

PROJECT INFORMATION

PROJECT ADDRESS: 3282, 3230, 3240 & 3300 COFFEY LANE, SANTA ROSA, CA
 OWNER/DEVELOPER: POST STREET REALTY GROUP, LLC
 C/O GEORGE BUNTING
 721 WEST SCHOOL STREET
 COTATI, CA 94931
 (707) 795-8133
 CIVIL ENGINEER: THOMAS J. BILLETTER, P.E.
 BC ENGINEERING GROUP, INC.
 418 B STREET, THIRD FLOOR
 SANTA ROSA, CA 95401
 (707) 542-4321
 LANDSCAPE ARCHITECT: STEPHEN A. KOVANIS
 BC ENGINEERING GROUP, INC.
 418 B STREET, THIRD FLOOR
 SANTA ROSA, CA 95401
 (707) 542-4321
 ARCHITECT: CUBIX CONSTRUCTION
 5 MEADOWBROOK LANE
 DANVILLE, CA 94526
 (925) 766-5457
 ACRES: 1.04

DESIGN REVIEW NOTES

GENERAL PLAN: LIGHT INDUSTRY
 ZONING: LIGHT INDUSTRIAL
 WATER: CITY OF SANTA ROSA
 SEWER: CITY OF SANTA ROSA

ON SITE FIRE HYDRANTS SHALL BE LOCATED, AS NECESSARY, BY THE CITY OF SANTA ROSA FIRE DEPARTMENT.

TRASH DISPOSAL ON SITE WILL BE FOR OFFICE USE ONLY. PATRONS WILL NOT BE ALLOWED TO DISPOSE OF GARBAGE ON SITE.

BUILDING ROOF DRAINS SHALL BE CONNECTED TO THE UNDERGROUND DRAINAGE SYSTEM.

PARKING SUMMARY

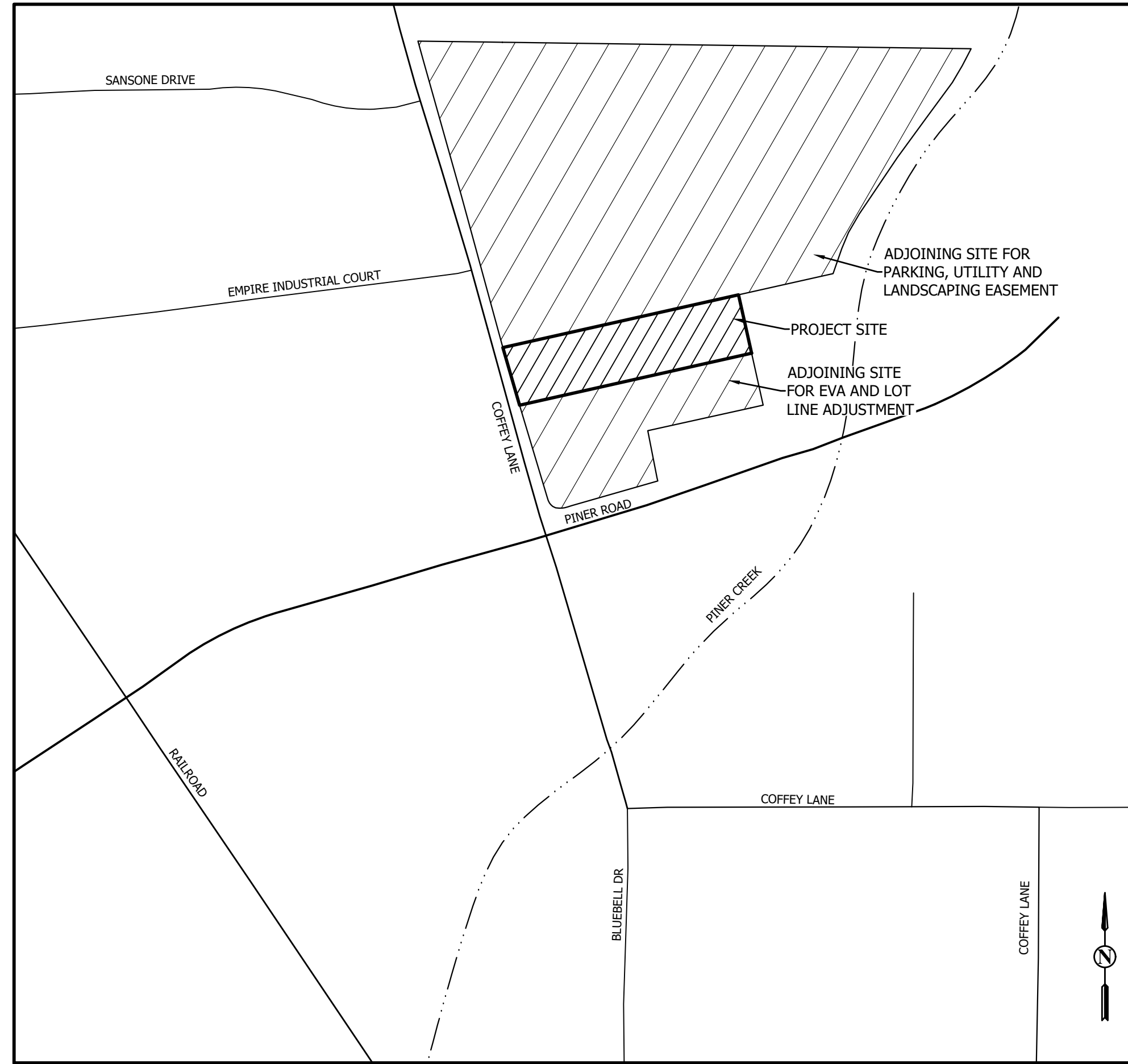
ON-SITE STALLS:

COVERED	1
STANDARD	1
ADA	1

PARKING IN EASEMENT:

STANDARD	25
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**DESIGN REVIEW DRAWINGS FOR
 COFFEY PARK STORAGE
 3282, 3230, 3240, & 3300 COFFEY LANE, SANTA ROSA CA
 APN: 034-011-077, -076, & -074**



Vicinity Map
 NTS

SHEET INDEX

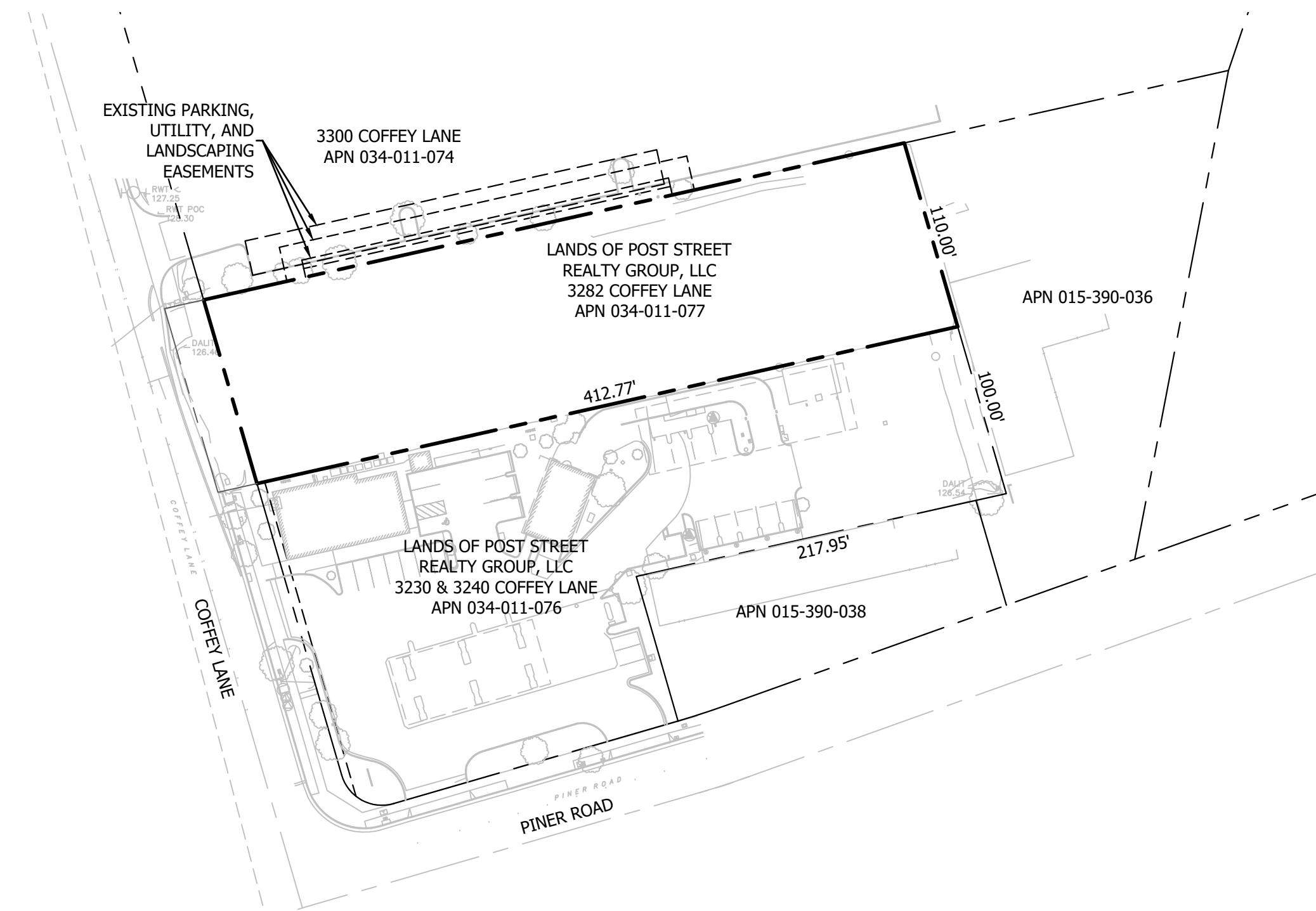
- C1.0 PROJECT INFORMATION
- C2.0 EXISTING CONDITIONS
- C2.1 SITE PLAN
- C3.0 GRADING & UTILITY PLAN
- C3.1 SITE SECTIONS
- L1.0 PRELIMINARY LANDSCAPE PLAN

ABBREVIATIONS

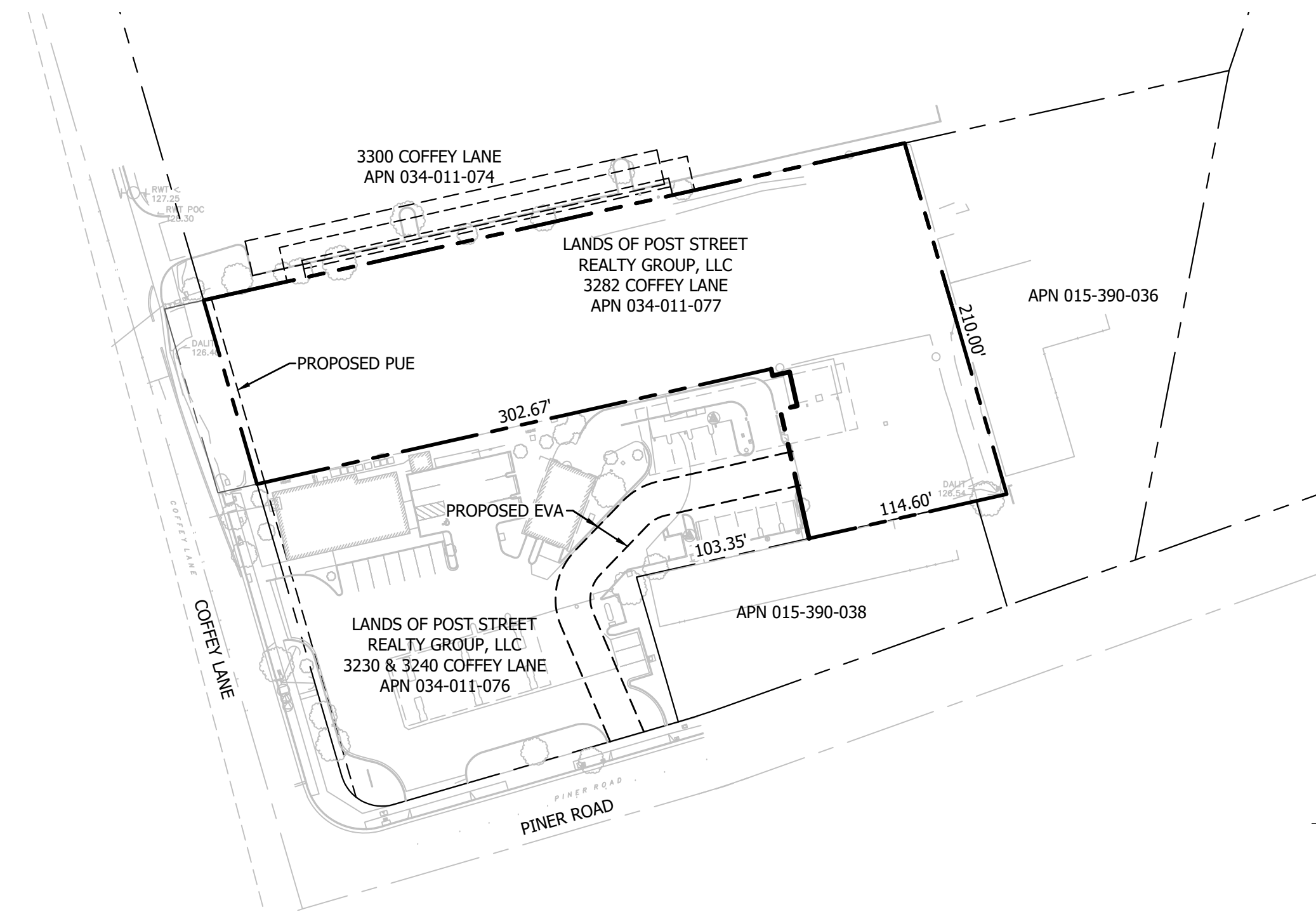
AB	AGGREGATE BASE	MAX	MAXIMUM
AC	ASPHALT CONCRETE	MIN	MINIMUM
APN	ASSESSOR'S PARCEL NUMBER	NG	NATURAL GRADE
BC	BEGIN HORIZONTAL CURVE	NTS	NOT TO SCALE
BSL	BUILDING SETBACK LINE	PD	POP-UP DRAIN
BLDG	FINISH GRADE BUILDING	PL	PROPERTY LINE
CL	CENTERLINE	PLNT	PLANTER
CONC	CONCRETE	POC	POINT OF CURVATURE
DN	DOCUMENT NUMBER	R/W	RIGHT-OF-WAY
EC	END HORIZONTAL CURVE	RWD	REDWOOD
EG	EXISTING GROUND	SD	STORM DRAIN PIPE
EP	EDGE OF PAVEMENT	SO	SIDE OPENING
EX	EXISTING	SS	SANITARY SEWER
FF	FINISHED FLOOR	SSCO	SANITARY SEWER CLEAN OUT
FG	FINISHED GRADE	SW	SIDEWALK
FL	FLOW LINE	T	TELEPHONE
FND	FOUND	TC	TOP OF CURVE
FNL	FENCELINE	TD	TRENCH DRAIN
GB	GRADE BREAK	TG	TOP OF GRATE
JP	JOINT POLE	TW	TOP OF WALL
JS	JUNCTION STRUCTURE	TYP	TYPICAL
		W	WATER

LEGEND

EXISTING	PROPOSED	DEFINITION
---	---	PROPERTY LINE
---	---	ROAD CENTERLINE
OH		ELECTRICAL (OVERHEAD WIRE)
⊕		GATE VALVE
SS	SS	HYDRANT
⊙		SANITARY SEWER PIPE
☀		STREET LIGHT
W	W	WATER LINE
X		EDGE OF PAVEMENT
		FENCE
		CONCRETE
		ASPHALT CONCRETE
		DRAINAGE FLOW
		STORMDRAIN



Existing Property Boundaries
 NTS

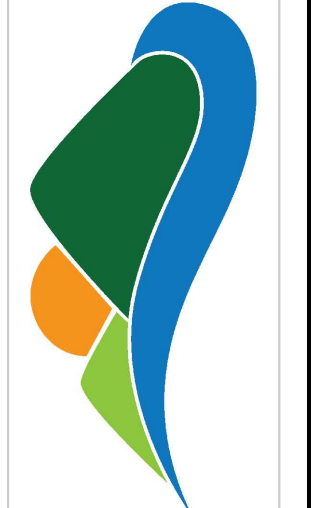


Proposed Property Boundaries
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DESIGN REVIEW DRAWINGS
 PROJECT INFORMATION
 COFFEY PARK STORAGE
 3282, 3230, 3240, & 3300 COFFEY LANE
 SANTA ROSA, CA 95403

