

MEMORANDUM

To: Kyle Peterson, HMC Architects
From: Eric Schniewind, Dudek
Subject: Hydrology Technical Memorandum for Santee Community Center Project
Date: April 17, 2025
Attachments: A – Drainage Study for Santee Community Center, Psomas, February, 2025
B – Storm Water Quality Management Plan (SWQMP), Psomas, February, 2025

This memorandum describes the existing hydrology and water quality setting and regulatory requirements related to stormwater runoff that would apply to development associated with the proposed Santee Community Center (Project or proposed Project) in the City of Santee, California. The Project site is located at the southwest corner of Riverwalk Drive and Park Center Drive adjacent to an existing City-owned YMCA facility at 10123 Riverwalk Drive. The proposed facility would include a 12,500-square-foot structure and a new parking lot to be located north of the existing YMCA facility. The following provides information and resources that can be used in support of the environmental review pursuant to the California Environmental Quality Act.

1 Environmental Setting

1.1 Regional Hydrology

1.1.1 Los Coches Creek – San Diego River Watershed

The Project site is located within the San Diego River watershed, which is approximately 45 miles long and extends from the mountains in the Cleveland National Forest to the Pacific Ocean (SWRCB 2024). The river flows through unincorporated areas of San Diego (including the community of Lakeside), the City of Santee, and the City of San Diego. The Los Coches Creek is a tributary to San Diego River and drains a mostly urbanized watershed until it joins the San Diego River in the lower portion of the river. The lower 20 miles of the San Diego River has been adversely affected by various human activities including various mining projects, abandoned mining pits, mining waste, urban runoff pollutants, and also encroachment of invasive, non-native plant species, which has degraded water quality, beneficial uses, and habitats. As a result, the lower 20 miles of the San Diego River is on the U.S. Environmental Protection Agency (EPA) Impaired Waters 303(d) list for bifenthrin (an insecticide), chlordane (pesticide), chloride, color, cyfluthrin (insecticide), cypermethrin (insecticide), bacteria, nitrogen, dissolved oxygen, permethrin, phosphorus, total dissolved solids, and turbidity (RWQCB 2024). Los Coches Creek is also on the 303(d) list for bacteria, nitrogen, phosphorus, and selenium (RWQCB 2024).

1.1.2 San Diego River Valley Groundwater Basin

The Project site is located within the San Diego River Valley Groundwater Basin (Basin No. 9-15), which includes the smaller subbasin known as the Santee Basin (Carollo Engineers 2021). The Santee Basin is designated by the Department of Water Resources, in accordance with the Sustainable Groundwater Management Act (SGMA), to be a very low priority basin (DWR 2024). The basin is unadjudicated and not critically overdrafted. The Pueblo water rights are the key water rights doctrine that governs allocation of surface water and groundwater of the San Diego River (Carollo Engineers 2021). As a result, this basin is not subject to the requirements of developing a groundwater sustainability plan because of the low priority designation.

Water supply for the City of Santee is provided by Padre Dam Municipal Water District that only pumps a small amount of groundwater from the basin to supplement the recycled water system (Carollo Engineers 2021). During the period of 2016 to 2020, the volume of water pumped from the basin has ranged from 0 to 198 acre-feet per year. Instead, water supply is primarily imported from the San Diego County Water Authority (SDCWA). This potable water supply is imported from the California State Water Project (North Bay, South Bay, and California Aqueducts) and the Colorado River (Los Angeles and Colorado River Aqueducts) by the Metropolitan Water District of Southern California (Metropolitan). The water supply is treated at Metropolitan's Skinner Treatment Plant near Temecula, California, and then released into SDCWA's system.

1.2 Existing Project Site Stormwater Drainage

The portion of the Project site where the community center is proposed currently consists of a parking lot and landscaped areas along the southern portion of the site (Attachment A). Stormwater runoff currently occurs as sheet flow toward the south of the parking lot where it is conveyed via two existing earthen swales and discharged into Woodglen Vista Creek, a tributary to San Diego River. The portion of the site that would be developed into a parking lot is currently covered in grass where stormwater drains to three existing grate inlets that convey runoff via a storm drainpipe to the west and into Woodglen Vista Creek (Attachment A).

1.3 Proposed Project Site Stormwater Drainage

As proposed, the new community center would be located on a portion of the existing parking lot with the remaining portion redesigned and a separate new parking lot located north of the existing YMCA. Stormwater would be managed through a series of catch basins, roof drainages, and a total of 8 biofiltration basins (5 basins located to the south and east of the proposed building and 3 basins located on the west and south edge of the proposed parking lot). The catch basins and roof drainages would convey runoff to the biofiltration basins. Off-site flows from the northern portion of the existing parking lot would be intercepted by a new cross gutter at the north end of the site and conveyed to the existing earthen swale, bypassing the treatment basins, and ultimately discharging into Woodglen Vista Creek similar to existing conditions (Attachment A). The runoff from the new parking lot would be conveyed via surface flow to the three biofiltration basins located in the landscaped areas of the parking lot, and then conveyed to Woodglen Creek.

The total amount of impervious surfaces after development would increase from the current condition of 45.7% impervious surfaces (71% impervious in the community center location and 16% impervious in the proposed parking lot location) to approximately 77% impervious (78% for the community center location and 76% at the parking lot) (Attachment A). As a result, the calculated 100-year, 6-hour peak storm flow would increase from

22.4 cubic feet per second to 26.2 cubic feet per second in the proposed condition (Attachment A). The design of the proposed stormwater drainage control features are in accordance with the San Diego County Hydraulic Design Manual and the San Diego County Project Clean Water's Stormwater Technical Guide.

1.4 Flood Zones

The Project site is not located in a 100-year floodplain, although the southwestern corner of the site does abut against a flood hazard zone (FEMA 2024).

1.5 Water Supply

As previously noted, water supply for the City of Santee is provided by Padre Dam Municipal Water District that sources the majority of its water from SDCWA. SDCWA obtains its water from three sources: imported California State Water Project water, Colorado River water, and desalinated water from the Carlsbad Desalination Plant. The Padre Dam Municipal Water District's water supplies also include recycled water and a very small amount of groundwater used to supplement the recycled water system (Carollo Engineers 2021).

The current water usage on site is unknown but limited to possible irrigation demands and assumed to be relatively low. According to the 2020 Urban Water Management Plan (UWMP), the Padre Dam Municipal Water District can meet projected water demands out to 2045 under normal, single dry year, and multiple (5) year scenarios (Carollo Engineers 2021).

2 Regulatory Setting

2.1 Federal

2.1.1 Clean Water Act

Increasing public awareness and concern for controlling water pollution led to the enactment of the Federal Water Pollution Control Act Amendments of 1972. As amended in 1977, this law became commonly known as the Clean Water Act (CWA) (33 USC 1251 et seq.). The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The CWA established basic guidelines for regulating discharges of pollutants into the waters of the United States. The CWA requires that states adopt water quality standards to protect public health, enhance the quality of water resources, and ensure implementation of the CWA.

Section 303 of the Clean Water Act (Beneficial Use and Water Quality Objectives)

The Los Angeles Regional Water Quality Control Board (RWQCB) is responsible for the protection of the beneficial uses of waters within the proposed Project area. RWQCB uses its planning, permitting, and enforcement authority to meet its responsibilities adopted in the Basin Plan to implement plans, policies, and provisions for water quality management.

In accordance with state policy for water quality control, RWQCB employs a range of beneficial use definitions for surface waters, groundwater basins, marshes, and mudflats that serve as the basis for establishing water quality objectives and discharge conditions and prohibitions. The Basin Plan for the Los Angeles Region has identified

existing and potential beneficial uses supported by the key surface water drainages throughout its jurisdiction. Under CWA Section 303(d), the State of California is required to develop a list of impaired water bodies that do not meet water quality standards and objectives. A total maximum daily load defines how much of a specific pollutant/stressor a given water body can tolerate and still meet relevant water quality standards. RWQCB has developed total maximum daily loads for select reaches of water bodies.

Section 401 of the Clean Water Act (Water Quality Certification)

Section 401 of the CWA requires that an applicant for any federal permit (e.g., a U.S. Army Corps of Engineers Section 404 permit) obtain certification from the state, requiring that discharge to waters of the United States would comply with provisions of the CWA and with state water quality standards. For example, an applicant for a permit under Section 404 of the CWA must also obtain water quality certification per Section 401 of the CWA. Section 404 of the CWA requires a permit from the U.S. Army Corps of Engineers prior to discharging dredged or fill material into waters of the United States unless such a discharge is exempt from CWA Section 404. For the Project area, the Los Angeles RWQCB provides the water quality certification required under Section 401 of the CWA.

Section 402 of the Clean Water Act

The CWA was amended in 1972 to provide that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The NPDES permit program, as authorized by Section 402 of the CWA, was established to control water pollution by regulating point sources that discharge pollutants into waters of the United States (33 USC 1342). In California, EPA has authorized the State Water Resources Control Board (SWRCB) permitting authority to implement the NPDES program.

Regulations (Phase II Rule) that became final on December 8, 1999, expanded the existing NPDES program to address stormwater discharges from construction sites that disturb land equal to or greater than 1 acre and less than 5 acres (small construction activity). The regulations also require that stormwater discharges from small Municipal Separate Storm Sewer Systems (MS4s) be regulated by a NPDES General Permit for Storm Water Discharges Associated with Construction Activity, Order No. 99-08-DWQ (i.e., the General Construction Permit). Post-construction stormwater controls to satisfy requirements of the NPDES program are permitted under the Phase II Small MS4 Permit (Order No. 2013-001 DWQ effective July 1, 2013).

To obtain coverage under the Construction General Permit, a project applicant must provide a Notice of Intent, a stormwater pollution prevention plan (SWPPP), and other documents required by Attachment B of the Construction General Permit. The SWPPP must contain a visual monitoring program, a chemical monitoring program for “non-visible” pollutants to be implemented if there is a failure of best management practices (BMPs), and a sediment-monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Routine inspection of all BMPs is required under the provisions of the Construction General Permit. On September 2, 2009, SWRCB issued a new NPDES General Permit for Storm Water Associated with Construction Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002 - as amended by 2010-0014-DWQ and 2012-0006-DWQ) that became effective July 1, 2010.

Section 404 of the Clean Water Act

Section 404 of the CWA established a permitting program to regulate the discharge of dredged or fill material into waters of the United States, which include wetlands adjacent to national waters (33 USC 1344). This permitting program is administered by the U.S. Army Corps of Engineers and enforced by EPA.

2.1.2 National Flood Insurance Program

The National Flood Insurance Act of 1968 established the National Flood Insurance Program in order to provide flood insurance within communities that were willing to adopt floodplain management programs to mitigate future flood losses. The act also required the identification of all floodplain areas within the United States and the establishment of flood-risk zones within those areas. The Federal Emergency Management Agency (FEMA) is the primary agency responsible for administering programs and coordinating with communities to establish effective floodplain management standards. FEMA is responsible for preparing Flood Insurance Rate Maps that delineate the areas of known special flood hazards and their risk applicable to the community. The program encourages the adoption and enforcement by local communities of floodplain management ordinances that reduce flood risks. In support of the program, FEMA identifies flood hazard areas throughout the United States on FEMA flood hazard boundary maps.

2.1.3 Federal Antidegradation Policy

The Federal Antidegradation Policy (40 CFR 131.12) requires states to develop statewide antidegradation policies and identify methods for implementing them. Pursuant to the Code of Federal Regulations (CFR), state antidegradation policies and implementation methods shall, at a minimum, protect and maintain: (1) existing in-stream water uses; (2) existing water quality where the quality of the waters exceeds levels necessary to support existing beneficial uses, unless the state finds that allowing lower water quality is necessary to accommodate economic and social development in the area; and (3) water quality in waters considered an outstanding national resource.

2.2 State

2.2.1 Senate Bill 610 and Senate Bill 221: Water Supply Assessments and Water Supply Verifications

Senate Bill (SB) 610 and SB 221, effective January 1, 2002, improve the linkage between certain land use decisions made by cities and counties and water supply availability. The statutes require detailed information regarding water availability and reliability with respect to certain developments to be included in the administrative record. Under Water Code Section 10912(a), projects subject to the California Environmental Quality Act requiring a water supply assessment include residential development of more than 500 dwelling units; shopping centers or business establishments employing more than 1,000 persons or having more than 500,000 square feet of floor space; commercial office buildings employing more than 1,000 persons or having more than 250,000 square feet of floor space; hotels, motels, or both having more than 500 rooms; industrial, manufacturing, or processing plants, or industrial parks planned to house more than 1,000 persons, occupying more than 40 acres of land or having more than 650,000 square feet of floor area; mixed-use projects that include one or more of the projects specified; or a project that would demand an amount of water equivalent to or greater than the amount required by a 500-dwelling-unit project. A fundamental source document for compliance with SB 610 is the UWMP, which can be

used by the water supplier to meet the standard for SB 610. The proposed Project does not meet the requirements for a water supply assessment to be prepared.

2.2.2 California Water Code Section 10610 et seq., Urban Water Management Planning Act

California urban water providers are required by state law to develop an UWMP to ensure sufficient water supplies are available to meet the long-term needs of their customers during normal, dry, or multiple-dry years. The Urban Water Management Planning Act requires urban water suppliers, which provide water for municipal purposes to more than 3,000 customers or supply more than 3,000 acre-feet of water annually, to develop an UWMP every 5 years, in the years ending in 0 and 5.

In the act, the California Legislature declared that the waters of the state are a limited and renewable resource subject to ever-increasing demands; that the conservation and efficient use of urban water supplies are of a statewide concern; that successful implementation of plans is best accomplished at the local level; that conservation and efficient use of water shall be actively pursued to protect both the people of the state and their water resources; that conservation and efficient use of urban water supplies shall be a guiding criterion in public decisions; and that urban water suppliers shall be required to develop water management plans to achieve conservation and efficient use.

The Padre Dam Municipal Water District's 2020 UWMP has been prepared in compliance with these requirements of the act, as well as the additional reporting requirements of the Water Conservation Act of 2009. The UWMP is intended to serve as a general, flexible, and open-ended document that periodically can be updated to reflect changes in regional water supply trends, conservation policies, and water use efficiency policies.

2.2.3 Sustainable Groundwater Management Act

On September 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package—Assembly Bill 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley)—collectively known as the Sustainable Groundwater Management Act (SGMA), which requires governments and water agencies of high- and medium-priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. For critically overdrafted basins, sustainability should be achieved by 2040. For the remaining high- and medium-priority basins, 2042 is the deadline. Through SGMA, the California Department of Water Resources provides ongoing support to local agencies through guidance, financial assistance, and technical assistance. SGMA empowers local agencies to form Groundwater Sustainability Agencies to manage basins sustainably and requires Groundwater Sustainability Plans for crucial (i.e., medium to high priority) groundwater basins in California. The San Diego River Valley Groundwater Basin (which includes the Santee Basin) is not subject to SGMA requirements.

2.2.4 California Porter-Cologne Water Quality Control Act

Since 1973, the California SWRCB and its nine RWQCBs have been delegated the responsibility for administering permitted discharge into the waters of California. The Project site falls within the jurisdiction of the San Diego RWCQB. The Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.; California Code of Regulations, Title 23, Division 3, Chapter 15) provides a comprehensive water-quality management system for the protection of California waters. Under the act, "any person discharging waste, or proposing to discharge waste,

within any region that could affect the quality of the waters of the state” must file a report of the discharge with the appropriate RWQCB. Pursuant to the act, the RWQCB may then prescribe “waste discharge requirements” that add conditions related to control of the discharge. The Porter-Cologne Water Quality Control Act defines “waste” broadly, and the term has been applied to a diverse array of materials, including nonpoint source pollution. When regulating discharges that are included in the federal SWA, the state essentially treats waste discharge requirements and NPDES as a single permitting vehicle. In April 1991, SWRCB and other state environmental agencies were incorporated into the California Environmental Protection Agency.

RWQCB regulates urban runoff discharges under the NPDES permit regulations. NPDES permitting requirements cover runoff discharged from point (e.g., industrial outfall discharges) and nonpoint (e.g., stormwater runoff) sources. RWQCB implements the NPDES program by issuing construction and industrial discharge permits.

Under the NPDES permit regulations, BMPs are required as part of a SWPPP. EPA defines BMPs as “schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of Waters of the United States.” BMPs include “treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage” (40 CFR 122.2).

2.2.5 CALGreen

The California Green Building Standards Code, Title 24, Part 11, of the California Code of Regulations, also known as CALGreen, is designed to improve public health, safety, and general welfare by using design and construction methods that reduce the negative environmental impact of development and to encourage sustainable construction practices. CALGreen provides mandatory direction to developers of all new construction and renovations of residential and non-residential structures with regard to all aspects of design and construction, including, but not limited to, site drainage design, stormwater management, and water use efficiency. Required measures are accompanied by a set of voluntary standards designed to encourage developers and local agencies to aim for a higher standard of development.

2.2.6 California Water Code

The California Water Code includes 22 kinds of districts or local agencies with specific statutory provisions to manage surface water. Many of these agencies have statutory authority to exercise some forms of groundwater management. For example, a Water Replenishment District (Water Code Section 60000 et seq.) is authorized to establish groundwater replenishment programs and collect fees for that service, while a Water Conservation District (Water Code Section 75500 et seq.) can levy groundwater extraction fees. Through special acts of the California Legislature, 13 local agencies have been granted greater authority to manage groundwater. Most of these agencies, formed since 1980, have the authority to limit export and control some in-basin extraction upon evidence of overdraft or the threat of an overdraft condition. These agencies can also generally levy fees for groundwater management activities and for water supply replenishment.

2.2.7 Assembly Bill 3030 – Groundwater Management Act

In 1992, Assembly Bill 3030 was passed, which increased the number of local agencies authorized to develop a groundwater management plan and set forth a common framework for management by local agencies throughout California. These agencies could possess the same authority as a water replenishment district to “fix and collect

fees and assessments for groundwater management” (Water Code Section 10754), provided they receive a majority of votes in favor of the proposal in a local election (Water Code Section 10754.3).

2.3 Regional

2.3.1 San Diego Regional Water Quality Control Board

As previously detailed, the Project site is located within the jurisdiction of the San Diego RWQCB. The San Diego RWQCB authorizes NPDES permits that ensure compliance with wastewater treatment and discharge requirements. The San Diego RWQCB enforces wastewater treatment and discharge requirements for properties near and surrounding the Project site.

