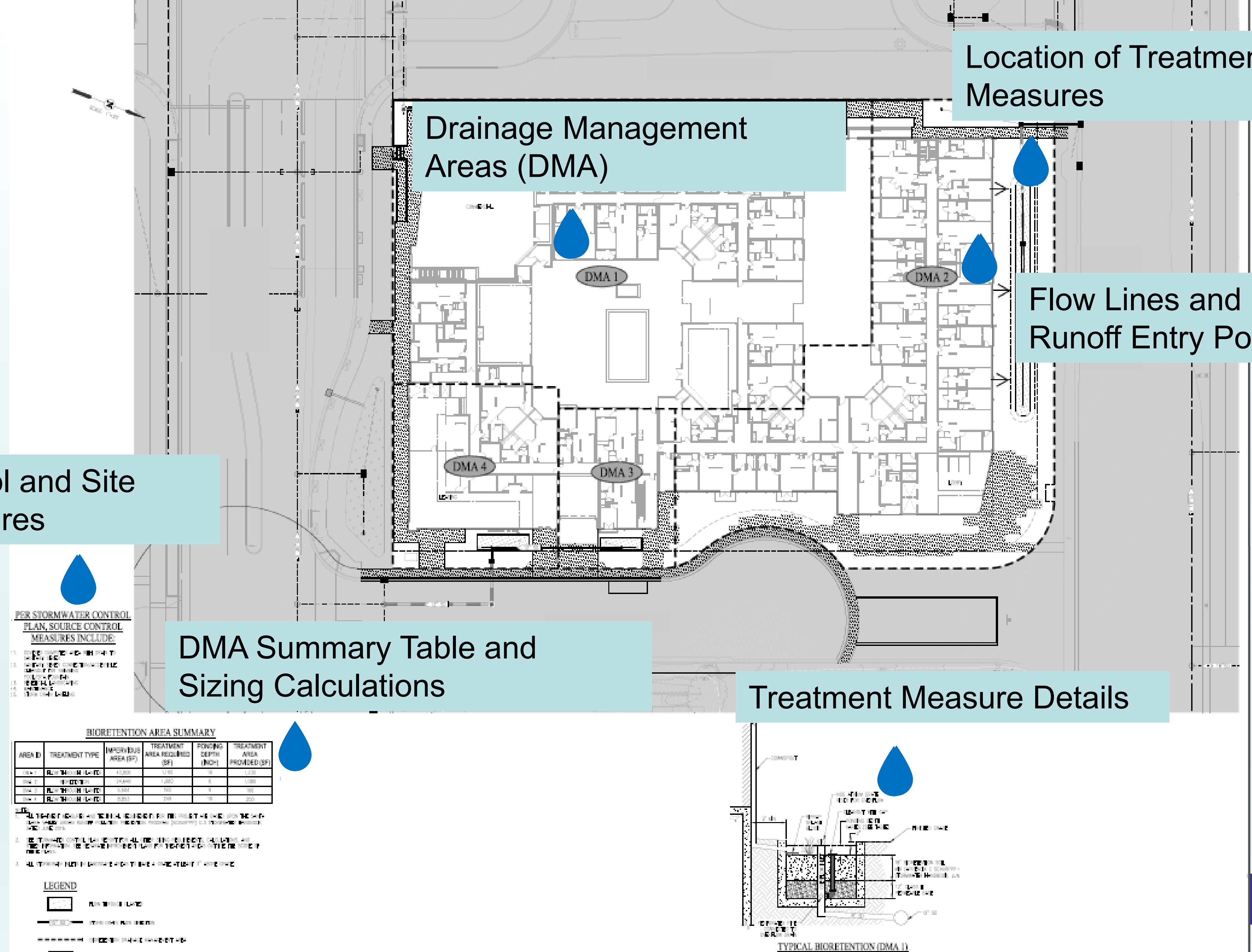
Presentation Overview

- Required Submittals
- Reporting Impervious Surface Area Quantities (C.3 Data Form)
- Drainage Management Areas (DMAs)
- Flow Lines and Entry Points
- Treatment Measure Details
- Plant List, Soil Mix Requirements

Stormwater Control Plan (SWCP) Components

- Forms
  - C.3 Data Form
  - Stormwater Control Plan Sheet
  - Special Projects worksheet and narrative, if applicable
  - Treatment Measure O&M Checklists (final SWCP)
  - If Hydromodification Management required, Bay Area Hydrology Model (BAHM) Report

SWCP Components



Location of Treatment Measures

Drainage Management Areas (DMA)

Flow Lines and Runoff Entry Points

Source Control and Site Design Measures

DMA Summary Table and Sizing Calculations

Treatment Measure Details

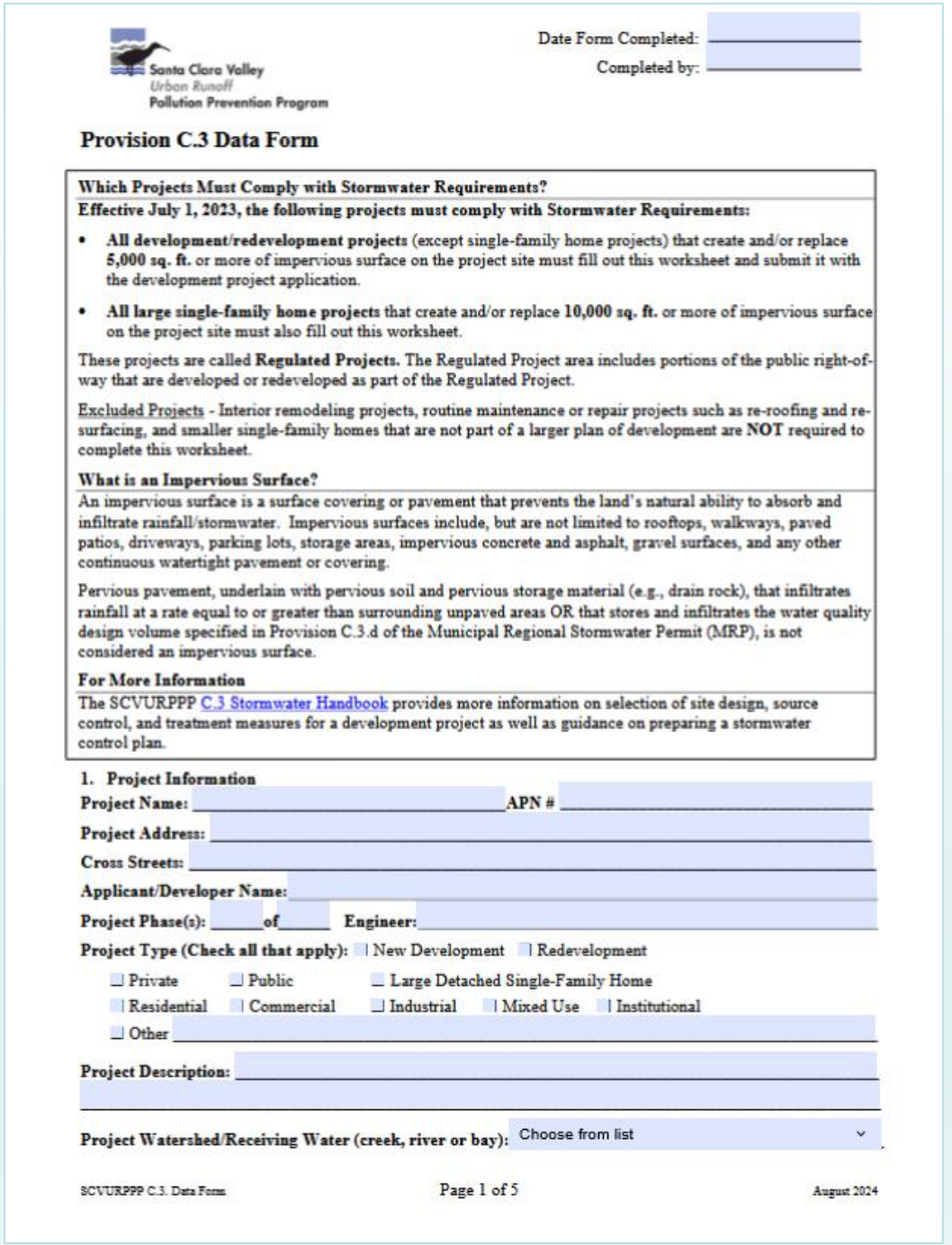
SWCP Components

- Additional Submittals
  - Written SWCP Report (optional but very helpful)
    - Project description, site constraints/opportunities (soil types, depth to groundwater), approach to site design and treatment, etc.
  - Grading plan sheets
  - Utility plan sheets
  - Landscape plan or description

C.3 Data Form

- Critical part of the SWCP Submittal
- Used to fill out the Annual Report which is submitted to the Water Board
- Applicants must complete all fields on the C.3 Data Form

https://scvurppp.org/newdev/



Santa Clara Valley Urban Runoff Pollution Prevention Program

Date Form Completed: _____

Completed by: _____

Provision C.3 Data Form

Which Projects Must Comply with Stormwater Requirements?

Effective July 1, 2023, the following projects must comply with Stormwater Requirements:

- **All development/redevelopment projects** (except single-family home projects) that create and/or replace **5,000 sq. ft.** or more of impervious surface on the project site must fill out this worksheet and submit it with the development project application.
- **All large single-family home projects** that create and/or replace **10,000 sq. ft.** or more of impervious surface on the project site must also fill out this worksheet.

These projects are called **Regulated Projects.** The Regulated Project area includes portions of the public right-of-way that are developed or redeveloped as part of the Regulated Project.

Excluded Projects - Interior remodeling projects, routine maintenance or repair projects such as re-roofing and re-surfacing, and smaller single-family homes that are not part of a larger plan of development are **NOT** required to complete this worksheet.

What is an Impervious Surface?

An impervious surface is a surface covering or pavement that prevents the land's natural ability to absorb and infiltrate rainfall/stormwater. Impervious surfaces include, but are not limited to rooftops, walkways, paved patios, driveways, parking lots, storage areas, impervious concrete and asphalt, gravel surfaces, and any other continuous watertight pavement or covering.

Pervious pavement, underlain with pervious soil and pervious storage material (e.g., drain rock), that infiltrates rainfall at a rate equal to or greater than surrounding unpaved areas OR that stores and infiltrates the water quality design volume specified in Provision C.3.d of the Municipal Regional Stormwater Permit (MRP), is not considered an impervious surface.

For More Information

The SCVURPPP C.3 Stormwater Handbook provides more information on selection of site design, source control, and treatment measures for a development project as well as guidance on preparing a stormwater control plan.

