

Stormwater Control Plan

C-Store Replacement and New Car Wash Use Permit P23-00300-MOD Planning Commission Hearing Date (May 7, 2025)



January 10, 2024

Christopher Brown PM Design Project Manager 2455 Bennett Valley Road, Suite A-102 Santa Rosa, CA 95404

RE: College Chevron 111 Howell Mountain Road Angwin, CA 94508

Dear Christopher:

In reference to College Chevron, Angwin, CA:

I am writing to confirm that Pacific Union College Water & Sewer System, which is licensed by the California State Water Resource Control Board, has provided sewer and water services to College Chevron since its original construction in 1967, and will continue to do so for the foreseeable future.

I would also like to confirm that the planned remodel of the College Chevron will not have any significant burden on the sewer and water facilities of Pacific Union College. Pacific Union College has adequate resources of both water and sewer capacity to handle this expansion to our system.

If you need more information, please feel free to contact me directly at 707-965-7150.

Sincerely,

Dale

Dale Withers Facilities Director Pacific Union College 205 Highland Oaks Drive Angwin, CA 94508

Facilities Management One Angwin Avenue Angwin, CA 94508~9797 707~965~7150(Office) 707~965~7170(Fax)

Stormwater Control Plan For a Regulated Project Chevron Angwin

December 6, 2024

Representative: PM Design Group, Inc. 2455 Bennett Valley Road, Suite A-102 Santa Rosa, CA 95404

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vicinity map	

Attachments

Attachment 1: Stormwater Control Plan Exhibit and Proposed Bioretention Systems Details Attachment 2: Additional Civil Plan Sheets

This Stormwater Control Plan was prepared using the template dated October 2018.

I. Project Data

Chevron Angwin
July 2024
024-400-001-000
111 Howell Mountain Road
Angwin, CA 94508
N/A
Gas station with convenience store
31,796 SF (0.73 AC)
14,807 SF (0.34 AC)
13,522 SF
28,586 SF
26,016 SF

II. Setting

II.A. Project Location and Description

The parcel functions as an existing gas station at 111 Howell Mountain Road in the census-designated place of Angwin, CA, in Napa County, CA. The APN number for the parcel is 024-400-001-000. The project proposes to demolish the existing abandoned building and construct a new convenience store and car wash, with a trash enclosure, parking, pedestrian access, and offsite frontage improvements.

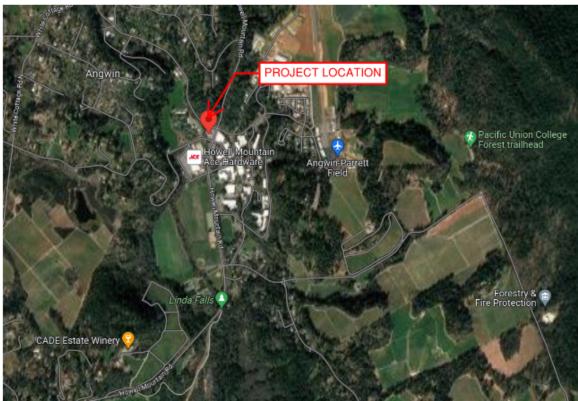


Figure 1: Vicinity Map

II.B. Existing Site Features and Conditions

The existing site area is 31,796 SF, approximately 0.73 acres, where 14,807 SF, approximately 0.34 acres, is being disturbed. This site slopes heavily from north and northeast to the south and southeast with slopes ranging from 2 percent to 20 percent. The adjacent landscape has slopes of 20 percent to 50 percent. No storm drain infrastructure is observed onsite. The existing soil type is Tehama silt loam, with slopes of up to 5 percent.

II.C. Opportunities and Constraints for Stormwater Control

Because the proposed condition results in the reduction of impervious surface area, treatment is only required for the disturbed areas. The proposed condition provides an increase in pervious area and allows the required stormwater treatment to be provided onsite. However, due to the small footprint of the site, the steep grades of the conform condition, and the existing utility infrastructure, the landscape areas must be located in certain areas on the project site in order to effectively serve as bioretention. Additionally, given the steep grades of the site, it is infeasible to treat all disturbed areas, and thus, alternative compliance will be used, where an equivalent undisturbed area is treated in lieu of the disturbed areas via bioretention facilities that are sized to account for the additional equivalent undisturbed areas.