2.3.2 Municipal Separate Storm Sewer System Permit

The County of San Diego (County) and its copermittee cities, including the City of Santee, have a joint Municipal Separate Storm Sewer System NPDES permit (MS4 Permit) (Permit Order No. R9-2013-0001, NPDES Permit No. CAS0109266) that was amended by Order Nos. R9-2015-0001 (adopted February 11, 2015) and R9-2015-0100 (adopted November 18, 2015). The MS4 Permit is intended to implement BMPs to reduce pollutants in stormwater discharges to the maximum extent practicable. The permittees listed under the joint permit have the authority to develop, administer, implement, and enforce stormwater management programs within their own jurisdiction.

Urban stormwater runoff is defined in the MS4 Permit as including stormwater and dry weather flows from a drainage area that reaches a receiving water body or subsurface. The permit regulates the discharge of all wet- and dry-weather urban stormwater runoff within the County and the jurisdictions of its copermittees. Pursuant to Provision B of Order No. R9-2013-0001, as amended, the copermittees must develop a water quality improvement plan for each of the watershed management areas in the San Diego Region. The water quality improvement plans guide the copermittees’ jurisdictional runoff management programs toward achieving improved water quality in MS4 discharges and receiving waters.

2.3.3 County of San Diego Watershed Protection, Stormwater Management, and Discharge Control Ordinance (Effective February 26, 2016)

In order to protect water resources and to improve water quality, the County developed a Watershed Protection Program that would provide controls on the stormwater conveyance system and protect receiving waters. Other purposes of the program are to enable the use of management practices by the County and its citizens that will reduce the adverse effects of non-stormwater and polluted stormwater discharges to the stormwater conveyance system and receiving waters; to secure benefits from the use of stormwater as a resource; and to ensure the County is compliant with applicable state and federal law and California RWQCB Order No. R9-2013-0001, NPDES No. CAS0109266 as amended by Order Nos. R9-2015-0001 and R9-2015-0100. The County prepared the 2020 BMP Design Manual, which provides guidance for land development and public improvement projects to comply with the 2013 MS4 Permit (Order No. R9-2013-0001 as amended by Order Nos. R9-2015-0001 and R9-2015-0100). The BMP Design Manual provides guidance for the implementation of stormwater quality control measures in new

development and redevelopment projects in unincorporated areas of the County with the intention of improving water quality and mitigating potential water quality impacts from stormwater and non-stormwater discharges.

2.4 Local

2.4.1 Santee Municipal Code – Stormwater

Chapter 9.06 of the City of Santee Municipal Code provides the stormwater management and discharge control requirements for new development and redevelopment projects in the City. Projects are required to implement BMPs for both operation and construction activities. Illicit discharges and illicit connections are prohibited as well as spills, dumping, or disposal of any solid or liquid waste including any pollutant as defined in Section 502(6) of the CWA, 33 USC Section 1362(6), or incorporated into California Water Code Section 13373.

3 Impact Analysis

Water Quality Standards and Waste Discharge Requirements

Construction

The proposed Project would involve earthwork activities and soil disturbance over the course of construction that could expose soils to the effects of wind and water erosion and sedimentation and other pollutants associated with construction activity could be released from accidental spills or unauthorized releases. Standard construction management practices, as required through the City and the statewide NPDES Construction General Permit, would minimize construction-related impacts on water quality. The Construction General Permit would require implementation of a SWPPP to address potential construction-related impacts on water quality. The SWPPP must specify the location, type, and maintenance requirements for BMPs necessary to prevent stormwater runoff from carrying construction-related pollutants into the City’s municipal storm drain system.

The standard requirements contained in a SWPPP are sufficient to minimize the Project’s potential to violate water quality standards or waste discharge requirements during construction. Therefore, construction-related impacts of the Project on water quality would be less than significant.

Operation

Redevelopment of the Project site would involve changes to existing drainage patterns and would result in an increase in impervious surfaces from 45.7% to 77%. As a result, the proposed changes to the site use could become a source of pollution from incidental spills of vehicle oils and other pollutants that can be conveyed by storm and landscape irrigation flows. However, all proposed improvements would be required to adhere to existing drainage control requirements including the MS4 NPDES permit and the City’s drainage control requirements (Municipal Code Chapter 9.06). Prior to issuance of a building permit, the Project applicant would be required to submit drainage control plans to the City for review and approval. As part of these requirements, the plans would identify post-construction BMPs that are consistent with Low Impact Development requirements and meet all applicable MS4 and City requirements. The proposed Project would include a total of 8 biofiltration basins and use of the existing earthen swale to manage stormwater runoff. These post-construction BMPs would meet the City’s requirements and would be consistent with the County’s 2020 BMP Design Manual. Adherence to these drainage

control requirements would be adequate to protect the water quality of stormwater discharged off site. Therefore, compliance with these existing regulatory requirements for drainage control design measures would reduce potential impacts related to water quality standards and waste discharge requirements to a less-than-significant level.

Groundwater Supplies

There are no groundwater extraction wells currently on the Project site and no extraction wells are proposed as part of the Project. The underlying groundwater basin, San Diego River Valley Groundwater Basin, is considered by the Department of Water Resources to be a low priority basin and not subject to the requirements of SGMA.

The proposed Project may require dewatering activities during construction due to reported groundwater levels at 14.5 feet below ground surface during the geotechnical investigation (Group Delta 2022). However, even if considered necessary for completion of construction for foundations or utility corridors, the dewatering would be temporary and likely involve only relatively small quantities of groundwater.

The proposed Project would be served by the Padre Dam Municipal Water District that sources the majority of its water from SDCWA. SDCWA obtains its water from imported surface waters (California State Water Project water and Colorado River water) and desalinated water from the Carlsbad Desalination Plant. Groundwater is only used to supplement the recycled water system (Carollo Engineers 2021). In addition, according to the 2020 UWMP, the Padre Dam Municipal Water District can meet projected water demands out to 2045 under normal, single dry year, and multiple (5) year scenarios (Carollo Engineers 2021).

Therefore, while the Project would increase the water demand at the site, the proposed Project would not contribute to depletion of groundwater or interfere with recharge of a managed groundwater supply source. Impacts would be less than significant.

Flooding and Water Quality

As noted above, the proposed Project would result in an increase in the amount of impervious surfaces at the site that could increase off-site discharges if not managed appropriately. However, in accordance with MS4 Permit requirements and local City drainage control requirements, all runoff from the Project would be required to include post-construction drainage control BMPs that can attenuate peak stormwater flows from the site (Attachment A and Attachment B). The proposed Project would include 8 biofiltration basins to provide both water quality and flow attenuation consistent with the City requirements. Therefore, with adherence to the MS4 Permit and local City drainage control requirements (Municipal Code Chapter 9.06), the proposed changes to drainage patterns would not result in on- or off-site flooding or other adverse effects related to stormwater quantity or quality. There would also be no other sources of polluted runoff that are not already discussed above.

The Project site is not located in a flood hazard zone (FEMA 2024), and is therefore not at threat for impeding or redirecting flood flows.

Overall, the Project would adhere to the existing drainage control regulatory requirements of the NPDES MS4 Permit and City drainage control requirements such that the proposed changes in drainage patterns would have a less-than-significant impact related to erosion/siltation, flooding, capacities of existing infrastructure, or impeding or redirecting flood flows.

4 Conclusion

As described above, the proposed improvements would adhere to existing stormwater drainage control requirements (e.g., NPDES MS4 Permit and City Municipal Code Chapter 9.06) and provide on-site treatment and detention of stormwater flows compared to existing conditions that can reduce impacts to less-than-significant levels. Water supply is primarily sourced from imported water and very little groundwater; however, even so, according to the current UWMP, the proposed water demand for the projected future can be met in normal, single dry year, and multiple dry year scenarios until 2045.

5 References

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Attachment A

Drainage Study for Santee Community Center, Psomas,
February 2025

**DRAINAGE STUDY
FOR
SANTEE COMMUNITY CENTER**

**10129 Riverwalk Drive
Santee, CA 92071**

February 2025

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- C. Storm Drain Sizing**

1.0 Project Data

Table 1 - Project Data

<i>Project Name/Number</i>	Santee Community Center
<i>Project Location</i>	10129 Riverwalk Drive Santee, CA 92071
<i>Project Type and Description</i>	Santee Community and parking lot
<i>Total Project Site Area (acres)</i>	2.31 acres
<i>Total New Impervious Surface Area</i>	47,063 square feet
<i>Total Replaced Impervious Surface Area</i>	64,220 square feet
<i>Total Pre-Project Impervious Surface Area</i>	64,220 square feet (45.7%)
<i>Total Post-Project Impervious Surface Area</i>	111,283 square feet (77.1%)
<i>Net Impervious Area</i>	47,063 square feet (increase)
<i>Design Storm Frequency and Depth</i>	2.5 inches (100-year, 6-hour) 5.0 inches (100-year, 24-hour)

1.0 Project Data

Table 1 - Project Data

<i>Project Name/Number</i>	Santee Community Center
<i>Project Location</i>	10129 Riverwalk Drive Santee, CA 92071
<i>Project Type and Description</i>	Santee Community and parking lot
<i>Total Project Site Area (acres)</i>	2.31 acres
<i>Total New Impervious Surface Area</i>	47,063 square feet
<i>Total Replaced Impervious Surface Area</i>	64,220 square feet
<i>Total Pre-Project Impervious Surface Area</i>	64,220 square feet (45.7%)
<i>Total Post-Project Impervious Surface Area</i>	111,283 square feet (77.1%)
<i>Net Impervious Area</i>	47,063 square feet (increase)
<i>Design Storm Frequency and Depth</i>	2.5 inches (100-year, 6-hour) 5.0 inches (100-year, 24-hour)

2.0 Engineer's Declaration Statement

I, Sarah Curran, as the Engineer of Record, hereby take responsible charge for the information included within this Drainage Report. I declare that this report has been prepared in accordance with the applicable City of Santee standards and regulations.



Sarah Curran, PE RCE #C69620



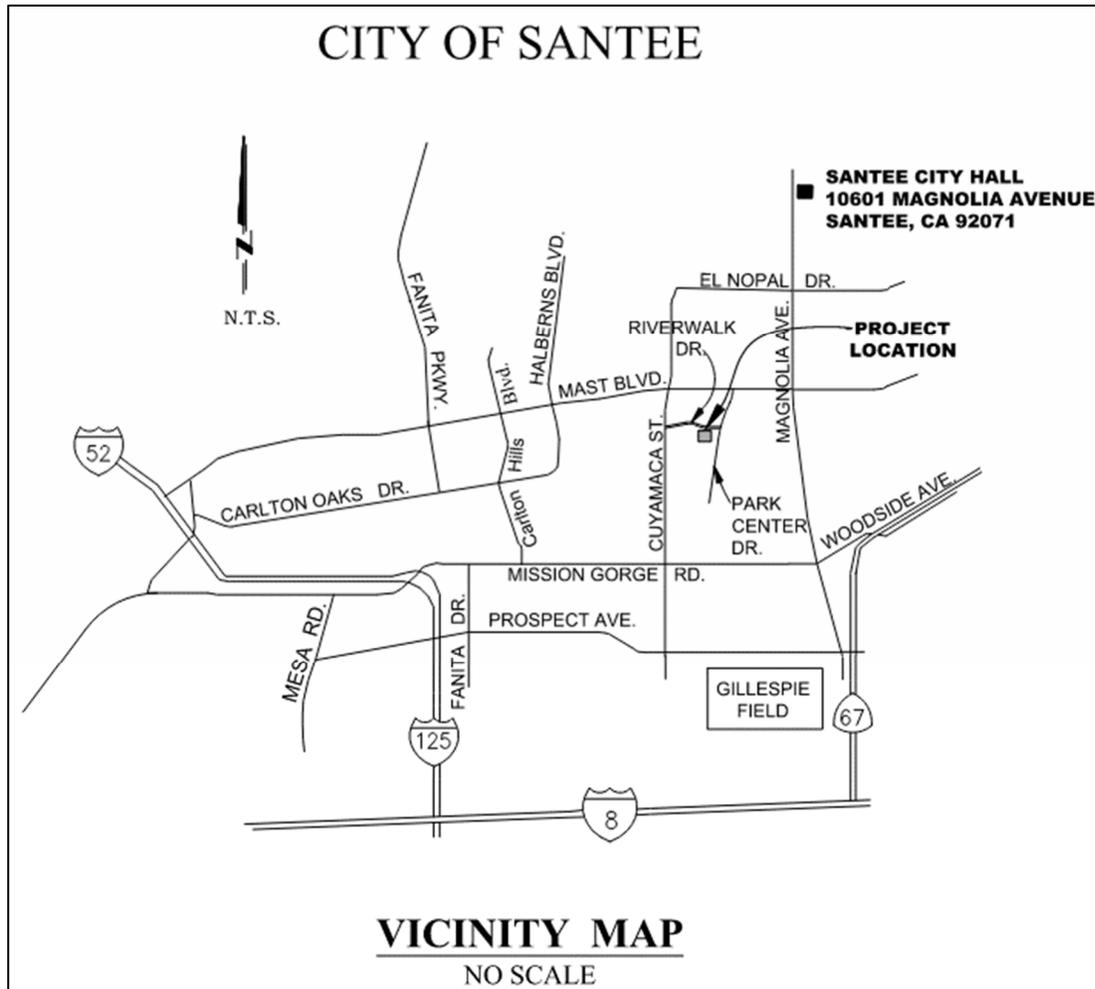
3.0 Setting

3.1 Project Description and Location

This project proposes a new community center to be constructed on City-owned property in the Santee Town Center Community Park adjacent to an existing City-owned YMCA facility located at 10123 Riverwalk Drive. The project will include dedicated facilities for teens and seniors, lobby space, multi-purpose rooms, administrative offices and storage, occupying approximately 12,500 square feet as well as a new parking lot to be located just north of the existing YMCA facility. The project's site improvements will include complimentary drought tolerant landscape architecture, storm water compliance, environmental documentation, realignment of adjacent parking facilities and replacement of displaced parking and accessibility compatibility with adjacent features.

The vicinity map for the project site is illustrated in Figure 1.

Figure 1-Project Vicinity Map



4.0 Hydrologic Method and Criteria

4.1 Existing Conditions and Drainage

The site currently consists of a parking lot and landscape area along the southern portion of the site. Existing drainage is conveyed via surface flow through the project site from the northwest end of the parking lot to the south. Runoff is then conveyed via two existing earthen swales then discharged into Woodglen Vista Creek and ultimately flows to the San Diego River.

The site of the new parking lot currently consists of a grass area that drains to three existing grate inlets that convey the drainage via storm drain pipe to the west then discharges into Woodglen Vista Creek.

4.2 Proposed Site Layout, Grading, and Drainage

The proposed site features one building and two covered outdoor event spaces. The project will also redesign a portion of the existing parking lot and create a new parking lot to replace the displaced parking. The site has drainage inlets in the landscaped areas and area drains in the plazas. There are three biofiltration basins located along the southern edge of the site. Drainage of the site is conveyed via catch basins and roof drainage is piped to the biofiltration basins and will then discharge into Woodglen Vista Creek. From the creek, the water will flow to the San Diego River. Offsite flows from the northern portion of the existing parking lot will be intercepted by a new cross gutter at the north end of the project site and conveyed to the existing earthen swale, bypassing the proposed treatment basins, and ultimately discharging into Woodglen Vista Creek similarly to the pre-development condition.

The drainage for the new parking lot is conveyed via surface flow to three biofiltration basins located in the landscaped areas of the parking lot. This drainage will then discharge into Woodglen Vista Creek and ultimately flow to the San Diego River.

The site has been evaluated for flooding risk using the FEMA Flood Insurance Rate Map (Panel 1651G) provided within the Maps section of this report. The site is within Zone X, which encompasses areas outside of the 0.2% annual chance floodplain. The area south of the site within Woodglen Vista Creek falls within the Zone AE which includes areas that are subject to the 1% annual chance of flood and have base flood elevations determined. For this area directly south of the site, the base flood elevation is determined to be approximately 339 feet. The finish floor of the proposed Community Center building is set at 350.5 feet, which lies above the required 1' increase above the base flood elevation.

4.3 Rational Method Analysis

The proposed hydrology was modeled using the San Diego County Hydrology Manual Rational Method. The Rational Method formula estimates the peak rate of runoff at any location in a watershed as a function of the drainage area (A), runoff coefficient (C), and rainfall intensity (I) for a duration equal to the time of concentration (Tc), expressed as follows:

$$Q = C I A$$

Where:

Q = peak discharge, in cubic feet per second (cfs)

C = runoff coefficient, proportion of the rainfall that runs off the surface (no units)

I = average rainfall intensity for a duration equal to the Tc for the area, in inches per hour (Note: If the computed Tc is less than 5 minutes, use 5 minutes for computing the peak discharge, Q)

A = drainage area contributing to the design location, in acres

In accordance with the manual, calculations consist of both the 100-year return period, 24-hour duration storm and the 100-year, 6-hour duration storm, applying a Type II storm. According to the isopluvial maps the 100-year, 24-hour rainfall depth for Santee, CA is 5.0 inches; and the depth of the 6-hour storm is 2.5 inches. The runoff coefficients were determined based on the soil type of the native soil, and the percent impervious according to equation:

$$C = 0.90 \times (\% \text{ Impervious}) + C_p \times (1 - \% \text{ Impervious})$$

Where: C_p = Pervious Coefficient Runoff Value for the soil type $C = 0.30$ in/hr

5.0 Hydrologic Results

The 100-year, 6-hour peak flow rates for the pre-project and post-project conditions based on the Rational Method results are provided in Table 4.1. The project area is approximately 4.02 acres.

Table 4.1 – Summary of Existing and Proposed Peak Discharge Rates

Drainage Basin ID	Existing Condition		Proposed Condition	
	Area (acres)	100-yr, 6-hr Peak Flow Rate (cfs)	Area (acres)	100-yr, 6-hr Peak Flow Rate (cfs)
Basin 1A	3.78	18.4	2.00	10.1
Basin 1B			0.61	3.2
Basin 1C			0.17	0.8
Basin 1D			0.38	1.9
Basin 1E			0.46	2.5
Basin 1F			0.16	0.8
Basin 2A	1.39	4.0	0.40	1.9
Basin 2B			0.28	1.6
Basin 2C			0.71	3.4

The peak run-off calculations provided within Appendix A and B demonstrate that unmitigated run-off rates are increased in the proposed condition, as compared to the existing condition. This is a result of increases in impervious area runoff. The project specific SWQMP includes the hydromodification design of permanent storm water management BMPs that are intended to mitigate for the increase in run-off, consistent with the City of Santee BMP Design Manual.