1. Project Information

Project Name: _____ **APN #** _____

Project Address: _____

Cross Streets: _____

Applicant/Developer Name: _____

Project Phase(s): _____ **of** _____ **Engineer:** _____

Project Type (Check all that apply): ☐ New Development ☐ Redevelopment

☐ Private ☐ Public ☐ Large Detached Single-Family Home

☐ Residential ☐ Commercial ☐ Industrial ☐ Mixed Use ☐ Institutional

☐ Other _____

Project Description: _____

Project Watershed/Receiving Water (creek, river or bay): Choose from list

SCVURPPP C.3. Data Form Page 1 of 5 August 2024

C.3 Data Form

- The “new” and “replaced” IAs must be reported in the Annual Report.
- Correctly identifying “replaced” IA is important to determine if stormwater treatment is required for the entire site (50% rule)

C.3.b.iv.(2) ►Regulated Projects Reporting Table (part 1) – Projects Approved During the Fiscal Year Reporting Period

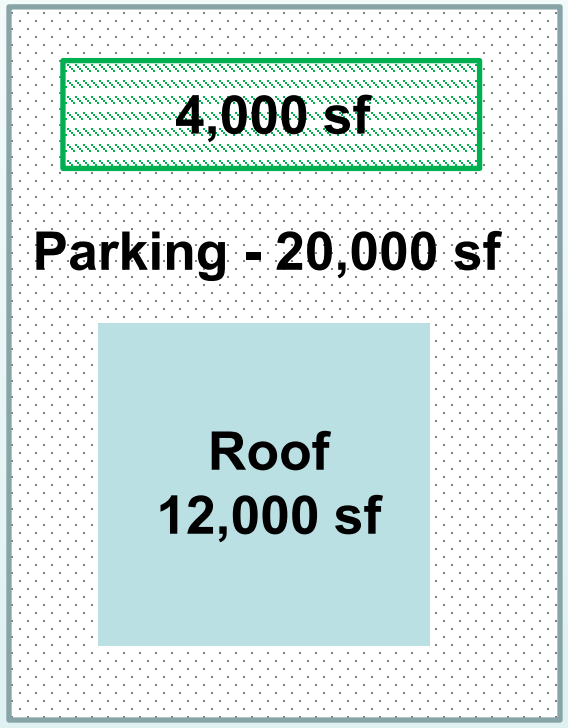
Project Name Project No.	Project Location[1], Street Address	Name of Developer	Project Phase No.[2]	Project Type & Description[3]	Project Watershed[4]	Total Site Area (Acres)	Total Area of Land Disturbed (Acres)	Total New Impervious Surface Area (ft²)[5]	Total Replaced Impervious Surface Area (ft²)[6]	Total Pre-Project Impervious Surface Area[7](ft²)	Total Post-Project Impervious Surface Area[8](ft²)
Private Projects											
Public Projects											

C.3 Data Form – Reporting New and Replaced Impervious Area

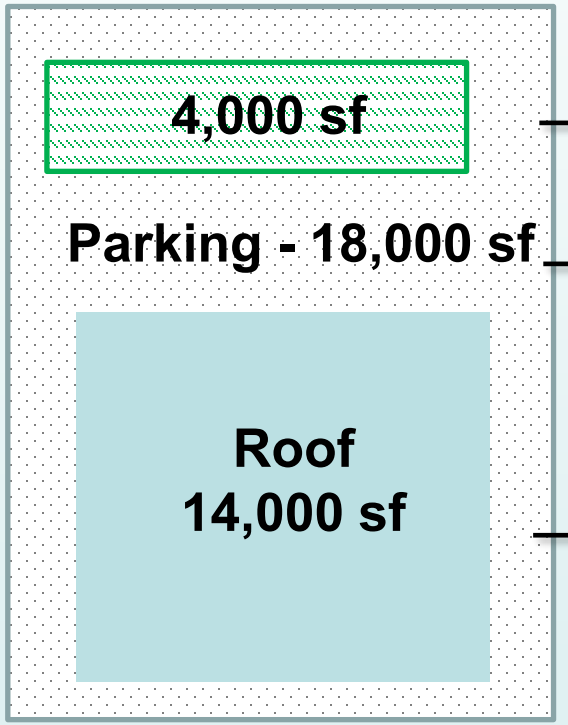
- The Regulated Project threshold applies to impervious surface area created and/or replaced **cumulatively over the entire project site**
- Impervious area replaced in the right-of-way must be included in the calculations
- The "new" and "replaced" Impervious Area (IA) are based on the total site area and not specific locations within the site
- A project will have "new" Impervious Area only if the total post-project IA exceeds the total pre-project IA (total post-project IA – total pre-project IA = New IA)
- Constructed IA on a site that does not exceed the total pre-project IA is considered "replaced" IA

Reporting Impervious Areas (IA)
Scenario 1 : New vs Replaced

Pre-Project Scenario



Post-Project Scenario



Landscape as-is

Parking reduced & replaced

Building replaced and expanded

Pre-project IA	**32,000 sf**
Post-project IA	**32,000 sf**
Replaced IA	**32,000 sf**
New IA	**0 sf**

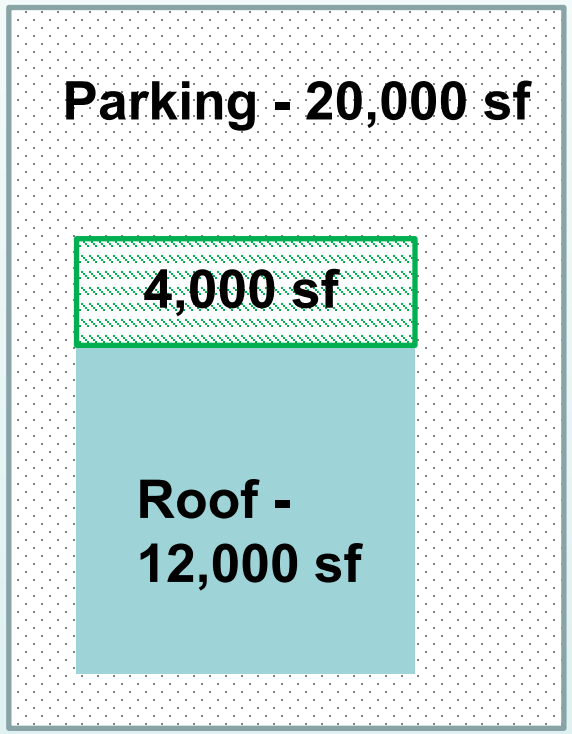
Reporting Impervious Areas (IA)
Scenario 1 : New vs Replaced

2. Project Size

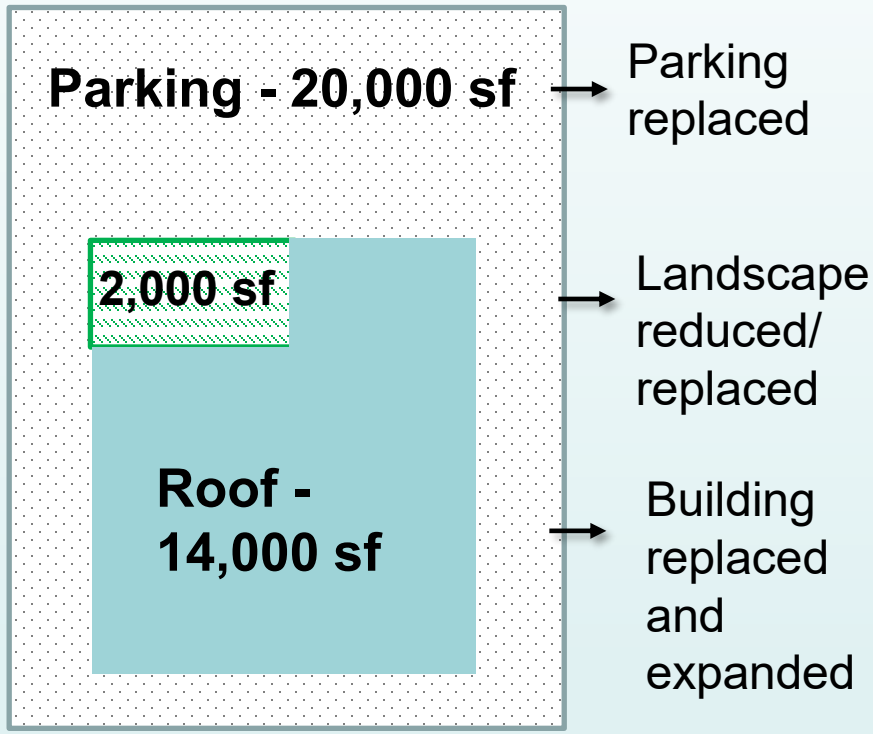
a. Total Site Area: _____(ft²)		**b. Total Land Area Disturbed During Construction: _____ (ft²)** (including clearing, grading, stockpiling, or excavating)			
Project Totals	**Total Existing (Pre-project) Area (ft²)**	**Existing Area Retained[1] (ft²)**	**Existing Area Replaced[2] (ft²)**	**New Area Created[2] (ft²)**	**Total Post-Project Area (ft²)**
Impervious Area (IA)					
c. Total on-site IA	32,000		32,000	0	32,000
d. Total off-site IA[3]					0
e. Total project IA	32,000	0	32,000	0	32,000
f. Total new and replaced IA			32,000		
Pervious Area (PA)[4]					
g. Total on-site PA	4,000				4,000
h. Total off-site PA[3]					
i. Total project PA	4,000				4,000
j. Total Project Area (2.e.+2.i.)	36,000				36,000
k. Percent Replacement of IA in Redevelopment Projects: (Existing on-site IA Replaced ÷ Existing Total on-site IA) x 100% 100 %					

Reporting Impervious Areas
Scenario 2 : New vs Replaced

Pre-Project Scenario



Post-Project Scenario



Parking replaced

Landscape reduced/ replaced

Building replaced and expanded

Pre-project IA	32,000 sf
Post-project IA	34,000 sf
Replaced IA	32,000 sf
New IA	2,000 sf

Reporting Impervious Areas
Scenario 2 : New vs Replaced

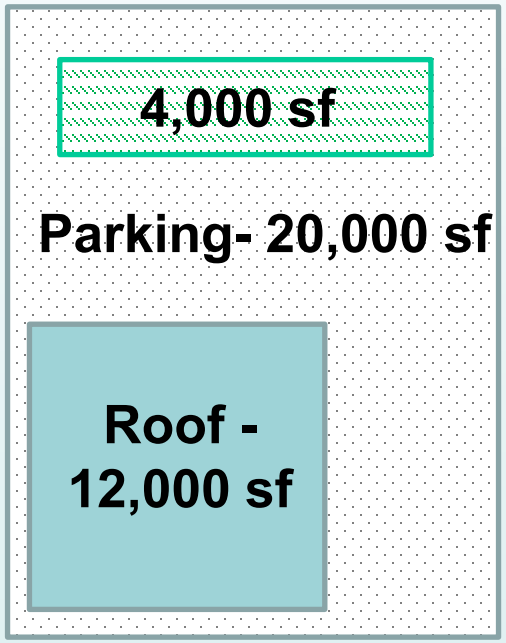
2. Project Size

a. Total Site Area: _____(ft²)		**b. Total Land Area Disturbed During Construction: _____ (ft²)** (including clearing, grading, stockpiling, or excavating)			
Project Totals	**Total Existing (Pre-project) Area (ft²)**	**Existing Area Retained[1] (ft²)**	**Existing Area Replaced[2] (ft²)**	**New Area Created[2] (ft²)**	**Total Post-Project Area (ft²)**
Impervious Area (IA)					
c. Total on-site IA	32,000		32,000	2,000	34,000
d. Total off-site IA[3]					0
e. Total project IA	32,000	0	32,000	2,000	34,000
f. Total new and replaced IA			34,000		
Pervious Area (PA)[4]					
g. Total on-site PA	4,000				2,000
h. Total off-site PA[3]					
i. Total project PA	4,000				2,000
j. **Total Project Area (2.e.+2.i.)**	36,000				36,000