III. Low Impact Development Design Strategies

III.A. Optimization of Site Layout

III.A.1. Limitation of development envelope

Proposed improvements are limited to 0.34 acres and does not increase the existing impervious area. Only areas required to be regraded for the redevelopment are modified. The disturbed project area is shown in Attachment 1, Preliminary Stormwater Control Plan.

III.A.2. Preservation of natural drainage features

The sites natural drainage pattern of north/northeast to south/southeast was maintained. Drainage inlets are placed in locations where runoff would typically flow to ensure efficient capture of runoff.

III.A.3. Setbacks from creeks, wetlands, and riparian habitats

There are no proposed changes to existing setbacks from surrounding creeks, wetlands, or riparian habitats.

III.A.4. Minimization of imperviousness

The proposed project reduces the impervious areas and increases the pervious areas.

III.A.5. Use of drainage as a design element

The proposed project only very slightly increases the existing, onsite impervious area.

III.B. Use of Permeable Pavements

Permeable pavers were not selected for this project as the flow-through planter used onsite is sufficient in capturing and treating the runoff from the site.

III.C. Dispersal of Runoff to Pervious Areas

Runoff from the roof of the proposed building, car wash, and parking areas will be directed towards treatment in bioretention areas.

III.D. Stormwater Control Measures

Impervious area will be directed to the bioretention area onsite, which will be flow-through planter due to space constraints and slopes within the site. The bioretention area serving this site is located within the limits of DMA 1, but will serve as treatment for DMA 1, 2, and 5. The bioretention areas will have a level bottom throughout the whole system. Additional areas in DMA 1 and DMA 5 will serve as alternative compliance areas in lieu of areas DMA 3 and 4 which cannot be treated due to the need to conform to existing conditions. See Attachment

1, Preliminary Stormwater Control Management Plan and Proposed Bioretention System Details for additional information.

IV. Documentation of Drainage Design

IV.A. Descriptions of Each Drainage Management Area

IV.A.1. Table 2. Drainage Management Areas

DMA Name	Area (SF)	Surface Type/Description
DMA 1	10,958	Proposed roof area, ADA area, replaced asphalt, sidewalk, landscape
DMA 2	1,504	Replaced asphalt, sidewalk, landscape
DMA 3	1,183	Offsite sidewalk and pavement
DMA 4	2,026	Replaced asphalt and concrete pavement
DMA 5	3,601	Replaced asphalt, existing asphalt

IV.A.2. Drainage Management Area Descriptions

DMA 1, totaling 10,958 square feet, drains the proposed roof area of the convenience store and car wash, the ADA parking stalls, replaced asphalt pavement of the driveway and car wash queue, sidewalk and curb ramps, and landscape area. DMA 2 contains 301 SF of offsite area to be used for alternative compliance. DMA 1 drains to the flow-through planter within DMA 1.

DMA 2, totaling 1,504 square feet, drains the replaced asphalt pavement in the parking areas, sidewalk and curb ramps, and landscape area. DMA 2 drains to the flow-through planter within DMA 1.

DMA 3, totaling 1,183 square feet, drains the offsite sidewalk, pavement, and frontage improvements. DMA 3 is treated via alternative compliance of offsite areas captured in DMA 1 and DMA 5.

DMA 4, totaling 2,026 square feet, drains the replaced asphalt of the drive aisle adjacent to the building and the heavy duty concrete pavement around the building entrance and adjacent fuel pump. the ADA area, replaced asphalt pavement, sidewalk, and landscape area. DMA 4 is treated via alternative compliance of offsite areas captured in DMA 1 and DMA 5.

DMA 5, totaling 3,601 square feet, drains the replaced and existing asphalt. DMA 5 contains 2,981 SF of offsite area to be used for alternative compliance. DMA 5 drains to the flow-through planter within DMA 1.

IV.B. Tabulation and Sizing Calculations

IV.B.1. Table 3. Information Summary for Bioretention Facility Design

For bioretention details, see Attachment 1, Stormwater Control Plan and Proposed Bioretention System Details. Design criteria include using the 4% rule to determine the minimum size required and placement of the appropriate bioretention system based on proposed grading and drainage patterns.