6.0 Hydraulic Methodology and Criteria

6.1 Criteria

Hydraulic calculations were performed in conformance with the San Diego County Hydraulic Design Manual, dated September 2014 and the City of Santee's Public Works Standards, dated September 1982.

6.2 Storm Drain Design

Pipe sizes were calculated using Manning's equation, with an additional 30% sizing factor to account for losses. The major proposed storm drains will be constructed of reinforced concrete pipe (RCP) and the area drains will be constructed using polyvinyl chloride (PVC). The Manning's roughness coefficient "n" used for the hydraulic calculations for RCP/PVC is 0.013. The Manning's Equation calculation spreadsheet that was used for the pipe sizing is located in Appendix C.

6.3 Energy Dissipater Design

Energy dissipaters (i.e. riprap) at the storm drain outfalls will be specified using the San Diego Regional Standard Drawings ("D" Series) drawing number D-40, which provides rock classifications for design velocities entering riprap outfalls.

7.0 Hydraulic Results

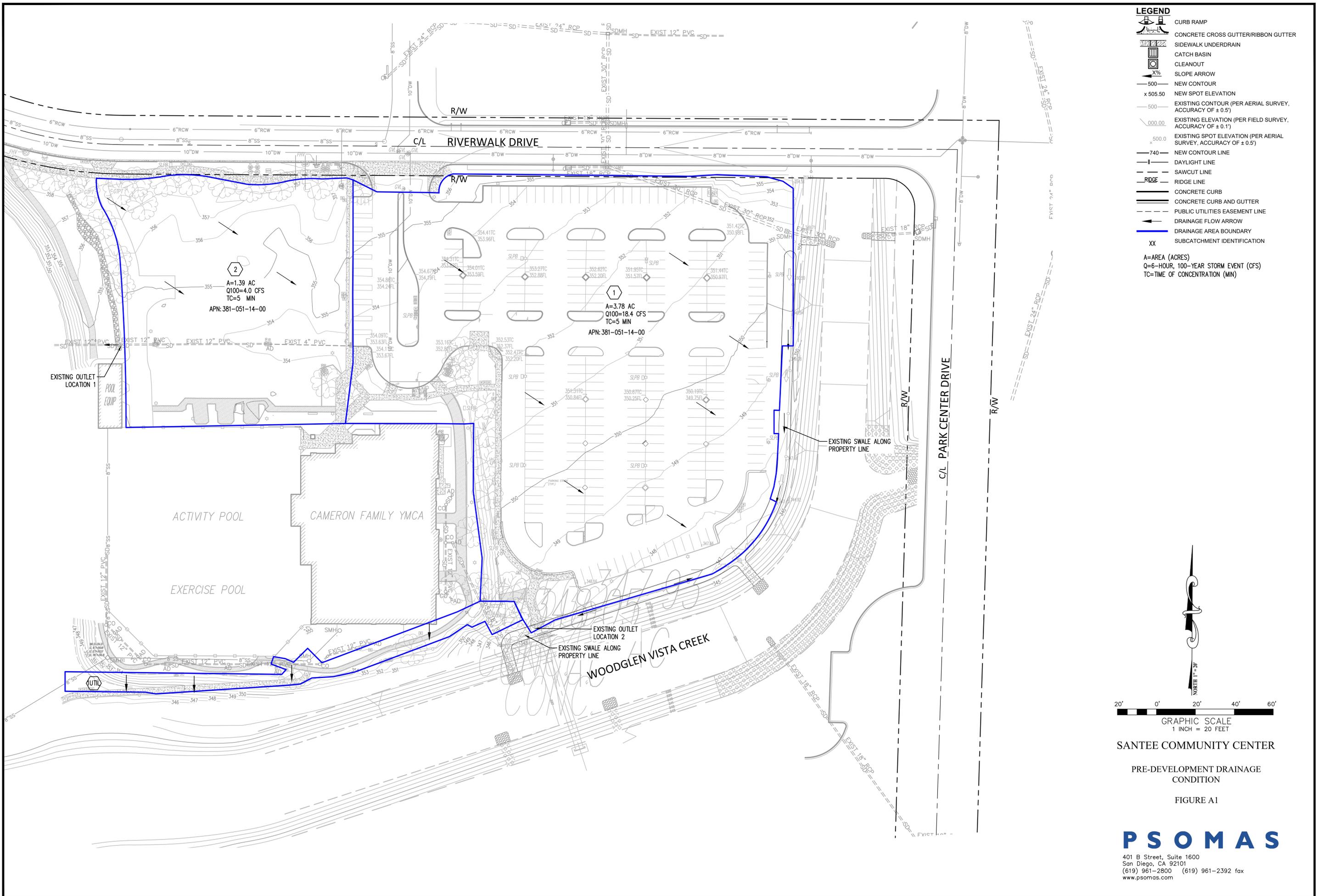
7.1 Storm Drain Results

See storm drain pipe sizing calculations in Appendix C.

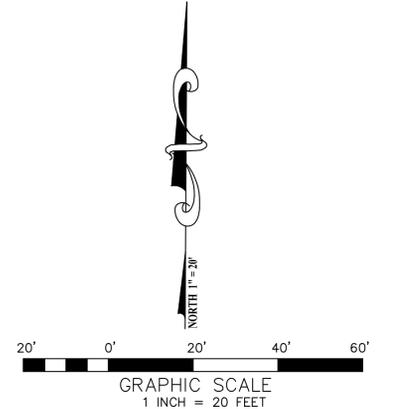
8.0 Conclusion

The design of the stormwater control measures, and other stormwater pollution control are in accordance with the current edition of the San Diego County Project Clean Water's Stormwater Technical Guide and the California Stormwater Quality Association (CASQA).

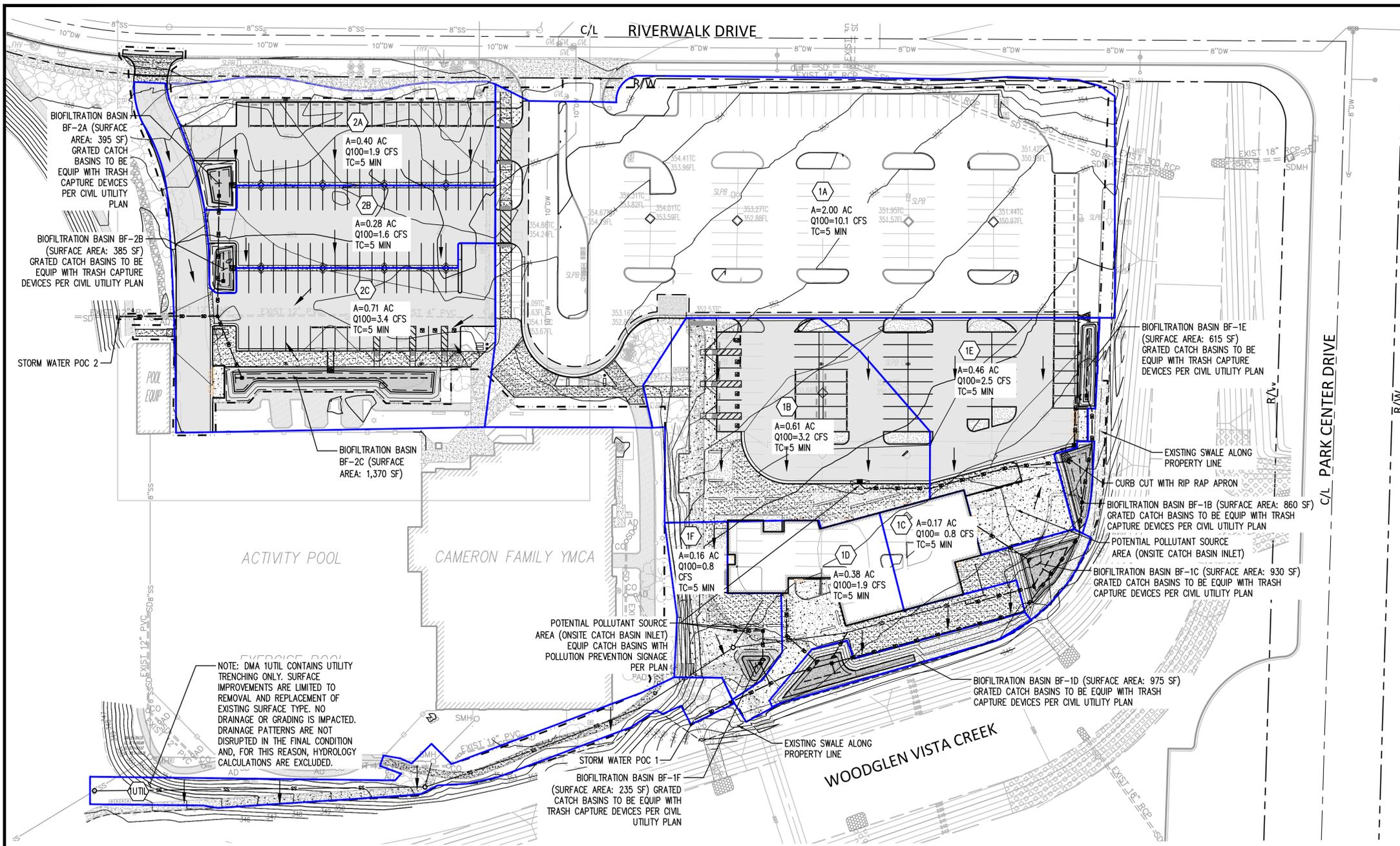
MAPS



- LEGEND**
- CURB RAMP
 - CONCRETE CROSS GUTTER/RIBBON GUTTER
 - SIDEWALK UNDERDRAIN
 - CATCH BASIN
 - CLEANOUT
 - SLOPE ARROW
 - NEW CONTOUR
 - NEW SPOT ELEVATION
 - EXISTING CONTOUR (PER AERIAL SURVEY, ACCURACY OF ± 0.5')
 - EXISTING ELEVATION (PER FIELD SURVEY, ACCURACY OF ± 0.1')
 - EXISTING SPOT ELEVATION (PER AERIAL SURVEY, ACCURACY OF ± 0.5')
 - NEW CONTOUR LINE
 - DAYLIGHT LINE
 - SAWCUT LINE
 - RIDGE LINE
 - CONCRETE CURB
 - CONCRETE CURB AND GUTTER
 - PUBLIC UTILITIES EASEMENT LINE
 - DRAINAGE FLOW ARROW
 - DRAINAGE AREA BOUNDARY
 - SUBCATCHMENT IDENTIFICATION
- A=AREA (ACRES)
 Q=6-HOUR, 100-YEAR STORM EVENT (CFS)
 TC=TIME OF CONCENTRATION (MIN)



SANTEE COMMUNITY CENTER
 PRE-DEVELOPMENT DRAINAGE
 CONDITION
 FIGURE A1



LEGEND

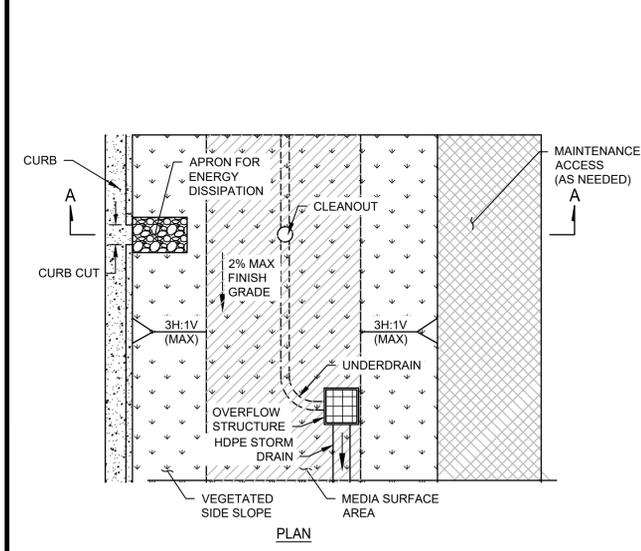
- CURB RAMP
- CONCRETE CROSS GUTTER/RIBBON GUTTER
- SIDEWALK UNDERDRAIN
- CATCH BASIN
- CLEANOUT
- SLOPE ARROW
- NEW CONTOUR
- NEW SPOT ELEVATION
- EXISTING CONTOUR (PER AERIAL SURVEY, ACCURACY OF ± 0.5')
- EXISTING ELEVATION (PER FIELD SURVEY, ACCURACY OF ± 0.1')
- EXISTING SPOT ELEVATION (PER AERIAL SURVEY, ACCURACY OF ± 0.5')
- NEW CONTOUR LINE
- DAYLIGHT LINE
- SAWCUT LINE
- RIDGE LINE
- CONCRETE CURB
- CONCRETE CURB AND GUTTER
- PUBLIC UTILITIES EASEMENT LINE
- DRAINAGE AREA BOUNDARY
- SUBCATCHMENT IDENTIFICATION

1B
 A=AREA (ACRES)
 Q=6-HOUR, 100-YEAR STORM EVENT (CFS)
 TC=TIME OF CONCENTRATION (MIN)

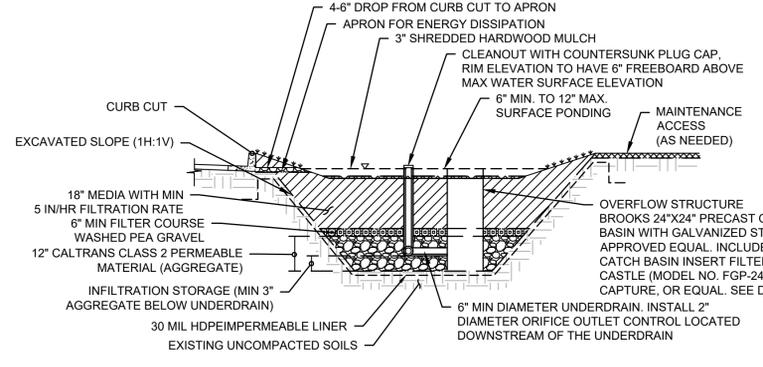
- GENERAL NOTES:**
- HYDRAULIC SOIL GROUP = C
 - APPROXIMATE DEPTH TO GROUND WATER = 14.5 - 16.1 FT BELOW EXISTING SURFACE
 - NO EXISTING NATURAL HYDROLOGIC FEATURES EXIST WITHIN THE PROJECT LIMITS.
 - THERE ARE NO POTENTIAL CRITICAL COURSE SEDIMENT YIELD AREAS LOCATED WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS.
 - THE CITY OF SANTEE, AS THE PROJECT OWNER, IS RESPONSIBLE FOR THE MAINTENANCE OF PROPOSED BMPs, INCLUDING BIOFILTRATION BASINS AND TRASH CAPTURE DEVICES.

DMA DATA TABLE		
DMA TITLE	TRIBUTARY SIZE (AC)	DRAINS TO
1A	2.00	EXISTING POINT OF DISCHARGE (NO IMPROVEMENTS PROPOSED)
1B	0.61	BF-1B
1C	0.17	BF-1C
1D	0.38	BF-1D
1E	0.46	BF-1E
1F	0.16	BF-1F
2A	0.40	BF-2A
2B	0.28	BF-2B
2C	0.71	BF-2C
1UTIL	0.22	NATURAL SURFACE FLOW PRESERVED

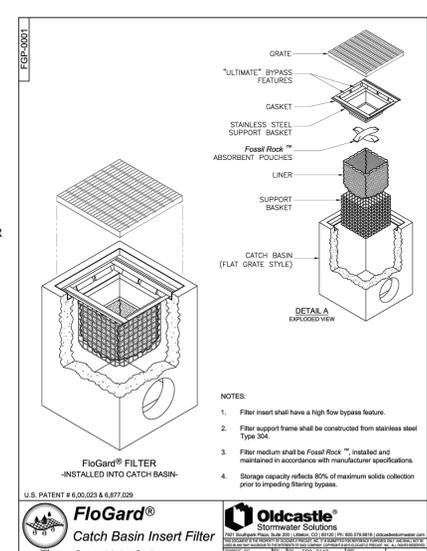
NOTE: DMA 1UTIL CONTAINS UTILITY TRENCHING ONLY. SURFACE IMPROVEMENTS ARE LIMITED TO REMOVAL AND REPLACEMENT OF EXISTING SURFACE TYPE. NO DRAINAGE OR GRADING IS IMPACTED. DRAINAGE PATTERNS ARE NOT DISRUPTED IN THE FINAL CONDITION AND, FOR THIS REASON, HYDROLOGY CALCULATIONS ARE EXCLUDED.



FOR REFERENCE ONLY
BIOFILTRATION BASIN DETAIL
 N.T.S.



- BIOFILTRATION PROTECTION DURING CONSTRUCTION:**
- PREVENT OVER-COMPACTION OF NATIVE SOILS IN AREAS OF THE BASIN WHERE INFILTRATION WILL OCCUR. DELINEATE THE BIOFILTRATION AREA AND KEEP CONSTRUCTION TRAFFIC OFF. PROTECT SOILS WITH FENCING, PLYWOOD, ETC.
 - PROVIDE EROSION CONTROL IN THE CONTRIBUTING DRAINAGE AREAS OF THE DESIGNATED BIOFILTRATION AREA. STABILIZE UPSLOPE AREAS.
 - DRAINAGE SHOULD BE DIRECTED AWAY FROM BIORETENTION FACILITIES UNTIL UPSLOPE AREAS ARE STABILIZED. THE CONCENTRATION OF FINES COULD PREVENT POST-CONSTRUCTION INFILTRATION AND CAUSE DESIGN FAILURE.
 - IF DRAINAGE IS TO BE ALLOWED THROUGH THE FACILITY DURING CONSTRUCTION LEAVE OR BACKFILL AT LEAST 6 INCHES ABOVE THE FINAL GRADE. TEMPORARILY COVER THE UNDERDRAIN WITH PLASTIC OR FABRIC. LINE OR MULCH THE BIOFILTRATION AREA.
 - BIORETENTION FACILITIES SHOULD REMAIN OUTSIDE THE LIMIT OF DISTURBANCE TO PREVENT SOIL COMPACTION BY HEAVY EQUIPMENT. PROTECT BIORETENTION AREAS WITH SILT FENCE AND CONSTRUCTION FENCING.
 - VERIFY INSTALLATION OF UNDERDRAIN IS CORRECT PRIOR TO PLACING SOIL.