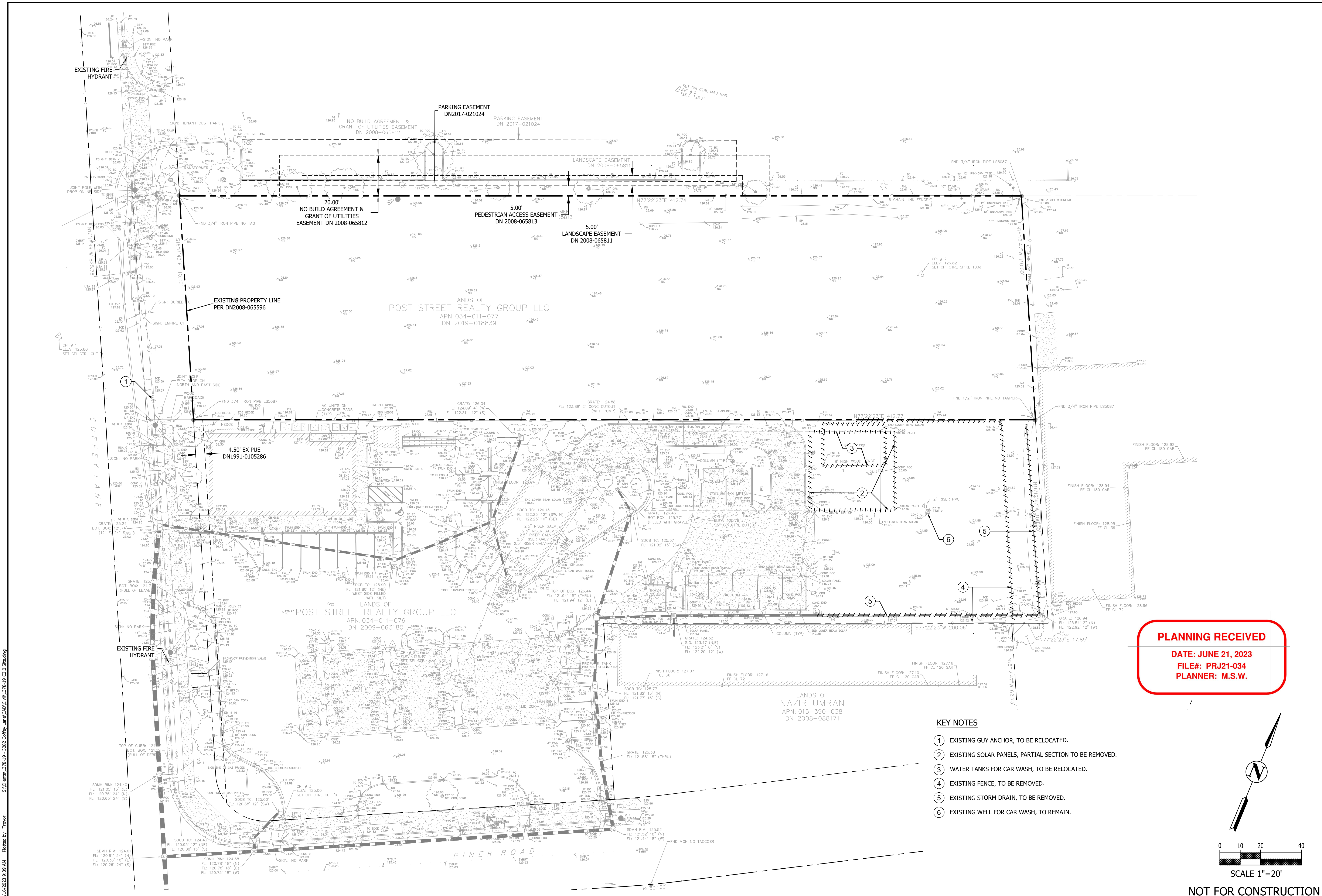
PRELIMINARY

Date: 6/19/2023
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 034-011-076
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C1.0
 1 of 6

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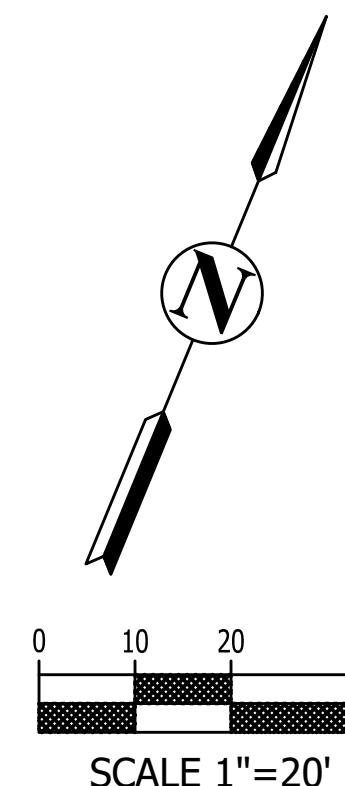
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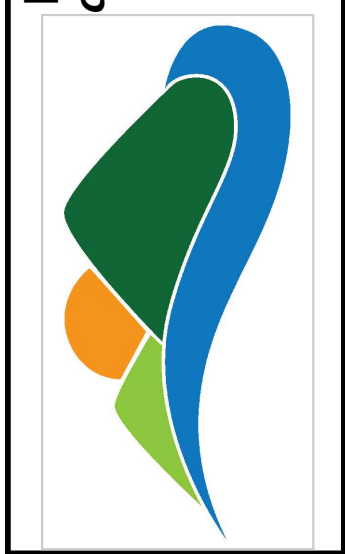
KEY NOTES

- ① EXISTING GUY ANCHOR, TO BE RELOCATED.
- ② EXISTING SOLAR PANELS, PARTIAL SECTION TO BE REMOVED.
- ③ WATER TANKS FOR CAR WASH, TO BE RELOCATED.
- ④ EXISTING FENCE, TO BE REMOVED.
- ⑤ EXISTING STORM DRAIN, TO BE REMOVED.
- ⑥ EXISTING WELL FOR CAR WASH, TO REMAIN.



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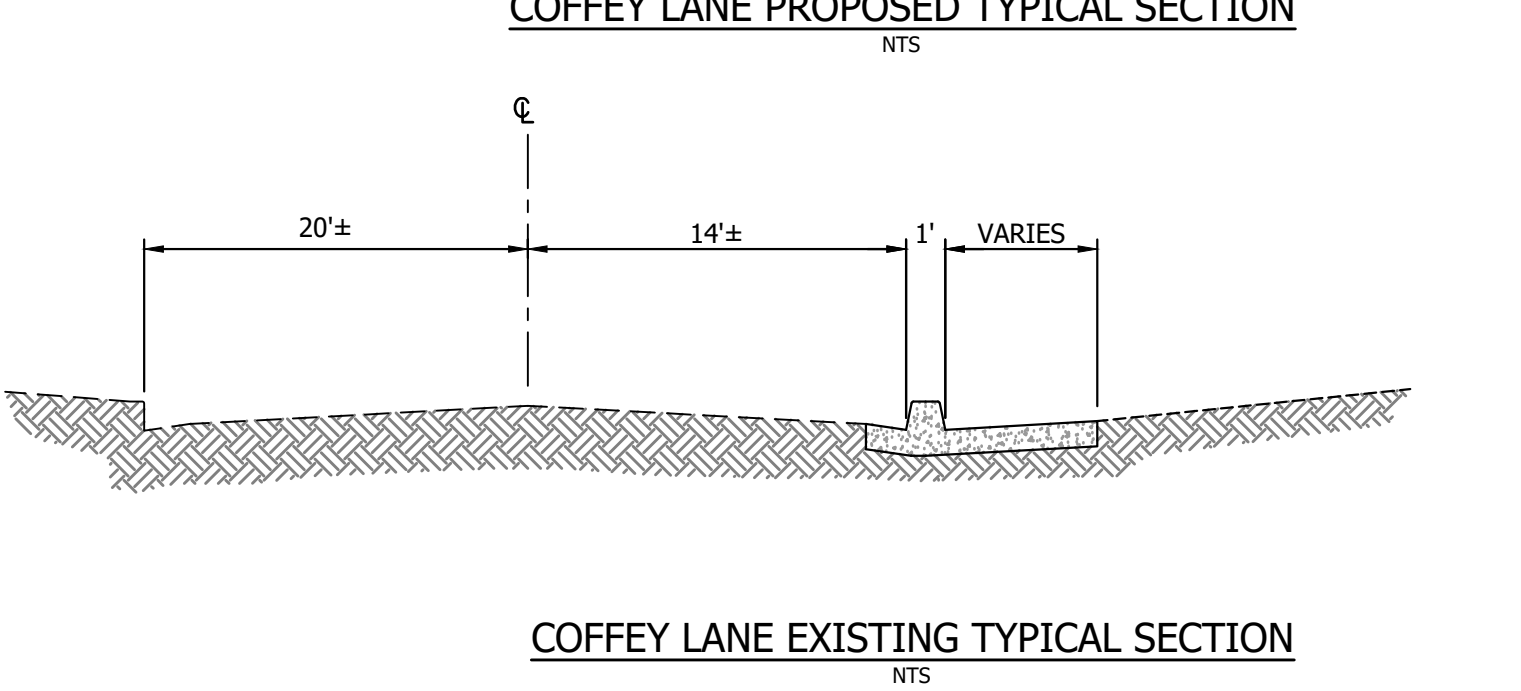
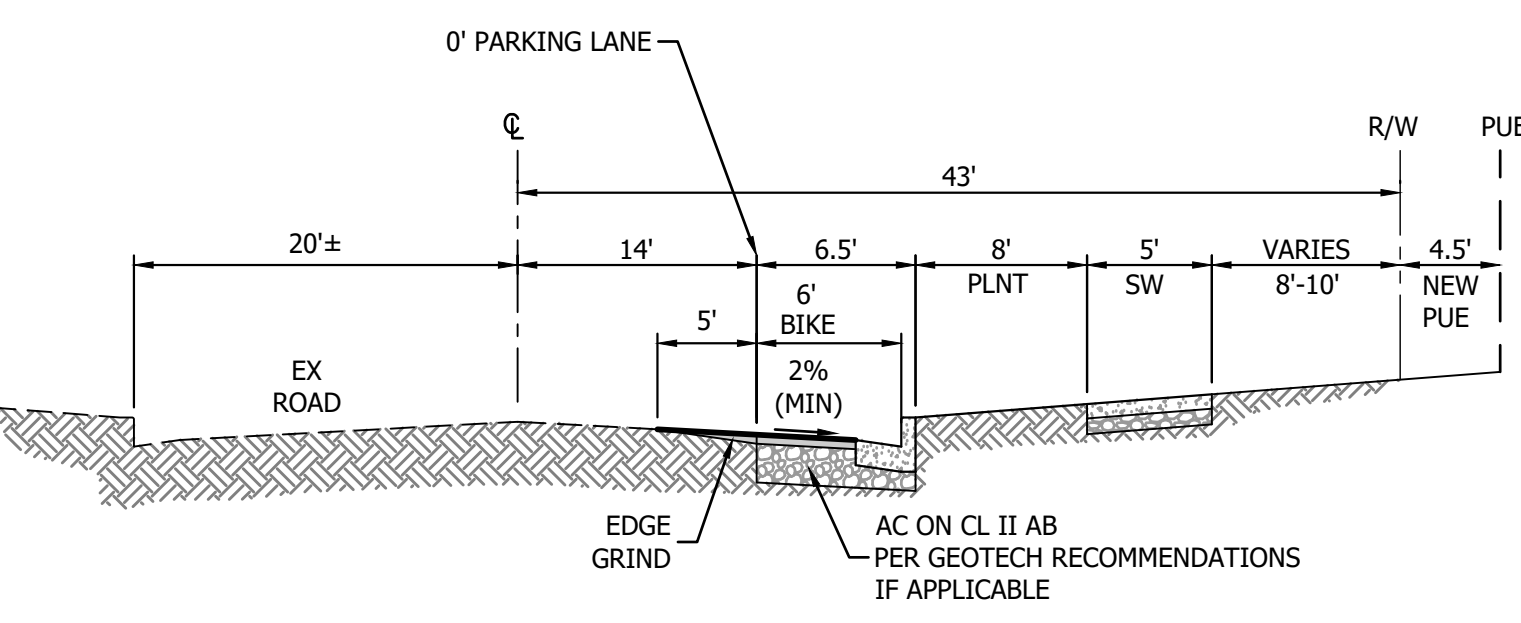
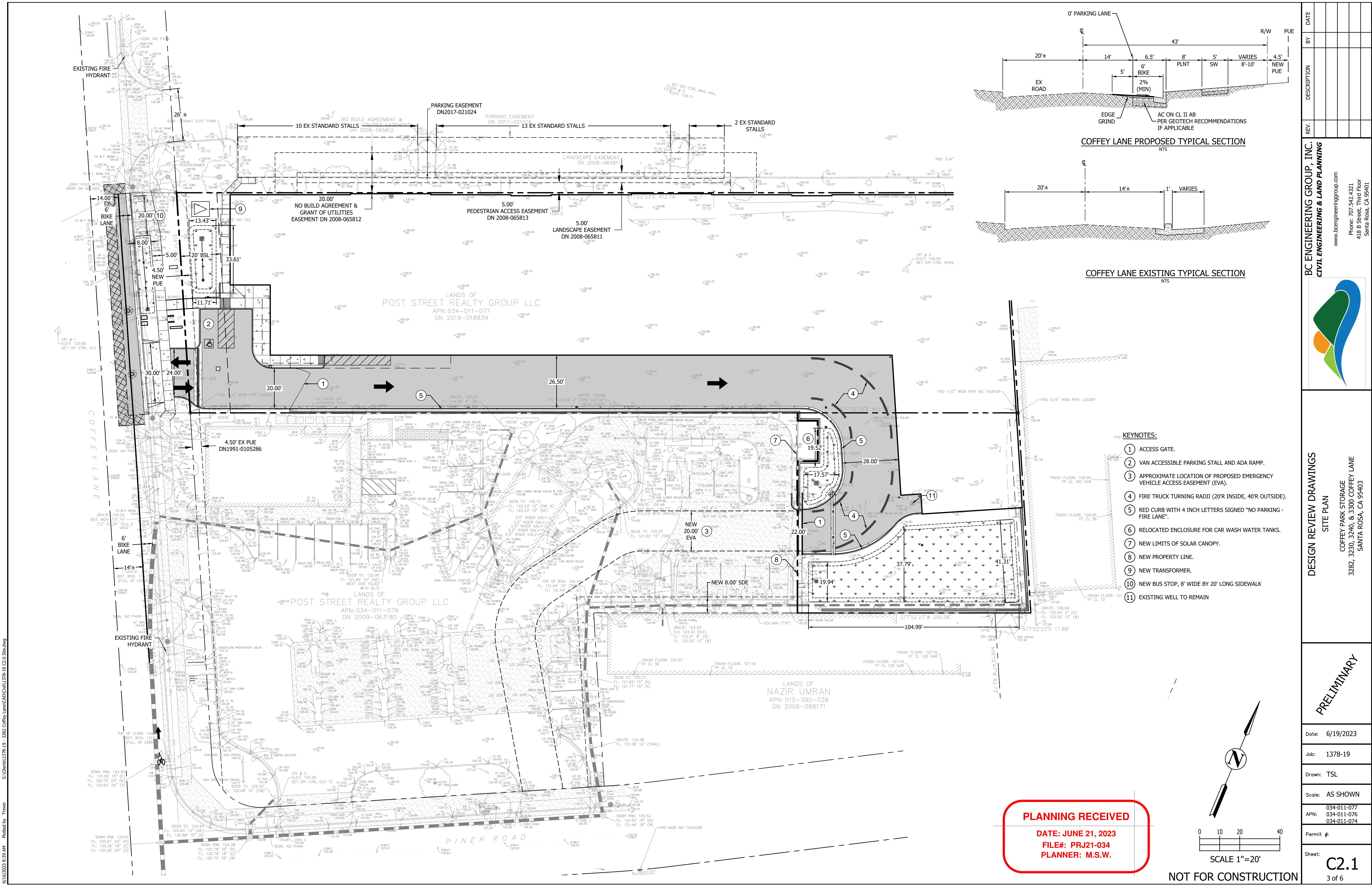
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DESIGN REVIEW DRAWINGS
 EXISTING CONDITIONS
 COFFEY PARK STORAGE
 3282, 3230, 3240, & 3300 COFFEY LANE
 SANTA ROSA, CA 95403

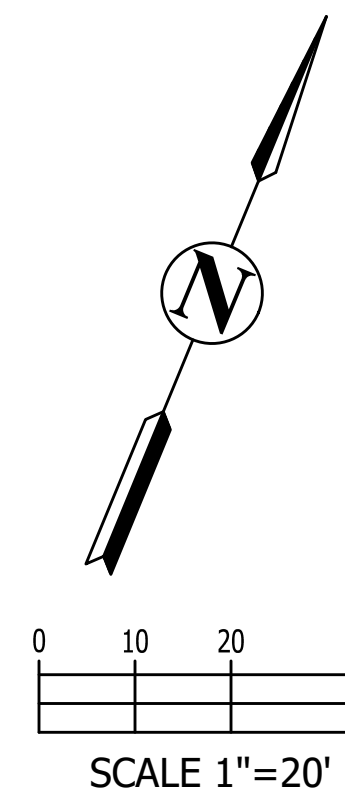
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Permit #:	
Sheet:	C2.0 2 of 6



- KEYNOTES:**
- ① ACCESS GATE.
 - ② VAN ACCESSIBLE PARKING STALL AND ADA RAMP.
 - ③ APPROXIMATE LOCATION OF PROPOSED EMERGENCY VEHICLE ACCESS EASEMENT (EVA).
 - ④ FIRE TRUCK TURNING RADII (20' INSIDE, 40' OUTSIDE).
 - ⑤ RED CURB WITH 4 INCH LETTERS SIGNED "NO PARKING - FIRE LANE".
 - ⑥ RELOCATED ENCLOSURE FOR CAR WASH WATER TANKS.
 - ⑦ NEW LIMITS OF SOLAR CANOPY.
 - ⑧ NEW PROPERTY LINE.
 - ⑨ NEW TRANSFORMER.
 - ⑩ NEW BUS STOP, 8' WIDE BY 20' LONG SIDEWALK
 - ⑪ EXISTING WELL TO REMAIN