DMA Name	Area (SF)
DMA 1	10,958
DMA 2	1,504
DMA 3	1,183
DMA 4	2,026
DMA 5	3,601

DMA Name	DMA Area (square feet)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor	Flow	Facility Nar through Plan 1, 2, & 5	ter (DMA
1	10,958	Roofs and paving; landscaped areas	1.0 & 0.1	10,217		Minimum	Proposed
2	1,504	Paving; Landscaped areas	1.0 & 0.1	1,088	Sizing factor	Facility Size (SF)	Facility Size (SF)
5	3,601	Paving	1.0	3,601			
	Te	otal		14,907	0.04	596	596

IV.B.2. Table 4. Areas Draining to Bioretention Facilities

V. Source Control Measures

V.A. Site activities and potential sources of pollutants

See Table 5 below.

V.B. Table 5. Source Control Measure

Potential Source of	Permanent	Operational
Runoff Pollutants	Source Control BMPs	Source Control BMPs
On-site storm drain inlets (unauthorized non- stormwater discharges and accidental spills or leaks).	Mark all inlets with the words "No Dumping! Flows to Bay" or similar	 Maintain and periodically repaint or replace inlet markings Provide stormwater pollution prevention information to new site owners, lessees or operators See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm-drains or to store or deposit materials so as to create a potential discharge to storm drains."
Landscape/Outdoor Pesticide Use/Building and Grounds Maintenance	 State that final landscape plans will accomplish all the following: Preserve existing native trees, shrubs and ground cover to the maximum extent possible Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution 	 Maintain landscaping using minimum or no pesticides See applicable operational BMPs in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com Provide IPM information to new owners, lessees and operators.

	 Where landscaped areas are used to retain or detain stormwater, specific plants that are tolerant of saturated soil conditions Consider using pest-resistant plans, especially adjacent to hardscape To insure successful establishment, select plants approximate to site soils, slopes climate, sun wind, rain, land use, air movement, ecological consistency and plant intermetions 	
Food service	 interactions Describe the location and features of the designated cleaning area. Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated. 	
Refuse areas	 State how site refuse will be handled and provide supporting detail to what is shown on plans. State that signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar. 	 State how the following will be implemented: Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site. See Fact Sheet SC-34, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
Vehicle and Equipment Cleaning	• If a car wash area is not provided, describe measures taken to discourage on-site car- washing and explain how these will be enforced.	 Describe operational measures to implement the following (if applicable): Washwater from vehicle and equipment washing operations shall not be discharged to the storm drain system. Car dealerships and similar may rinse cars with water only. See Fact Sheet SC-21, "Vehicle and Equipment Cleaning," in the CASQA Stormwater Quality Handbooks at www.casqa.org/resources/bmphandbooks
Fuel Dispensing Areas		 The property owner shall dry sweep the fueling area routinely. See the Business Guide Sheet, "Automotive Service–Service Stations" in the CASQA

	Stormwater Quality Handbooks at www.casqa.org/resources/bmphandbooks
Plazas, sidewalks, and parking lots.	• Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect wash water containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.

V.C. Features, Materials, and Methods of Construction of Source Control BMPs

Additional Design and Construction Considerations for Bioretention Basins

- Sediment controls and fencing should be installed to prevent clogging and compaction of engineered and existing site soils during construction.
- Whenever possible, avoid the use of heavy equipment during construction on areas where bioretention systems are to be installed. If soils are compacted, additional ripping may be necessary to re-establish soil permeability.
- After basin excavation, do not compact the native underlying soils.
- When installing the engineered soil mix, drop it from the bucket and do not compact it.

VI. Stormwater Facility Maintenance

VI.A. Ownership and Responsibility for Maintenance in Perpetuity

The applicant accepts responsibility for interim operation and maintenance of stormwater treatment and flowcontrol facilities until such time as this responsibility is formally transferred to a subsequent owner.

Signature of Applicant or Other Responsible Party	Date
Type or Print Name	
Company Name	
Address	
Phone number:	
Email:	

VI.B.Summary of Maintenance Requirements for Each Stormwater Facility Table 6. Routine Maintenance Activities for Bioretention Areas