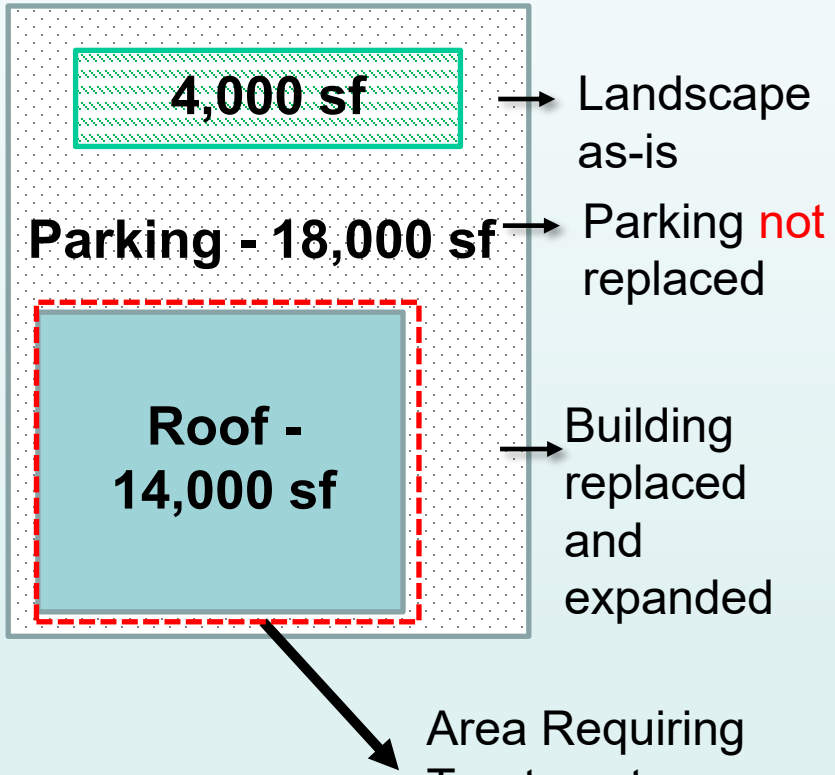
k. Percent Replacement of IA in Redevelopment Projects: (Existing on-site IA Replaced ÷ Existing Total on-site IA) x 100%
100 %

Reporting Impervious Areas
Scenario 3 – 50% Rule

Pre-Project Scenario



Post-Project Scenario



Pre-project IA	32,000 sf
Post-project IA	32,000 sf
Replaced IA	14,000 sf
Existing IA Retained	18.000 sf
New IA	0 sf
Percent replaced	14,000/32,000 = 43.75%

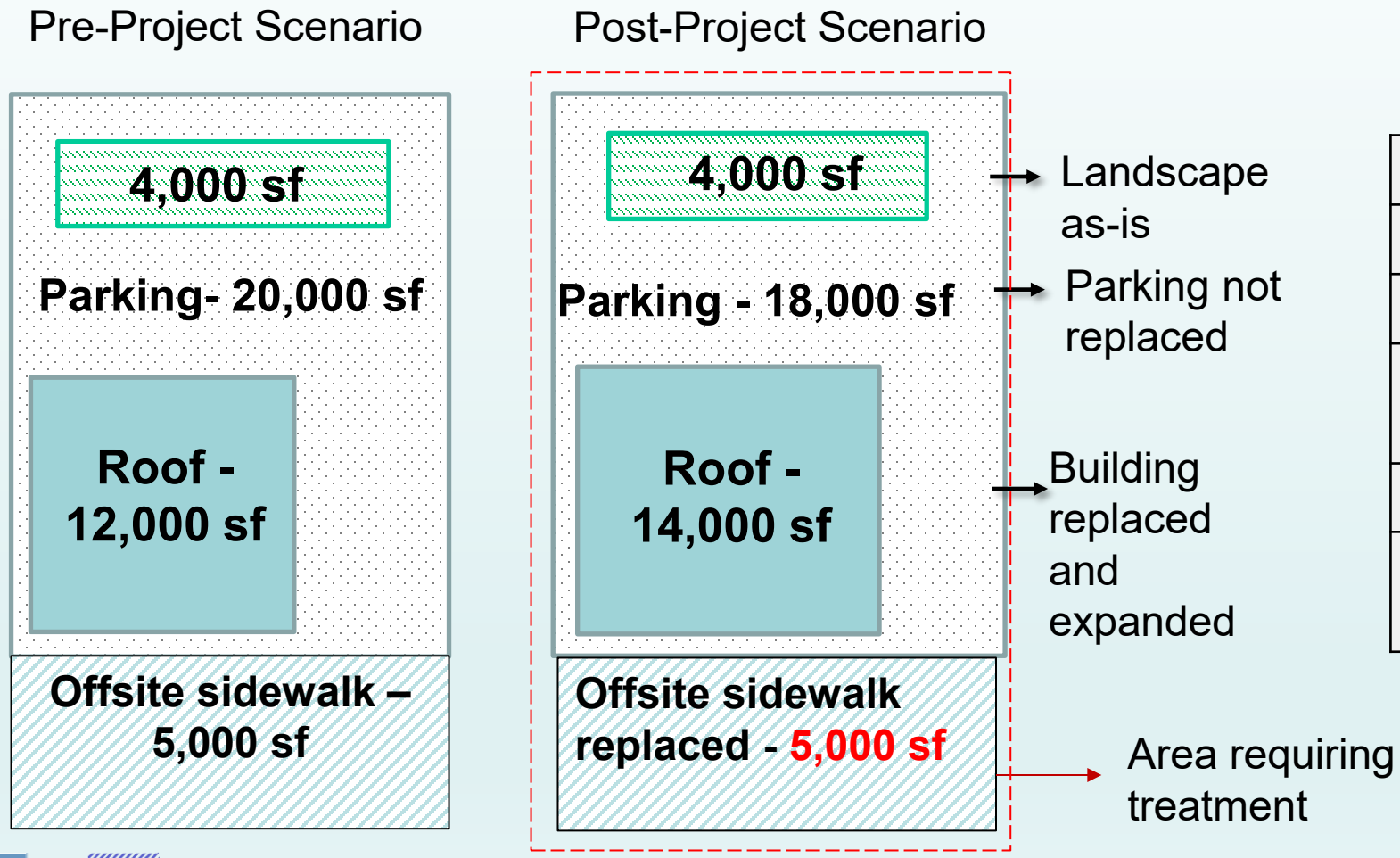
Reporting Impervious Areas
Scenario 3 – 50% Rule

2. Project Size

a. Total Site Area: _____(ft²)		**b. Total Land Area Disturbed During Construction: _____ (ft²)** (including clearing, grading, stockpiling, or excavating)			
Project Totals	**Total Existing (Pre-project) Area (ft²)**	**Existing Area Retained[1] (ft²)**	**Existing Area Replaced[2] (ft²)**	**New Area Created[2] (ft²)**	**Total Post-Project Area (ft²)**
Impervious Area (IA)					
c. Total on-site IA	32,000	18,000	14,000	0	32,000
d. Total off-site IA[3]					0
e. Total project IA	32,000	18,000	14,000	0	32,000
f. Total new and replaced IA			14,000		
Pervious Area (PA)[4]					
g. Total on-site PA	4,000				4,000
h. Total off-site PA[3]					
i. Total project PA	4,000				4,000
j. **Total Project Area (2.e.+2.i.)**	36,000				36,000

k. Percent Replacement of IA in Redevelopment Projects: (Existing on-site IA Replaced ÷ Existing Total on-site IA) x 100%
43.75 %

Reporting Impervious Areas
Scenario 4 – Offsite improvements and 50% rule



Pre-project IA	37,000 sf
Post-project IA	37,000 sf
Replaced IA	19,000 sf
Existing IA Retained	18.000 sf
New IA	0 sf
Percent replaced	19,000/37,000 = 51.35%

Reporting Impervious Areas
Scenario 4 – Offsite improvements and 50% rule

2. Project Size

a. Total Site Area: _____(ft²)		**b. Total Land Area Disturbed During Construction: _____ (ft²)** (including clearing, grading, stockpiling, or excavating)			
Project Totals	**Total Existing (Pre-project) Area (ft²)**	**Existing Area Retained[1] (ft²)**	**Existing Area Replaced[2] (ft²)**	**New Area Created[2] (ft²)**	**Total Post-Project Area (ft²)**
Impervious Area (IA)					
c. Total on-site IA	32,000	18,000	14,000	0	32,000
d. Total off-site IA[3]	5,000		5,000	0	5,000
e. Total project IA	37,000	18,000	19,000	0	37,000
f. Total new and replaced IA			19,000		
Pervious Area (PA)[4]					
g. Total on-site PA	4,000				4,000
h. Total off-site PA[3]	0				0
i. Total project PA	4,000				4,000
j. **Total Project Area (2.e.+2.i.)**	41,000				41,000
k. Percent Replacement of IA in Redevelopment Projects: (Total Existing IA Replaced ÷ Total Existing IA) x 100%					51.351%

C3 Data Form: Common Errors

uring Construction: _____ (ft^2)
ıg, or excavating)

New Area Created² (ft^2)	Total Post-Project Area (ft^2)
0	192,000
	0
0	192,000
,000	
	18,000
	18,000
	210,000

ıg Total on-site IA) x 100%

BMP Volume Calculations - CASQA BMP Handboc

Drainage Area ID	Area (SF)	Imperv Area (SF)	% Imperv
H1	191,340	156,412	82%
H2	59,930	47,944	80%
H3	5,960	0	0%
Total	***257,230***	***205,784***	***80%***