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SCALE 1"=20'
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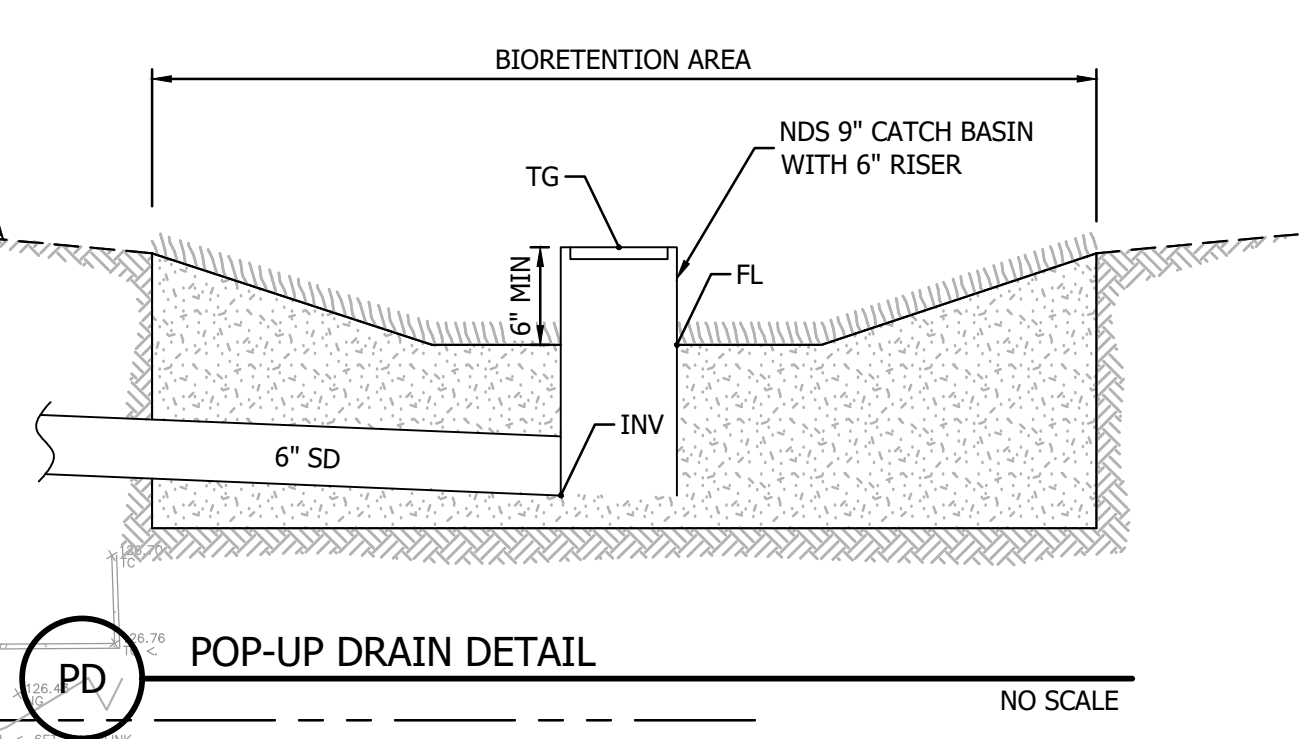
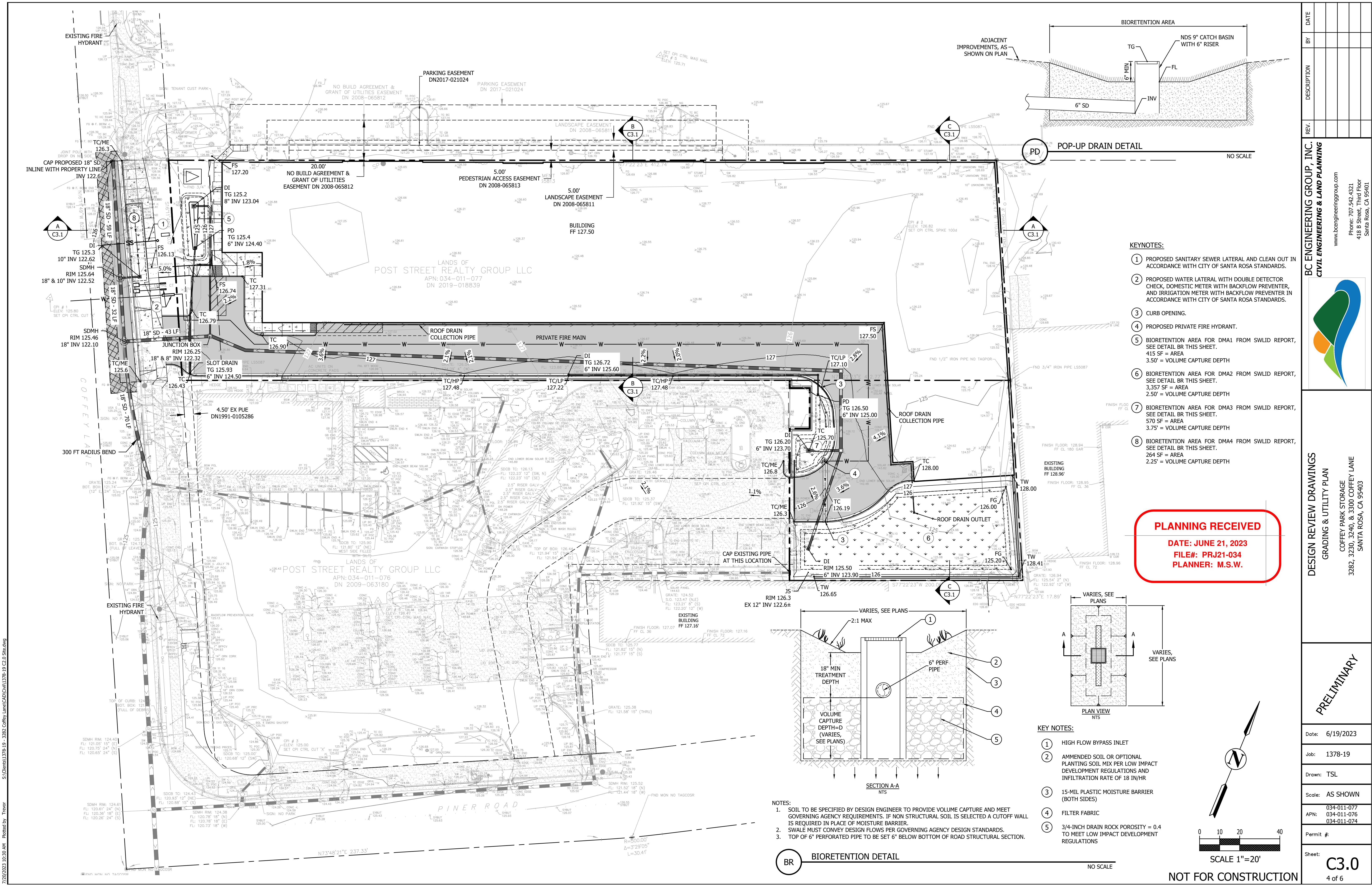
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DESIGN REVIEW DRAWINGS
 SITE PLAN
 COFFEY PARK STORAGE
 3282, 3230, 3240, & 3300 COFFEY LANE
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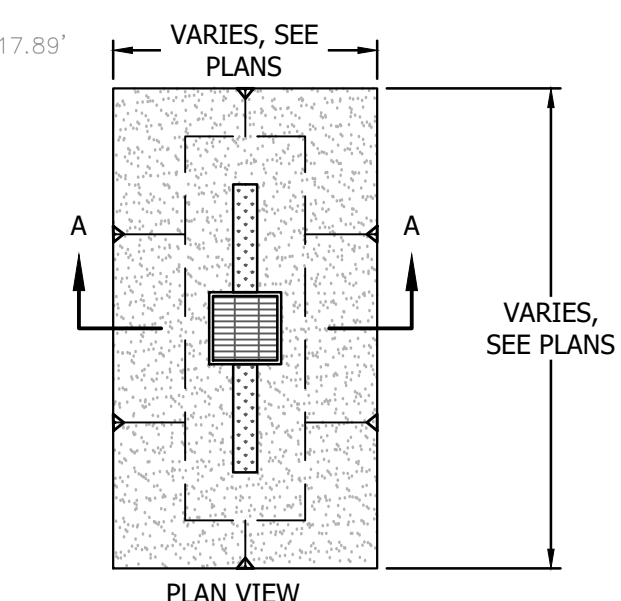
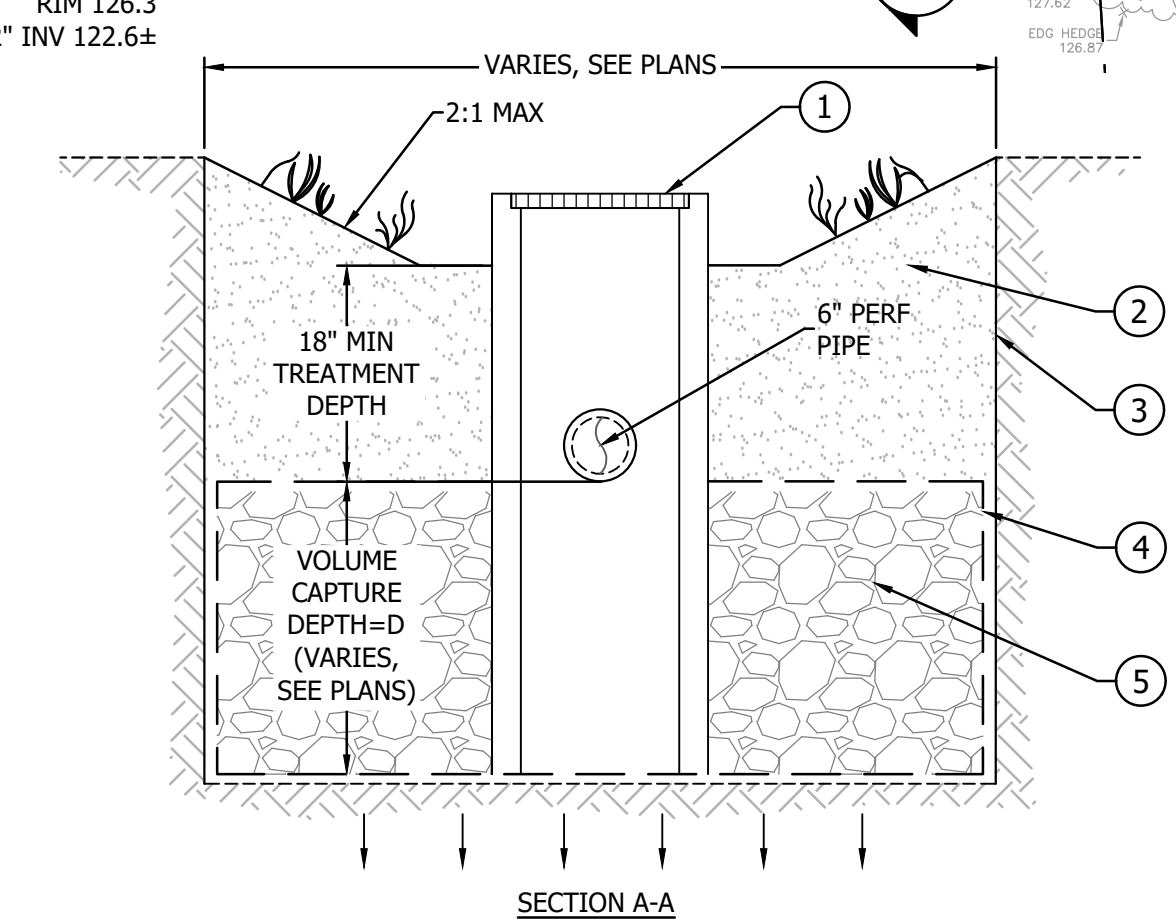
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Permit #:	
Sheet:	C2.1 3 of 6

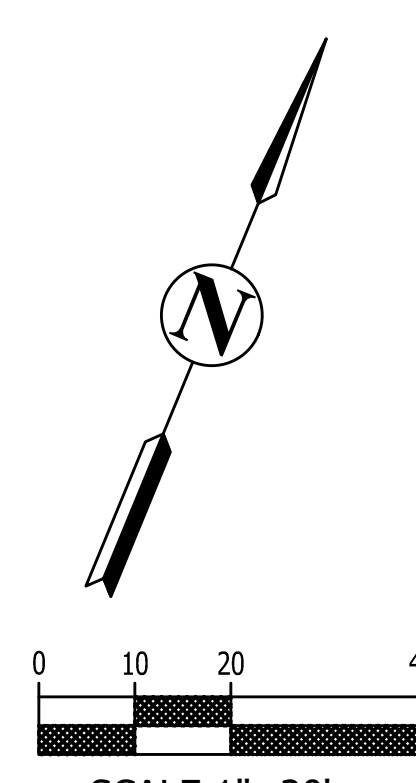


- KEYNOTES:**
- 1 PROPOSED SANITARY SEWER LATERAL AND CLEAN OUT IN ACCORDANCE WITH CITY OF SANTA ROSA STANDARDS.
 - 2 PROPOSED WATER LATERAL WITH DOUBLE DETECTOR CHECK, DOMESTIC METER WITH BACKFLOW PREVENTER, AND IRRIGATION METER WITH BACKFLOW PREVENTER IN ACCORDANCE WITH CITY OF SANTA ROSA STANDARDS.
 - 3 CURB OPENING.
 - 4 PROPOSED PRIVATE FIRE HYDRANT.
 - 5 BIORETENTION AREA FOR DMA1 FROM SWLID REPORT, SEE DETAIL BR THIS SHEET. 415 SF = AREA. 3.50' = VOLUME CAPTURE DEPTH
 - 6 BIORETENTION AREA FOR DMA2 FROM SWLID REPORT, SEE DETAIL BR THIS SHEET. 3,357 SF = AREA. 2.50' = VOLUME CAPTURE DEPTH
 - 7 BIORETENTION AREA FOR DMA3 FROM SWLID REPORT, SEE DETAIL BR THIS SHEET. 570 SF = AREA. 3.75' = VOLUME CAPTURE DEPTH
 - 8 BIORETENTION AREA FOR DMA4 FROM SWLID REPORT, SEE DETAIL BR THIS SHEET. 264 SF = AREA. 2.25' = VOLUME CAPTURE DEPTH

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- KEY NOTES:**
- 1 HIGH FLOW BYPASS INLET
 - 2 AMENDED SOIL OR OPTIONAL PLANTING SOIL MIX PER LOW IMPACT DEVELOPMENT REGULATIONS AND INFILTRATION RATE OF 18 IN/HR
 - 3 15-MIL PLASTIC MOISTURE BARRIER (BOTH SIDES)
 - 4 FILTER FABRIC
 - 5 3/4-INCH DRAIN ROCK POROSITY = 0.4 TO MEET LOW IMPACT DEVELOPMENT REGULATIONS



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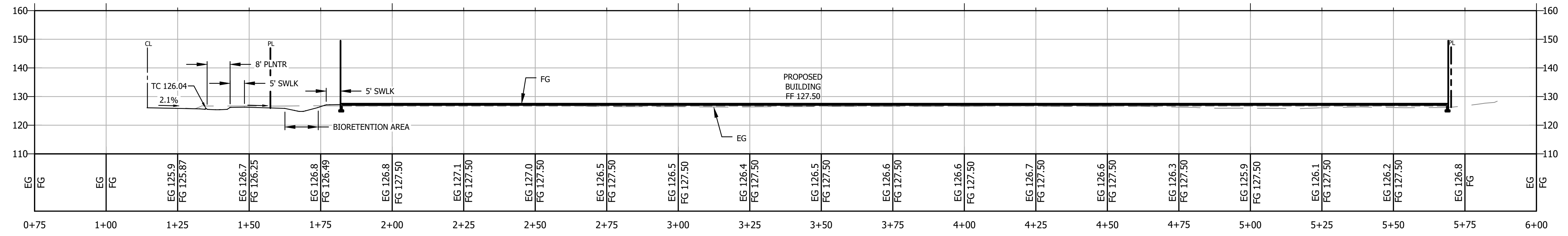
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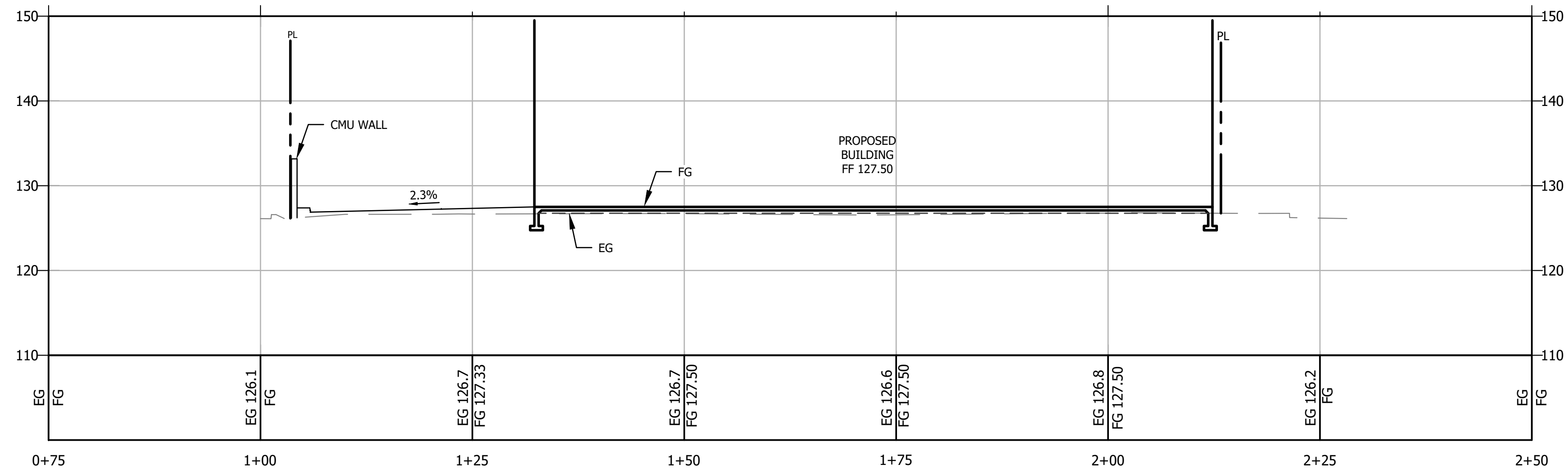
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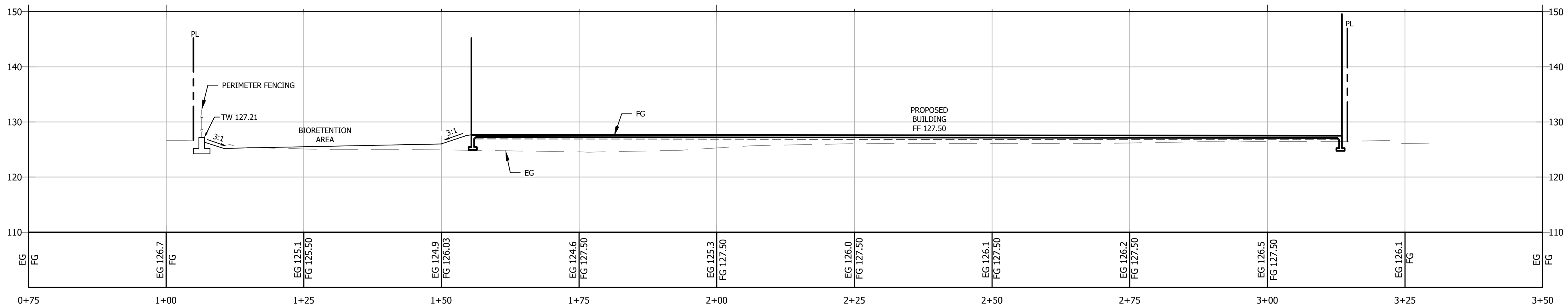
SITE SECTION A-A
 HORIZONTAL SCALE: 1"=20'
 VERTICAL SCALE: 1"=20'