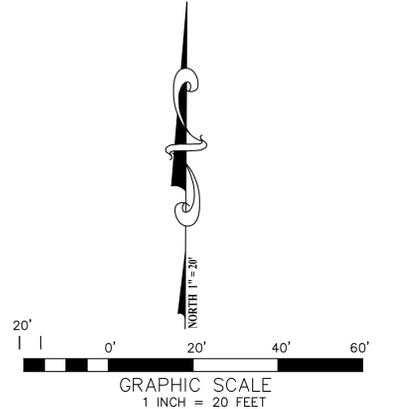


FloGard® FILTER
 -INSTALLED INTO CATCH BASIN-
 N.T.S.

SPECIFIER CHART

MODEL NO.	STANDARD & SHALLOW			STANDARD DEPTH			SHALLOW DEPTH		
	INLET DIAMETER (IN)	GRATE SIZE (IN)	TOTAL STORAGE CAPACITY (GAL)	INLET DIAMETER (IN)	GRATE SIZE (IN)	TOTAL STORAGE CAPACITY (GAL)	INLET DIAMETER (IN)	GRATE SIZE (IN)	TOTAL STORAGE CAPACITY (GAL)
FGP-12P	12 X 12	12 X 12	2.5	12	12	10	12	12	10
FGP-15P	15 X 15	15 X 15	4.7	15	15	18	15	15	18
FGP-18P	18 X 18	18 X 18	8.2	18	18	32	18	18	32
FGP-24P	24 X 24	24 X 24	15.0	24	24	60	24	24	60
FGP-30P	30 X 30	30 X 30	22.5	30	30	90	30	30	90
FGP-36P	36 X 36	36 X 36	30.0	36	36	120	36	36	120
FGP-42P	42 X 42	42 X 42	37.5	42	42	150	42	42	150
FGP-48P	48 X 48	48 X 48	45.0	48	48	180	48	48	180
FGP-54P	54 X 54	54 X 54	52.5	54	54	210	54	54	210
FGP-60P	60 X 60	60 X 60	60.0	60	60	240	60	60	240

FOR REFERENCE ONLY
FLOGARD CATCH BASIN INSERT FILTER
 N.T.S.



GRAPHIC SCALE
 1 INCH = 20 FEET
SANTEE COMMUNITY CENTER
 POST-DEVELOPMENT DRAINAGE
 CONDITION
 FIGURE A2

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the **Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations** tables contained within the **Flood Insurance Study (FIS)** report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) Zone 11. The horizontal datum was NAD83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSIMC-3 #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at <http://www.ngs.noaa.gov/>.

Base map information shown on this FIRM was provided in digital format by the USDA National Agriculture Imagery Program (NAIP). This information was photogrammetrically compiled at a scale of 1:24,000 from aerial photography dated 2009.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

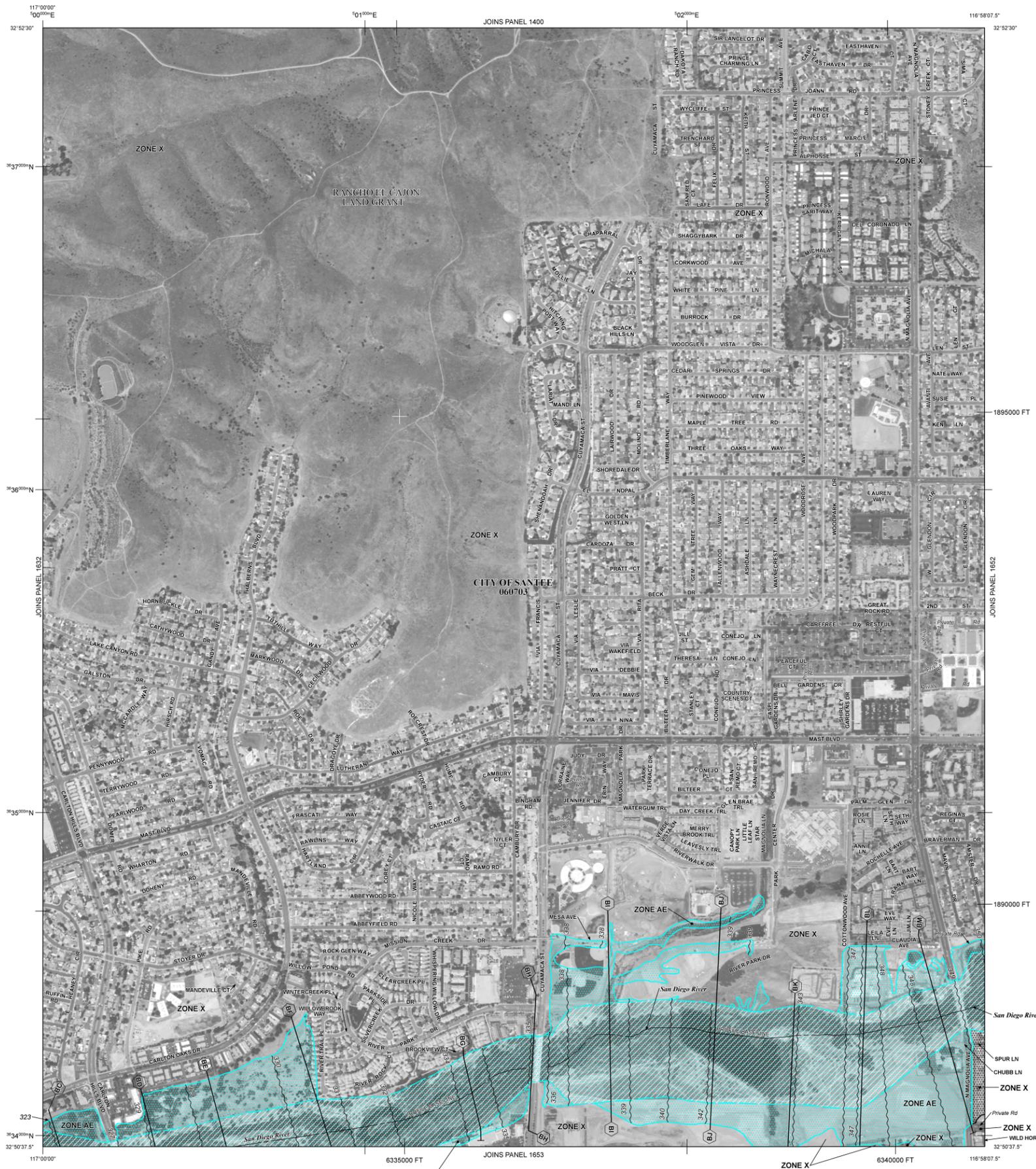
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a listing of communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-877-FEMA MAP (1-877-336-2627) for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://msc.fema.gov/>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/businessinfo/>.

The **"profile base lines"** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the "profile base line", in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently determined. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

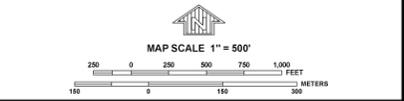
- OTHER FLOOD AREAS**
- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- OTHER AREAS**
- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**
- OTHERWISE PROTECTED AREAS (OPAs)**

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
- Base Flood Elevation line and value; elevation in feet*
- Base Flood Elevation value where uniform within zone; elevation in feet* (EL 987)

- * Referenced to the North American Vertical Datum of 1988
- A — A — Cross section line
- 23 — 23 — Transsect line
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 47°07'30" 32°22'30"
- 6000000 FT
- DX5510_x
- M1.5 River Mile
- MAP REPOSITORIES**
- Refer to Map Repositories list on Map Index
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP**
- June 19, 1997
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL**
- May 16, 2012 - to update corporate limits, to add roads and road names, to incorporate previously issued Letters of Map Revision, and to update map elevations to North American Vertical Datum of 1988.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1651G

FIRM
FLOOD INSURANCE RATE MAP
SAN DIEGO COUNTY,
CALIFORNIA
AND INCORPORATED AREAS

PANEL 1651 OF 2375
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
SANTEE, CITY OF 060703 1651 G

Note to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
060703C1651G
MAP REVISED
MAY 16, 2012

Federal Emergency Management Agency

APPENDIX A

PSOMAS401 B STREET, SUITE 1600
SAN DIEGO, CA 92101**SANTEE CC**PSOMAS#: 5HMC010100
CALCULATED BY: JM

Precipitation (in.)

	100-year Storm
6hr P	2.5
24hr P	5
Adjusted 6hr P	N/A
Between 45% to 65%?	50.00%

100 YEAR - EXISTING CONDITION

DRAINAGE AREA	DEVELOPMENT	A (ACRES)	% OF TOTAL ACREAGE	C	Tc***	*I50 (IN/HR)	Q** (CFS)	REMARKS
THE FOLLOWING HYDROLOGIC CALCULATIONS DONE PER METHODS DESCRIBED IN THE CITY OF SAN DIEGO DRAINAGE DESIGN MANUAL								
Watershed 1								
1	71% IMPERVIOUS	3.78	73.11%	0.74	5.0	6.6	18.4	
Watershed 2								
2	16% IMPERVIOUS	1.39	26.89%	0.44	5.0	6.6	4.0	
TOTAL		5.17					22.5	

* Intensities are based on the equation from the San Diego County - Hydrology Manual (2004) , Figure 3-1 where:

$$I(t) = 7.44 * P6 * D^{-0.645}$$

**Q based on the rational method equation from the San Diego County - Hydrology Manual (2004) and expressed as:

$$Q = C * I * A$$

**Time of Concentration (Tc) is based on the nomograph on San Diego County - Hydrology Manual (2004), Figure 3-4 .

APPENDIX B

PSOMAS401 B STREET, SUITE 1600
SAN DIEGO, CA 92101**SANTEE CC**PSOMAS#: 5HMC010100
CALCULATED BY: JM

Precipitation (in.)

	100-year Storm
6hr P	2.5
24hr P	5
Adjusted 6hr P	N/A
Between 45% to 65%?	50.00%

100 YEAR - PROPOSED CONDITION

DRAINAGE AREA	DEVELOPMENT	A (ACRES)	% OF TOTAL ACREAGE	C	Tc***	*I50 (IN/HR)	Q** (CFS)	REMARKS
THE FOLLOWING HYDROLOGIC CALCULATIONS DONE PER METHODS DESCRIBED IN THE CITY OF SAN DIEGO DRAINAGE DESIGN MANUAL								
Watershed 1								
1A	79% IMPERVIOUS	2.00	38.68%	0.77	5.0	6.6	10.1	
1B	83% IMPERVIOUS	0.61	11.80%	0.80	5.0	6.6	3.2	
1C	70% IMPERVIOUS	0.17	3.29%	0.72	5.0	6.6	0.8	
1D	79% IMPERVIOUS	0.38	135.71%	0.77	5.0	6.6	1.9	
1E	90% IMPERVIOUS	0.46	64.79%	0.84	5.0	6.6	2.5	
1F	71% IMPERVIOUS	0.16	3.09%	0.73	5.0	6.6	0.8	
Watershed 2								
2A	72% IMPERVIOUS	0.40	7.74%	0.73	5.0	6.6	1.9	
2B	94% IMPERVIOUS	0.28	5.42%	0.86	5.0	6.6	1.6	
2C	71% IMPERVIOUS	0.71	13.73%	0.73	5.0	6.6	3.4	
TOTAL		5.17					26.3	

* Intensities are based on the equation from the San Diego County - Hydrology Manual (2004) , Figure 3-1 where:

$$I(t) = 7.44 * P6 * D^{-0.645}$$

**Q based on the rational method equation from the San Diego County - Hydrology Manual (2004) and expressed as:

$$Q = C * I * A$$

***Time of Concentration (Tc) is based on the nomograph on San Diego County - Hydrology Manual (2004), Figure 3-4 .

APPENDIX C

STORM DRAIN LATERALS
 PIPE FLOW - DMA 1A CALCULATIONS

5/31/2023
 2BEN010100

LATERAL STATION	SD LINE "A"
FLOW REGIME	FULL
DESIGN FLOW "Q100" (cfs)	9.80 cfs
PIPE DIAMETER "d" (inches)	18"
PIPE MATERIAL	HDPE
MANNINGS "n" VALUE	0.012
PIPE SLOPE "S" (feet/feet)	0.0100
FRICTION SLOPE "S_f" (feet/feet)	0.0100
DEPTH OF FLOW "D" (feet)	1.50'
FLOW AREA "A" (square feet)	1.77 sf
WETTED PERIMETER "P"	4.71'
HYDRAULIC RADIUS "R" (A/P)	0.38'
FLOW TOP WIDTH, T (feet)	0.00'
FLOW VELOCITY "V" (feet/second)	6.44 fps
VELOCITY HEAD (V²/2G) (feet)	0.64'
SPECIFIC ENERGY (D+ V²/2G) (lb-ft/lb)	2.14'
FLOW CAPACITY DEPTH RATIO "D/d"	1.00
PIPE FLOW CAPACITY (cfs)	11.38 cfs

STORM DRAIN LATERALS
PIPE FLOW - DMA 2 CALCULATIONS

5/31/2023
2BEN010100

LATERAL STATION	SD LATERAL "B-1"	SD LATERAL "B-2"	SD LATERAL "B-3"
FLOW REGIME	NORMAL	NORMAL	NORMAL
DESIGN FLOW "Q100" (cfs)	2.00 cfs	3.40 cfs	3.70 cfs
PIPE DIAMETER "d" (inches)	10"	12"	12"
PIPE MATERIAL	PVC	PVC	PVC
MANNINGS "n" VALUE	0.009	0.009	0.009
PIPE SLOPE "S" (feet/feet)	0.0100	0.0100	0.0100
FRICTION SLOPE "S_f" (feet/feet)	0.0100	0.0100	0.0100
DEPTH OF FLOW "D" (feet)	0.83'	1.00'	1.00'
FLOW AREA "A" (square feet)	0.55 sf	0.79 sf	0.79 sf
WETTED PERIMETER "P"	2.58'	3.14'	3.14'
HYDRAULIC RADIUS "R" (A/P)	0.21'	0.25'	0.25'
FLOW TOP WIDTH, T (feet)	0.03'	0.00'	0.00'
FLOW VELOCITY "V" (feet/second)	5.85 fps	6.55 fps	6.55 fps
VELOCITY HEAD (V²/2G) (feet)	0.53'	0.67'	0.67'
SPECIFIC ENERGY (D+ V²/2G) (lb-ft/lb)	1.37'	1.67'	1.67'
FLOW CAPACITY DEPTH RATIO "D/d"	1.00	1.00	1.00
PIPE FLOW CAPACITY (cfs)	3.16 cfs	5.15 cfs	5.15 cfs

Attachment B

Storm Water Quality Management Plan (SWQMP), Psomas,
February 2025

CITY OF SANTEE

**PRIORITY DEVELOPMENT PROJECT (PDP)
STORM WATER QUALITY MANAGEMENT PLAN (SWQMP)
FOR
Santee Community Center
[INSERT PERMIT APPLICATION NUMBERS]**

**10129 Riverwalk Drive
Santee, CA 92071**

**ASSESSOR'S PARCEL NUMBER(S):
381-051-14-00
ENGINEER OF WORK:**

**Sarah Curran C69620
[PROVIDE WET SIGNATURE AND STAMP ABOVE LINE]**

PREPARED FOR:

City of Santee
10601 Magnolia Ave.
Santee, CA 92071
(619) 258-4100

PDP SWQMP PREPARED BY:

Psomas
401 B St., Suite 1600
San Diego, CA 92101
(619)961-2800

DATE OF SWQMP:
February 2025

PLANS PREPARED BY:

Psomas
401 B St., Suite 1600
San Diego, CA 92101
(619) 961-2800

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Attachment 4: Copy of Plan Sheets Showing Permanent Storm Water BMPs

ACRONYMS

APN	Assessor's Parcel Number
BMP	Best Management Practice
HMP	Hydromodification Management Plan
HSG	Hydrologic Soil Group
MS4	Municipal Separate Storm Sewer System
N/A	Not Applicable
NRCS	Natural Resources Conservation Service
PDP	Priority Development Project
PE	Professional Engineer
SC	Source Control
SD	Site Design
SDRWQCB	San Diego Regional Water Quality Control Board
SIC	Standard Industrial Classification
SWQMP	Storm Water Quality Management Plan

SWQMP PREPARER'S CERTIFICATION PAGE

Project Name: Santee Community Center
Permit Application Number: CIP 2018-31

PREPARER'S CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of storm water best management practices (BMPs) for this project, and that I have exercised responsible charge over the design of the BMPs as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the PDP requirements of the City of Santee BMP Design Manual, which is a design manual for compliance with local City of San Diego and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2015-0100) requirements for storm water management.

I have read and understand that the City of Santee has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the BMP Design Manual. I certify that this PDP SWQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this PDP SWQMP by the City Engineer is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of storm water BMPs for this project, of my responsibilities for project design.

Engineer of Work's Signature, PE Number & Expiration Date

Sarah Curran

Print Name

Psomas

Company

Date

Engineer's Seal:

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SWQMP PROJECT OWNER'S CERTIFICATION PAGE

Project Name: Santee Community Center
Permit Application Number: CIP 2018-31

PROJECT OWNER'S CERTIFICATION

This PDP SWQMP has been prepared for City of Santee by Psomas. The PDP SWQMP is intended to comply with the PDP requirements of the City of Santee BMP Design Manual, which is a design manual for compliance with local City of San Diego and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2015-0100) requirements for storm water management.

The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan. Once the undersigned transfers its interests in the property, its successor-in-interest shall bear the aforementioned responsibility to implement the best management practices (BMPs) described within this plan, including ensuring on-going operation and maintenance of structural BMPs. A signed copy of this document shall be available on the subject property into perpetuity.