- C3 data form not updated as plan sheets are updated

C3 Data Form: Common Errors

2. Project Size

a. Total Site Area: _____(ft²)		**b. Total Land Area Disturbed During Construction: _____ (ft²)** (including clearing, grading, stockpiling, or excavating)			
Project Totals	**Total Existing (Pre-project) Area (ft²)**	**Existing Area Retained[1] (ft²)**	**Existing Area Replaced[2] (ft²)**	**New Area Created[2] (ft²)**	**Total Post-Project Area (ft²)**
Impervious Area (IA)					
c. Total on-site IA	32,000	18,000	14,000	2,000	34,000
d. Total off-site IA[3]					0
e. Total project IA	32,000	18,000	14,000	2,000	34,000
f. Total new and replaced IA			16,000		
Pervious Area (PA)[4]					
g. Total on-site PA	4,000				4,000
h. Total off-site PA[3]					
i. Total project PA	4,000				4,000
j. **Total Project Area (2.e.+2.i.)**	36,000				38,000
k. Percent Replacement of IA in Redevelopment Projects: (Existing on-site IA Replaced ÷ Existing Total on-site IA) x 100% 43.75 %					

- Inconsistent totals

Site Design and Source Control Measures

- List of measures provided on C3 Data form
- Measures should be project-specific
- Measures should be indicated on plan sheets or SWMP narrative

6. Selection of Specific Stormwater Control Measures:

Site Design Measures

- ❑ Minimize land disturbed (e.g., protect trees and soil)
- ❑ Minimize impervious surfaces (e.g., reduction in post-project impervious surface)
- ❑ Minimum-impact street or parking lot design (e.g., parking on top of or under buildings)
- ❑ Cluster structures/ pavement
- ❑ Disconnected downspouts (direct runoff from roofs, sidewalks, patios to landscaped areas)
- ❑ Pervious pavement
- ❑ Green roof
- ❑ Other self-treating[5] area (e.g., landscaped areas)
- ❑ Self-retaining[5] area
- ❑ Rainwater harvesting and use (e.g., rain barrel, cistern for designated use)[6]
- ❑ Preserved open space
- ❑ Protected riparian and wetland areas/buffers
- ❑ Other _____

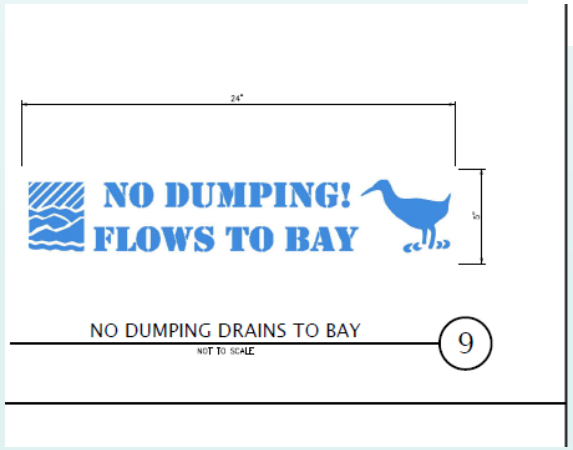
Source Control Measures

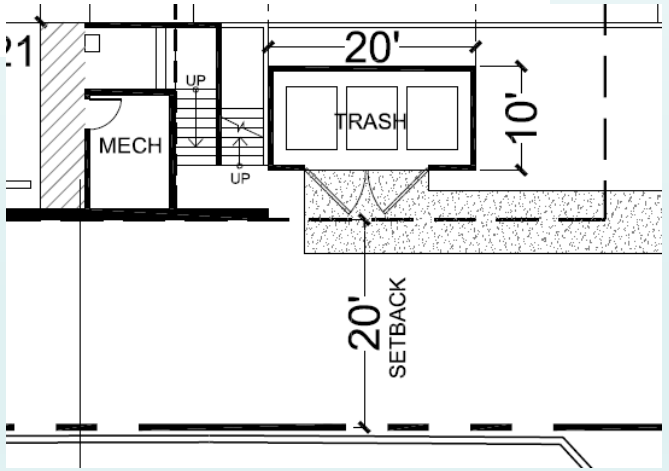
- ❑ Wash area/racks, drain to sanitary sewer[7]
- ❑ Covered dumpster area, drain to sanitary sewer[7]
- ❑ Sanitary sewer connection or accessible cleanout for swimming pool/spa/fountain[7]
- ❑ Beneficial landscaping (minimize irrigation, runoff, pesticides and fertilizers; promotes treatment)
- ❑ Outdoor material storage protection
- ❑ Covers, drains for loading docks, maintenance bays, fueling areas
- ❑ Maintenance (pavement sweeping, catch basin cleaning, good housekeeping)
- ❑ Storm drain labeling
- ❑ Other _____

Showing Source Controls on Plans

STORMWATER SOURCE CONTROLS

1. COVERED DUMPSTER AREA CONNECTED TO SANITARY SEWER.
2. BENEFICIAL LANDSCAPING, INCLUDING MINIMIZING IRRIGATION, RUNOFF, SYNTHETIC PESTICIDES, AND QUICK RELEASE FERTILIZER.
3. MAINTENANCE ACTIVITIES, INCLUDING PAVEMENT SWEEPING, CATCH BASIN CLEANING, AND GOOD HOUSEKEEPING.
4. STORM DRAIN LABELING.



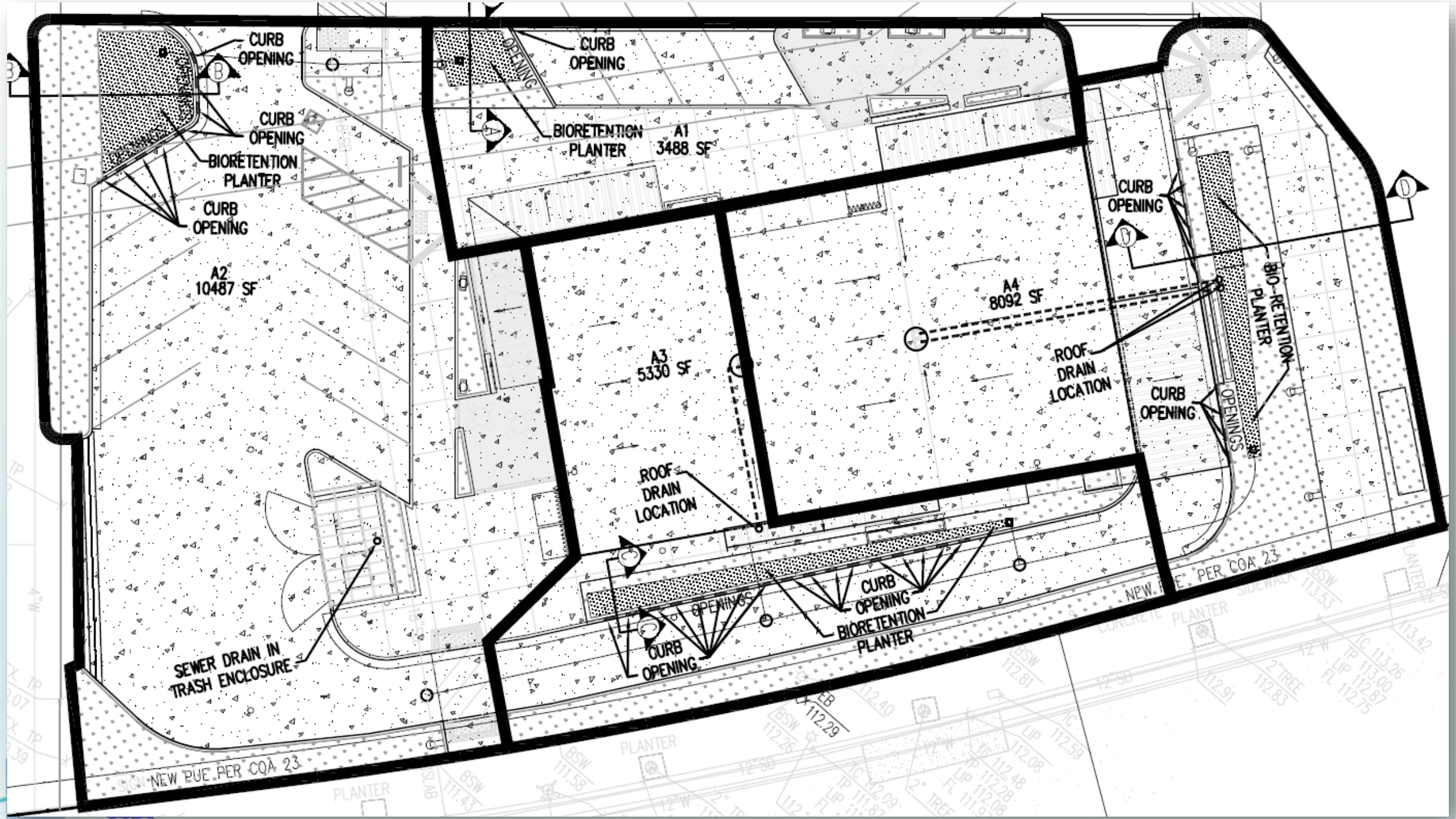


Detail should show cover on dumpster area

Utility Plan should show connection to sanitary sewer

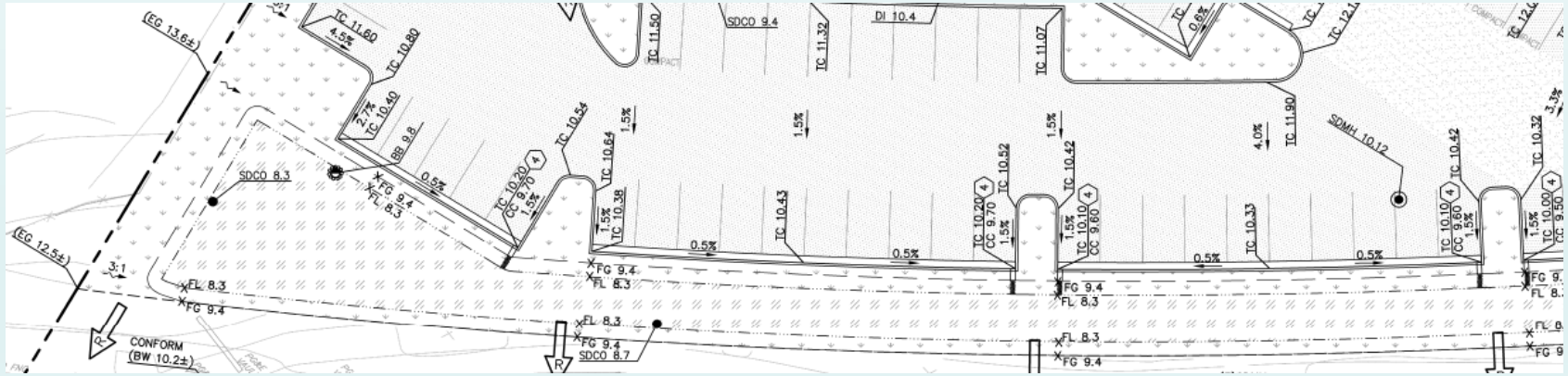
Reviewing DMAs

- The entire project site should be divided into DMAs
- DMAs must include all runoff contributing area and include off-site areas that are being replaced
- DMAs and treatment measures should be indicated on plan sheets
- DMAs should be labeled as self-treating areas or self-retaining areas, or show treatment measures
- All impervious areas within the DMA should drain toward a treatment measure or self-retaining area