No.	Maintenance Task	Frequency of Task
1	Remove obstructions, debris and trash from bioretention area and dispose of properly.	Monthly, or as needed after storm events
2	Inspect bioretention area to ensure that it drains between storms and within five days after rainfall. If ponded water does not drain within five days, check if drains are clogged or consider removing the surface biotreatment soil and replacing with the approved soil mix and replant	Monthly, or as needed after storm events
3	Inspect inlets for channels, soil exposure or other evidence of erosion. Clear obstructions and remove sediment.	Monthly, or as needed after storm events
4	Remove and replace all dead and diseased vegetation.	Twice a year
5	Maintain vegetation and the irrigation system. Prune and weed to keep bioretention area neat and orderly in appearance.	Before wet season begins, or as needed
6	Inspect and, if needed, add mulch before the wet season begins. It is recommended that composted arbor mulch be applied once a year to maintain a 3" depth of mulch over all bare soil areas except within six inches of tree trunks.	Before wet season begins, or as needed
7	Inspect bioretention area using the attached inspection checklist.	Monthly, or after large storm events, and after removal of accumulated debris or material

VII. Construction Checklist

Additional Design and Construction Considerations for Bioretention Basins

- Sediment controls and fencing should be installed to prevent clogging and compaction of engineered and existing site soils during construction.
- Whenever possible, avoid the use of heavy equipment during construction on areas where bioretention systems are to be installed. If soils are compacted, additional ripping may be necessary to re-establish soil permeability.
- After basin excavation, do not compact the native underlying soils.
- When installing the engineered soil mix, drop it from the bucket and do not compact it.

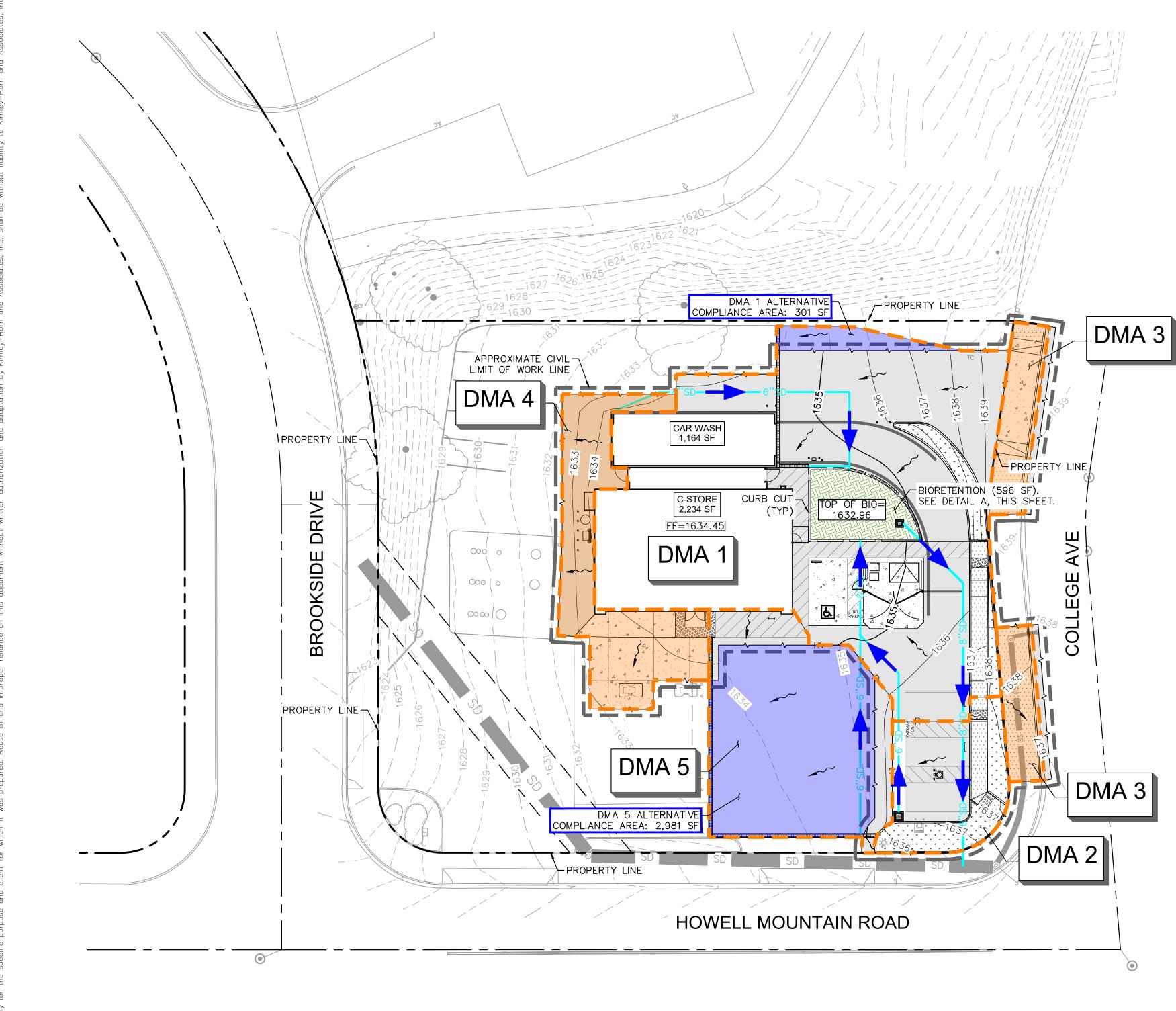
Table 7. Construction Plan C.3 Checklist