SITE SECTION B-B
 HORIZONTAL SCALE: 1"=10'
 VERTICAL SCALE: 1"=10'

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SITE SECTION C-C
 HORIZONTAL SCALE: 1"=10'
 VERTICAL SCALE: 1"=10'



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DESIGN REVIEW DRAWINGS
 SITE SECTIONS
 COFFEY PARK STORAGE
 3282, 3230, 3240, & 3300 COFFEY LANE
 SANTA ROSA, CA 95403

PRELIMINARY

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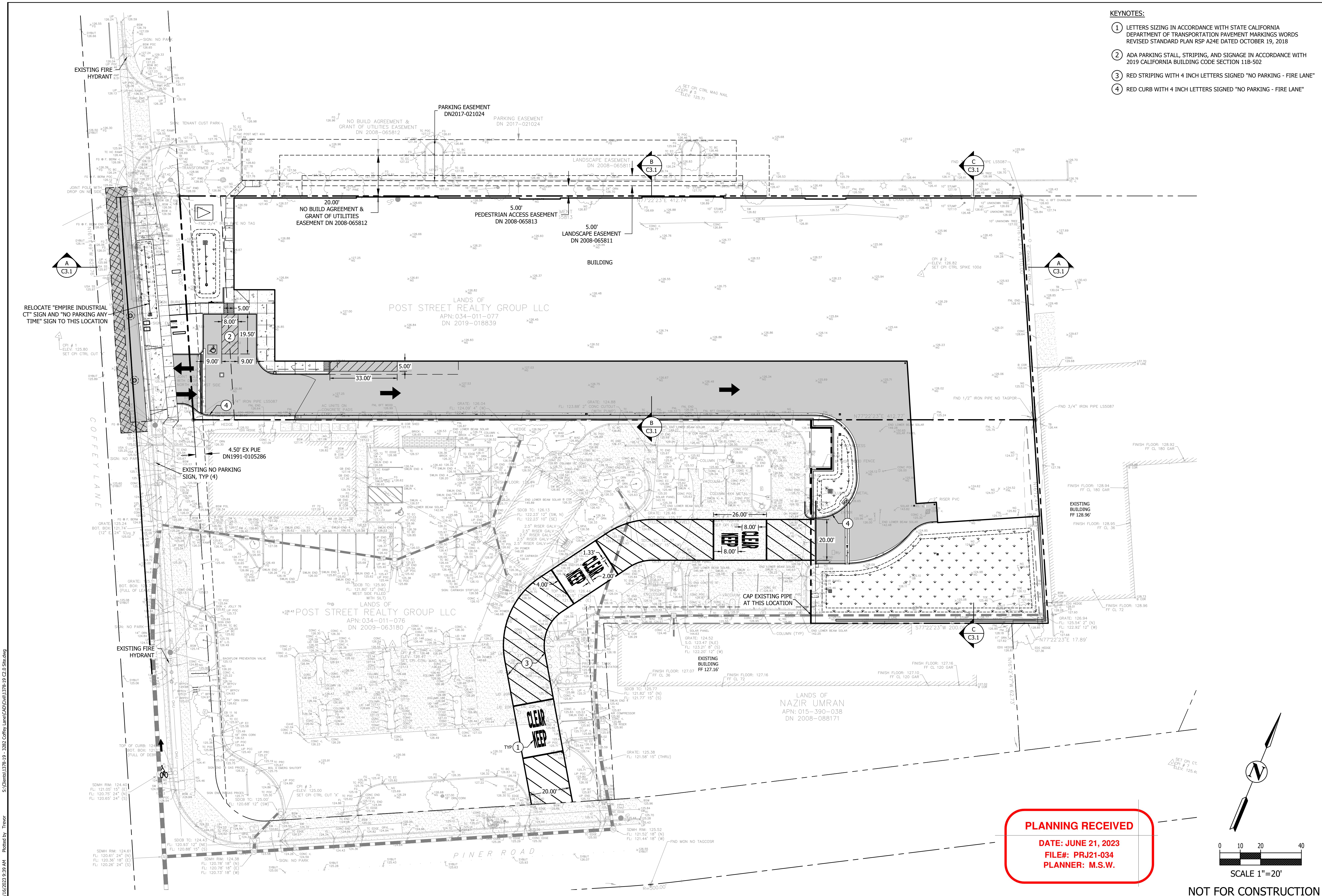
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C3.1

5 of 6

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- KEYNOTES:**
- LETTERS SIZING IN ACCORDANCE WITH STATE CALIFORNIA DEPARTMENT OF TRANSPORTATION PAVEMENT MARKINGS WORDS REVISED STANDARD PLAN RSP A24E DATED OCTOBER 19, 2018
 - ADA PARKING STALL, STRIPING, AND SIGNAGE IN ACCORDANCE WITH 2019 CALIFORNIA BUILDING CODE SECTION 11B-502
 - RED STRIPING WITH 4 INCH LETTERS SIGNED "NO PARKING - FIRE LANE"
 - RED CURB WITH 4 INCH LETTERS SIGNED "NO PARKING - FIRE LANE"

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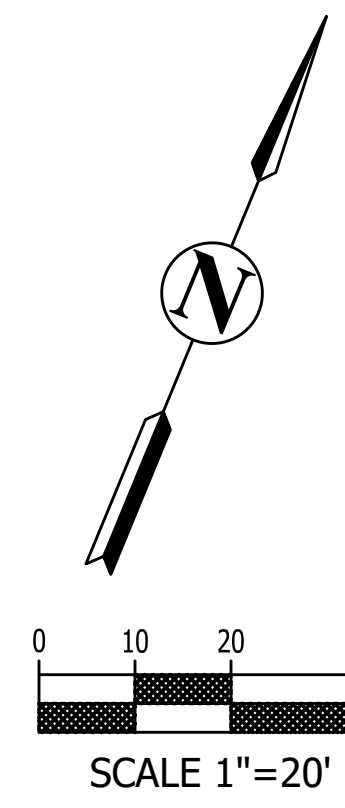


DESIGN REVIEW DRAWINGS
SIGNAGE & STRIPING PLAN
 COFFEY PARK STORAGE
 3282, 3230, 3240, & 3300 COFFEY LANE
 SANTA ROSA, CA 95403

PRELIMINARY

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Sheet:	C4.0 6 of 6

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HYDRAULIC AREA LEGEND

- A1 HYDRAULIC CALCULATION AREA
- PROPOSED DRAINAGE AREA BOUNDARY
- EXISTING DRAINAGE AREA BOUNDARY
- FLOW DIRECTION
- OVERLAND RELEASE FLOW DIRECTION
- 1 POINT OF CONCENTRATION

LINETYPE LEGEND

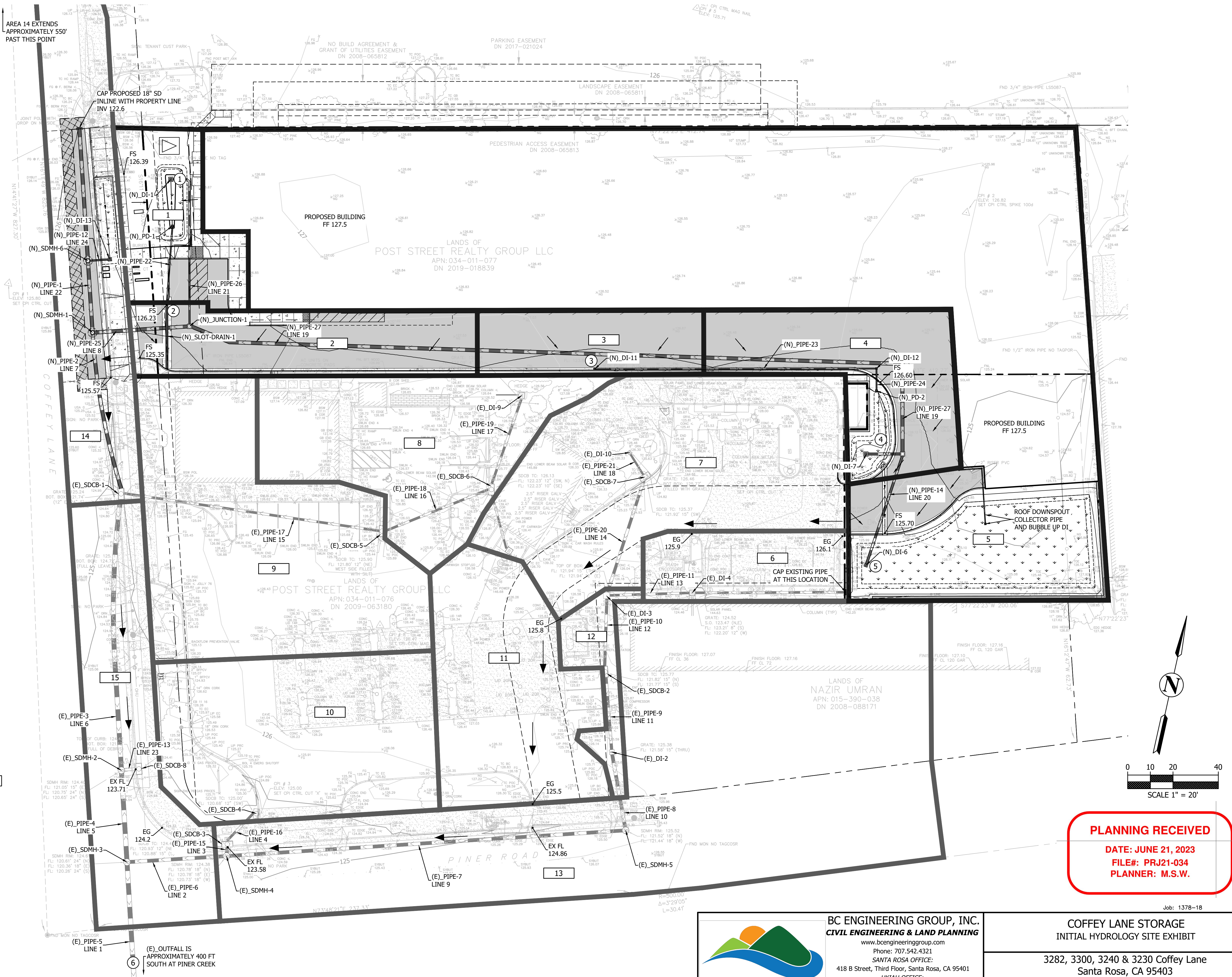
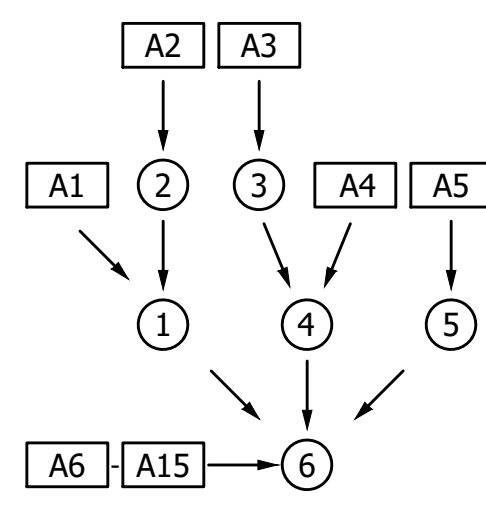
- EXISTING STORMWATER PIPE
- PROPERTY LINE
- PROPOSED FLOWLINE
- PROPOSED RETAINING WALL
- PROPOSED STORMWATER PIPE

HYDRAULIC CALCULATION AREAS

- A1: AREA = 3,478 SF / 0.08 ACRES
IMPERVIOUS AREA = 3,478 SF / 0.08 ACRES
- A2: AREA = 4,521 SF / 0.10 ACRES
IMPERVIOUS AREA = 4,521 SF / 0.10 ACRES
- A3: AREA = 2,854 SF / 0.07 ACRES
IMPERVIOUS AREA = 2,854 SF / 0.07 ACRES
- A4: AREA = 5,353 SF / 0.12 ACRES
IMPERVIOUS AREA = 5,353 SF / 0.12 ACRES
- A5: AREA = 40,998 SF / 0.94 ACRES
IMPERVIOUS AREA = 40,998 SF / 0.94 ACRES
- A6: AREA = 2,784 SF / 0.06 ACRES
IMPERVIOUS AREA = 2,784 SF / 0.06 ACRES
- A7: AREA = 11,360 SF / 0.26 ACRES
IMPERVIOUS AREA = 11,360 SF / 0.26 ACRES
- A8: AREA = 7,559 SF / 0.17 ACRES
IMPERVIOUS AREA = 7,559 SF / 0.17 ACRES
- A9: AREA = 11,390 SF / 0.26 ACRES
IMPERVIOUS AREA = 11,390 SF / 0.26 ACRES
- A10: AREA = 8,640 SF / 0.20 ACRES
IMPERVIOUS AREA = 8,640 SF / 0.20 ACRES
- A11: AREA = 6,902 SF / 0.16 ACRES
IMPERVIOUS AREA = 6,902 SF / 0.16 ACRES
- A12: AREA = 1,359 SF / 0.03 ACRES
IMPERVIOUS AREA = 1,359 SF / 0.03 ACRES
- A13: AREA = 24,483 SF / 0.56 ACRES
IMPERVIOUS AREA = 24,483 SF / 0.56 ACRES
- A14: AREA = 23,131 SF / 0.53 ACRES
IMPERVIOUS AREA = 23,131 SF / 0.53 ACRES
- A15: AREA = 7,156 SF / 0.16 ACRES
IMPERVIOUS AREA = 7,156 SF / 0.16 ACRES

ABBREVIATIONS

AD	AREA DRAIN
APN	ASSESSOR'S PARCEL NUMBER
CB	CATCH BASIN
CL	CENTERLINE
CY	CURB YARD
DI	DROP INLET
EG	EXISTING GROUND
EX or (E)	EXISTING
FD	FLOOR DRAIN
FG	FINISH GRADE
FL	FLOWLINE
FS	FINISHED SURFACE
FT	FOOT / FEET
GB	GRADE BREAK
GR	GRATE
HP	HIGH POINT
IG	INVERT GRADE
IN	INCH
INV	INVERT
L	LENGTH
LF	LINEAL FOOT/FEET
MAX	MAXIMUM
ME	MATCH EXISTING
MIN	MINIMUM
(N)	NEW
(NTS)	NOT TO SCALE
PL	PROPERTY LINE
S	SLOPE
SF	SQUARE FOOT
TB	TOP OF BANK
TYP	TYPICAL
YD, YDS	YARD, YARDS



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COFFEY LANE STORAGE
 INITIAL HYDROLOGY SITE EXHIBIT
 3282, 3300, 3240 & 3230 Coffey Lane
 Santa Rosa, CA 95403
 APN 034-011-077, -074, & -076

Job: 1378-18



BC Engineering Group

Civil Engineering & Land Planning

Initial Storm Water Low Impact Development Report

For

Coffey Park Storage

3282, 3230, 3240, & 3300 Coffey Lane

Santa Rosa, CA 95403

APN: 034-011-077, -074, & -076

June 19, 2022

Prepared by



Thomas J. Billeter P.E.

No. 78125

Exp. September 2023

Job# 1378-19

TB@bcengineeringgroup.com

PLANNING RECEIVED

DATE: JUNE 21, 2023

FILE#: PRJ21-034

PLANNER: M.S.W.

418 B Street, 3rd Floor

Santa Rosa, CA 95401

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Contents

Project Description	1
Pollution Prevention and Runoff Reduction Measures	1
Proposed BMPs: Design and Calculations	1
Maintenance and Funding Source.....	2
Appendices	A
Appendix A: Pre and Post Development Site Exhibit	A
Appendix B: Calculation Details from Storm Water Calculator.....	B
Appendix C: Calculation References.....	C
Appendix D: BMP Details, Selection Table, and Determination Worksheet.....	D
Appendix E: Maintenance Check List, and Draft Maintenance Agreement.....	E



Project Description

This report addresses the Storm Water Low Impact Development associated with the development of a storage facility on Coffey Lane near the intersection with Piner Road in Santa Rosa. The overall project encompasses approximately 1.32 acres across the two lots, which includes a paved driveway and a two story self-storage building. The site is currently an empty field on the northern parcel and a mostly-developed gas station and car wash on the southern parcel. The project location does not include any known sensitive site, water, or drainage features.

While both lots encompass 2.45 acres, improvements are restricted to only 1.32 acres of the site. The remaining 1.13 acres, which consists of a drive-thru car wash, gas station, and associated convenience store, will not be touched and therefore is not included in the tributary area required for stormwater treatment.

This project creates more than a combined total of 1.0 acre of impervious area and therefore requires permanent stormwater best management practices to provide treatment and hydromodification control for 100% of the post project runoff volume. This report compares existing and proposed project site runoff for the design storm provided by the 2017 Storm Water Low Impact Development Technical Design Manual.

Pollution Prevention and Runoff Reduction Measures

This project will be designed to incorporate temporary and permanent pollution prevention and storm water Best Management Practices measures to minimize the introduction of pollutants in downstream bodies of water.

A Sediment Control Plan will be prepared and included with the construction drawings that will require temporary stormwater BMPs to be installed by the contractor during construction. A formal Storm Water Pollution Prevention Plan will also be prepared prior to construction due to the project area being over 1 acre.

The City of Santa Rosa has regular street sweeping and trash pickup that serve as ongoing source controls against stormwater pollution. Storm water inlets will be stenciled with graphics that identify that the inlets drain to the creek, in order to deter dumping of pollutants directly into drainage structures.

Runoff Reduction Measures, such as interceptor trees and impervious area disconnection, may be incorporated into the final site design but are not included in the initial runoff calculations. These reduction credits may be utilized during the development of Construction Drawings when more detailed information about the site plan and proposed features are readily available.

Proposed BMPs: Design and Calculations

A series of BMPs will be incorporated throughout the site to capture post-development stormwater runoff during light storm events. Each BMP area will be designed with larger overflow structures to capture runoff from larger events so as not to inundate the surrounding paved areas. These structures will then be connected to an underground storm drain system that will outlet into existing public drainage infrastructure. The site



shall be graded to direct runoff to bioretention areas to meet hydromodification requirements. Please refer to the Post Development Site Exhibit in Appendix A for proposed preliminary sizes and locations of treatment areas.