Project Owner's Signature

Print Name

Company

Date

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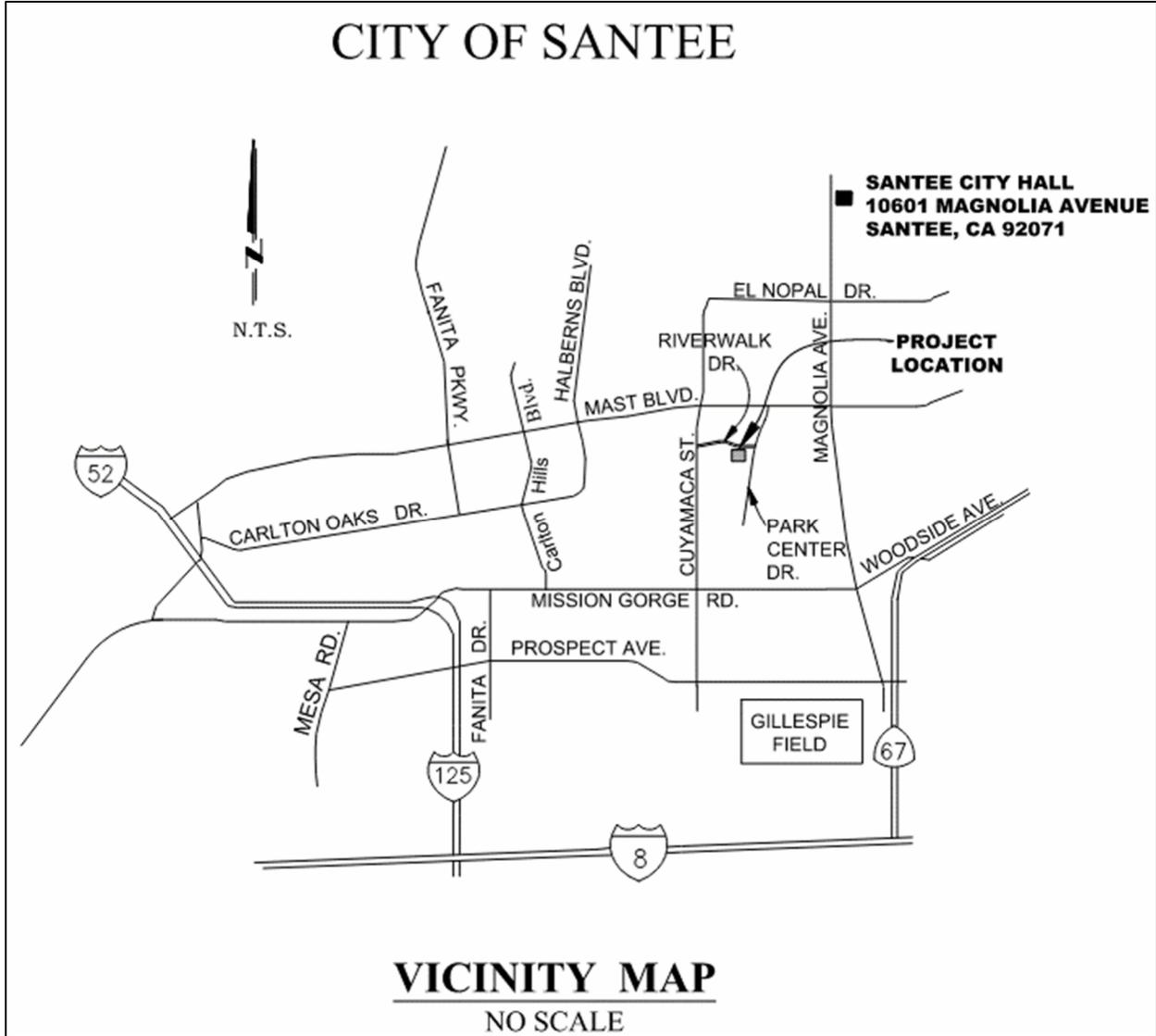
SUBMITTAL RECORD

Use this Table to keep a record of submittals of this PDP SWQMP. Each time the PDP SWQMP is re-submitted, provide the date and status of the project. In column 4 summarize the changes that have been made or indicate if response to plancheck comments is included. When applicable, insert response to plancheck comments behind this page.

Submittal Number	Date	Project Status	Summary of Changes
1	May 26, 2023	<input checked="" type="checkbox"/> Preliminary Design / Planning/ CEQA <input type="checkbox"/> Final Design	Initial Submittal
2	January 12, 2024	<input type="checkbox"/> Preliminary Design / Planning/ CEQA <input checked="" type="checkbox"/> Final Design	2 nd Submittal
3		<input type="checkbox"/> Preliminary Design / Planning/ CEQA <input type="checkbox"/> Final Design	
4		<input type="checkbox"/> Preliminary Design / Planning/ CEQA <input type="checkbox"/> Final Design	

PROJECT VICINITY MAP

Project Name: Santee Community Center
Permit Application Number: CIP 2018-31



Applicability of Permanent, Post-Construction Storm Water BMP Requirements (Storm Water Intake Form for all Development Permit Applications)		Form I-1 Model BMP Design Manual [August 31, 2015]
Project Identification		
Project Name: Santee Community Center		
Permit Application Number:		Date:
Project Address: 10129 Riverwalk Drive Santee, CA 92071		
Determination of Requirements		
<p>The purpose of this form is to identify permanent, post-construction requirements that apply to the project. This form serves as a short <u>summary</u> of applicable requirements, in some cases referencing separate forms that will serve as the backup for the determination of requirements.</p> <p>Answer each step below, starting with Step 1 and progressing through each step until reaching "Stop". Upon reaching a Stop, do not complete further Steps beyond the Stop.</p> <p>Refer to BMP Design Manual sections and/or separate forms referenced in each step below.</p>		
Step	Answer	Progression
Step 1: Is the project a "development project"? See Section 1.3 of the BMP Design Manual for guidance.	<input checked="" type="checkbox"/> Yes	Go to Step 2.
	<input type="checkbox"/> No	Stop. Permanent BMP requirements do not apply. No SWQMP will be required. Provide discussion below.
Discussion / justification if the project is <u>not</u> a "development project" (e.g., the project includes <i>only</i> interior remodels within an existing building):		
Step 2: Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions? To answer this item, see Section 1.4 of the BMP Design Manual <i>in its entirety</i> for guidance, AND complete Form I-2, Project Type Determination.	<input type="checkbox"/> Standard Project	Stop. <u>Only Standard Project requirements apply, including Standard Project SWQMP.</u>
	<input checked="" type="checkbox"/> PDP	<u>Standard and PDP requirements apply, including PDP SWQMP.</u> Go to Step 3.
	<input type="checkbox"/> Exception to PDP definitions	Stop. <u>Standard Project requirements apply, and any additional requirements specific to the type of project.</u> Provide discussion and list any additional requirements below. Prepare Standard Project SWQMP.

[Step 2 Continued from Page 1] Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:

Step 3 (PDPs only). Is the project subject to earlier PDP requirements due to a prior lawful approval? See Section 1.10 of the BMP Design Manual for guidance.	<input type="checkbox"/> Yes	Consult the [City Engineer] to determine requirements. Provide discussion and identify requirements below. Go to Step 4.
	<input checked="" type="checkbox"/> No	BMP Design Manual PDP requirements apply. Go to Step 4.

Discussion / justification of prior lawful approval, and identify requirements (*not required if prior lawful approval does not apply*):

Step 4 (PDPs only). Do hydromodification control requirements apply? See Section 1.6 of the BMP Design Manual for guidance.	<input checked="" type="checkbox"/> Yes	PDP structural BMPs required for pollutant control (Chapter 5) and hydromodification control (Chapter 6). Go to Step 5.
	<input type="checkbox"/> No	Stop. PDP structural BMPs required for pollutant control (Chapter 5) only. Provide brief discussion of exemption to hydromodification control below.

Discussion / justification if hydromodification control requirements do not apply:

Step 5 (PDPs subject to hydromodification control requirements only). Does protection of critical coarse sediment yield areas apply based on review of WMAA Potential Critical Coarse Sediment Yield Area Map? See Section 6.2 of the BMP Design Manual for guidance.	<input type="checkbox"/> Yes	Management measures required for protection of critical coarse sediment yield areas (Chapter 6.2). Stop.
	<input checked="" type="checkbox"/> No	Management measures not required for protection of critical coarse sediment yield areas. Provide brief discussion below. Stop.

Discussion / justification if protection of critical coarse sediment yield areas requirements do not apply:
Critical coarse sediment not located near project site.

Project Information

Project Name: Santee Community Center	
Permit Application Number:	Date:
Project Address: 10129 Riverwalk Drive Santee, CA 92071	

Project Type Determination: Standard Project or Priority Development Project (PDP)

The project is (select one): New Development Redevelopment

The total proposed newly created or replaced impervious area is: 111,283 ft² (2.56) acres

Is the project in any of the following categories, (a) through (f)?

Yes	No <input checked="" type="checkbox"/>	(a)	New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes <input checked="" type="checkbox"/>	No	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes	No <input checked="" type="checkbox"/>	(c)	<p>New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses:</p> <ul style="list-style-type: none"> (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812). (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.

Form I-2 Page 2, Form Template Date: August 31, 2015

Yes	No <input checked="" type="checkbox"/>	(d)	<p>New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands).</p> <p><i>Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees. See BMP Design Manual Section 1.4.2 for additional guidance.</i></p>
Yes	No <input checked="" type="checkbox"/>	(e)	<p>New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses:</p> <ul style="list-style-type: none"> (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.
Yes	No <input checked="" type="checkbox"/>	(f)	<p>New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction.</p> <p><i>Note: See BMP Design Manual Section 1.4.2 for additional guidance.</i></p>

Does the project meet the definition of one or more of the Priority Development Project categories (a) through (f) listed above?

No – the project is not a Priority Development Project (Standard Project).

Yes – the project is a Priority Development Project (PDP).

The following is for redevelopment PDPs only:

The area of existing (pre-project) impervious area at the project site is: 235,224 acres ft² (A)

The total proposed newly created or replaced impervious area is 111,283 ft² (B)

Percent impervious surface created or replaced (B/A)*100: 47.3%

The percent impervious surface created or replaced is (select one based on the above calculation):

less than or equal to fifty percent (50%) – only new impervious areas are considered PDP

OR

greater than fifty percent (50%) – the entire project site is a PDP

**Site Design Checklist
For PDPs**

Form I-3B (PDPs)
Model BMP Design Manual
[August 31, 2015]

Project Summary Information

Project Name	Santee Community Center
Project Address	10129 Riverwalk Drive Santee, CA 92071
Assessor's Parcel Number(s) (APN(s))	381-051-14-00
Permit Application Number	CIP 2018-31
Project Hydrologic Unit	Select One: <input type="checkbox"/> Santa Margarita 902 <input type="checkbox"/> San Luis Rey 903 <input type="checkbox"/> Carlsbad 904 <input type="checkbox"/> San Dieguito 905 <input type="checkbox"/> Penasquitos 906 <input checked="" type="checkbox"/> San Diego 907 <input type="checkbox"/> Pueblo San Diego 908 <input type="checkbox"/> Sweetwater 909 <input type="checkbox"/> Otay 910 <input type="checkbox"/> Tijuana 911
Project Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	San Diego River Basin, 434 mi ² 907.1
Parcel Area (total area of Assessor's Parcel(s) associated with the project)	53.81 Acres (2,343,963 Square Feet)
Area to be Disturbed by the Project (Project Area)	3.31 Acres (144,344 Square Feet)
Project Proposed Impervious Area (subset of Project Area)	2.56 Acres (111,283 Square Feet)
Project Proposed Pervious Area (subset of Project Area)	0.76 Acres (33,061 Square Feet)
Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area.	

Description of Existing Site Condition

Current Status of the Site (select all that apply):

- Existing development
- Previously graded but not built out
- Demolition completed without new construction
- Agricultural or other non-impervious use
- Vacant, undeveloped/natural

Description / Additional Information:

Existing parking lot used by the Cameron Family YMCA.
Existing vacant area North of the Cameron Family YMCA.

Existing Land Cover Includes (select all that apply):

- Vegetative Cover
- Non-Vegetated Pervious Areas
- Impervious Areas

Description / Additional Information:

Existing AC parking lot with landscaped buffer areas.
Proposed parking lot location has existing pervious areas.

Underlying Soil belongs to Hydrologic Soil Group (select all that apply):

- NRCS Type A
- NRCS Type B
- NRCS Type C
- NRCS Type D

Approximate Depth to Groundwater (GW):

- GW Depth < 5 feet
- 5 feet < GW Depth < 10 feet
- 10 feet < GW Depth < 20 feet
- GW Depth > 20 feet

Existing Natural Hydrologic Features (select all that apply):

Watercourses

Seeps

Springs

Wetlands

None

Description / Additional Information:

Description of Existing Site Drainage Patterns

How is storm water runoff conveyed from the site? At a minimum, this description should answer:

- (1) whether existing drainage conveyance is natural or urban;
- (2) Is runoff from offsite conveyed through the site? if yes, quantify all offsite drainage areas, design flows, and locations where offsite flows enter the project site, and summarize how such flows are conveyed through the site;
- (3) Provide details regarding existing project site drainage conveyance network, including any existing storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels; and
- (4) Identify all discharge locations from the existing project site along with a summary of conveyance system size and capacity for each of the discharge locations. Provide summary of the pre-project drainage areas and design flows to each of the existing runoff discharge locations.

Describe existing site drainage patterns:

The entire existing parking lot south of Riverwalk Drive conveys stormwater to the south of the lot. Runoff surface flow is then conveyed into an existing earthen swale then discharged into Woodglen Vista Creek. The creek eventually discharges into the San Diego River. A summary of the pre-project drainage areas and design flows can be found in the Project's hydrology report.

The vacant area north of the Cameron Family YMCA currently sheet flows south to catch basins located in an earthen swale. From there the drainage is conveyed via pipe to the west where the pipe daylights and outlets into an earthen open channel that flows southerly into Woodglen Vista Creek and eventually into the San Diego River. A summary of the pre-project drainage areas and design flows can be found in the Project's hydrology report.

Description of Proposed Site Development

Project Description / Proposed Land Use and/or Activities:

The community center will be constructed on City-owned property in the Santee Town Center Community Park adjacent to an existing City-owned YMCA facility located at 10129 Riverwalk Drive. The Project will include dedicated facilities for teens and seniors, lobby space, multi-purpose rooms, administrative offices and storage, occupying approximately 12,500 square feet. The Project's site improvements will include complimentary drought tolerant landscape architecture, storm water compliance, environmental documentation, addition of new parking lot area, realignment of adjacent parking facilities (but not replacement of displaced parking) and accessibility compatibility with adjacent features and the new building.

List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features):

The proposed site features one building with support areas and two covered outdoor event spaces and courtyards. The project will also redesign a portion of the existing parking lot. The proposed site will also include the development of a new parking lot to the North of the Cameron Family YMCA.

List/describe proposed pervious features of the project (e.g., landscape areas):

There are four landscaped islands located in the redesigned parking lot as well as planted common areas around the proposed building.

For the proposed new parking lot, there are eight landscaped islands.

Does the project include grading and changes to site topography?

- Yes
- No

Description / Additional Information:

Grading of the site involves remedial grading per the Project Geotechnical Report requirements and grading to achieve drainage and accessibility compliance requirements around the building and proposed new parking lot area.

Description of Proposed Site Drainage Patterns

Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)?

Yes

No

If yes, provide details regarding the proposed project site drainage conveyance network, including storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels, and the method for conveying offsite flows through or around the proposed project site. Identify all discharge locations from the proposed project site along with a summary of the conveyance system size and capacity for each of the discharge locations. Provide a summary of pre- and post-project drainage areas and design flows to each of the runoff discharge locations. Reference the drainage study for detailed calculations.

Describe proposed site drainage patterns:

Drainage from parking lot areas tributary to our site will be rerouted around our site via a concrete V-gutter that directs the flows to the existing earthen swale and continue to match existing flow conditions. The site has proposed catch basins located in the outdoor event areas to collect surface flows away from the building entryways. There are three biofiltration basins that have a total provided area of 11,000 square feet in order to treat the site and provide hydromodification benefits. Drainage of the site conveys the water to the biofiltration basins and eventually will discharge into Woodglen Vista Creek via surface overflow. A summary of the post-project drainage areas and design flows can be found in the Project's hydrology report.

For the northern new parking lot, water will be conveyed to the west and to the south of the site into three new biofiltration basins then discharged into an earthen open channel to the west which then flows southerly into Woodglen Vista Creek. The creek eventually discharges into the San Diego River. A summary of the post-project drainage areas and design flows can be found in the Project's hydrology report.

Identify whether any of the following features, activities, and/or pollutant source areas will be present (select all that apply):

- On-site storm drain inlets
- Interior floor drains and elevator shaft sump pumps
- Interior parking garages
- Need for future indoor & structural pest control
- Landscape/Outdoor Pesticide Use
- Pools, spas, ponds, decorative fountains, and other water features
- Food service
- Refuse areas
- Industrial processes
- Outdoor storage of equipment or materials
- Vehicle and Equipment Cleaning
- Vehicle/Equipment Repair and Maintenance
- Fuel Dispensing Areas
- Loading Docks
- Fire Sprinkler Test Water
- Miscellaneous Drain or Wash Water
- Plazas, sidewalks, and parking lots

Description / Additional Information:

There are three catch basins on the project site. The site will have a kitchen area for food service, trash enclosure, and features an outdoor plaza, seating, sidewalks, and parking lot.

Identification and Narrative of Receiving Water and Pollutants of Concern

Describe flow path of storm water from the project site discharge location(s), through urban storm conveyance systems as applicable, to receiving creeks, rivers, and lagoons as applicable, and ultimate discharge to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable):

The site has two proposed catch basins located in the outdoor event areas. There are two biofiltration basins that have a required area of 2,000 square feet in order to treat the site. Drainage of the site conveys the water to the biofiltration basins and eventually will discharge into Woodglen Vista Creek. From the creek, the water will be discharged into the San Diego River.

List any 303(d) impaired water bodies within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs and/or Highest Priority Pollutants from the WQIP for the impaired water bodies:

303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs / WQIP Highest Priority Pollutant
San Diego River	Phosphorus	
	Total Dissolved Solids	
	Nitrogen	
	Indicator Bacteria	Highest Priority Pollutant
	Cadmium	
	Benthic Community Effects	
	Oxygen, Dissolved	
	Toxicity	
	Sulfates	

Identification of Project Site Pollutants*

***Identification of project site pollutants is only required if flow-thru treatment BMPs are implemented onsite in lieu of retention or biofiltration BMPs (note the project must also participate in an alternative compliance program unless prior lawful approval to meet earlier PDP requirements is demonstrated)**

Identify pollutants expected from the project site based on all proposed use(s) of the site (see BMP Design Manual Appendix B.6):

Pollutant	Not Applicable to the Project Site	Expected from the Project Site	Also a Receiving Water Pollutant of Concern
Sediment		X	
Nutrients	X		
Heavy Metals	X		
Organic Compounds		X	
Trash & Debris		X	

Oxygen Demanding Substances	X		
Oil & Grease		X	
Bacteria & Viruses	X		
Pesticides		X	

Hydromodification Management Requirements

Do hydromodification management requirements apply (see Section 1.6 of the BMP Design Manual)?