Design Feature	Plan Sheet
Grading and Drainage	C3.0
Drainage Management Areas	C4.0
Bioretention and Flow-through Planter Details	C4.0

VIII. Certifications

The preliminary design of stormwater treatment facilities and other stormwater pollution control measures in this plan are in accordance with the current edition of the BASMAA *Post-Construction Manual*.

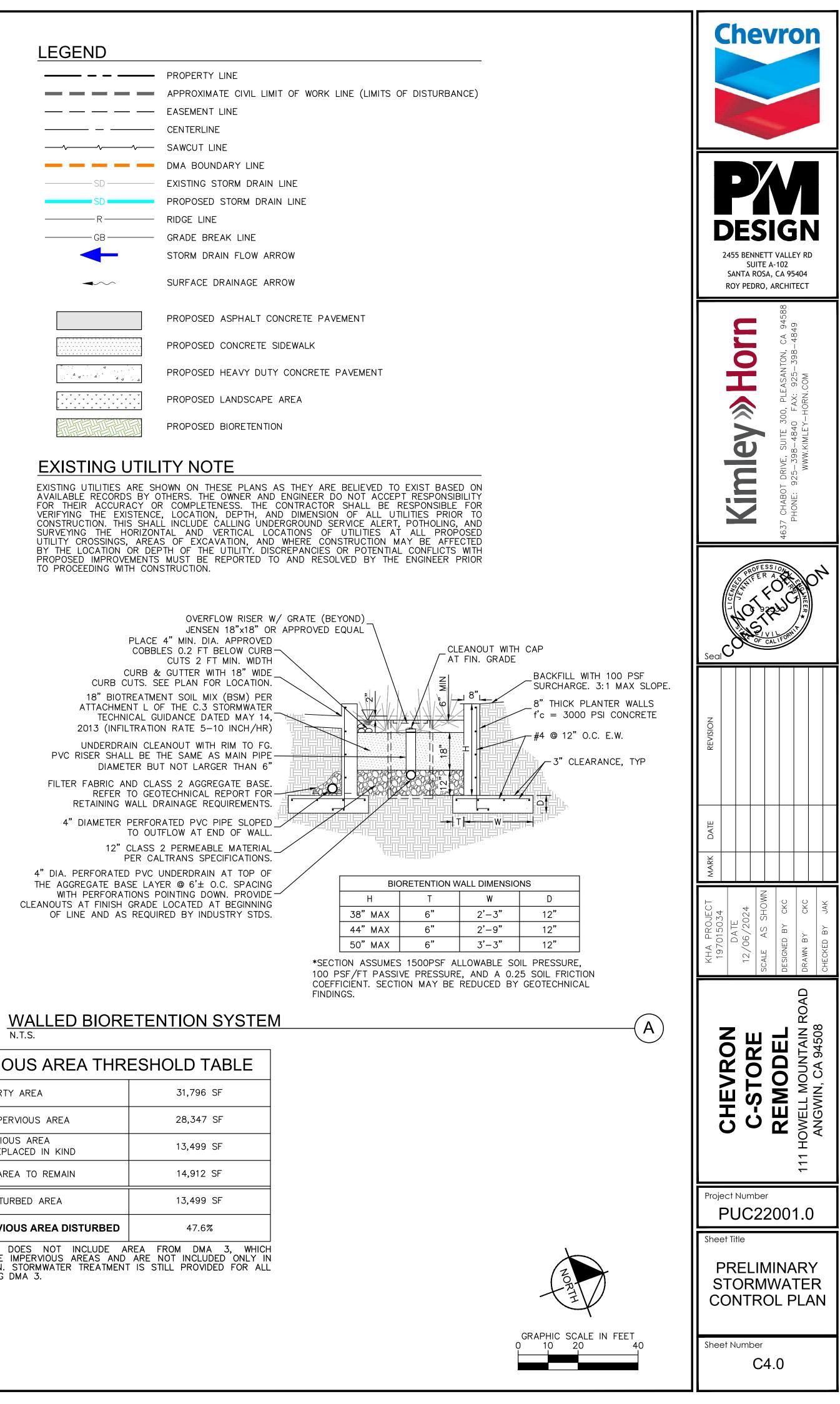
ATTACHMENT 1: STORMWATER CONTROL PLAN AND PRPOPOSED BIORETENTION SYSTEM DETAILS



PROPOSED STORMWATER TREATMENT SUMMARY							
	TOTAL AREA (SF)	PERVIOUS AREA (SF)	IMPERVIOUS AREA (SF)	EFFECTIVE IMPERVIOUS AREA (SF)	REQUIRED TREATMENT AREA (SF) - IMP CALC	PROVIDED TREATMENT (SF)	TREATMENT TYPE
*DMA 1	10,958	889	10,069	10,158	406		BIORETENTION
DMA 2	1,504	463	1,041	1,087	43		BIORETENTION
***DMA 3	1,393	0	1,393	1,393	-	596	ALT COMPLIANCE
***DMA 4	2,026	0	2,026	2,026	-		ALT COMPLIANCE
**DMA 5	3,601	0	3,601	3,601	144		BIORETENTION
TOTAL (DMA 1-5)	19,482	1,352	18,130	-	594	596	N/A
TOTAL TREATED (DMA 1, 2, 5)	16,063	1,352	14,711	14,846	594	596	N/A

SF OF IMPERVIOUS AREA WITHIN DMA 1 IS AREA THAT IS TO BE TREATED AND SERVE AS ALTERNATIVE COMPLIANCE FOR THE UNTREATED AREA (3,209 SF) WITHIN DMAS 3 AND 4.