The Hydrologic Soil Group of this project site is classified as Group 'D' based on the National Resources Conservation Services (NRCS) Web Soil Survey. Refer to Appendix C for Soil Resource Report. As the project progresses towards construction drawings and a geotechnical investigation is performed, soil types encountered may vary from what is listed on the NRCS website. However, Group 'D' is the most conservative assumption for initial calculations. If more favorable soil types are encountered, calculations will be revised to reflect the site's specific soil type.

Runoff Curve numbers are determined according to the TR-55 manual and can be found in Appendix C for 'TR-55 Runoff Curve Numbers for Urban Areas'. Post-development runoff was conservatively assumed at 98 to reflect the majority of impervious surfaces on site. Runoff curve numbers may be calculated to incorporate the proposed pervious surface during the construction phase.

Calculations were prepared to determine the total amount of post-development stormwater runoff volume required for hydromodification control. The proposed bioretention design assumes that the soil media used has a porosity of at least 40%. Priority 2 'Roadside Bioretention with Curb Opening' facilities are anticipated to be utilized throughout the site. A detail for this feature is included in Appendix D. Calculations included in Appendix B demonstrate that the proposed landscape area reserved for BMPs is sized to meet hydromodification requirements.

Maintenance and Funding Source

The BMPs in this project shall be maintained, inspected, and replaced by the property owner as necessary to ensure they continue to function effectively. A maintenance agreement shall be recorded against the property and run with the title of the land. A draft of this agreement is included in Appendix E of this report.

Inspections shall be performed twice annually for sediment and/or trash accumulation in the gutter. If obstructions and/or trash are observed, they shall be removed and properly disposed of. Inspections shall be performed twice during the rainy season to check for ponded water. Pesticides and fertilizers shall not be used in the bioretention area, and plants shall be pruned, weeds pulled, and dead plants replaced as needed. All inspection and maintenance activities shall be recorded using the sample Maintenance Checklists included in Appendix E and kept on file to be provided to City staff and/or the Regional Water Quality Control Board staff upon request.



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Appendix A: Pre and Post Development Site Exhibit

HYDRAULIC AREA LEGEND

- A1 HYDRAULIC CALCULATION AREA
- PROPOSED DRAINAGE AREA BOUNDARY
- EXISTING DRAINAGE AREA BOUNDARY
- FLOW DIRECTION
- OVERLAND RELEASE FLOW DIRECTION
- 1 POINT OF CONCENTRATION

LINETYPE LEGEND

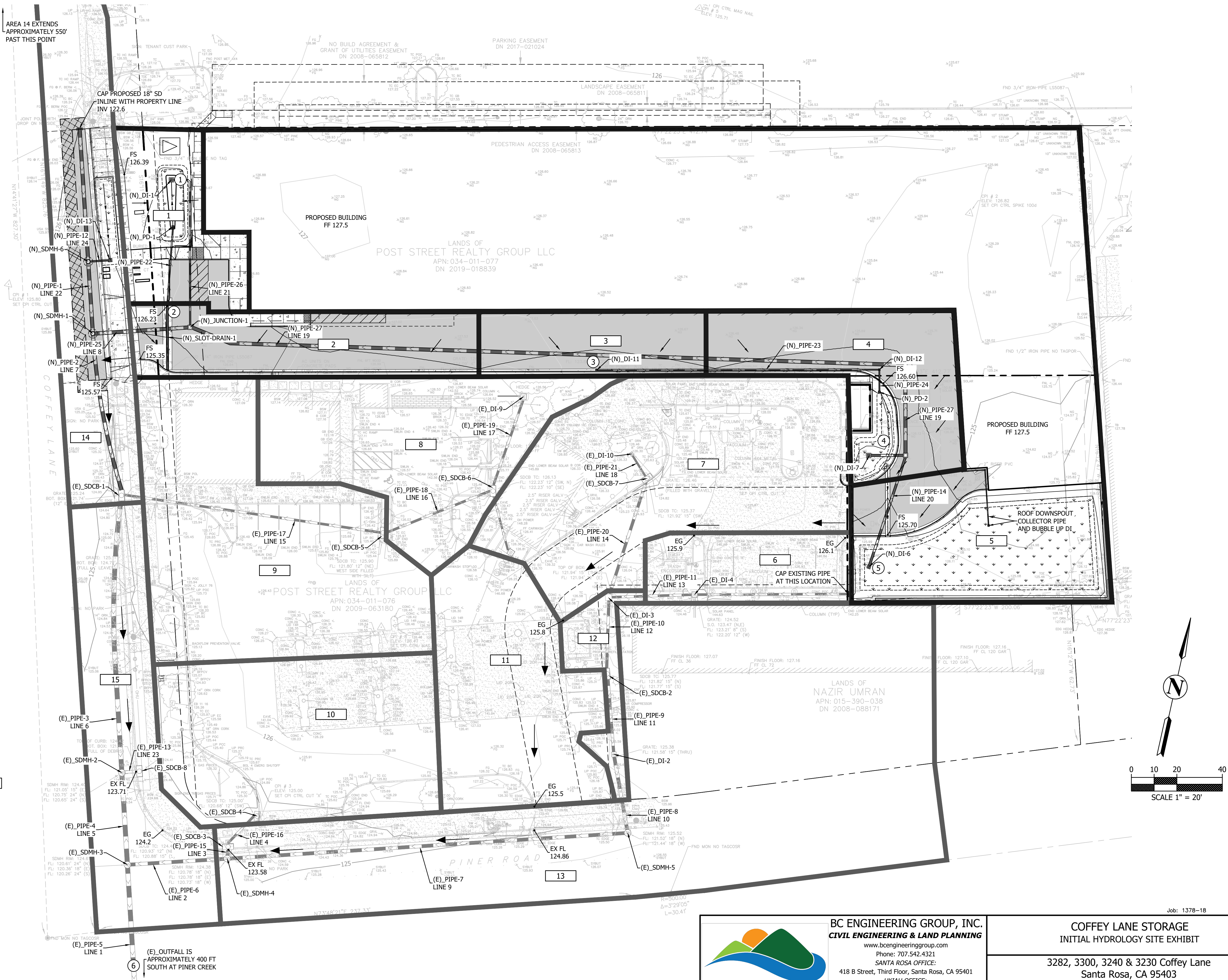
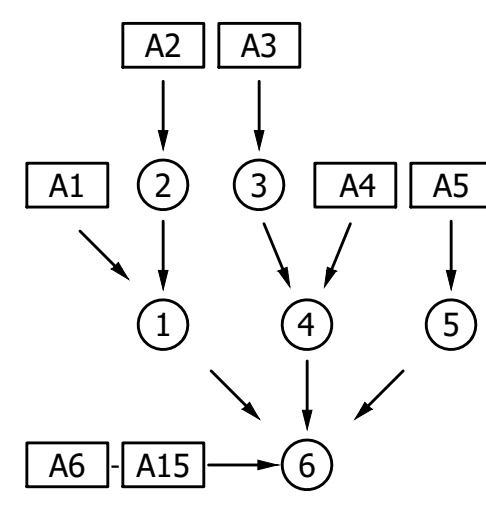
- EXISTING STORMWATER PIPE
- PROPERTY LINE
- PROPOSED FLOWLINE
- PROPOSED RETAINING WALL
- PROPOSED STORMWATER PIPE

HYDRAULIC CALCULATION AREAS

- A1: AREA = 3,478 SF / 0.08 ACRES
IMPERVIOUS AREA = 3,478 SF / 0.08 ACRES
- A2: AREA = 4,521 SF / 0.10 ACRES
IMPERVIOUS AREA = 4,521 SF / 0.10 ACRES
- A3: AREA = 2,854 SF / 0.07 ACRES
IMPERVIOUS AREA = 2,854 SF / 0.07 ACRES
- A4: AREA = 5,353 SF / 0.12 ACRES
IMPERVIOUS AREA = 5,353 SF / 0.12 ACRES
- A5: AREA = 40,998 SF / 0.94 ACRES
IMPERVIOUS AREA = 40,998 SF / 0.94 ACRES
- A6: AREA = 2,784 SF / 0.06 ACRES
IMPERVIOUS AREA = 2,784 SF / 0.06 ACRES
- A7: AREA = 11,360 SF / 0.26 ACRES
IMPERVIOUS AREA = 11,360 SF / 0.26 ACRES
- A8: AREA = 7,559 SF / 0.17 ACRES
IMPERVIOUS AREA = 7,559 SF / 0.17 ACRES
- A9: AREA = 11,390 SF / 0.26 ACRES
IMPERVIOUS AREA = 11,390 SF / 0.26 ACRES
- A10: AREA = 8,640 SF / 0.20 ACRES
IMPERVIOUS AREA = 8,640 SF / 0.20 ACRES
- A11: AREA = 6,902 SF / 0.16 ACRES
IMPERVIOUS AREA = 6,902 SF / 0.16 ACRES
- A12: AREA = 1,359 SF / 0.03 ACRES
IMPERVIOUS AREA = 1,359 SF / 0.03 ACRES
- A13: AREA = 24,483 SF / 0.56 ACRES
IMPERVIOUS AREA = 24,483 SF / 0.56 ACRES
- A14: AREA = 23,131 SF / 0.53 ACRES
IMPERVIOUS AREA = 23,131 SF / 0.53 ACRES
- A15: AREA = 7,156 SF / 0.16 ACRES
IMPERVIOUS AREA = 7,156 SF / 0.16 ACRES

ABBREVIATIONS

- AD AREA DRAIN
- APN ASSESSOR'S PARCEL NUMBER
- CB CATCH BASIN
- CL CENTERLINE
- CY CURB YARD
- DI DROP INLET
- EG EXISTING GROUND
- EX or (E) EXISTING
- FD FLOOR DRAIN
- FG FINISH GRADE
- FL FLOWLINE
- FS FINISHED SURFACE
- FT FOOT / FEET
- GB GRADE BREAK
- GR GRATE
- HP HIGH POINT
- IG INVERT GRADE
- IN INCH
- INV INVERT
- L LENGTH
- LF LINEAL FOOT/FEET
- MAX MAXIMUM
- ME MATCH EXISTING
- MIN MINIMUM
- (N) NEW
- NTS NOT TO SCALE
- PL PROPERTY LINE
- S SLOPE
- SF SQUARE FEET
- TB TOP OF BANK
- TYP TYPICAL
- YD, YDS YARD, YARDS



7/20/2023 10:31 AM Plotted by: Tmorris S:\Projects\1378-18-3825 Coffey Lane\CD\1378-18 Hydro Exhibit.dwg

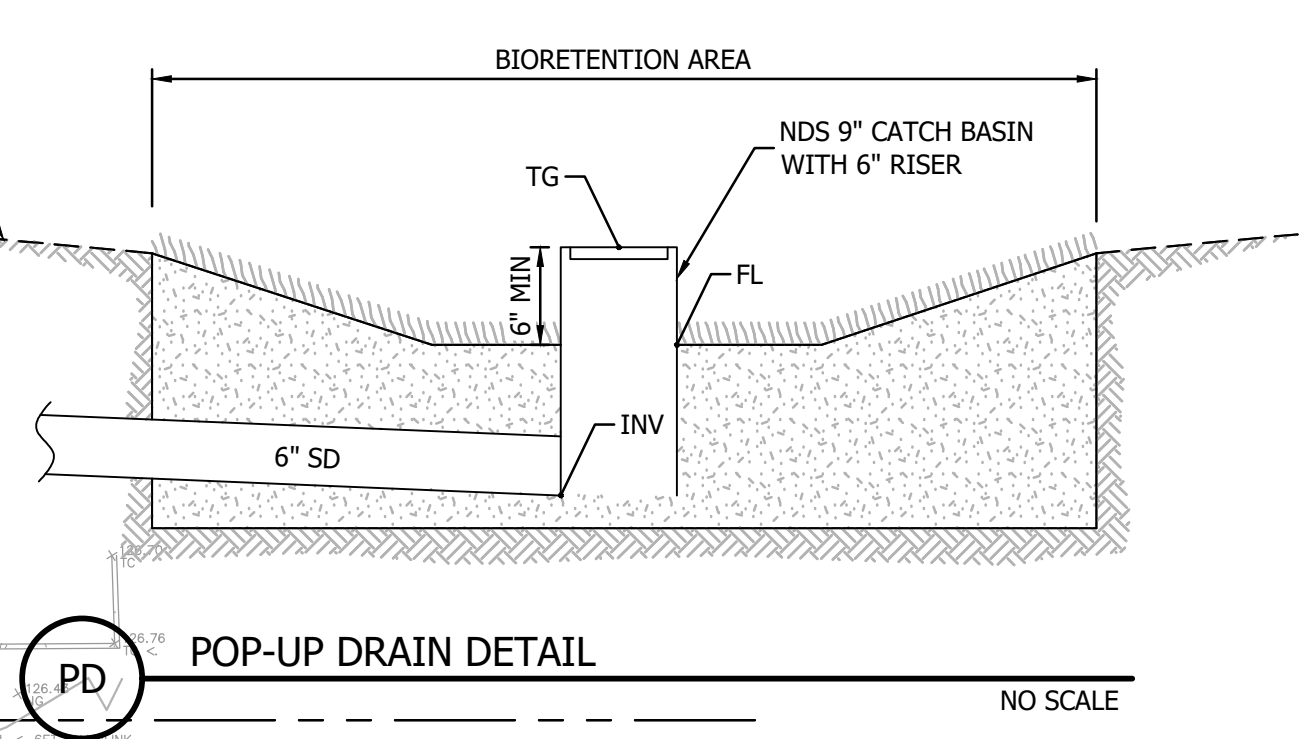
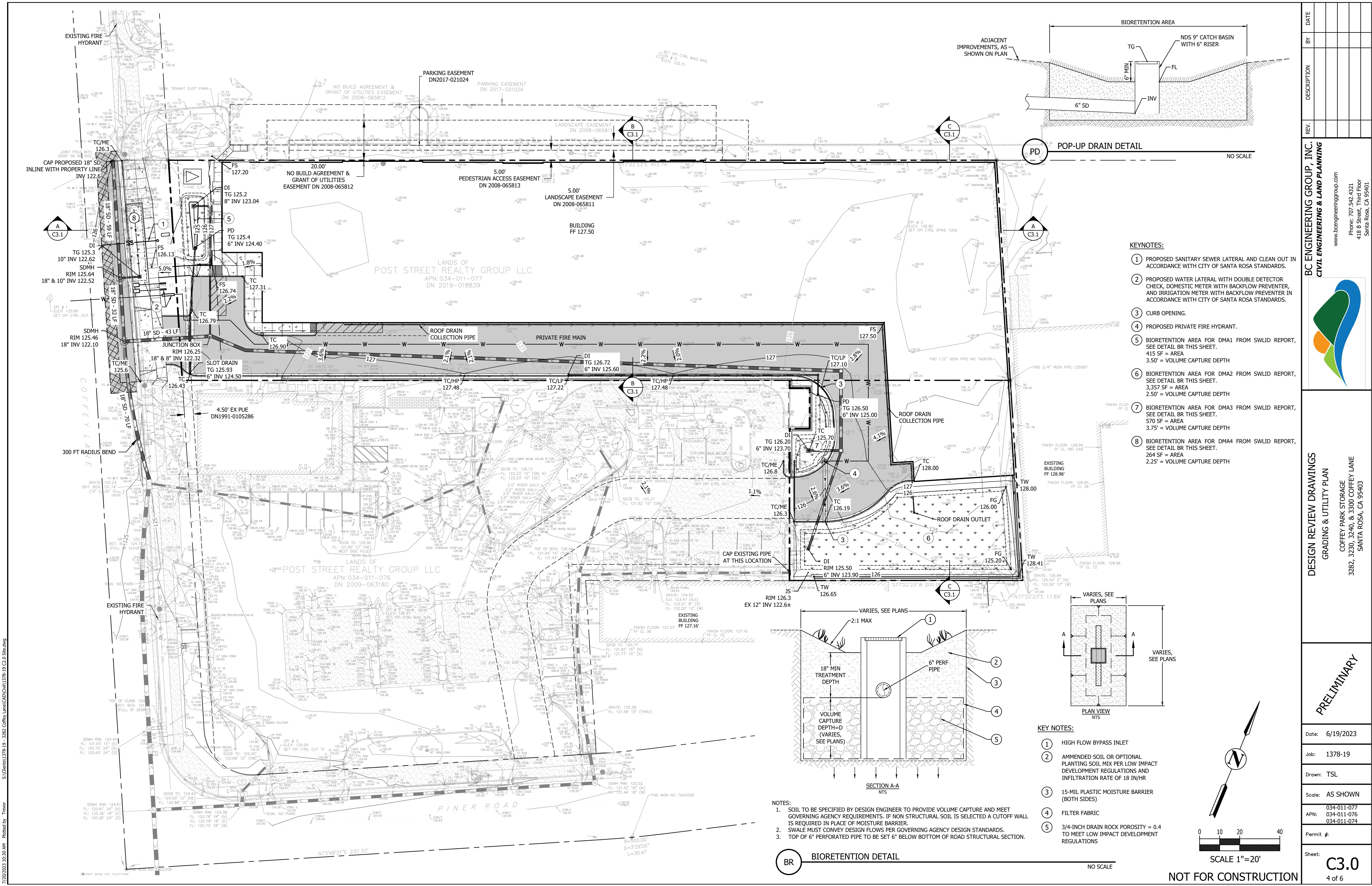
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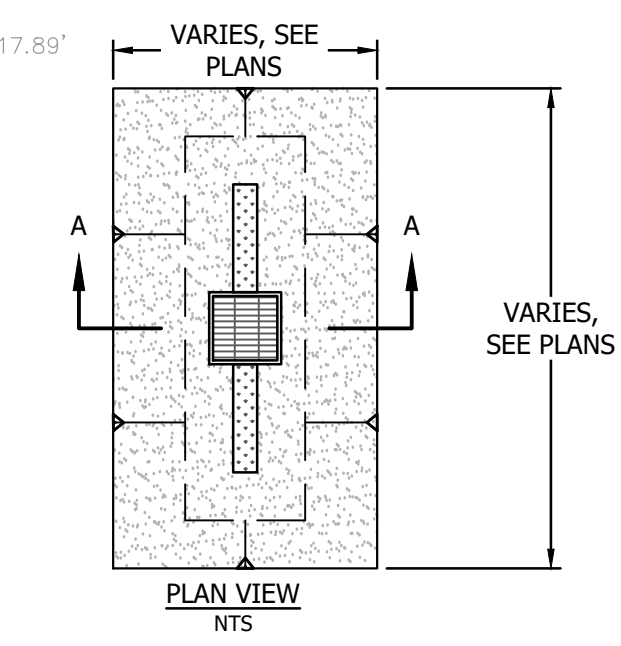
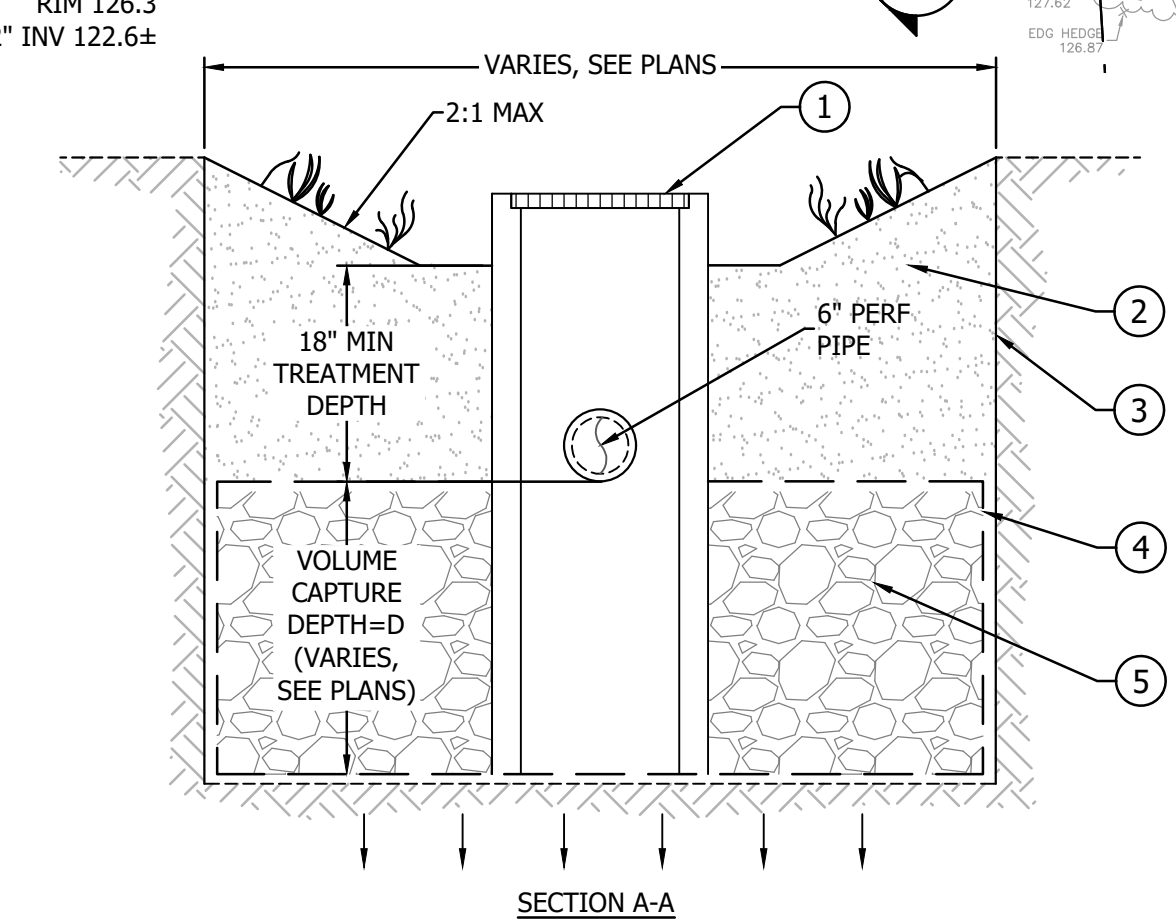
Job: 1378-18