- Yes, hydromodification management flow control structural BMPs required.
- No, the project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.
- No, the project will discharge runoff directly to conveyance channels whose bed and bank are concrete-lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.
- No, the project will discharge runoff directly to an area identified as appropriate for an exemption by the WMAA for the watershed in which the project resides.

Description / Additional Information (to be provided if a 'No' answer has been selected above):

Critical Coarse Sediment Yield Areas*

***This Section only required if hydromodification management requirements apply**

Based on the maps provided within the WMAA, do potential critical coarse sediment yield areas exist within the project drainage boundaries?

- Yes
- No, No critical coarse sediment yield areas to be protected based on WMAA maps

If yes, have any of the optional analyses presented in Section 6.2 of the BMP Design Manual been performed?

- 6.2.1 Verification of Geomorphic Landscape Units (GLUs) Onsite
- 6.2.2 Downstream Systems Sensitivity to Coarse Sediment
- 6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite
- No optional analyses performed, the project will avoid critical coarse sediment yield areas identified based on WMAA maps

If optional analyses were performed, what is the final result?

- No critical coarse sediment yield areas to be protected based on verification of GLUs onsite
- Critical coarse sediment yield areas exist but additional analysis has determined that protection is not required. Documentation attached in Attachment 2.b of the SWQMP.
- Critical coarse sediment yield areas exist and require protection. The project will implement management measures described in Sections 6.2.4 and 6.2.5 as applicable, and the areas are identified on the SWQMP Exhibit.

Discussion / Additional Information:

The City of San Diego Regional Watershed Management Area analysis provided mapping of Critical Coarse Sediment Yield areas. The location of our project is not near a Coarse Sediment Yield area. Refer to Attachment 2b.

Flow Control for Post-Project Runoff*

***This Section only required if hydromodification management requirements apply**

List and describe point(s) of compliance (POCs) for flow control for hydromodification management (see Section 6.3.1). For each POC, provide a POC identification name or number correlating to the project's HMP Exhibit and a receiving channel identification name or number correlating to the project's HMP Exhibit.

Drainage of the site is conveyed via catch basins and daylighted roof drainage is piped to the biofiltration basins and will then discharge into Woodglen Vista Creek. From the creek, the water will flow to the San Diego River. Biofiltration basins are sized for hydromodification. Please refer to the HMP exhibit for the discharge area.

Has a geomorphic assessment been performed for the receiving channel(s)?

No, the low flow threshold is 0.1Q2 (default low flow threshold)

Yes, the result is the low flow threshold is 0.1Q2

Yes, the result is the low flow threshold is 0.3Q2

Yes, the result is the low flow threshold is 0.5Q2

If a geomorphic assessment has been performed, provide title, date, and preparer:

Discussion / Additional Information: (optional)

Other Site Requirements and Constraints

When applicable, list other site requirements or constraints that will influence storm water management design, such as zoning requirements including setbacks and open space, or local codes governing minimum street width, sidewalk construction, allowable pavement types, and drainage requirements.

None.

Optional Additional Information or Continuation of Previous Sections As Needed

This space provided for additional information or continuation of information from previous sections as needed.

Source Control BMP Checklist for All Development Projects (Standard Projects and Priority Development Projects)		Form I-4 Model BMP Design Manual [August 31, 2015]	
Project Identification			
Project Name: Santee Community Center			
Permit Application Number: CIP 2018-31			
Source Control BMPs			
All development projects must implement source control BMPs SC-1 through SC-6 where applicable and feasible. See Chapter 4 and Appendix E of the Model BMP Design Manual for information to implement source control BMPs shown in this checklist.			
Answer each category below pursuant to the following.			
<ul style="list-style-type: none"> • "Yes" means the project will implement the source control BMP as described in Chapter 4 and/or Appendix E of the Model BMP Design Manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification may be provided. 			
Source Control Requirement		Applied?	
SC-1 Prevention of Illicit Discharges into the MS4		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Discussion / justification if SC-1 not implemented:		<input type="checkbox"/> N/A	
SC-2 Storm Drain Stenciling or Signage		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Discussion / justification if SC-2 not implemented:		<input type="checkbox"/> N/A	
SC-3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Discussion / justification if SC-3 not implemented:		<input type="checkbox"/> N/A	
SC-4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Discussion / justification if SC-4 not implemented:		<input type="checkbox"/> N/A	

Source Control Requirement	Applied?		
SC-5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SC-5 not implemented:			
SC-6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below) <ul style="list-style-type: none"> <input type="checkbox"/> On-site storm drain inlets <input type="checkbox"/> Interior floor drains and elevator shaft sump pumps <input type="checkbox"/> Interior parking garages <input type="checkbox"/> Need for future indoor & structural pest control <input type="checkbox"/> Landscape/Outdoor Pesticide Use <input type="checkbox"/> Pools, spas, ponds, decorative fountains, and other water features <input type="checkbox"/> Food service <input type="checkbox"/> Refuse areas <input type="checkbox"/> Industrial processes <input type="checkbox"/> Outdoor storage of equipment or materials <input type="checkbox"/> Vehicle and Equipment Cleaning <input type="checkbox"/> Vehicle/Equipment Repair and Maintenance <input type="checkbox"/> Fuel Dispensing Areas <input type="checkbox"/> Loading Docks <input type="checkbox"/> Fire Sprinkler Test Water <input type="checkbox"/> Miscellaneous Drain or Wash Water <input type="checkbox"/> Plazas, sidewalks, and parking lots 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> Yes 	<ul style="list-style-type: none"> <input type="checkbox"/> No 	<ul style="list-style-type: none"> <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A

Discussion / justification if SC-6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for all "No" answers shown above.

Additional BMPs Based on Potential Sources of Runoff Pollutants not applicable to our site.

Site Design BMP Checklist for All Development Projects (Standard Projects and Priority Development Projects)	Form I-5 Model BMP Design Manual [August 31, 2015]
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Project Identification

Project Name: Santee Community Center
 Permit Application Number: CIP 2018-31

Site Design BMPs

All development projects must implement site design BMPs SD-1 through SD-8 where applicable and feasible. See Chapter 4 and Appendix E of the Model BMP Design Manual for information to implement site design BMPs shown in this checklist.

- Answer each category below pursuant to the following.
- "Yes" means the project will implement the site design BMP as described in Chapter 4 and/or Appendix E of the Model BMP Design Manual. Discussion / justification is not required.
 - "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.
 - "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification may be provided.

Site Design Requirement	Applied?		
SD-1 Maintain Natural Drainage Pathways and Hydrologic Features	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SD-1 not implemented:			
SD-2 Conserve Natural Areas, Soils, and Vegetation	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SD-2 not implemented: Existing landscaped planters in the parking lot are being removed. Existing pervious area to the south of the project site is being modified to incorporate the Biofiltration BMPs			
SD-3 Minimize Impervious Area	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SD-3 not implemented:			
SD-4 Minimize Soil Compaction	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SD-4 not implemented:			
SD-5 Impervious Area Dispersion	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SD-5 not implemented:			

Site Design Requirement	Applied?		
SD-6 Runoff Collection	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SD-6 not implemented:			
SD-7 Landscaping with Native or Drought Tolerant Species	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Discussion / justification if SD-7 not implemented:			
SD-8 Harvesting and Using Precipitation	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Discussion / justification if SD-8 not implemented: Harvest and Use BMP is not feasible for the project site.			

Summary of PDP Structural BMPs	Form I-6 (PDPs) Model BMP Design Manual [August 31, 2015]
Project Identification	
Project Name: Santee Community Center	
Permit Application Number: CIP 2018-31	
PDP Structural BMPs	
<p>All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the BMP Design Manual). Selection of PDP structural BMPs for storm water pollutant control must be based on the selection process described in Chapter 5. PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management (see Chapter 6 of the BMP Design Manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s).</p> <p>PDP structural BMPs must be verified by the local jurisdiction at the completion of construction. This may include requiring the project owner or project owner's representative and engineer of record to certify construction of the structural BMPs (see Section 1.12 of the BMP Design Manual). PDP structural BMPs must be maintained into perpetuity, and the local jurisdiction must confirm the maintenance (see Section 7 of the BMP Design Manual).</p> <p>Use this form to provide narrative description of the general strategy for structural BMP implementation at the project site in the box below. Then complete the PDP structural BMP summary information sheet (page 3 of this form) for each structural BMP within the project (copy the BMP summary information page as many times as needed to provide summary information for each individual structural BMP).</p>	
<p>Bio-1 Biofiltration BMPs were selected for this site due to the ample site area to accommodate these basins. Drainage flows are directed to the basins via surface flow and pipes from catch basins throughout the site. These basins are being utilized for flow and pollutant control.</p> <p>(Continue on page 2 as necessary.)</p>	

Structural BMP Summary Information
(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No. BF-1B

Construction Plan Sheet No. C1.9

Type of structural BMP:

- Retention by harvest and use (HU-1)
- Retention by infiltration basin (INF-1)
- Retention by bioretention (INF-2)
- Retention by permeable pavement (INF-3)
- Partial retention by biofiltration with partial retention (PR-1)
- Biofiltration (BF-1)
- Biofiltration with Nutrient Sensitive Media Design (BF-2)
- Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F
- Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)
- Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
- Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
- Detention pond or vault for hydromodification management
- Other (describe in discussion section below)

Purpose:

- Pollutant control only
- Hydromodification control only
- Combined pollutant control and hydromodification control
- Pre-treatment/forebay for another structural BMP
- Other (describe in discussion section below)

Who will certify construction of this BMP?
 Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the BMP Design Manual)

City of Santee

Who will be the final owner of this BMP?

City of Santee

Who will maintain this BMP into perpetuity?

City of Santee

What is the funding mechanism for maintenance?

City of Santee

Structural BMP Summary Information
(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No. BF-1C

Construction Plan Sheet No. C1.9

Type of structural BMP:

- Retention by harvest and use (HU-1)
- Retention by infiltration basin (INF-1)
- Retention by bioretention (INF-2)
- Retention by permeable pavement (INF-3)
- Partial retention by biofiltration with partial retention (PR-1)
- Biofiltration (BF-1)
- Biofiltration with Nutrient Sensitive Media Design (BF-2)
- Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F
- Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)
- Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
- Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
- Detention pond or vault for hydromodification management
- Other (describe in discussion section below)

Purpose:

- Pollutant control only
- Hydromodification control only
- Combined pollutant control and hydromodification control
- Pre-treatment/forebay for another structural BMP
- Other (describe in discussion section below)

Who will certify construction of this BMP?
 Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the BMP Design Manual)

City of Santee

Who will be the final owner of this BMP?

City of Santee

Who will maintain this BMP into perpetuity?

City of Santee

What is the funding mechanism for maintenance?

City of Santee

Structural BMP Summary Information
(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No. BF-1D

Construction Plan Sheet No. C1.9

Type of structural BMP:

- Retention by harvest and use (HU-1)
- Retention by infiltration basin (INF-1)
- Retention by bioretention (INF-2)
- Retention by permeable pavement (INF-3)
- Partial retention by biofiltration with partial retention (PR-1)
- Biofiltration (BF-1)
- Biofiltration with Nutrient Sensitive Media Design (BF-2)
- Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F
- Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)
- Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
- Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
- Detention pond or vault for hydromodification management
- Other (describe in discussion section below)

Purpose:

- Pollutant control only
- Hydromodification control only
- Combined pollutant control and hydromodification control
- Pre-treatment/forebay for another structural BMP
- Other (describe in discussion section below)

Who will certify construction of this BMP?
 Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the BMP Design Manual)

City of Santee

Who will be the final owner of this BMP?

City of Santee

Who will maintain this BMP into perpetuity?

City of Santee

What is the funding mechanism for maintenance?

City of Santee

Structural BMP Summary Information
(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No. BF-1E

Construction Plan Sheet No. C1.9

Type of structural BMP:

- Retention by harvest and use (HU-1)
- Retention by infiltration basin (INF-1)
- Retention by bioretention (INF-2)
- Retention by permeable pavement (INF-3)
- Partial retention by biofiltration with partial retention (PR-1)
- Biofiltration (BF-1)
- Biofiltration with Nutrient Sensitive Media Design (BF-2)
- Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F
- Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)
- Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
- Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
- Detention pond or vault for hydromodification management
- Other (describe in discussion section below)

Purpose:

- Pollutant control only
- Hydromodification control only
- Combined pollutant control and hydromodification control
- Pre-treatment/forebay for another structural BMP
- Other (describe in discussion section below)

Who will certify construction of this BMP?
 Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the BMP Design Manual)

City of Santee

Who will be the final owner of this BMP?

City of Santee

Who will maintain this BMP into perpetuity?

City of Santee

What is the funding mechanism for maintenance?

City of Santee

Structural BMP Summary Information
(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No. BF-1F

Construction Plan Sheet No. C1.9

Type of structural BMP:

- Retention by harvest and use (HU-1)
- Retention by infiltration basin (INF-1)
- Retention by bioretention (INF-2)
- Retention by permeable pavement (INF-3)
- Partial retention by biofiltration with partial retention (PR-1)
- Biofiltration (BF-1)
- Biofiltration with Nutrient Sensitive Media Design (BF-2)
- Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F
- Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)
- Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
- Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
- Detention pond or vault for hydromodification management
- Other (describe in discussion section below)

Purpose:

- Pollutant control only
- Hydromodification control only
- Combined pollutant control and hydromodification control
- Pre-treatment/forebay for another structural BMP
- Other (describe in discussion section below)

Who will certify construction of this BMP?
 Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the BMP Design Manual)

City of Santee

Who will be the final owner of this BMP?

City of Santee

Who will maintain this BMP into perpetuity?

City of Santee

What is the funding mechanism for maintenance?

City of Santee

Structural BMP Summary Information
(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No. BF-2A

Construction Plan Sheet No. C1.9

Type of structural BMP:

- Retention by harvest and use (HU-1)
- Retention by infiltration basin (INF-1)
- Retention by bioretention (INF-2)
- Retention by permeable pavement (INF-3)
- Partial retention by biofiltration with partial retention (PR-1)
- Biofiltration (BF-1)
- Biofiltration with Nutrient Sensitive Media Design (BF-2)
- Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F
- Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)
- Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
- Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
- Detention pond or vault for hydromodification management
- Other (describe in discussion section below)

Purpose:

- Pollutant control only
- Hydromodification control only
- Combined pollutant control and hydromodification control
- Pre-treatment/forebay for another structural BMP
- Other (describe in discussion section below)

Who will certify construction of this BMP?
 Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the BMP Design Manual)

City of Santee

Who will be the final owner of this BMP?

City of Santee

Who will maintain this BMP into perpetuity?

City of Santee

What is the funding mechanism for maintenance?

City of Santee

Structural BMP Summary Information
(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No. BF-2B

Construction Plan Sheet No. C1.9

Type of structural BMP:

- Retention by harvest and use (HU-1)
- Retention by infiltration basin (INF-1)
- Retention by bioretention (INF-2)
- Retention by permeable pavement (INF-3)
- Partial retention by biofiltration with partial retention (PR-1)
- Biofiltration (BF-1)
- Biofiltration with Nutrient Sensitive Media Design (BF-2)
- Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F
- Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)
- Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
- Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
- Detention pond or vault for hydromodification management
- Other (describe in discussion section below)

Purpose:

- Pollutant control only
- Hydromodification control only
- Combined pollutant control and hydromodification control
- Pre-treatment/forebay for another structural BMP
- Other (describe in discussion section below)

Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the BMP Design Manual)	City of Santee
Who will be the final owner of this BMP?	City of Santee
Who will maintain this BMP into perpetuity?	City of Santee
What is the funding mechanism for maintenance?	City of Santee

Structural BMP Summary Information
(Copy this page as needed to provide information for each individual proposed structural BMP)

Structural BMP ID No. BF-2C

Construction Plan Sheet No. C1.9

Type of structural BMP:

- Retention by harvest and use (HU-1)
- Retention by infiltration basin (INF-1)
- Retention by bioretention (INF-2)
- Retention by permeable pavement (INF-3)
- Partial retention by biofiltration with partial retention (PR-1)
- Biofiltration (BF-1)
- Biofiltration with Nutrient Sensitive Media Design (BF-2)
- Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F
- Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below)
- Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below)
- Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below)
- Detention pond or vault for hydromodification management
- Other (describe in discussion section below)

Purpose:

- Pollutant control only
- Hydromodification control only
- Combined pollutant control and hydromodification control
- Pre-treatment/forebay for another structural BMP
- Other (describe in discussion section below)

Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the BMP Design Manual)	City of Santee
Who will be the final owner of this BMP?	City of Santee
Who will maintain this BMP into perpetuity?	City of Santee
What is the funding mechanism for maintenance?	City of Santee