CURB OPENING
CURB OPENING
BIORETENTION PLANTER
CURB OPENING
CURB OPENING
BIORETENTION PLANTER
A1
3488 SF
A2
10487 SF
A3
5330 SF
A4
8092 SF
CURB OPENING
BIO-RETENTION PLANTER
ROOF DRAIN LOCATION
ROOF DRAIN LOCATION
CURB OPENING
OPENINGS
CURB OPENING
CURB OPENING
BIORETENTION PLANTER
OPENINGS
SEWER DRAIN IN TRASH ENCLOSURE
NEW PUE PER COA 23
NEW PUE PER COA 23

Reviewing DMAs, cont'd

- Review site topography/grading
  - Runoff should flow toward treatment measures by gravity
  - Pumping runoff into treatment measures strongly discouraged (extra maintenance, failure during storms, vector issues)



Reviewing DMAs – DMA Summary Tables

TREATMENT CONTROL MEASURE SUMMARY TABLE

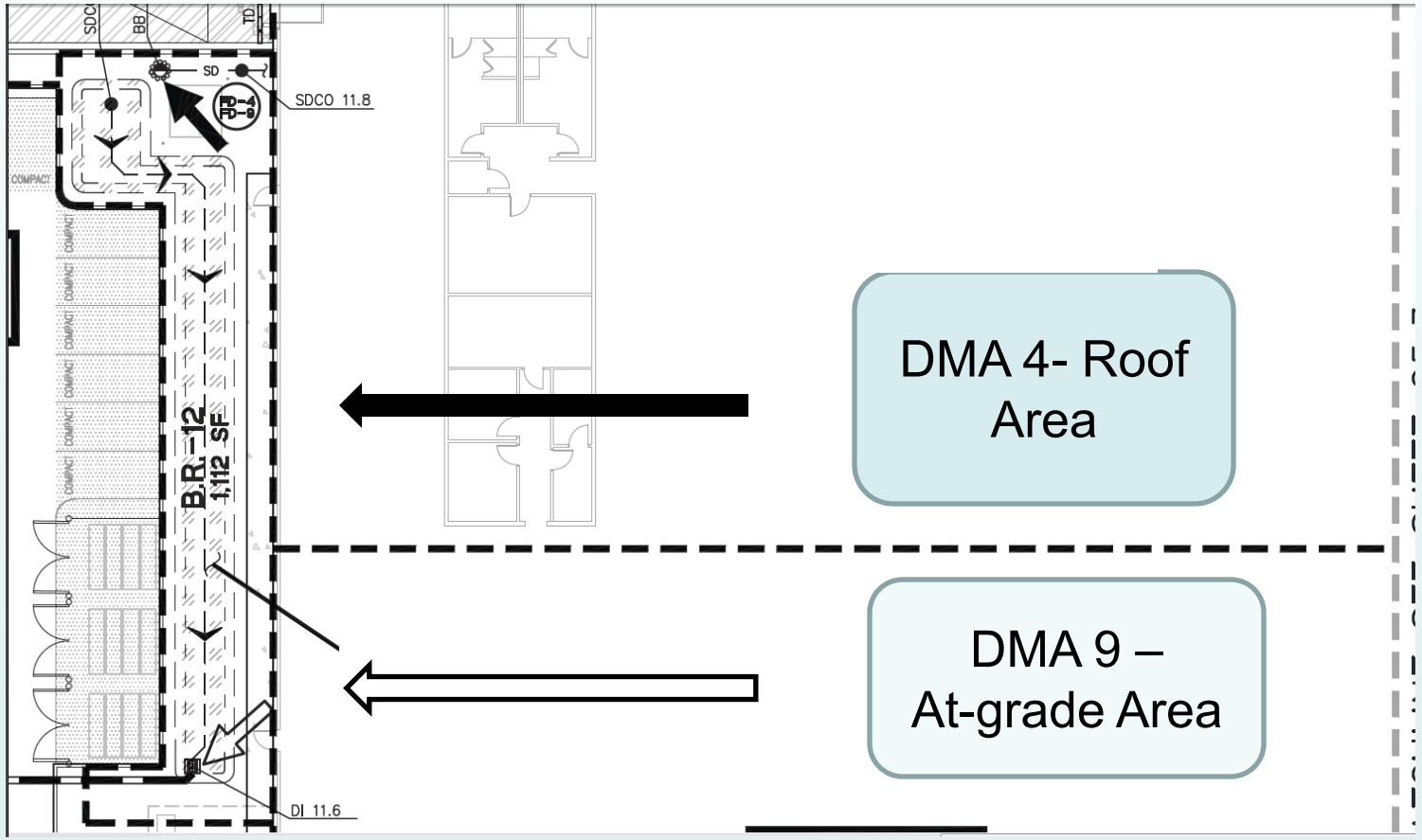
DRAINAGE MANAGEMENT AREA	TCM#	LOCATION	TYPE OF TREATMENT USED	LID or NON-LID	SIZING METHOD	DRAINAGE AREA (SF)	IMPERVIOUS SURFACE (SF)	PERVIOUS SURFACE (PERMEABLE PAVEMENT) (SF)	PERVIOUS SURFACE (OTHER) (SF)	% ONSITE AREA TREATED BY LID OR NON-LID TCM	BIORETENTION AREA REQUIRED (SF)	BIORETENTION AREA PROVIDED (SF)
DMA-A	N/A	ONSITE	Self-treating areas	LID	N/A	17648	0	0	17648	13.90%	N/A	N/A
DMA-B	B	ONSITE	Bioretention unlined w/ underdrain	LID	2C. Flow: 4% Method **	5067	4851	0	216	3.99%	194	216
DMA-C	N/A	ONSITE	Self-retaining areas	LID	N/A	3026	1890	0	1136	2.38%	N/A	N/A
DMA-D	D	ONSITE	Bioretention lined* w/ underdrain	LID	2C. Flow: 4% Method **	696	696	0	0	0.55%	28	29
DMA-E	E	ONSITE	Bioretention lined* w/ underdrain	LID	2C. Flow: 4% Method **	979	979	0	0	0.77%	39	40
DMA-F	F	ONSITE	Bioretention lined* w/ underdrain	LID	2C. Flow: 4% Method **	3745	3653	0	92	2.95%	146	148
DMA-G	G	ONSITE	Bioretention lined* w/ underdrain	LID	2C. Flow: 4% Method **	4118	3994	0	124	3.24%	160	160
DMA-H	H	ONSITE	Bioretention lined* w/ underdrain	LID	2C. Flow: 4% Method **	3049	3012	0	37	2.40%	120	128
DMA-I	I	ONSITE	Bioretention lined* w/ underdrain	LID	2C. Flow: 4% Method **	1976	1976	0	0	1.56%	79	82
DMA-J	J	ONSITE	Bioretention lined* w/ underdrain	LID	2C. Flow: 4% Method **	879	845	0	34	0.69%	34	34
DMA-K	K	ONSITE	Bioretention lined* w/ underdrain	LID	2C. Flow: 4% Method **	1883	1823	0	60	1.48%	73	82
DMA-L	L	ONSITE	Bioretention lined* w/ underdrain	LID	2C. Flow: 4% Method **	945	909	0	36	0.74%	36	36
DMA-M	M	ONSITE	Bioretention lined* w/ underdrain	LID	2C. Flow: 4% Method **	2092	2045	0	47	1.65%	82	85
DMA-N	N	ONSITE	Flow-Through planter concrete lined* w/ underdrain	LID	2C. Flow: 4% Method **	2690	2600	0	90	2.12%	104	110
DMA-O	O	ONSITE	Bioretention lined* w/ underdrain	LID	2C. Flow: 4% Method **	8627	8279	0	348	6.80%	331	348
DMA-P	N/A	ONSITE	Self-retaining areas	LID	N/A	3354	834	0	2520	2.64%	N/A	N/A
DMA-Q	N/A	ONSITE	Self-retaining areas	LID	N/A	3000	116	0	2884	2.36%	N/A	N/A
DMA-R	N/A	ONSITE	Self-retaining areas	LID	N/A	30837	3087	26495	1255	24.30%	N/A	N/A

Reviewing DMAs, cont'd

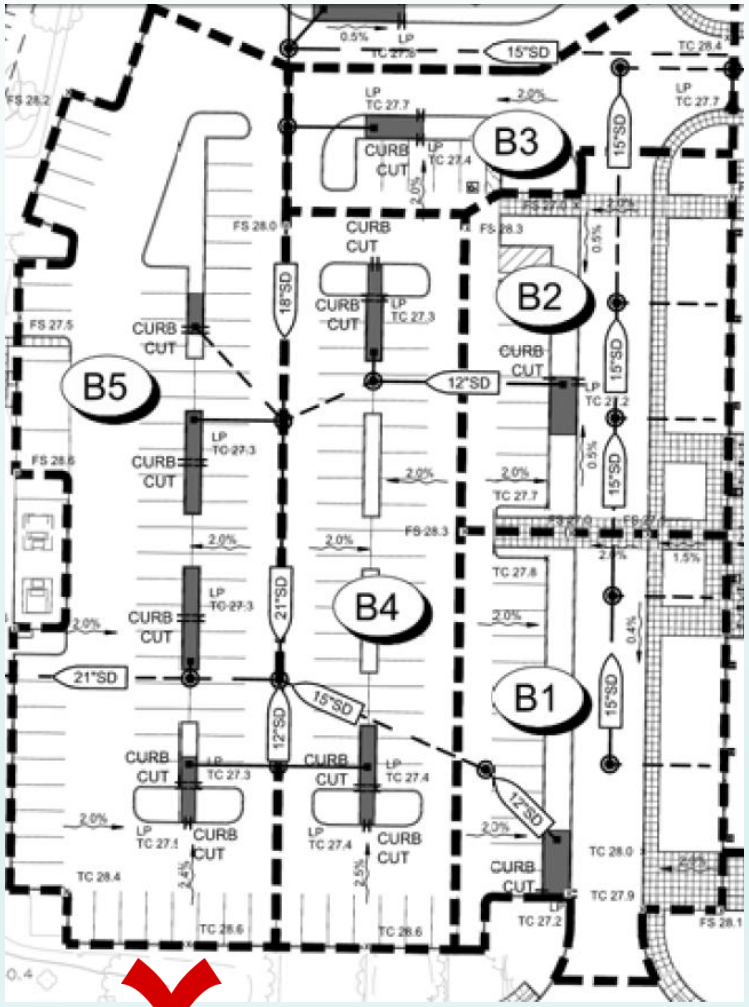
- Multiple DMAs may flow to same treatment measure
  - Treatment measure should be sized adequately
  - Flow path should be indicated
- One DMA should not flow to multiple treatment measures