COFFEY LANE STORAGE
 INITIAL HYDROLOGY SITE EXHIBIT

3282, 3300, 3240 & 3230 Coffey Lane
 Santa Rosa, CA 95403
 APN 034-011-077, -074, & -076

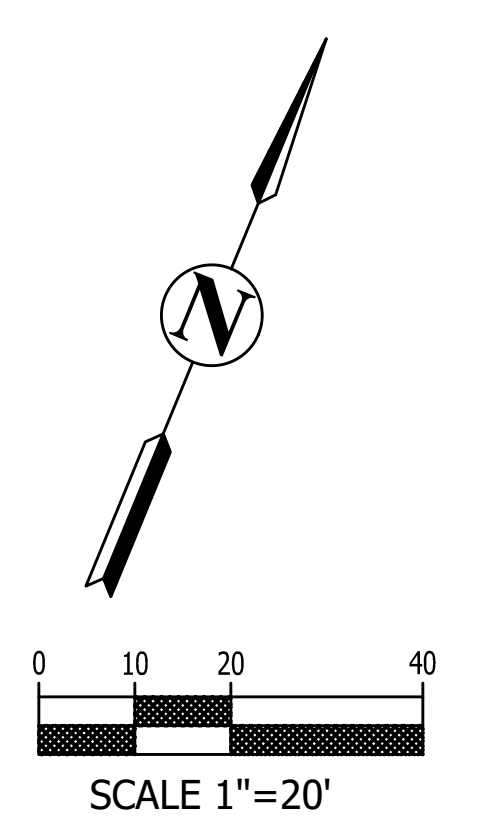


- KEYNOTES:**
- 1 PROPOSED SANITARY SEWER LATERAL AND CLEAN OUT IN ACCORDANCE WITH CITY OF SANTA ROSA STANDARDS.
 - 2 PROPOSED WATER LATERAL WITH DOUBLE DETECTOR CHECK, DOMESTIC METER WITH BACKFLOW PREVENTER, AND IRRIGATION METER WITH BACKFLOW PREVENTER IN ACCORDANCE WITH CITY OF SANTA ROSA STANDARDS.
 - 3 CURB OPENING.
 - 4 PROPOSED PRIVATE FIRE HYDRANT.
 - 5 BIORETENTION AREA FOR DMA1 FROM SWLID REPORT, SEE DETAIL BR THIS SHEET. 415 SF = AREA. 3.50' = VOLUME CAPTURE DEPTH
 - 6 BIORETENTION AREA FOR DMA2 FROM SWLID REPORT, SEE DETAIL BR THIS SHEET. 3,357 SF = AREA. 2.50' = VOLUME CAPTURE DEPTH
 - 7 BIORETENTION AREA FOR DMA3 FROM SWLID REPORT, SEE DETAIL BR THIS SHEET. 570 SF = AREA. 3.75' = VOLUME CAPTURE DEPTH
 - 8 BIORETENTION AREA FOR DMA4 FROM SWLID REPORT, SEE DETAIL BR THIS SHEET. 264 SF = AREA. 2.25' = VOLUME CAPTURE DEPTH



- NOTES:**
- 1 SOIL TO BE SPECIFIED BY DESIGN ENGINEER TO PROVIDE VOLUME CAPTURE AND MEET GOVERNING AGENCY REQUIREMENTS. IF NON STRUCTURAL SOIL IS SELECTED A CUTOFF WALL IS REQUIRED IN PLACE OF MOISTURE BARRIER.
 - 2 SWALE MUST CONVEY DESIGN FLOWS PER GOVERNING AGENCY DESIGN STANDARDS.
 - 3 TOP OF 6\"/>

- KEY NOTES:**
- 1 HIGH FLOW BYPASS INLET
 - 2 AMENDED SOIL OR OPTIONAL PLANTING SOIL MIX PER LOW IMPACT DEVELOPMENT REGULATIONS AND INFILTRATION RATE OF 18 IN/HR
 - 3 15-MIL PLASTIC MOISTURE BARRIER (BOTH SIDES)
 - 4 FILTER FABRIC
 - 5 3/4-INCH DRAIN ROCK POROSITY = 0.4 TO MEET LOW IMPACT DEVELOPMENT REGULATIONS



REV.	DESCRIPTION	BY	DATE

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 Santa Rosa, CA 95401

DESIGN REVIEW DRAWINGS
 GRADING & UTILITY PLAN
 COFFEY PARK STORAGE
 3282, 3230, 3240, & 3300 COFFEY LANE
 SANTA ROSA, CA 95403

PRELIMINARY

Date: 6/19/2023
 Job: 1378-19
 Drawn: TSL
 Scale: AS SHOWN
 APN: 034-011-077
 034-011-076
 034-011-074
 Permit #:
 Sheet: **C3.0**
 4 of 6



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Appendix B: Calculation Details from Storm Water Calculator



STORM WATER CALCULATOR

LID BMP Summary Page & Site Global Values

Project Information: Project Name: Coffey Park Storage Address/Location: 3282, 3230, 3240 & 3300 Coffey Lane Designer: TSL Date: See Cover		Site Information: Mean Seasonal Precipitation (MSP) of Project Site: 32.50 (inches) K=MSP/3(K= 1.08 Impervious area - pre development: 0.0 ft ² Impervious area - post development: 57,324.0 ft ²		Based upon the pre and post development impervious area, the post construction BMP requirement is: 100% Capture & Treatment
---	--	--	--	---

Summary of Saved BMP Results:

BMP ID:	Tributary Area			Requirements		BMP Design Results						
	Tributary Area (ft ²)	Runoff Reduction Measures (Y/N)	Type of Requirement Met	Type of BMP Design	Percent Achieved	Hydromodification Control		Flow Base Treatment		Delta Volume Capture		
						Required V _{Hydromod} (ft ³)	Achieved (ft ³)	Required Q Treatment (cfs)	Achieved (ft ³)	Required Vdelta (ft ³)	Achieved (ft ³)	
1	DMA 1	7,717	No	Hydromod Volume Capture	Priority 2: P2-04 Roadside Bioretention - Curb Opening	103.6	560.7172	581.0000				
2	DMA 2	41,524	No	Hydromod Volume Capture	Priority 2: P2-04 Roadside Bioretention - Curb Opening	111.3	3017.1338	3357.0001				
3	DMA 3	7,825	No	Hydromod Volume Capture	Priority 2: P2-04 Roadside Bioretention - Curb Opening	100.3	568.5645	570.0000				
4	DMA 4	3,164	No	Hydromod Volume Capture	Priority 2: P2-04 Roadside Bioretention - Curb Opening	103.4	229.8962	237.6000				
5												
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STORM WATER CALCULATOR

BMP Tributary Parameters		Project Name:	Coffey Park Storage
BMP ID:	DMA 1		
BMP Design Criteria:	100% Capture & Treatment		
Type of BMP Design:	Priority 2: P2-04 Roadside Bioretention - Curb Opening		
BMP's Physical Tributary Area:	7,717.0 ft ²		
Description/Notes:			

Hydromodification Requirement: 100% Volume Capture; $V_{HYDROMOD}$		$V_{HYDROMOD} =$	560.72 ft ³
Post development hydrologic soil type within tributary area:	D: 0 - 0.05 in/hr infiltration (transmission) rate		
Post development ground cover description:	Impervious - Paved Parking, Rooftop, Driveways		
CN _{POST} :	98		
User Composite post development CN:	0.0		

BMP Sizing Tool: Hydromodification Requirement		Percent of Goal Achieved =	103.62 %
	BMP Volume Below Ground		Ponded Water Above Ground
Porosity:	0.40	Depth:	0.00 ft
Depth below perforated pipe if present:	3.50 ft	Width:	0.00 ft
Width:	0.00 ft	Length:	0.00 ft
Length:	0.00 ft	Area:	0.00 ft ²
Area:	415.00 ft ²		



STORM WATER CALCULATOR

BMP Tributary Parameters		Project Name:	Coffey Park Storage
BMP ID:	DMA 2		
BMP Design Criteria:	100% Capture & Treatment		
Type of BMP Design:	Priority 2: P2-04 Roadside Bioretention - Curb Opening		
BMP's Physical Tributary Area:	41,524.0	ft ²	
Description/Notes:			

Hydromodification Requirement: 100% Volume Capture; $V_{HYDROMOD}$		$V_{HYDROMOD} =$	3,017.13	ft ³
Post development hydrologic soil type within tributary area:	D: 0 - 0.05 in/hr infiltration (transmission) rate			
Post development ground cover description:	Impervious - Paved Parking, Rooftop, Driveways			
CN _{POST} :	98			
User Composite post development CN:	0.0			

BMP Sizing Tool: Hydromodification Requirement		Percent of Goal Achieved =	111.26	%
	BMP Volume Below Ground		Ponded Water Above Ground	
Porosity:	0.40		Depth:	0.00 ft
Depth below perforated pipe if present:	2.50 ft		Width:	0.00 ft
Width:	0.00 ft		Length:	0.00 ft
Length:	0.00 ft		Area:	0.00 ft ²
Area:	3,357.00 ft ²			



STORM WATER CALCULATOR

BMP Tributary Parameters		Project Name: Coffey Park Storage
BMP ID:	DMA 3	
BMP Design Criteria:	100% Capture & Treatment	
Type of BMP Design:	Priority 2: P2-04 Roadside Bioretention - Curb Opening	
BMP's Physical Tributary Area:	7,825.0 ft²	
Description/Notes:		

Hydromodification Requirement: 100% Volume Capture; $V_{HYDROMOD}$		$V_{HYDROMOD} =$ 568.56 ft ³
Post development hydrologic soil type within tributary area:	D: 0 - 0.05 in/hr infiltration (transmission) rate	
Post development ground cover description:	Impervious - Paved Parking, Rooftop, Driveways	
CN _{POST} :	98	
User Composite post development CN:	0.0	

BMP Sizing Tool: Hydromodification Requirement		Percent of Goal Achieved = 100.25 %
	BMP Volume Below Ground	Ponded Water Above Ground
Porosity:	0.40	
Depth below perforated pipe if present:	3.75 ft	Depth: 0.00 ft
Width:	0.00 ft	Width: 0.00 ft
Length:	0.00 ft	Length: 0.00 ft
Area:	380.00 ft ²	Area: 0.00 ft ²



STORM WATER CALCULATOR

BMP Tributary Parameters		Project Name:	Coffey Park Storage
BMP ID:	DMA 4		
BMP Design Criteria:	100% Capture & Treatment		
Type of BMP Design:	Priority 2: P2-04 Roadside Bioretention - Curb Opening		
BMP's Physical Tributary Area:	3,164.0 ft ²		
Description/Notes:			

Hydromodification Requirement: 100% Volume Capture; $V_{HYDROMOD}$		$V_{HYDROMOD} =$	229.90 ft ³
Post development hydrologic soil type within tributary area:	D: 0 - 0.05 in/hr infiltration (transmission) rate		
Post development ground cover description:	Impervious - Paved Parking, Rooftop, Driveways		
CN _{POST} :	98		
User Composite post development CN:	0.0		

BMP Sizing Tool: Hydromodification Requirement		Percent of Goal Achieved =	103.35 %
	BMP Volume Below Ground	Ponded Water Above Ground	
Porosity:	0.40	Depth:	0.00 ft
Depth below perforated pipe if present:	2.25 ft	Width:	0.00 ft
Width:	0.00 ft	Length:	0.00 ft
Length:	0.00 ft	Area:	0.00 ft ²
Area:	264.00 ft ²		



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Appendix C: Calculation References

Table 2-2a Runoff curve numbers for urban areas ^{1/}

Cover description	Average percent impervious area ^{2/}	Curve numbers for hydrologic soil group				Reference Number
		A	B	C	D	
Fully developed urban areas (vegetation established)						
Open space (lawns, parks, golf courses, cemeteries, etc.) ^{3/} :						
Poor condition (grass cover < 50%)		68	79	86	89	1
Fair condition (grass cover 50% to 75%)		49	69	79	84	2
Good condition (grass cover > 75%)		39	61	74	80	3
Impervious areas:						
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98	4
Streets and roads:						
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98	5
Paved; open ditches (including right-of-way)		83	89	92	93	6
Gravel (including right-of-way)		76	85	89	91	7
Dirt (including right-of-way)		72	82	87	89	8
Western desert urban areas:						
Natural desert landscaping (pervious areas only) ^{4/}		63	77	85	88	9
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96	10
Urban districts:						
Commercial and business	85	89	92	94	95	11
Industrial	72	81	88	91	93	12
Residential districts by average lot size:						
1/8 acre or less (town houses)	65	77	85	90	92	13
1/4 acre	38	61	75	83	87	14
1/3 acre	30	57	72	81	86	15
1/2 acre	25	54	70	80	85	16
1 acre	20	51	68	79	84	17
2 acres	12	46	65	77	82	18
Developing urban areas						
Newly graded areas						
(pervious areas only, no vegetation) ^{5/}		77	86	91	94	19
Idle lands (CN's are determined using cover types similar to those in table 2-2c).						

¹ Average runoff condition, and $I_a = 0.2S$.² The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.³ CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.⁴ Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.⁵ Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.