 2,981 SF OF IMPERVIOUS AREA WITH DMA 5 IS AREA THAT IS TO BE TREATED AND SERVE AS ALTERNATIVE COMPLIANCE FOR THE UNTREATED AREA (3,209 SF) WITHIN DMAS 3 AND 4.
 THE 3,209 SF OF IMPERVIOUS AREA WITHIN DMA 3 AND DMA 4 IS INFEASIBLE TO BE TREATED DUE TO THE NEED TO CONFORM TO EXISTING CONDITIONS AND WILL BE TREATED IN LIEU VIA ALTERNATIVE COMPLIANCE AREAS (3,282 SF) IN DMAS 1 AND 5.

EXISTIN PROPOSE



TO PROCEEDING WITH CONSTRUCTION.

N.T.S.

ONSITE IMPERVIOUS AREA THRESHOLD TABLE

TOTAL PROPERTY AREA	31,796
EXISTING ONSITE IMPERVIOUS AREA	28,347
*ONSITE IMPERVIOUS AREA TO BE DISTURBED/REPLACED IN KIND	13,499
ONSITE IMPERVIOUS AREA TO REMAIN	14,912
TOTAL ONSITE DISTURBED AREA	13,499
PERCENT OF ONSITE IMPERVIOUS AREA DISTURBED	47.6%

ONSITE IMPERVIOUS AREA DOES NOT INCLUDE AREA FROM DMA 3, WHICH ENCOMPASSES ONLY OFFSITE IMPERVIOUS AREAS AND ARE NOT INCLUDED ONLY IN THE 50% RULE CALCULATION. STORMWATER TREATMENT IS STILL PROVIDED FOR ALL DISTURBED AREAS, INCLUDING DMA 3.

IMPERVIOUS VS PERVIOUS AREA

	TOTAL CONSTRUCTION AREA (SF)	IMPERVIOUS AREA (SF)	PERVIOUS AREA (SF)	PERCENT PERVIOUS
IG	16,200	15,682	518	3%
ED	16,200	14,848	1,352	8%

NOTE: THE TOTAL UNDISTURBED ONSITE AREA IS THE TOTAL CONSTRUCTION AREA LESS THE TOTAL AREA OF DMA 3.

ATTACHMENT 2: ADDITIONAL CIVIL PLAN SHEETS