Multiple DMAs Flowing to Same Treatment Measure

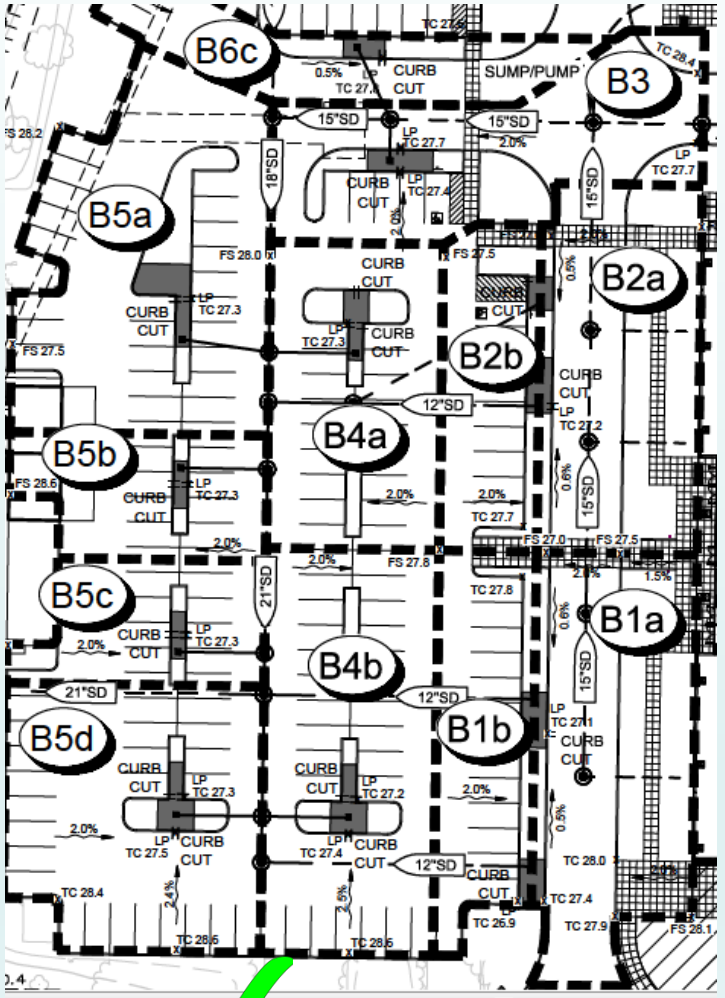
OK



Each DMA Flowing Into One Treatment Measure



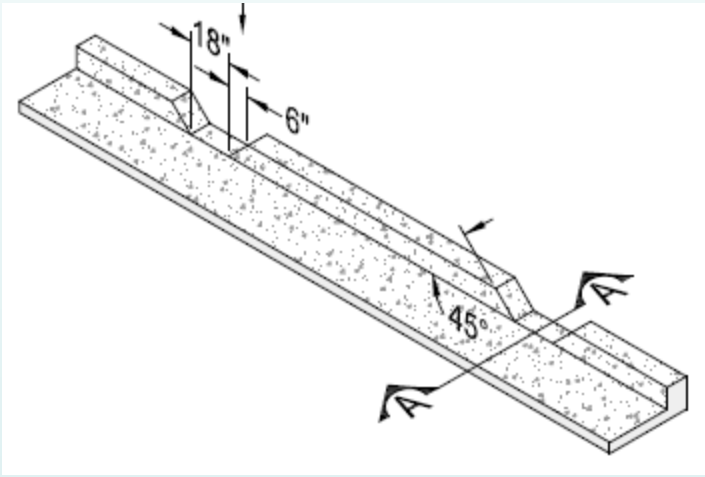
Incorrect



Correct

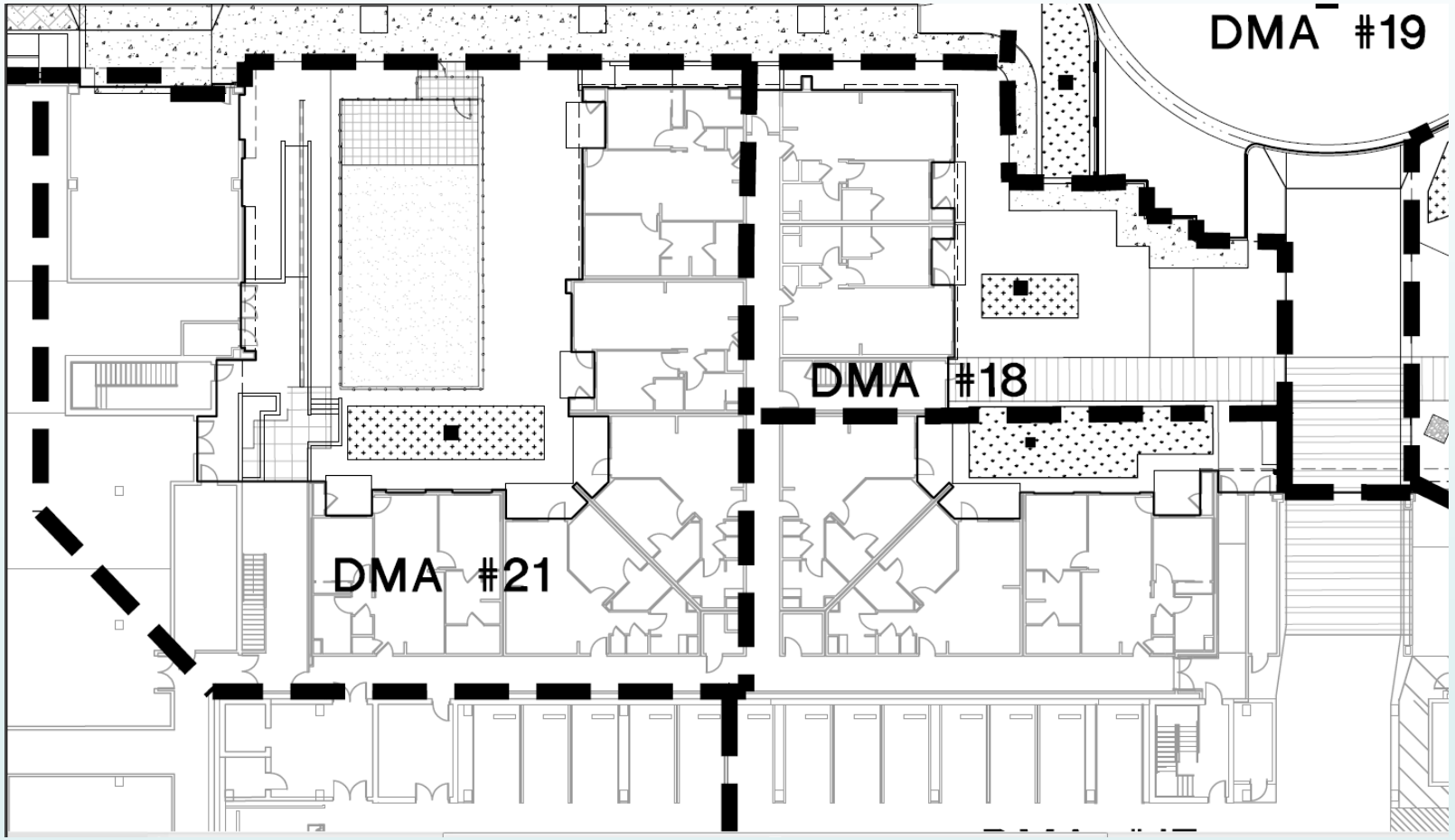
Flow Lines and Runoff Entry Points

- Direction of flow and how runoff enters treatment measures should be indicated
  - Roof downspouts
  - Area drain inlets
  - Bubblers/pop-up emitters
  - Curb cuts
  - Flush curb