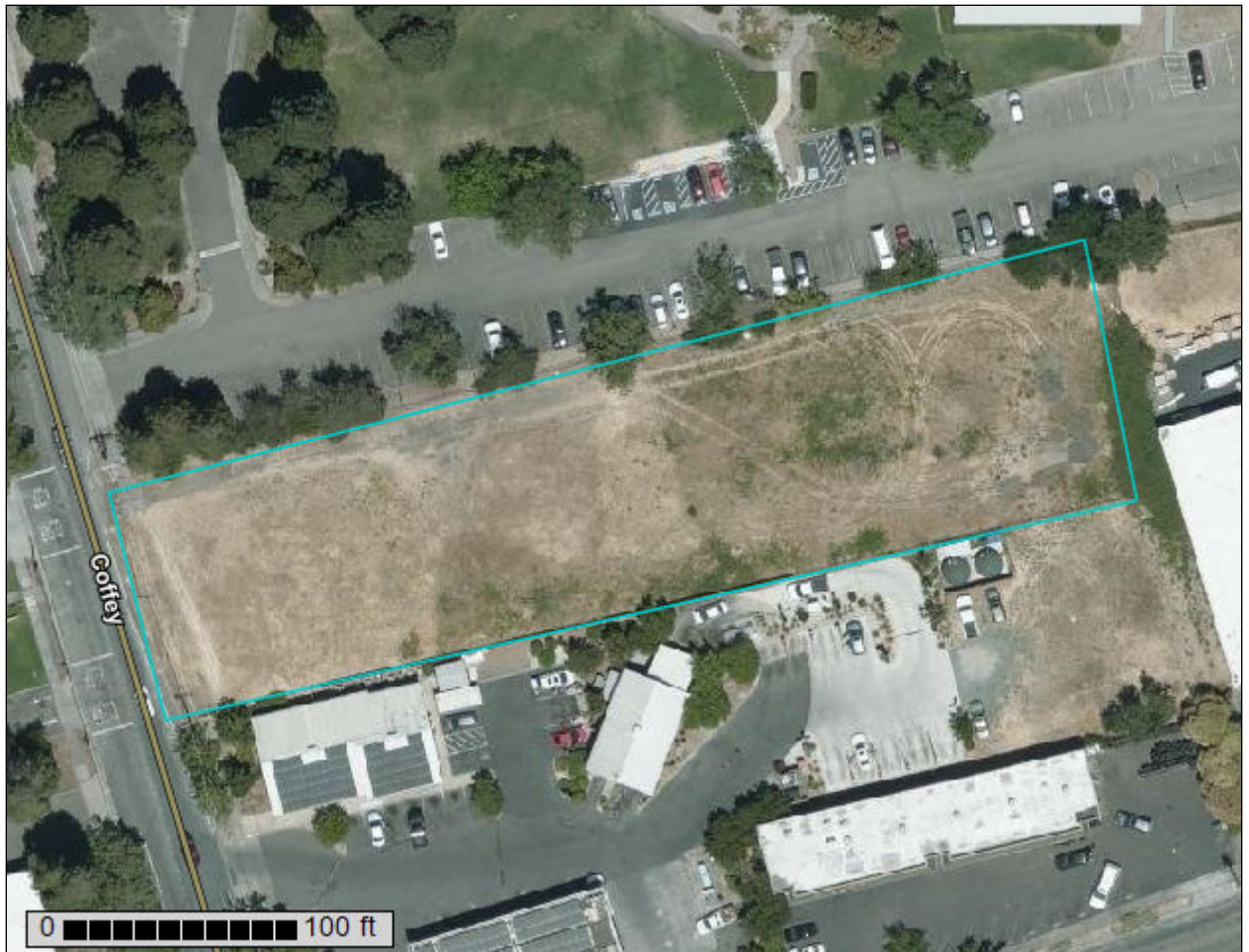
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Sonoma County, California



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
Sonoma County, California.....	13
WgC—Wright loam, 0 to 9 percent slopes.....	13
References	15

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

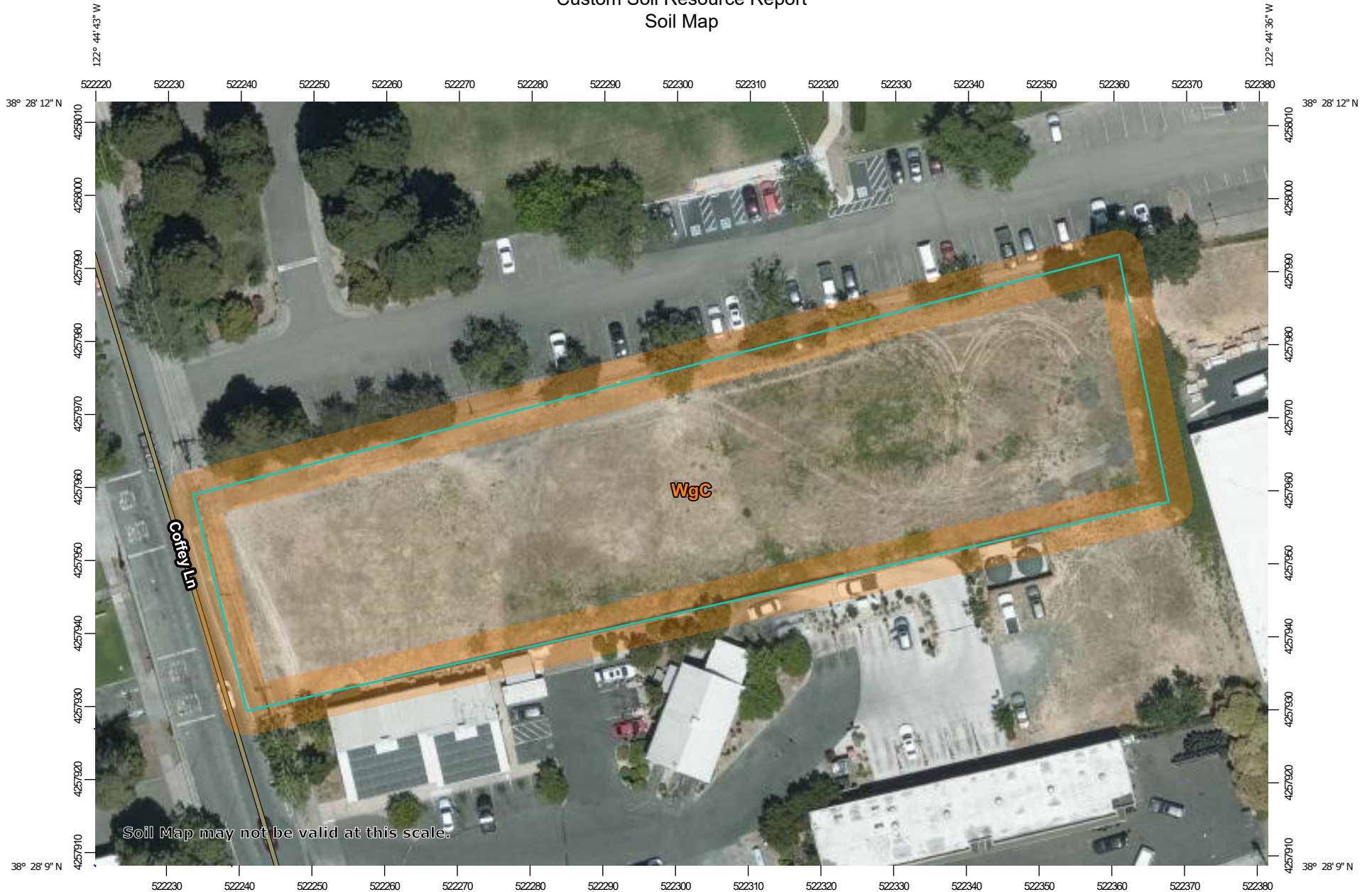
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:738 if printed on A landscape (11" x 8.5") sheet.

0 10 20 40 60 Meters

0 35 70 140 210 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)


Soils


 Soil Map Unit Polygons


 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit


 Clay Spot


 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop


 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole


 Slide or Slip


 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals


Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sonoma County, California
 Survey Area Data: Version 13, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 1, 2018—Jul 31, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
WgC	Wright loam, 0 to 9 percent slopes	1.1	100.0%
Totals for Area of Interest		1.1	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Custom Soil Resource Report

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Sonoma County, California

WgC—Wright loam, 0 to 9 percent slopes

Map Unit Setting

National map unit symbol: hfkl
Elevation: 60 to 300 feet
Mean annual precipitation: 30 inches
Mean annual air temperature: 55 degrees F
Frost-free period: 240 to 260 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Wright and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wright

Setting

Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

H1 - 0 to 15 inches: loam
H2 - 15 to 25 inches: loam
H3 - 25 to 62 inches: clay
H4 - 62 to 73 inches: sandy clay loam

Properties and qualities

Slope: 0 to 9 percent
Depth to restrictive feature: About 25 inches to abrupt textural change
Natural drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Clear lake

Percent of map unit: 5 percent
Landform: Depressions

Custom Soil Resource Report

Hydric soil rating: Yes

Huichica

Percent of map unit: 5 percent

Hydric soil rating: No

Zamora

Percent of map unit: 5 percent

Hydric soil rating: No

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- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

Custom Soil Resource Report

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Appendix D: BMP Details, Selection Table, and Determination Worksheet

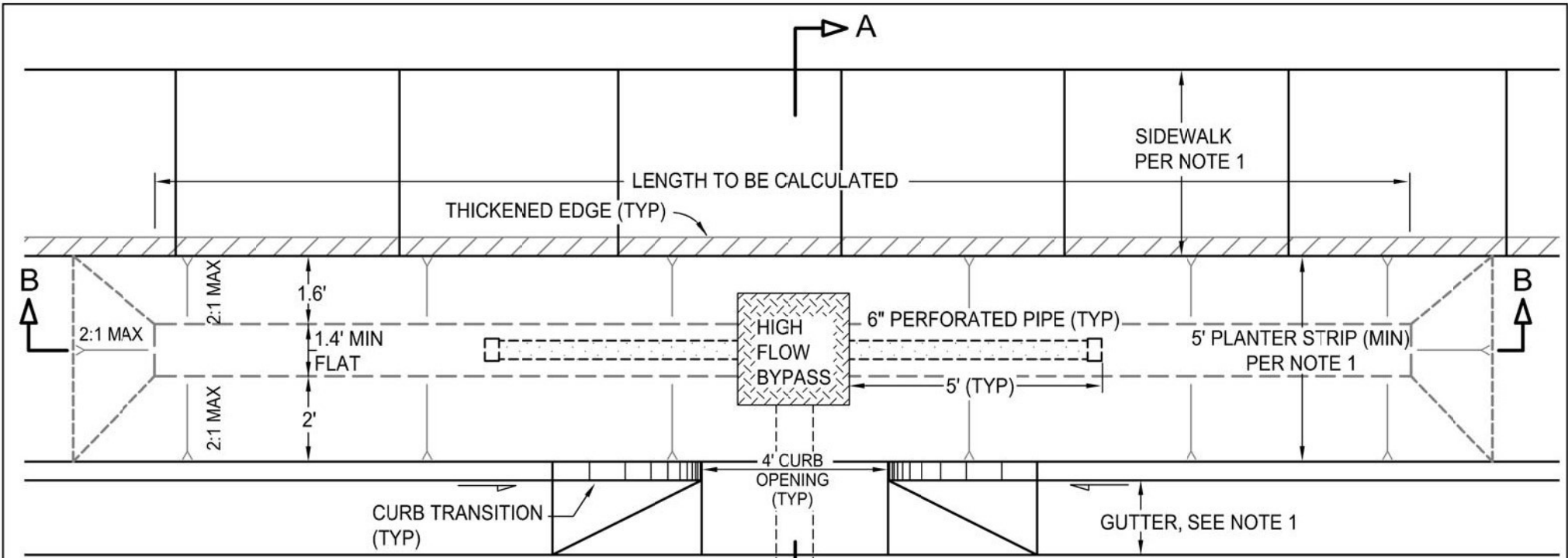
Project Name: Coffey Park Storage

Best Management Practice (BMP)	Detail Sheet	Detail Title	Can be used with...			Achieves...			Volume Capture	Runoff Reduction Measure	BMP in priority selected?		Unique Identifier of BMP per planes	Explanation of selection	Other notes:
			High Ground Water	Contamination	Slope Constraints	Treatment	Yes	No							
Universal BMP- to be considered on all projects.	Living Roof	N/A	N/A	X	X	X	X	X							
	Rainwater Harvesting	N/A	N/A	X	X	X		X							
Runoff Reduction Measures	Interceptor Trees	N/A	N/A	X	X	X			X						
	Bovine Terrace	RRM-01	Bovine Terrace	X					X						
	Vegetated Buffer Strip	RRM-02	Vegetated Buffer Strip						X						
	Impervious Area Disconnection	N/A	N/A	X	X	X			X						
Priority 1- to be installed with no underdrains or liners. Must drain all stading water within 72 hours.	Bioretention	P1-02	Roadside Bioretention - no C & G					X	X						
	Vegetated Swale-with Bioretention	P1-06	Swale with Bioretention					X	X						
	Constructed Wetlands	N/A	N/A					X	X						
Priority 2 BMPs- with subsurface drains installed above the capture volume.	Bioretention	P2-02	Roadside Bioretention - Flush Design Roadside					X	X						
		P2-03	Roadside Bioretention- Contiguous SW					X	X						
		P2-04	Roadside Bioretention- Curb Opening					X	X		X				
		P2-05	Roadside Bioretention- No C & G					X	X						
	Constructed Wetlands	N/A	N/A					X	X						

Date: _____

Page ____ of ____

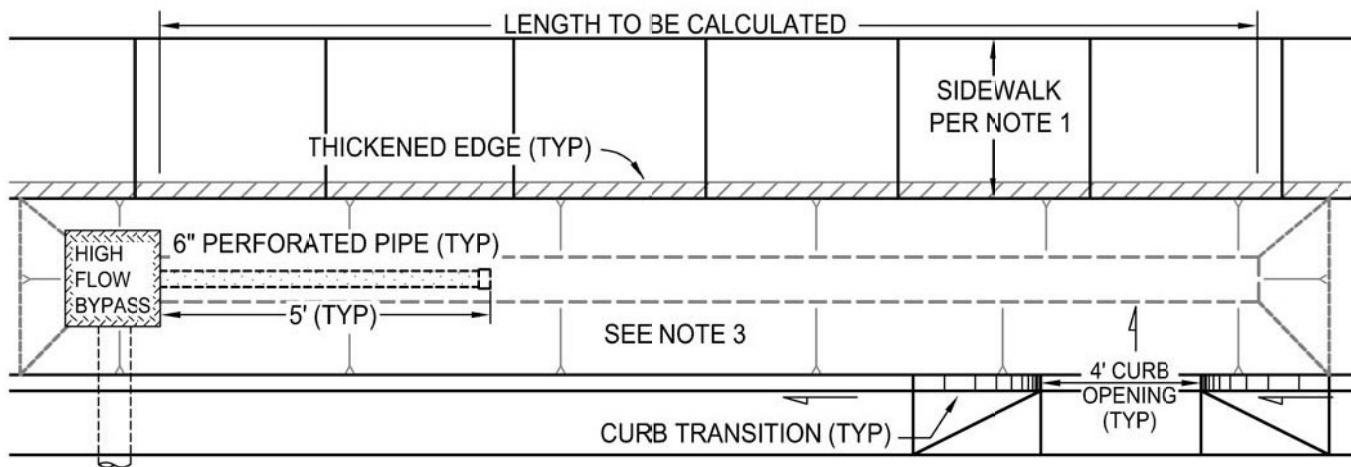
Best Management Practice (BMP)	Detail Sheet	Detail Title	Can be used with...			Slope Constraints Achieves...	Treatment	Volume Capture	Runoff Reduction Measure	BMP in priority selected?		Unique Identifier of BMP per plans	Explanation of selection	Other notes:	
			High Ground Water	Contamination	Slope Constraints					Yes	No				
Priority 3 BMPs - installed with subdrains and/or impermeable liner. Does not achieve volume capture and must be used as part of a treatment train.	Bioretention	P3-02	Roadside Bioretention - Flush Design Roadside	X	X	X	X								
		P3-03	Roadside Bioretention-Contiguous SW	X	X	X	X								
		P3-04	Roadside Bioretention-Curb Opening	X	X	X	X								
	Flow Through Planters	P3-05	Flow Through Planters	X	X	X	X								
	Vegetated Swale	P3-06	With Bioretention	X	X	X	X	X							
		P3-07	Vegetated Swale	X	X	X	X								
	Priority 4 BMPs - does not achieve volume capture and must be used as part of a	Tree Filter Unit			X	X	X	X							
Modular Bioretention				X	X	X	X								
Priority 5 BMPs - does not achieve volume capture and must be used as part of a treatment train.	Chambered Separator Units			X	X	X	X								
	Centrifugal Separator Units			X	X	X	X								
	Trash Excluders			X	X	X	X								
	Filter Inserts			X	X	X	X								
Priority 6 BMPs - see the "Offset Program" chapter for details.	Offset Program						N/A	N/A	N/A						
Other	Detention			X											



PLAN
TYPE A - CURB OPENING AT LOW POINT

NOTE:

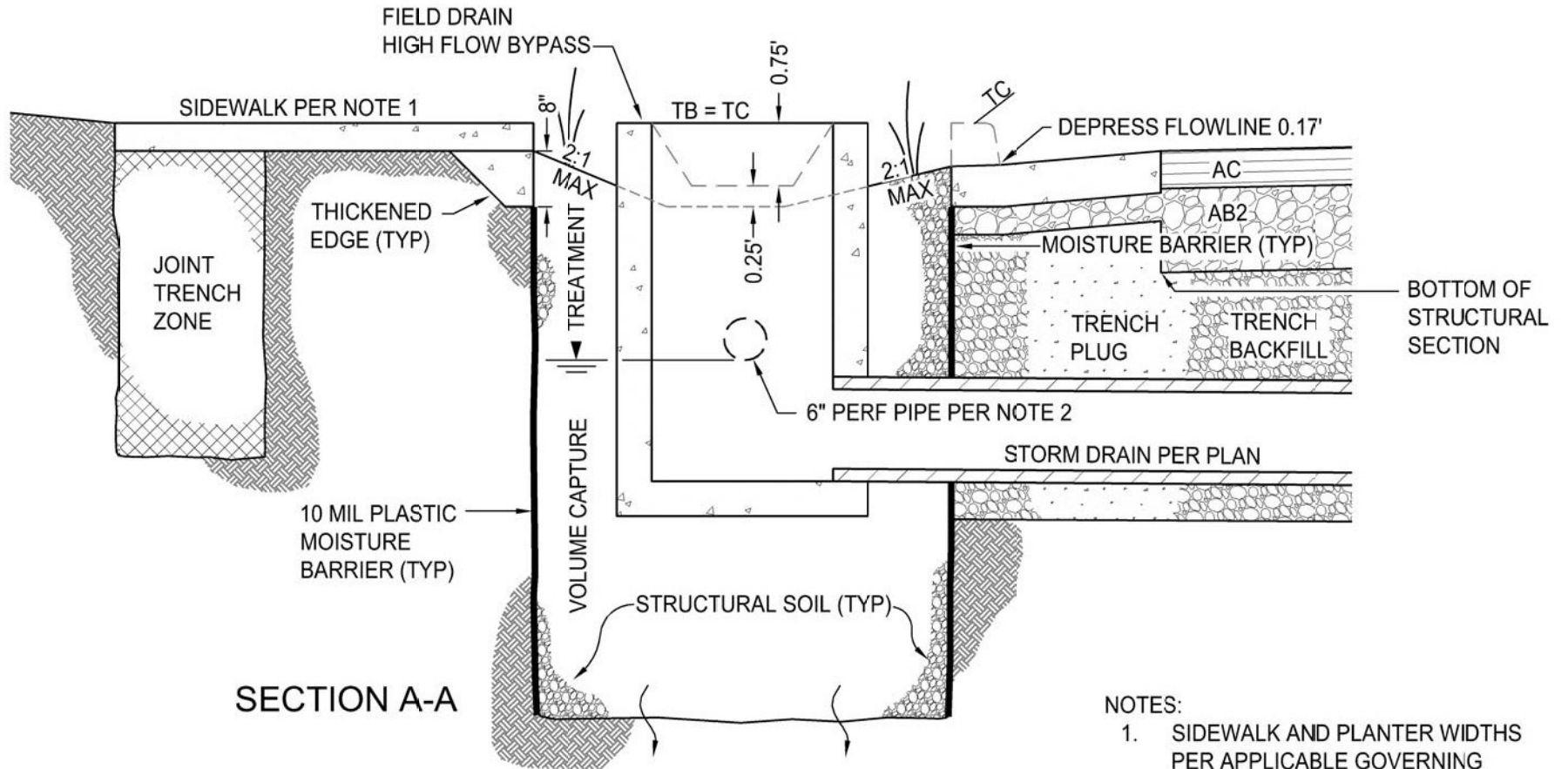
1. SIDEWALK, GUTTER AND PLANTER WIDTHS PER APPLICABLE MUNICIPAL STANDARDS (TYP).
2. TOP OF 6" PERFORATED PIPE TO BE SET 6" BELOW ROAD STRUCTURAL SECTION, MIN.
3. TYPE A MINIMUM DIMENSIONS AND GRADES APPLY TO TYPE B.