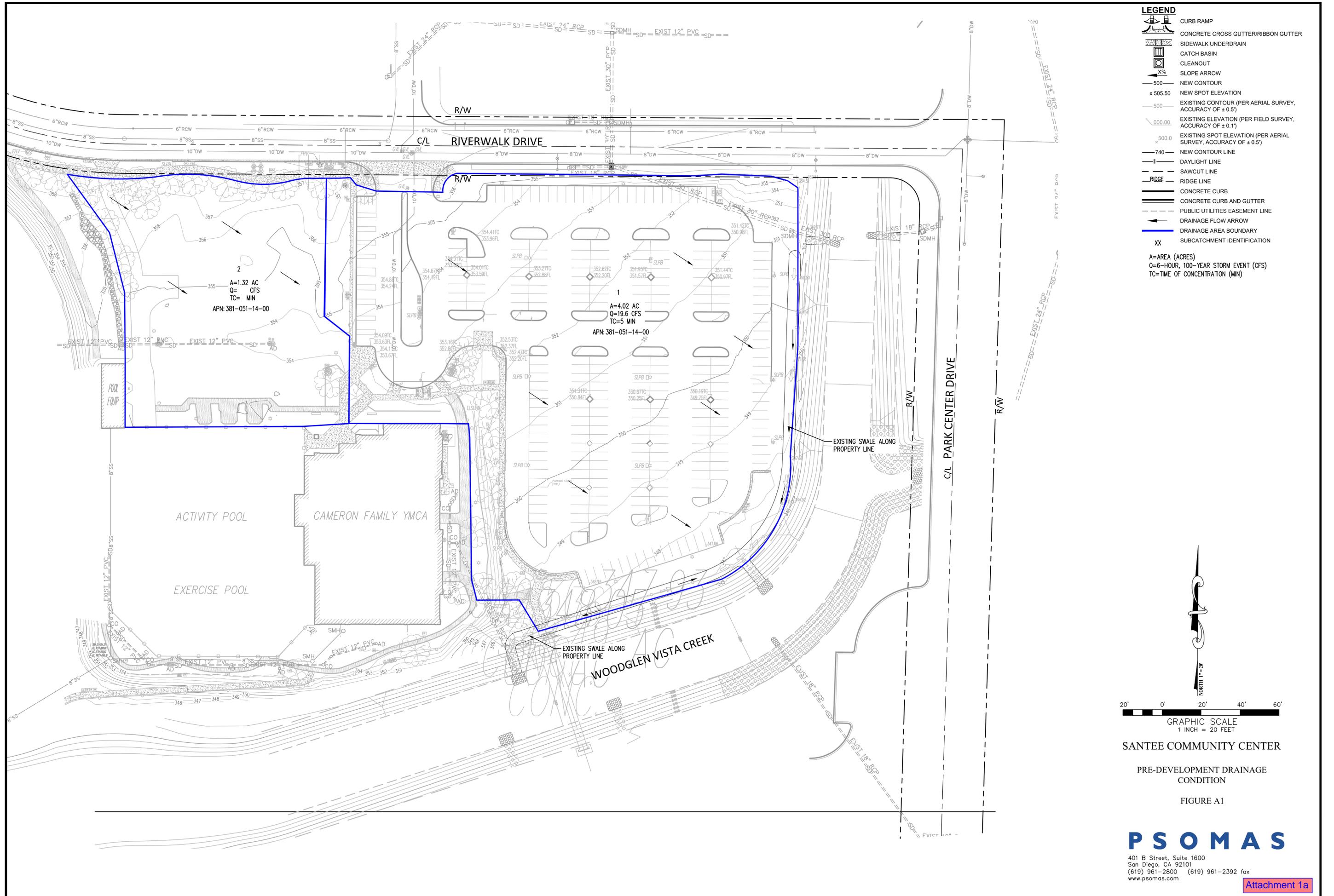
ATTACHMENT 1

BACKUP FOR PDP POLLUTANT CONTROL BMPS

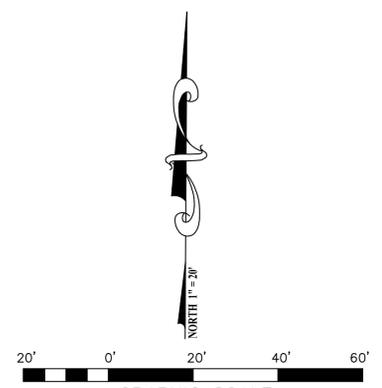
This is the cover sheet for Attachment 1.

Indicate which Items are Included behind this cover sheet:

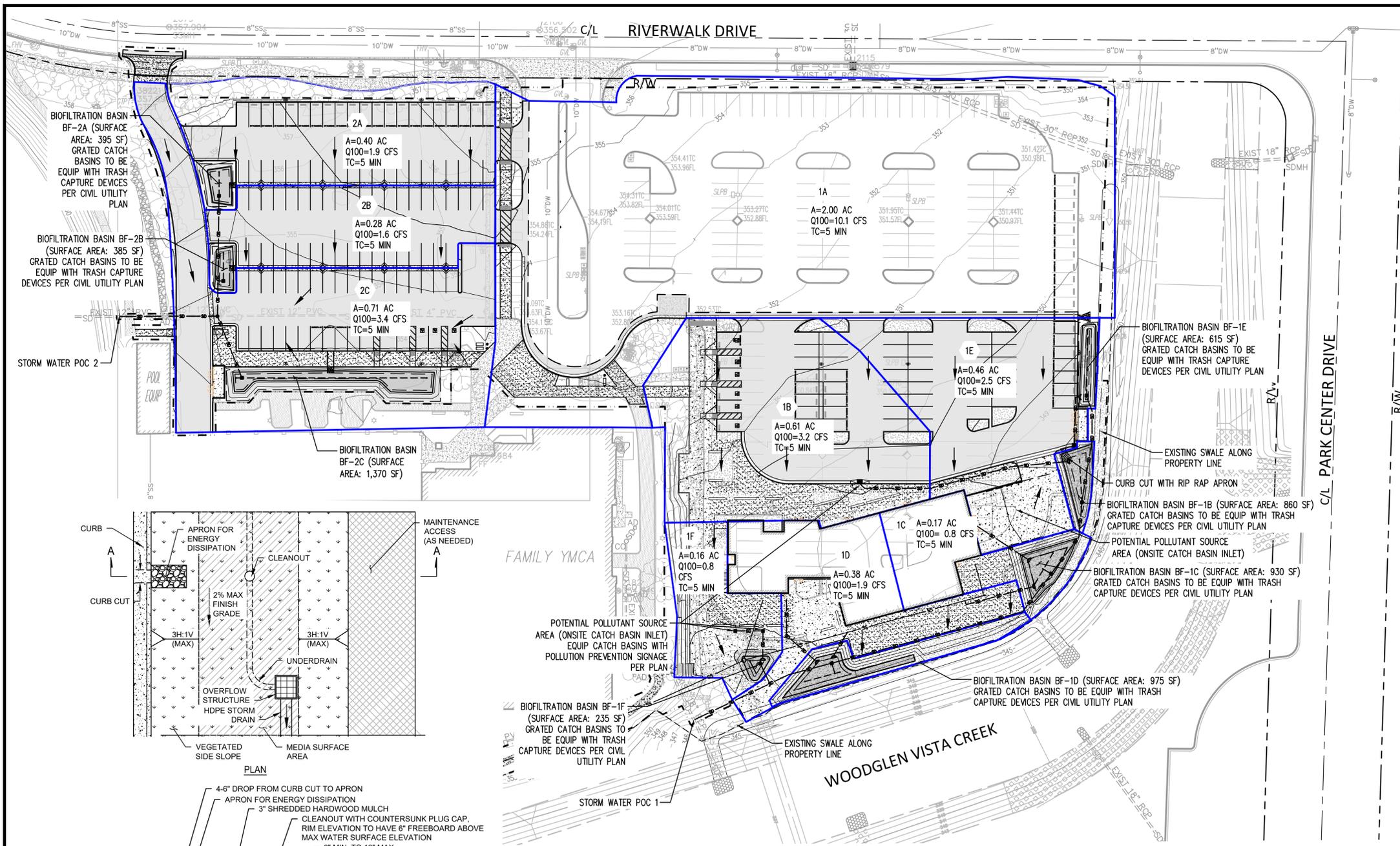
Attachment Sequence	Contents	Checklist
Attachment 1a	DMA Exhibit (Required) See DMA Exhibit Checklist on the back of this Attachment cover sheet.	<input checked="" type="checkbox"/> Included
Attachment 1b	Tabular Summary of DMAs Showing DMA ID matching DMA Exhibit, DMA Area, and DMA Type (Required)* *Provide table in this Attachment OR on DMA Exhibit in Attachment 1a	<input checked="" type="checkbox"/> Included on DMA Exhibit in Attachment 1a <input type="checkbox"/> Included as Attachment 1b, separate from DMA Exhibit
Attachment 1c	Form I-7, Harvest and Use Feasibility Screening Checklist (Required unless the entire project will use infiltration BMPs) Refer to Appendix B.3-1 of the BMP Design Manual to complete Form I-7.	<input checked="" type="checkbox"/> Included <input type="checkbox"/> Not included because the entire project will use infiltration BMPs
Attachment 1d	Form I-8, Categorization of Infiltration Feasibility Condition (Required unless the project will use harvest and use BMPs) Refer to Appendices C and D of the BMP Design Manual to complete Form I-8.	<input checked="" type="checkbox"/> Included <input type="checkbox"/> Not included because the entire project will use harvest and use BMPs
Attachment 1e	Pollutant Control BMP Design Worksheets / Calculations (Required) Refer to Appendices B and E of the BMP Design Manual for structural pollutant control BMP design guidelines	<input checked="" type="checkbox"/> Included



- LEGEND**
- CURB RAMP
 - CONCRETE CROSS GUTTER/RIBBON GUTTER
 - SIDEWALK UNDERDRAIN
 - CATCH BASIN
 - CLEANOUT
 - SLOPE ARROW
 - NEW CONTOUR
 - x 505.50 NEW SPOT ELEVATION
 - 500 EXISTING CONTOUR (PER AERIAL SURVEY, ACCURACY OF ± 0.5')
 - 000.00 EXISTING ELEVATION (PER FIELD SURVEY, ACCURACY OF ± 0.1')
 - x 500.0 EXISTING SPOT ELEVATION (PER AERIAL SURVEY, ACCURACY OF ± 0.5')
 - 740 NEW CONTOUR LINE
 - DAYLIGHT LINE
 - SAWCUT LINE
 - RIDGE LINE
 - CONCRETE CURB
 - CONCRETE CURB AND GUTTER
 - PUBLIC UTILITIES EASEMENT LINE
 - DRAINAGE FLOW ARROW
 - DRAINAGE AREA BOUNDARY
 - XX
- A=AREA (ACRES)
 Q=6-HOUR, 100-YEAR STORM EVENT (CFS)
 TC=TIME OF CONCENTRATION (MIN)



SANTEE COMMUNITY CENTER
 PRE-DEVELOPMENT DRAINAGE
 CONDITION
 FIGURE A1

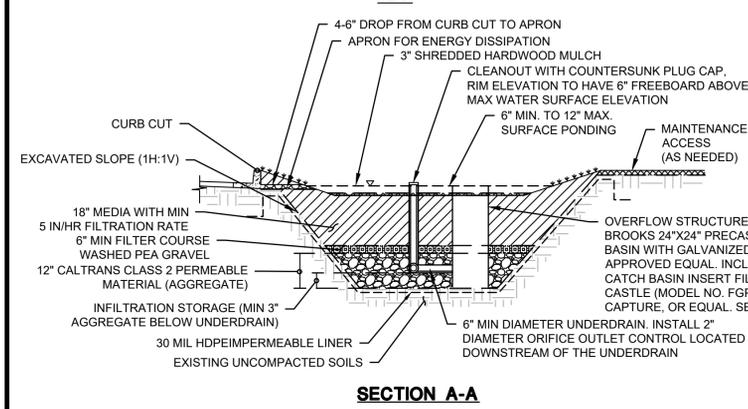
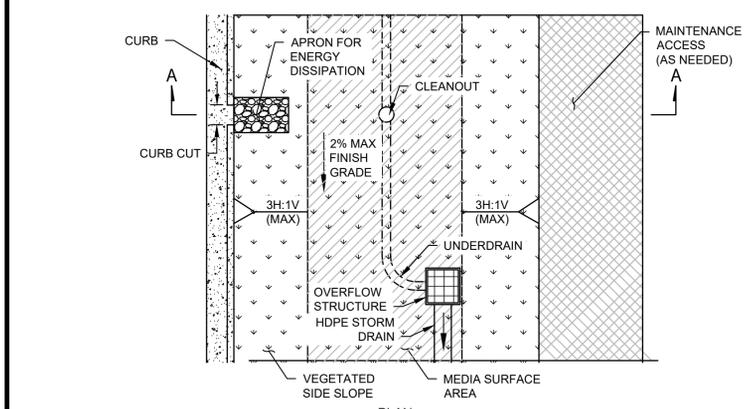


LEGEND

- CURB RAMP
- CONCRETE CROSS GUTTER/RIBBON GUTTER
- SIDEWALK UNDERDRAIN
- CATCH BASIN
- CLEANOUT
- SLOPE ARROW
- NEW CONTOUR
- NEW SPOT ELEVATION
- EXISTING CONTOUR (PER AERIAL SURVEY, ACCURACY OF ± 0.5')
- EXISTING ELEVATION (PER FIELD SURVEY, ACCURACY OF ± 0.1')
- EXISTING SPOT ELEVATION (PER AERIAL SURVEY, ACCURACY OF ± 0.5')
- NEW CONTOUR LINE
- DAYLIGHT LINE
- RIDGE LINE
- CONCRETE CURB
- CONCRETE CURB AND GUTTER
- PUBLIC UTILITIES EASEMENT LINE
- DRAINAGE AREA BOUNDARY
- SUBCATCHMENT IDENTIFICATION

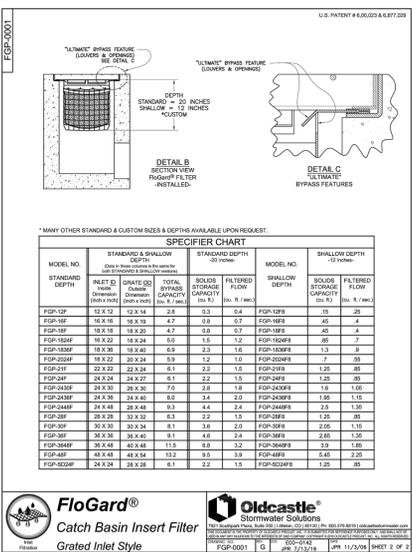
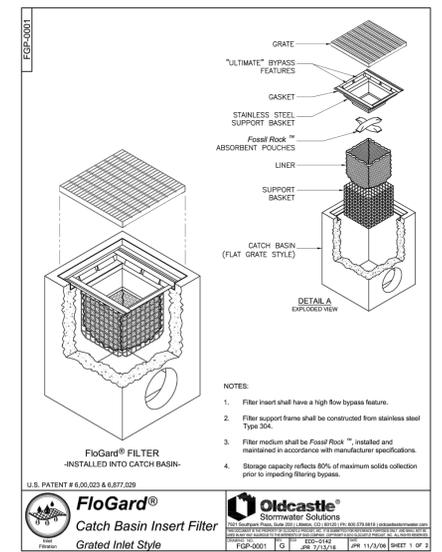
1B
A=AREA (ACRES)
Q=6-HOUR, 100-YEAR STORM EVENT (CFS)
TC=TIME OF CONCENTRATION (MIN)

- GENERAL NOTES:**
- HYDRAULIC SOIL GROUP = C
 - APPROXIMATE DEPTH TO GROUND WATER = 14.5 - 16.1 FT BELOW EXISTING SURFACE
 - NO EXISTING NATURAL HYDROLOGIC FEATURES EXIST WITHIN THE PROJECT LIMITS.
 - THERE ARE NO POTENTIAL CRITICAL COURSE SEDIMENT YIELD AREAS LOCATED WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS.
 - THE CITY OF SANTEE, AS THE PROJECT OWNER, IS RESPONSIBLE FOR THE MAINTENANCE OF PROPOSED BMPs, INCLUDING BIOFILTRATION BASINS AND TRASH CAPTURE DEVICES.



- BIOFILTRATION PROTECTION DURING CONSTRUCTION:**
- PREVENT OVER-COMPACTION OF NATIVE SOILS IN AREAS OF THE BASIN WHERE INFILTRATION WILL OCCUR. DELINEATE THE BIOFILTRATION AREA AND KEEP CONSTRUCTION TRAFFIC OFF. PROTECT SOILS WITH FENCING, PLYWOOD, ETC.
 - PROVIDE EROSION CONTROL IN THE CONTRIBUTING DRAINAGE AREAS OF THE DESIGNATED BIOFILTRATION AREA. STABILIZE UPSLOPE AREAS.
 - DRAINAGE SHOULD BE DIRECTED AWAY FROM BIORETENTION FACILITIES UNTIL UPSLOPE AREAS ARE STABILIZED. THE CONCENTRATION OF FINES COULD PREVENT POST-CONSTRUCTION INFILTRATION AND CAUSE DESIGN FAILURE.
 - IF DRAINAGE IS TO BE ALLOWED THROUGH THE FACILITY DURING CONSTRUCTION LEAVE OR BACKFILL AT LEAST 6 INCHES ABOVE THE FINAL GRADE. TEMPORARILY COVER THE UNDERDRAIN WITH PLASTIC OR FABRIC. LINE OR MULCH THE BIOFILTRATION AREA.
 - BIORETENTION FACILITIES SHOULD REMAIN OUTSIDE THE LIMIT OF DISTURBANCE TO PREVENT SOIL COMPACTION BY HEAVY EQUIPMENT. PROTECT BIORETENTION AREAS WITH SILT FENCE AND CONSTRUCTION FENCING.
 - VERIFY INSTALLATION OF UNDERDRAIN IS CORRECT PRIOR TO PLACING SOIL.

FOR REFERENCE ONLY
BIOFILTRATION BASIN DETAIL
N.T.S.

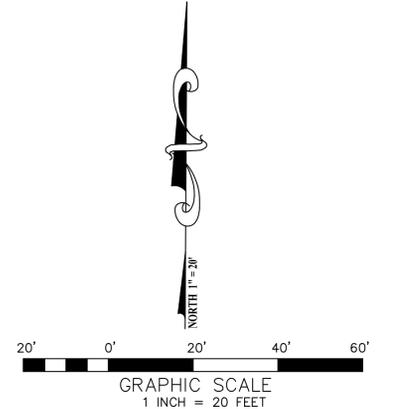


SPECIFIER CHART

MODEL NO.	STANDARD & SHALLOW	STANDARD DEPTH	SHALLOW DEPTH
STANDARD DEPTH	STANDARD DEPTH	STANDARD DEPTH	SHALLOW DEPTH
INCHES	INCHES	INCHES	INCHES
FGR-10P	12 X 12	12 X 12	12 X 12
FGR-10S	18 X 18	18 X 18	18 X 18
FGR-10M	18 X 18	18 X 18	18 X 18
FGR-10SP	18 X 24	18 X 24	18 X 24
FGR-20P	24 X 24	24 X 24	24 X 24
FGR-20S	30 X 30	30 X 30	30 X 30
FGR-20M	30 X 30	30 X 30	30 X 30
FGR-20SP	30 X 48	30 X 48	30 X 48
FGR-40P	48 X 48	48 X 48	48 X 48
FGR-40S	60 X 60	60 X 60	60 X 60
FGR-40M	60 X 60	60 X 60	60 X 60
FGR-40SP	60 X 96	60 X 96	60 X 96

DMA DATA TABLE

DMA TITLE	TRIBUTARY SIZE (AC)	DRAINS TO EXISTING POINT OF DISCHARGE (NO IMPROVEMENTS PROPOSED)
1A	2.00	BF-1B
1B	0.61	BF-1C
1C	0.17	BF-1D
1D	0.38	BF-1E
1E	0.46	BF-1F
1F	0.16	BF-1A
2A	0.40	BF-2B
2B	0.28	BF-2C
2C	0.71	



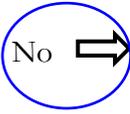
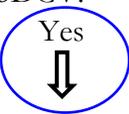
SANTEE COMMUNITY CENTER
POST-DEVELOPMENT DRAINAGE
CONDITION
FIGURE A2

PSOMAS
401 B Street, Suite 1600
San Diego, CA 92101
(619) 961-2800 (619) 961-2392 fax
www.psomas.com

FOR REFERENCE ONLY
FLOGARD CATCH BASIN INSERT FILTER
N.T.S.