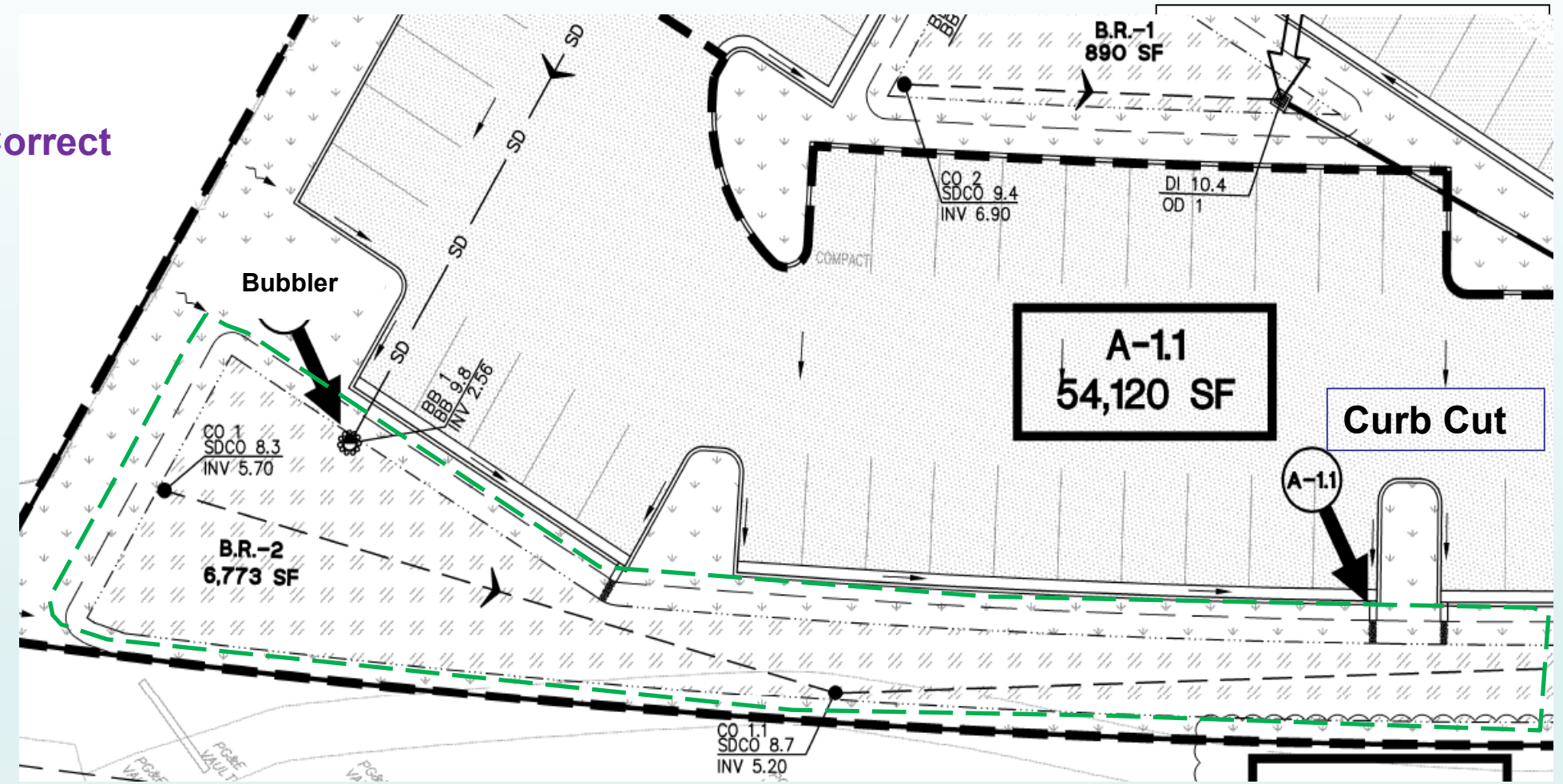
Flow Lines and Runoff Entry Points

Incorrect



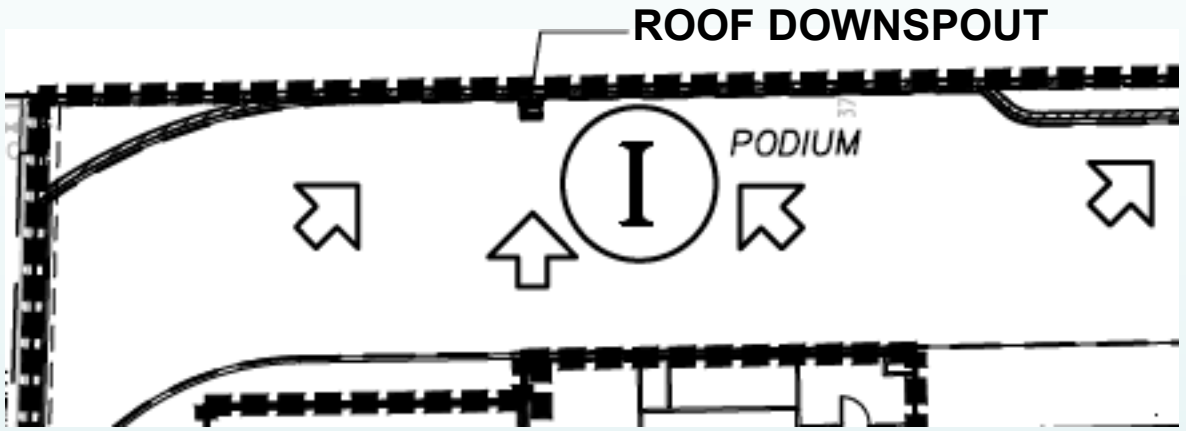
Flow Lines and Runoff Entry Points

✓ Correct



Flow Lines and Runoff Entry Points

✓ Correct



FLOW DIRECTION OF SURFACE DRAINAGE

GENERAL NOTES

1. DOWNSPOUTS ARE TO BE EITHER:
   1.1. DISCONNECTED FROM STORM DRAIN PIPE AND HAVE STORMWATER RUNOFF SHEET FLOW TO BIORETENTION AREAS; OR
   1.2. HARD PIPED TO BIORETENTION AREAS.

Treatment Measure Sizing

- Check for submittal of complete sizing calculations

✓ Correct

TREATMENT CONTROL MEASURE SUMMARY TABLE

Area	TCM#	Type	Drainage Area (s.f)	Impervious Area (s.f.)	Pervious Area (s.f)	Bioretention Area Required (s.f)	Bioretention Area Provided (s.f)
A	1	Planter Box	4,571	4,219	352	131 *	140
B	2	Planter Box	4,947	4,625	322	143 *	150
C	3	Planter Box	2,559	2,377	182	74 *	75
D	4	Planter Box	5,317	4,985	332	154 *	155
E	5	Planter Box	5,015	4,675	340	144 *	150
F	6	Planter Box	2,540	2,357	183	73 *	75
G	7	Planter Box	5,141	4,953	188	149 *	152
H	8	Planter Box	4,545	4,295	250	131 *	131

* REQUIRED BIORETENTION SQUARE FOOTAGE OF BASE ON COMBINATION FLOW AND VOLUME CALCULATION ON SHEET TM6.1.

Reviewing DMAs – Adequate Treatment Surface Area Not Provided

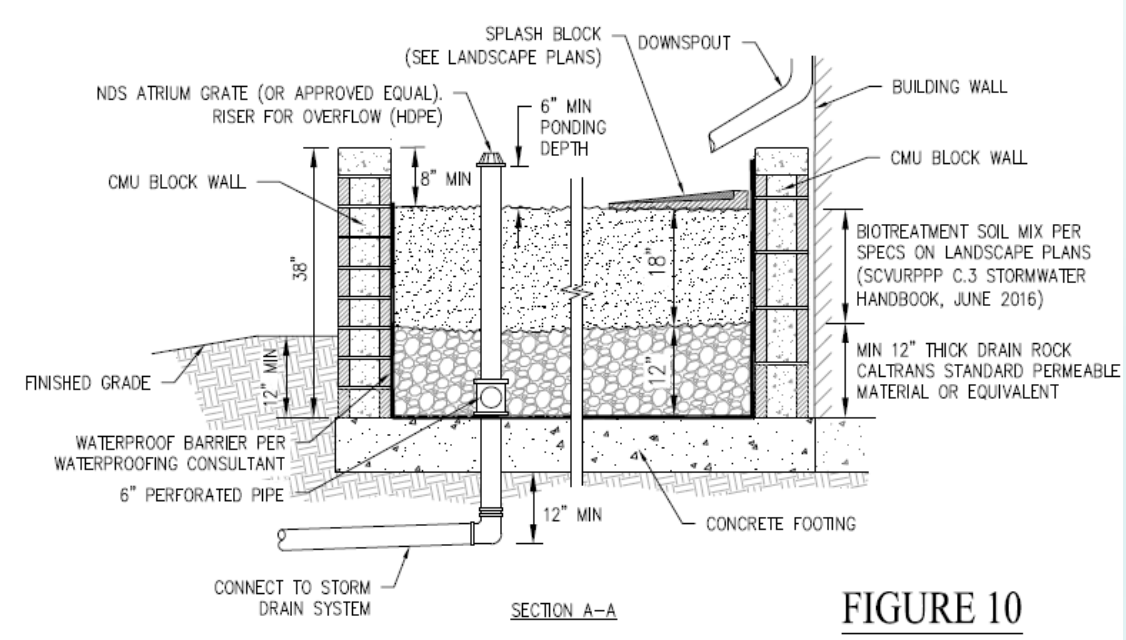
Incorrect

STORMWATER TREATMENT CALCULATION

AREA ID	SURFACE	IMPERVIOUS AREA (SF)	BMP USED	SIZING FACTOR	REQUIRED SURFACE AREA (SF)	SURFACE AREA AS PROVIDED (SF)
AREA 1	PAV	4,405	BIO RETENTION	0.04	176	0
AREA 2	PAV	3,350	BIO RETENTION	0.04	134	143
AREA 3	ROOF/PAV	3,071	BIO RETENTION	0.04	123	150
AREA 4	ROOF/PAV	6,094	BIO RETENTION	0.04	244	245
AREA 5	ROOF/PAV	3,771	BIO RETENTION	0.04	151	151
AREA 6	ROOF/PAV	10,887	BIO RETENTION	0.04	435	380
AREA 7	ROOF/PAV	3,627	BIO RETENTION	0.04	145	147
AREA 8	ROOF/PAV	4,787	BIO RETENTION	0.04	192	197
AREA 9	ROOF/PAV	1,784	BIO RETENTION	0.04	71	72
AREA 10	ROOF/PAV	1,275	BIO RETENTION	0.04	51	51
AREA 11	ROOF/PAV	2,298	BIO RETENTION	0.04	92	92
AREA 12	ROOF/PAV	1,760	BIO RETENTION	0.04	70	70
AREA 13	ROOF/PAV	6,268	BIO RETENTION	0.04	251	190
AREA 14	ROOF/PAV	5,000	BIO RETENTION	0.04	200	203
AREA 15	ROOF/PAV	3,084	BIO RETENTION	0.04	124	157
AREA 16	ROOF/PAV	12,072	BIO RETENTION	0.04	483	338
AREA 17	ROOF/PAV	12,871	BIO RETENTION	0.04	515	522
AREA 18	ROOF/PAV	4,235	BIO RETENTION	0.04	169	170
AREA 19	PAV	7,234	BIO RETENTION	0.04	290	298
AREA 20	PAV	7,006	BIO RETENTION	0.04	280	0
AREA 21	ROOF/PAV	8,808	BIO RETENTION	0.04	352	355
AREA 22	ROOF/PAV	11,774	BIO RETENTION	0.04	471	306
AREA 23	ROOF/PAV	4,561	BIO RETENTION	0.04	182	242
AREA 24	ROOF/PAV	27,028	BIO RETENTION	0.04	1,081	0

Treatment Measure Details

- Typical detail guidance is included in the C.3 Handbook
- Details should be specific to the project



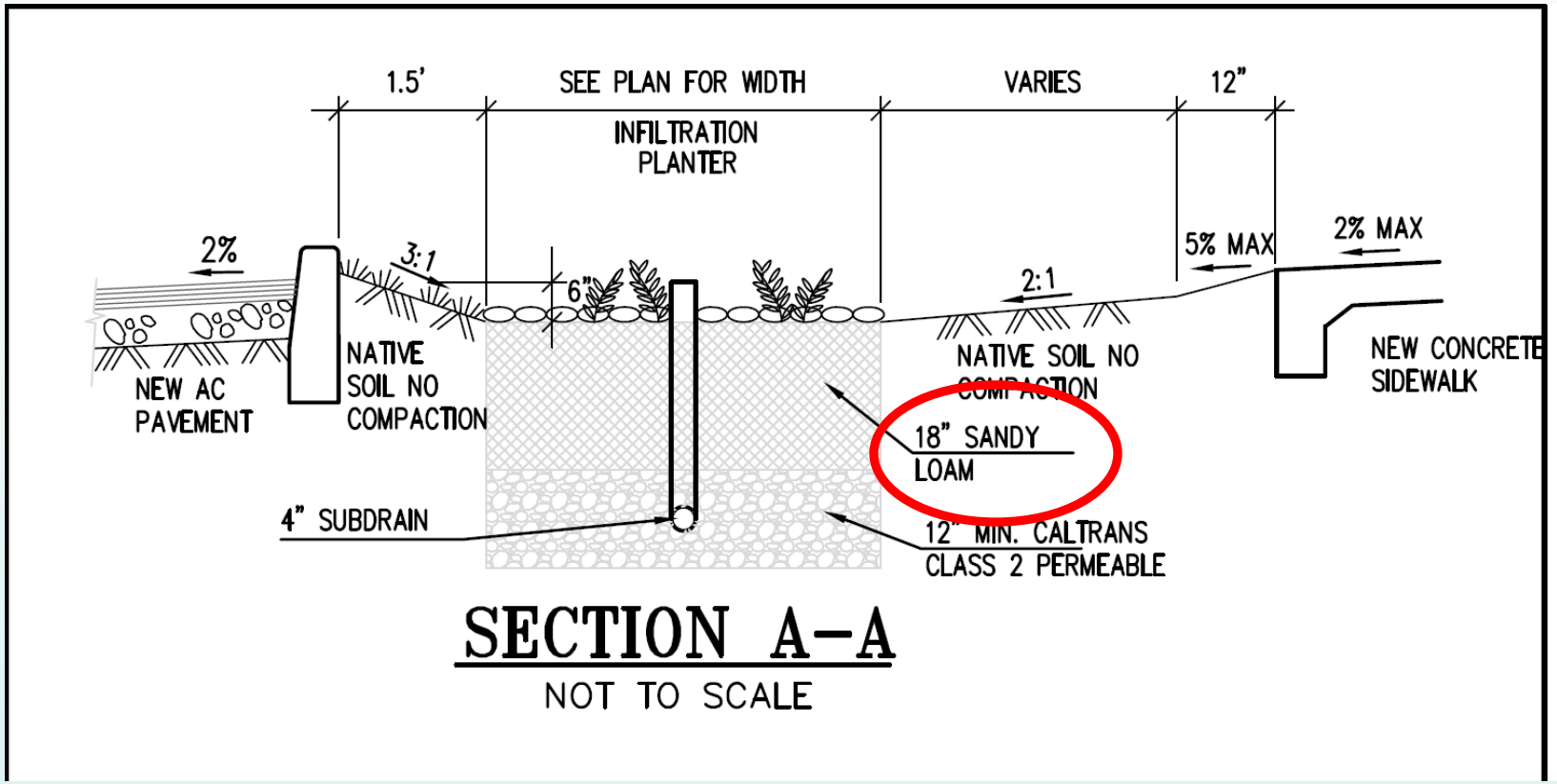
Treatment Measure Details: Common Errors