TYPE B - CURB OPENING ALONG A SLOPE

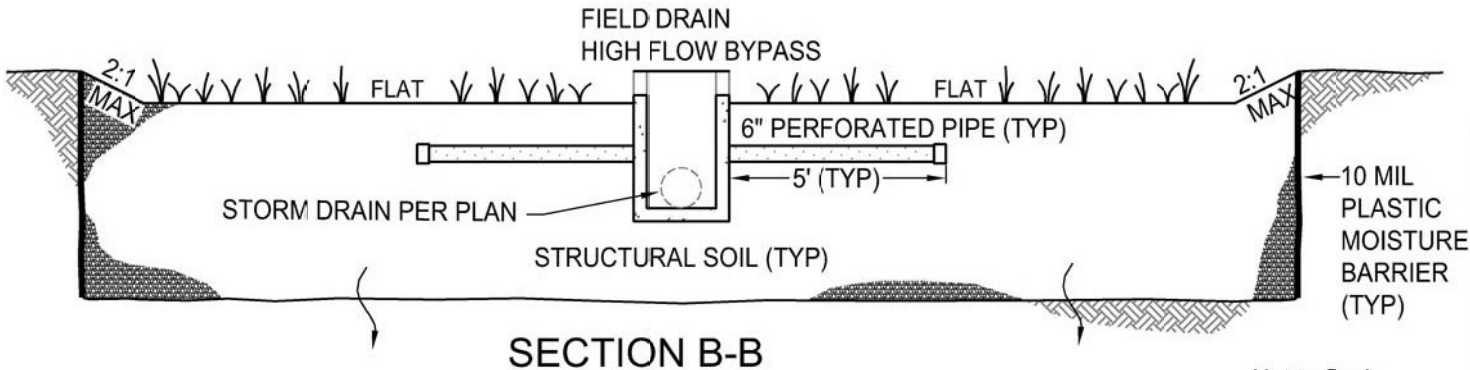
PRIORITY 2 ROADSIDE BIORETENTION - CURB OPENING		
SCALE: NONE	DATE: 04/06/17	
DWN. DIT CHK. HM	SHEET 1 of 2	P2-04

Not to Scale



SECTION A-A

- NOTES:
1. SIDEWALK AND PLANTER WIDTHS PER APPLICABLE GOVERNING AGENCY STANDARDS (TYP).
 2. TOP OF 6" PERFORATED PIPE TO BE SET 6" BELOW BOTTOM OF ROAD STRUCTURAL SECTION.



SECTION B-B

Not to Scale

PRIORITY 2 ROADSIDE BIORETENTION - CURB OPENING SECTION A-A & B-B		
SCALE: NONE	DATE: 04/06/17	
DWN. DIT CHK. HM	SHEET 2 of 2	P2-04



2017 Storm Water LID Determination Worksheet



PURPOSE AND APPLICABILITY: This determination worksheet is intended to satisfy the specific requirements of “ORDER NO. R1-2015-0030, NPDES NO. CA0025054 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT AND WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES FROM THE MUNICIPAL SEPARATE STORM SEWER SYSTEMS.” Additional design requirements imposed by Governing Agencies, such as local grading ordinances, CAL Green, CEQA, 401 permitting, and hydraulic design for flood control still apply as appropriate. Additionally, coverage under another regulation may trigger the requirement to design in accordance with the Storm Water LID Technical Design Manual.

Part 1: Project Information

Project Name Applicant (owner or developer) Name

Project Site Address Applicant Mailing Address

Project City/State/Zip Applicant City/State/Zip

Permit Number(s) - (if applicable) Applicant Phone/Email/Fax

Designer Name Designer Mailing Address

Designer City/State/Zip Designer Phone/Email

Type of Application/Project:

Subdivison	Grading Permit	Building Permit	Hillside Development	
DesignReview	Use Permit	Encroachment	Time Extensions	Other : _____

PART 2: Project Exemptions

1. Is this a project that creates or replaces *less than* 10,000 square feet of impervious surface¹, including all project phases and off-site improvements?

Yes No

1 Impervious surface replacement, such as the reconstruction of parking lots or excavation to roadway subgrades, is not a routine maintenance activity. Reconstruction is defined as work that replaces surfaces down to the subgrade. Overlays, resurfacing, trenching and patching are defined as maintenance activities per section VI.D.2.b.

2017 Storm Water LID Determination Worksheet

2. Is this project a routine maintenance activity² that is being conducted to maintain original line and grade, hydraulic capacity, and original purpose of facility such as resurfacing existing roads and parking lots?

Yes No

3. Is this project a stand alone pedestrian pathway, trail or off-street bike lane?

Yes No

4. **Did you answer "YES" to any of the questions in Part 2?**

YES: This project will *not* need to incorporate permanent Storm Water BMP's as required by the NPDES MS4 Permit. **Please complete the "Exemption Signature Section" on Page 4.**

NO: Please complete the remainder of this worksheet.

Part 3: Project Triggers

Projects that Trigger Requirements:

Please answer the following questions to determine whether this project requires permanent Storm Water BMP's and the submittal of a SW LIDs as required by the NPDES MS4 Permit order No. R1-2015-0030.

1. Does this project create or replace a combined total of 10,000 square feet or more of impervious surface¹ including all project phases and off-site improvements?

Yes No

2. Does this project create or replace a combined total or 10,000 square feet or more of impervious streets, roads, highways, or freeway construction or reconstruction³? Yes No

3. Does this project create or replace a combined total of 1.0 acre or more of impervious surface¹ including all project phases and off-site improvements? Yes No

4. **Did you answer "YES" to any of the above questions in Part 3?**

YES: This project will need to incorporate permanent Storm Water BMP's as required by the NPDES MS4 Permit. **Please complete remainder of worksheet and sign the "Acknowledgement Signature Section" on Page 4.**

NO: This project will *not* need to incorporate permanent Storm Water BMP's as required by the NPDES MS4 permit. **Please complete the "Exemption Signature Section" on Page 4.**

¹ Impervious surface replacement, such as the reconstruction of parking lots or excavation to roadway subgrades, is not a routine maintenance activity. Reconstruction is defined as work that replaces surfaces down to the subgrade. Overlays, resurfacing, trenching and patching are defined as maintenance activities per section VI.D.2.b.

² "Routine Maintenance Activity" includes activities such as overlays and/or resurfacing of existing roads or parking lots as well as trenching and patching activities and reroofing activities per section VI.D.2.b.

³ "Reconstruction" is defined as work that extends into the subgrade of a pavement per section VI.D.2.b.

2017 Storm Water LID Determination Worksheet

Acknowledgment Signature Section:

As the property owner or developer, I understand that this project is required to implement permanent Storm Water Best Management Practices and provide a Storm Water Low Impact Development Submittal (SW LIDS) as required by the City's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer Systems (MS4) Permit Order No. R1-2015-0030. *Any unknown responses must be resolved to determine if the project is subject to these requirements.

Applicant Signature

Date

Exemption Signature Section:

As the property owner or developer, I understand that this project as currently designed does not require permanent Storm Water BMP's nor the submittal of a Storm Water Low Impact Development Submittal (SW LIDS) as required by the City's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer Systems (MS4) Permit*. I understand that redesign may require submittal of a new Determination Worksheet and may require permanent Storm Water BMP's.

Applicant Signature

Date

- * This determination worksheet is intended to satisfy the specific requirements of "ORDER NO. R1-2015-0030, NPDES NO. CA0025054 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT AND WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES FROM THE MUNICIPAL SEPARATE STORM SEWER SYSTEMS." Additional design requirements imposed by Governing Agencies, such as local grading ordinances, CAL Green, CEQA, 401 permitting, and hydraulic design for flood control still apply as appropriate. Additionally, coverage under another regulation may trigger the requirement to design in accordance with the Storm Water LID Technical Design Manual.

Implementation Requirements: All calculations shall be completed using the "Storm Water Calculator" available at: www.srcity.org/stormwaterLID

Hydromodification Control/100% Volume Capture: Capture (infiltration and/or reuse) of 100% of the volume of runoff generated by a 1.0" 24-hour storm event, as calculated using the "Urban Hydrology for Small Watersheds" TR-55 Manual method. This is a retention requirement.

Treatment Requirement: Treatment of 100% of the flow calculated using the modified Rational Method and a known intensity of 0.20 inches per hour.

Delta Volume Capture Requirement: Capture (infiltration and/or reuse) of the increase in volume of storm water due to development generated by a 1.0" 24-hour storm event, as calculated using the "Urban Hydrology for Small Watersheds" TR-55 Manual method. This is a retention requirement.



BC Engineering Group

Civil Engineering & Land Planning

Appendix E: Maintenance Check List, and Draft Maintenance Agreement

Storm Water Quality Special Feature Maintenance Check List

Date: _____
 Start Time: _____
 Stop Time: _____

Inspector: _____
 Project: _____
 Address: _____

Inspection Status Codes:
S = Satisfactory * - See Notes on Form C
D = Deficient

Special Feature or Conditions

Reference code	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11
Additional Special Maintenance Inspection Critical	Add special inspection requirements in addition to Form A here.	Add special inspection requirements in addition to Form A here.	Add special inspection requirements in addition to Form A here.	Add special inspection requirements in addition to Form A here.	Add special inspection requirements in addition to Form A here.	Add special inspection requirements in addition to Form A here.	Add special inspection requirements in addition to Form A here.	Add special inspection requirements in addition to Form A here.	Add special inspection requirements in addition to Form A here.	Add special inspection requirements in addition to Form A here.	Add special inspection requirements in addition to Form A here.
BMP ID:											

Office Use: _____
 Complete: _____ Issues Corrective Action: _____ Re-Inspection Required: _____

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO: _____

City of Santa Rosa- Utilities Department
Storm Water & Creeks Section- Supervising Engineer
69 Stony Circle
Santa Rosa CA 95401

Project/Property: _____
APN(s): _____

Santa Rosa, California

**DECLARATION OF COVENANTS REGARDING MAINTENANCE OF
STORM WATER BMP FACILITIES**

This Declaration of Covenants Regarding Maintenance of Storm Water BMP Facilities (“Declaration”) is made on this _____ day of _____, 20____, by _____ (“Landowner”) **IF BUSINESS ENTITY, ADD TYPE**.

RECITALS

- A. Landowner is the fee simple owner of certain real property located in the City of Santa Rosa (“City”), Sonoma County, California, **INSERT LOT #s & DEVELOPMENT DESCRIPTION; APN #s** and more fully described in Exhibit A to this Declaration (“Property”).
- B. The City’s National Pollutant Discharge Elimination System (“NPDES”) Municipal Separate Storm Sewer System (“MS4”) Permit, Order number R1-2009-0050, issued by the North Coast Regional Water Quality Control Board, requires the City to implement and enforce specific requirements for the construction and maintenance of onsite storm water management facilities/best management practices (collectively, “BMP”) for development, redevelopment, and other applicable projects with the goal of mitigating impacts to storm water quality and runoff volume discharges into the MS4.
- C. Provisions of Chapter 17-12 and other applicable sections of the Santa Rosa City Code shall apply to the construction, inspection and maintenance of BMP facilities and the enforcement of MS4 Permit requirements.
- D. On **INSERT DATE**, **WHO (City Engineer OR Chief Building Official)** approved Landowner’s **IMPROVEMENT PLANS or BUILDING PERMIT SITE PLAN** (“Plan”) and a Final Standard Urban Stormwater Mitigation Plan (SUSMP”) for the Property which require the construction and maintenance of BMP facilities on the Property (the “BMP Facilities”) by Landowner. The BMP Facilities required under the SUSMP may include both built and

landscaping features. The PLAN, SUSMP may be inspected at the City of Santa Rosa, Department of Utilities, Storm Water & Creeks Section, 69 Stony Circle upon appointment.

- E. The PLAN, SUSMP requires that Landowner make and execute this Declaration.

DECLARATION OF COVENANTS

NOW, THEREFORE, in consideration of the foregoing recitals, Landowner hereby covenants, agrees and declares as follows:

1. Landowner shall, at Landowner's sole cost and expense, construct, inspect, and maintain the BMP Facilities in accordance with the Plan and the SUSMP. Landowner shall assure that all BMPs remain fully functional and that all areas identified in the Plan and SUSMP for treatment and/or volume capture discharge to the specified BMP as designed.
2. Landowner shall keep all records related to annual inspections of BMP's by City and all records related to BMP maintenance for a period of at least five years. The records shall include records of any BMP Facilities corrections, repairs, and replacements. Landowner shall make these records available to the City upon request.
3. In the event Landowner fails to maintain the BMP Facilities in good working condition as solely determined by the City, the City may enter upon the Property and take whatever steps it deems reasonably necessary to maintain and/or make in good working condition, such BMP Facilities. It is expressly understood that the City is under no obligation to maintain or repair the BMP Facilities, and in no event shall this Declaration be construed to impose such an obligation on the City.
4. In the event that the City performs work of any nature, or expends any funds in the performance of such work for labor, use of equipment, supplies, materials, or the like, due to failure of the Landowner to perform its maintenance obligations under this Declaration, as solely determined by City, Landowner shall reimburse the City within 60 days of receipt of notice for all costs incurred by the City to undertake such work. Costs shall include, but are not limited to, the actual cost of construction, maintenance and/or repair, and administrative costs directly related to such work.
5. Any violation of the Plan or SUSMP by Landowner shall be deemed a public nuisance under Chapter 1-30 of the Santa Rosa City Code and City shall be entitled to the remedies available to it under Chapter 1-30 in addition to those available to it under Chapter 17-12. The remedies identified herein shall be in addition to and cumulative of all other remedies, criminal or civil, which may be pursued by the City.

6. Landowner shall indemnify, defend and hold harmless the City and its employees, officials, and agents, from and against any liability, (including liability for claims, suits, actions, arbitration proceedings, administrative proceedings, regulatory proceedings, losses, expenses or costs of any kind, whether actual, alleged or threatened, interest, defense costs, and expert witness fees), where the same relates to, or arises out of, the construction, presence, existence, inspection, or maintenance of BMP Facilities on the Property or the performance of the covenants underlying this Declaration by Landowner, its officers, employees, agents, contractors or sub-contractors, excepting only that resulting from the sole, active negligence or intentional misconduct of the City, its employees, officials, or agents. This indemnification obligation is not limited in any way by any limitation on the amount or type of damages or compensation payable to or for the Landowner or its agents under workers' compensation acts, disability benefits acts or other employees' benefits acts. If any judgment or claim against the City, its officials, agents, or employees, shall be entered, Landowner shall pay all cost and expenses in connection therewith.
7. If any provisions of this Declaration shall be held to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.
8. This Declaration shall be governed according to the laws of the State of California. The parties hereto agree that the forum for the adjudication of any dispute related to this Declaration shall be brought exclusively and solely in Sonoma County, California.
9. Landowner shall not assign this Declaration to a third party without the express prior written consent of the City, provided that such consent will not be unreasonably withheld and that such consent shall not be required for Landowner to sell or lease the property to a third party.
10. Landowner binds itself, its partners, successors, legal representatives and assigns to the City, and to the partners, successors, legal representatives and assigns of the City with respect to all promises and agreements contained herein.
11. This Declaration shall be recorded by Landowner, and shall: a) constitute a "covenant running with the land;" b) be binding upon Landowner and Landowner's successors, heirs, and assigns in perpetuity; and, 3) benefit the City of Santa Rosa, its successors, and assigns. Any breach of this Declaration shall render Landowner

or Landowner's heirs, successors or assigns liable pursuant to the provisions of the Santa Rosa City Code.

12. Any notice, submittal or communication required or permitted to be served on Landowner or City may be served by personal delivery to the person or the office of the person identified below. Service may also be made by mail, by placing first-class postage, and addressed as indicated below, and depositing in the United States mail to:

City Representative:

Landowner or Landowner Representative:

City of Santa Rosa
Utilities Department
Storm Water & Creeks Section
Supervising Engineer
69 Stony Circle
Santa Rosa CA 95401

Name: _____
Address: _____

Executed as of the day and year first above stated.

LANDOWNER:

Name: _____

Signatures of Authorized Persons:

By: _____

Print Name: _____

Title: _____

By: _____

Print Name: _____

Title: _____

ATTACHMENTS:

Exhibit A- Property Description
Notary Acknowledgment