- Inlets for runoff to enter treatment measure not shown
- Overflow inlet not set above ponding depth
- Specific ponding depth not indicated
- Cleanout not shown
- Underdrain placement not correct
- Energy dissipation not shown
- Filter fabric between biotreatment soil and drain rock (never allowed)

Treatment Measure Details: Common Errors

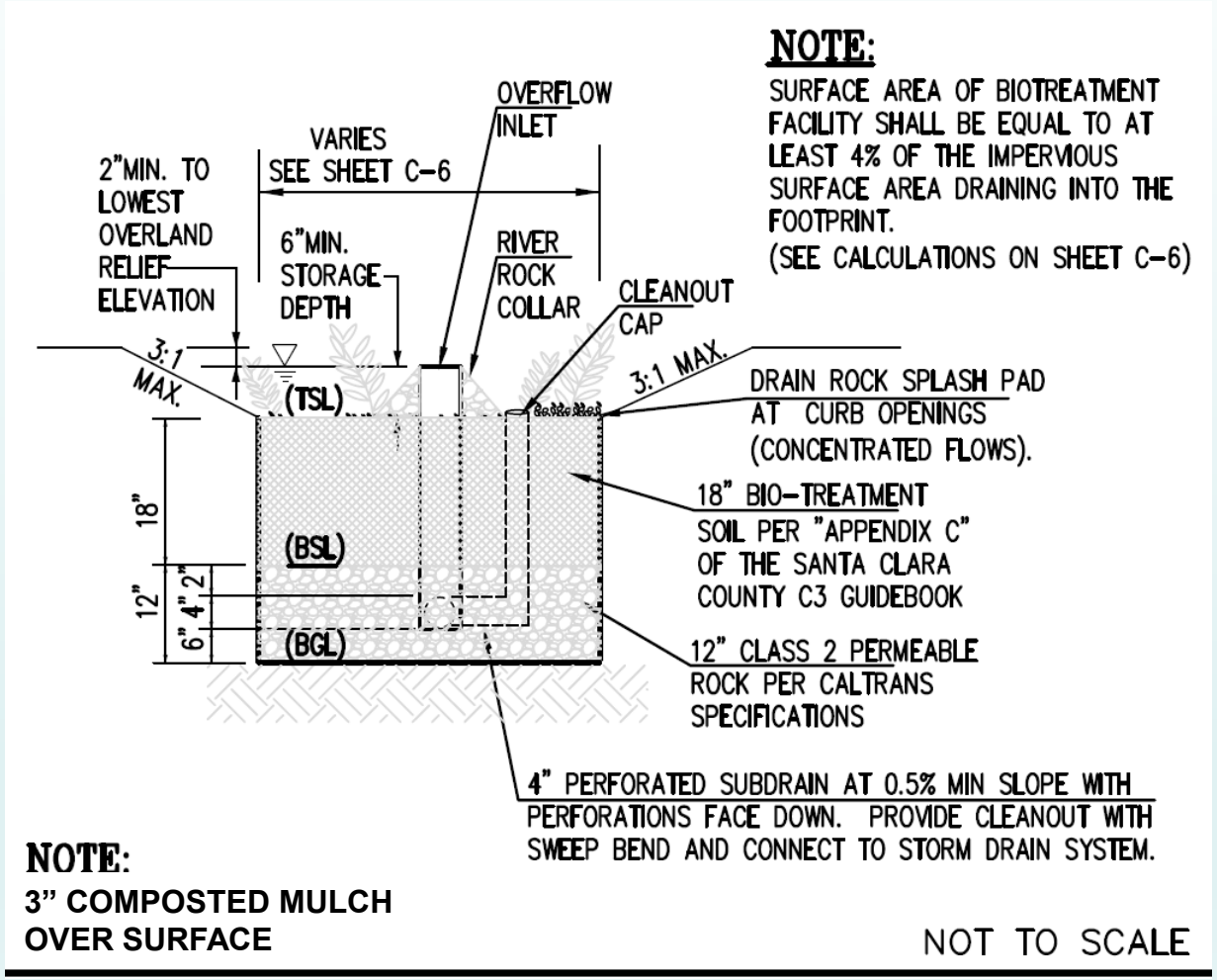
- Bioretention Area/Flow-through Planter
  - Biotreatment soil mix not mentioned or wrong reference (should reference BASMAA spec dated April 2016 or Appendix C of the C.3 Handbook)
  - Mulch not mentioned – need 3” of non-floating (composted) mulch
- Bioretention Area
  - Bottom lined without providing justification
  - Accepted justification includes:
    - Less than 5’ separation from base to groundwater
    - Located within 10’ of building
    - Infiltration not permitted on site

Treatment Measure Details: Common Errors



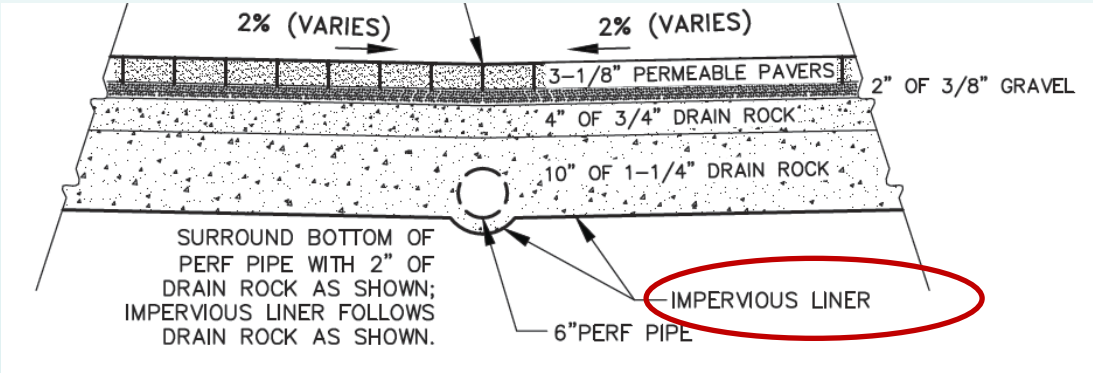
- Rock mulch or energy dissipation?
- No cleanout shown or indicated with note
- Incorrect soil specification

Treatment Measure Details: Good Notes



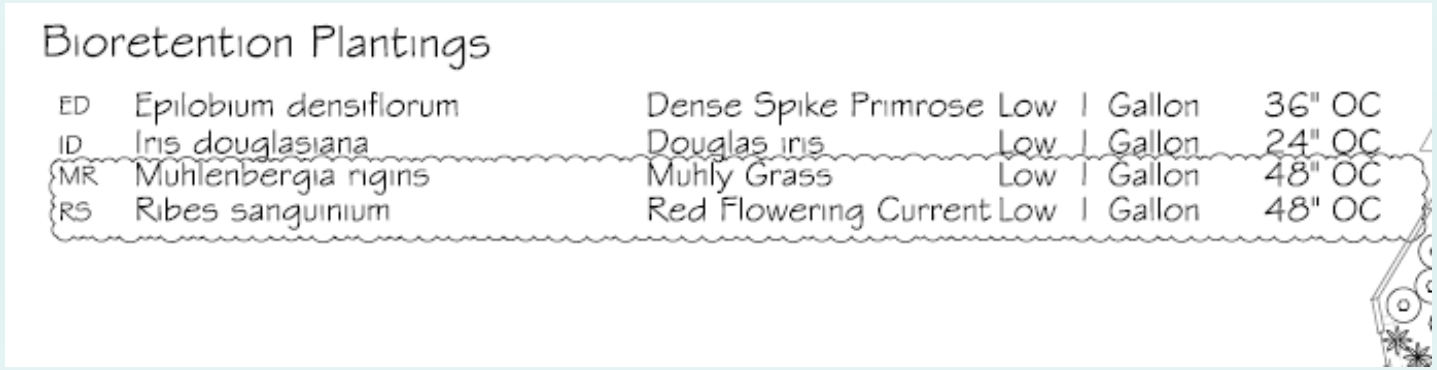
Treatment Measure Details: Common Errors

- Infiltration Trench
  - Lined with impervious liner so can't infiltrate
- Pervious Pavement
  - Lined with impervious liner
  - Designed to allow surface ponding
  - Underdrain placement not correct
  - Reservoir material selection
  - Compaction of subgrade



Landscape Plan

- Plants selected for bioretention should be consistent with the Plant List in the C.3 Handbook, Appendix D
- If plants not listed in Appendix D are shown, should have documentation from landscape architect that plants are similar
- Plan should clearly indicate the plants that will be planted in the treatment areas



Bioretention Plantings

ED	Epilobium densiflorum	Dense Spike Primrose	Low	1 Gallon	36" OC
ID	Iris douglasiana	Douglas Iris	Low	1 Gallon	24" OC
MR	Muhlenbergia rigins	Muhly Grass	Low	1 Gallon	48" OC
RS	Ribes sanguinium	Red Flowering Current	Low	1 Gallon	48" OC

For more information…

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