Attachment 1c

Worksheet 0-2. Harvest and Use Feasibility Screening

Harvest and Use Feasibility Screening		Worksheet B.3-1
<p>1. Is there a demand for harvested water (check all that apply) at the project site that is reliably present during the wet season? <i>Waiting on flush volume from plumbing.</i></p> <p><input checked="" type="checkbox"/> Toilet and urinal flushing</p> <p><input type="checkbox"/> Landscape irrigation <i>Due to the use of reclaimed water for the entirety of landscape irrigation, there is no irrigation demand for Harvest and Use (per City of Santee BMP Manual, Section B.3.2.2, bullet 1)</i></p> <p><input type="checkbox"/> Other: _____</p>		
<p>2. If there is a demand; estimate the anticipated average wet season demand over a period of 36 hours. Guidance for planning level demand calculations for toilet/urinal flushing and landscape irrigation is provided in Section B.3.2.</p> <p><i>Daily Occupancy - 190</i></p> <p><i>Total daily toilet/urinal use (based on office/retail space (7 per occupant)) - 1330 uses per day - 1995 uses in 36 hours</i></p> <p><i>Average 0.7 gal/flush = 1397 gallons used in 36 hours</i></p>		
<p>3. Calculate the DCV using worksheet B-2.1.</p> <p><i>DCV = 4514 cu-ft = 33,767 gallons</i></p>		
<p>3a. Is the 36-hour demand greater than or equal to the DCV?</p> <p>Yes / No </p> <p></p>	<p>3b. Is the 36-hour demand greater than 0.25DCV but less than the full DCV?</p> <p>Yes / No </p> <p></p>	<p>3c. Is the 36-hour demand less than 0.25DCV?</p> <p></p>
<p>Harvest and use appears to be feasible. Conduct more detailed evaluation and sizing calculations to confirm that DCV can be used at an adequate rate to meet drawdown criteria.</p>	<p>Harvest and use may be feasible. Conduct more detailed evaluation and sizing calculations to determine feasibility. Harvest and use may only be able to be used for a portion of the site, or (optionally) the storage may need to be upsized to meet long term capture targets while draining in longer than 36 hours.</p>	<p>Harvest and use is considered to be infeasible.</p>

Worksheet 0-1: Categorization of Infiltration Feasibility Condition

Categorization of Infiltration Feasibility Condition		Worksheet C.4-1	
<p>Part 1 - Full Infiltration Feasibility Screening Criteria</p> <p>Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?</p>			
Criteria	Screening Question	Yes	No
1	<p>Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.</p>		<input checked="" type="checkbox"/>
<p>Provide basis: Per the project specific Geotechnical Report, the infiltration rate is less than 0.001 inches per hour.</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			
2	<p>Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.</p>		<input checked="" type="checkbox"/>
<p>Provide basis: Per the project specific Geotechnical Report, the infiltration rate is less than 0.001 inches per hour.</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			

Worksheet C.4-1 Page 2 of 4			
Criteria	Screening Question	Yes	No
3	<p>Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</p>		☒
<p>Provide basis: Per the project specific Geotechnical Report, the infiltration rate is less than 0.001 inches per hour.</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			
4	<p>Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</p>		☒
<p>Provide basis: Per the project specific Geotechnical Report, the infiltration rate is less than 0.001 inches per hour.</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.</p>			
Part 1 Result*	<p>If all answers to rows 1 - 4 are “Yes” a full infiltration design is potentially feasible. The feasibility screening category is Full Infiltration</p> <p>If any answer from row 1-4 is “No”, infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a “full infiltration” design. Proceed to Part 2</p>		

*To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

Worksheet C.4-1 Page 3 of 4

Part 2 – Partial Infiltration vs. No Infiltration Feasibility Screening Criteria

Would infiltration of water in any appreciable amount be physically feasible without any negative consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
5	Do soil and geologic conditions allow for infiltration in any appreciable rate or volume? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		<input checked="" type="checkbox"/>

Provide basis:

Per the project specific Geotechnical Report, the infiltration rate is less than 0.001 inches per hour.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

6	Can Infiltration in any appreciable quantity be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.		<input checked="" type="checkbox"/>
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Provide basis:

Per the project specific Geotechnical Report, the infiltration rate is less than 0.001 inches per hour.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

Worksheet C.4-1 Page 4 of 4			
Criteria	Screening Question	Yes	No
7	<p>Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</p>		☒
<p>Provide basis: Per the project specific Geotechnical Report, the infiltration rate is less than 0.001 inches per hour.</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</p>			
8	<p>Can infiltration be allowed without violating downstream water rights? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.</p>		☒
<p>Provide basis: Per the project specific Geotechnical Report, the infiltration rate is less than 0.001 inches per hour.</p> <p>Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.</p>			
Part 2 Result*	<p>If all answers from row 1-4 are yes then partial infiltration design is potentially feasible. The feasibility screening category is Partial Infiltration.</p> <p>If any answer from row 5-8 is no, then infiltration of any volume is considered to be infeasible within the drainage area. The feasibility screening category is No Infiltration.</p>		No Infiltration

*To be completed using gathered site information and best professional judgment considering the definition of MEP in the Permit. Additional testing and/or studies may be required by Agency/Jurisdictions to substantiate findings

Automated Worksheet B.1: Calculation of Design Capture Volume (V2.0)

Category	#	Description	<i>i</i>	<i>ii</i>	<i>iii</i>	<i>iv</i>	<i>v</i>	<i>vi</i>	<i>vii</i>	<i>viii</i>	<i>ix</i>	<i>x</i>	Units
Standard Drainage Basin Inputs	1	Drainage Basin ID or Name	DMA 1B	DMA 1C	DMA 1D	DMA 2A	DMA 2B	DMA 2C					unitless
	2	85th Percentile 24-hr Storm Depth	0.50	0.50	0.50	0.50	0.50	0.50					inches
	3	Impervious Surfaces <u>Not Directed to Dispersion Area</u> (C=0.90)	33,565	4,810	22,685	13,250	9,276	24,188					sq-ft
	4	Semi-Pervious Surfaces <u>Not Serving as Dispersion Area</u> (C=0.30)											sq-ft
	5	Engineered Pervious Surfaces <u>Not Serving as Dispersion Area</u> (C=0.10)											sq-ft
	6	Natural Type A Soil <u>Not Serving as Dispersion Area</u> (C=0.10)											sq-ft
	7	Natural Type B Soil <u>Not Serving as Dispersion Area</u> (C=0.14)											sq-ft
	8	Natural Type C Soil <u>Not Serving as Dispersion Area</u> (C=0.23)											sq-ft
	9	Natural Type D Soil <u>Not Serving as Dispersion Area</u> (C=0.30)	8,385	2,640	10,790	4,185	2,930	7,639					sq-ft
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	10	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	No	No	No	No	No	No	No	No	No	No	yes/no
	11	Impervious Surfaces Directed to Dispersion Area per SD-B (Ci=0.90)											sq-ft
	12	Semi-Pervious Surfaces Serving as Dispersion Area per SD-B (Ci=0.30)											sq-ft
	13	Engineered Pervious Surfaces Serving as Dispersion Area per SD-B (Ci=0.10)											sq-ft
	14	Natural Type A Soil Serving as Dispersion Area per SD-B (Ci=0.10)											sq-ft
	15	Natural Type B Soil Serving as Dispersion Area per SD-B (Ci=0.14)											sq-ft
	16	Natural Type C Soil Serving as Dispersion Area per SD-B (Ci=0.23)											sq-ft
	17	Natural Type D Soil Serving as Dispersion Area per SD-B (Ci=0.30)											sq-ft
	18	Number of Tree Wells Proposed per SD-A											#
	19	Average Mature Tree Canopy Diameter											ft
	20	Number of Rain Barrels Proposed per SD-E											#
Initial Runoff Factor Calculation	22	Total Tributary Area	41,950	7,450	33,475	17,435	12,206	31,827	0	0	0	0	sq-ft
	23	Initial Runoff Factor for Standard Drainage Areas	0.78	0.69	0.71	0.76	0.76	0.76	0.00	0.00	0.00	0.00	unitless
	24	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	25	Initial Weighted Runoff Factor	0.78	0.69	0.71	0.76	0.76	0.76	0.00	0.00	0.00	0.00	unitless
	26	Initial Design Capture Volume	1,363	214	990	552	387	1,008	0	0	0	0	cubic-feet
Dispersion Area Adjustments	27	Total Impervious Area Dispersed to Pervious Surface	0	0	0	0	0	0	0	0	0	0	sq-ft
	28	Total Pervious Dispersion Area	0	0	0	0	0	0	0	0	0	0	sq-ft
	29	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ratio
	30	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	31	Runoff Factor After Dispersion Techniques	0.78	0.69	0.71	0.76	0.76	0.76	n/a	n/a	n/a	n/a	unitless
	32	Design Capture Volume After Dispersion Techniques	1,363	214	990	552	387	1,008	0	0	0	0	cubic-feet
Tree & Barrel Adjustments	33	Total Tree Well Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
	34	Total Rain Barrel Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
Results	35	Final Adjusted Runoff Factor	0.78	0.69	0.71	0.76	0.76	0.76	0.00	0.00	0.00	0.00	unitless
	36	Final Effective Tributary Area	32,721	5,141	23,767	13,251	9,277	24,189	0	0	0	0	sq-ft
	37	Initial Design Capture Volume Retained by Site Design Elements	0	0	0	0	0	0	0	0	0	0	cubic-feet
	38	Final Design Capture Volume Tributary to BMP	1,363	214	990	552	387	1,008	0	0	0	0	cubic-feet

No Warning Messages

Automated Worksheet B.2: Retention Requirements (V2.0)

Category	#	Description	<i>i</i>	<i>ii</i>	<i>iii</i>	<i>iv</i>	<i>v</i>	<i>vi</i>	<i>vii</i>	<i>viii</i>	<i>ix</i>	<i>x</i>	Units	
Basic Analysis	1	Drainage Basin ID or Name	DMA 1B	DMA 1C	DMA 1D	DMA 2A	DMA 2B	DMA 2C	-	-	-	-	unitless	
	2	85th Percentile Rainfall Depth	0.50	0.50	0.50	0.50	0.50	0.50	-	-	-	-	inches	
	3	Predominant NRCS Soil Type Within BMP Location	D	D	D	D	D	D					unitless	
	4	Is proposed BMP location Restricted or Unrestricted for Infiltration Activities?	Restricted	Restricted	Restricted	Restricted	Restricted	Restricted					unitless	
	5	Nature of Restriction	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater					unitless	
	6	Do Minimum Retention Requirements Apply to this Project?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	yes/no
	7	Are Habitable Structures Greater than 9 Stories Proposed?	No	No	No	No	No	No						yes/no
Advanced Analysis	8	Has Geotechnical Engineer Performed an Infiltration Analysis?	Yes	Yes	Yes	Yes	Yes	Yes					yes/no	
	9	Design Infiltration Rate Recommended by Geotechnical Engineer	0.001	0.001	0.001	0.001	0.001	0.001					in/hr	
Result	10	Design Infiltration Rate Used To Determine Retention Requirements	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	in/hr	
	11	Percent of Average Annual Runoff that Must be Retained within DMA	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	-	-	-	-	percentage	
	12	Fraction of DCV Requiring Retention	0.02	0.02	0.02	0.02	0.02	0.02	-	-	-	-	ratio	
	13	Required Retention Volume	27	4	20	11	8	20	-	-	-	-	cubic-feet	

No Warning Messages

Automated Worksheet B.3: BMP Performance (V2.0)

Category	#	Description	<i>i</i>	<i>ii</i>	<i>iii</i>	<i>iv</i>	<i>v</i>	<i>vi</i>	<i>vii</i>	<i>viii</i>	<i>ix</i>	<i>x</i>	Units	
BMP Inputs	1	Drainage Basin ID or Name	DMA 1B	DMA 1C	DMA 1D	DMA 2A	DMA 2B	DMA 2C	-	-	-	-	sq-ft	
	2	Design Infiltration Rate Recommended	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-	in/hr	
	3	Design Capture Volume Tributary to BMP	1,363	214	990	552	387	1,008	-	-	-	-	cubic-feet	
	4	Is BMP Vegetated or Unvegetated?	Vegetated	Vegetated	Vegetated	Vegetated	Vegetated	Vegetated						unitless
	5	Is BMP Impermeably Lined or Unlined?	Lined	Lined	Lined	Lined	Lined	Lined						unitless
	6	Does BMP Have an Underdrain?	Underdrain	Underdrain	Underdrain	Underdrain	Underdrain	Underdrain						unitless
	7	Does BMP Utilize Standard or Specialized Media?	Standard	Standard	Standard	Standard	Standard	Standard						unitless
	8	Provided Surface Area	860	930	2,795	685	460	3,150						sq-ft
	9	Provided Surface Ponding Depth	12	12	12	6	6	6						inches
	10	Provided Soil Media Thickness	27	27	27	27	27	27						inches
	11	Provided Gravel Thickness (Total Thickness)	27	27	27	27	27	27						inches
	12	Underdrain Offset	3	3	3	3	3	3						inches
	13	Diameter of Underdrain or Hydromod Orifice (Select Smallest)	0.90	0.90	0.90	0.90	0.90	0.90						inches
	14	Specialized Soil Media Filtration Rate												in/hr
	15	Specialized Soil Media Pore Space for Retention												unitless
	16	Specialized Soil Media Pore Space for Biofiltration												unitless
	17	Specialized Gravel Media Pore Space												unitless
Retention Calculations	18	Volume Infiltrated Over 6 Hour Storm	0	0	0	0	0	0	0	0	0	0	cubic-feet	
	19	Ponding Pore Space Available for Retention	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	unitless	
	20	Soil Media Pore Space Available for Retention	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	unitless	
	21	Gravel Pore Space Available for Retention (Above Underdrain)	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.40	0.40	0.40	unitless	
	22	Gravel Pore Space Available for Retention (Below Underdrain)	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	unitless	
	23	Effective Retention Depth	2.55	2.55	2.55	2.55	2.55	2.55	0.00	0.00	0.00	0.00	inches	
	24	Fraction of DCV Retained (Independent of Drawdown Time)	0.13	0.92	0.60	0.26	0.25	0.66	0.00	0.00	0.00	0.00	ratio	
	25	Calculated Retention Storage Drawdown Time	120	120	120	120	120	120	0	0	0	0	hours	
	26	Efficacy of Retention Processes	0.15	0.71	0.53	0.27	0.26	0.57	0.00	0.00	0.00	0.00	ratio	
	27	Volume Retained by BMP (Considering Drawdown Time)	206	152	529	150	102	574	0	0	0	0	cubic-feet	
	28	Design Capture Volume Remaining for Biofiltration	1,157	62	461	402	285	434	0	0	0	0	cubic-feet	
Biofiltration Calculations	29	Max Hydromod Flow Rate through Underdrain	0.0486	0.0486	0.0486	0.0462	0.0462	0.0462	0.0000	0.0000	0.0000	0.0000	cfs	
	30	Max Soil Filtration Rate Allowed by Underdrain Orifice	2.44	2.26	0.75	2.91	4.34	0.63	0.00	0.00	0.00	0.00	in/hr	
	31	Soil Media Filtration Rate per Specifications	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	in/hr	
	32	Soil Media Filtration Rate to be used for Sizing	2.44	2.26	0.75	2.91	4.34	0.63	0.00	0.00	0.00	0.00	in/hr	
	33	Depth Biofiltered Over 6 Hour Storm	14.64	13.54	4.50	17.47	26.02	3.80	0.00	0.00	0.00	0.00	inches	
	34	Ponding Pore Space Available for Biofiltration	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	unitless	
	35	Soil Media Pore Space Available for Biofiltration	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	unitless	
	36	Gravel Pore Space Available for Biofiltration (Above Underdrain)	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	unitless	
	37	Effective Depth of Biofiltration Storage	27.00	27.00	27.00	21.00	21.00	21.00	0.00	0.00	0.00	0.00	inches	
	38	Drawdown Time for Surface Ponding	5	5	16	2	1	9	0	0	0	0	hours	
	39	Drawdown Time for Effective Biofiltration Depth	11	12	36	7	5	33	0	0	0	0	hours	
	40	Total Depth Biofiltered	41.64	40.54	31.50	38.47	47.02	24.80	0.00	0.00	0.00	0.00	inches	
	41	Option 1 - Biofilter 1.50 DCV: Target Volume	1,736	93	692	602	427	651	0	0	0	0	cubic-feet	
	42	Option 1 - Provided Biofiltration Volume	1,736	93	692	602	427	651	0	0	0	0	cubic-feet	
	43	Option 2 - Store 0.75 DCV: Target Volume	868	46	346	301	214	325	0	0	0	0	cubic-feet	
	44	Option 2 - Provided Storage Volume	868	46	346	301	214	325	0	0	0	0	cubic-feet	
	45	Portion of Biofiltration Performance Standard Satisfied	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	ratio	
Result	46	Do Site Design Elements and BMPs Satisfy Annual Retention Requirements?	Yes	Yes	Yes	Yes	Yes	Yes	-	-	-	-	yes/no	
	47	Overall Portion of Performance Standard Satisfied (BMP Efficacy Factor)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	ratio	
	48	Deficit of Effectively Treated Stormwater	0	0	0	0	0	0	n/a	n/a	n/a	n/a	cubic-feet	

Attention!
 - BMPs sized at <3% of the effective tributary areas must be accompanied by Reduced Size BMP Maintenance calculations (see last tab)

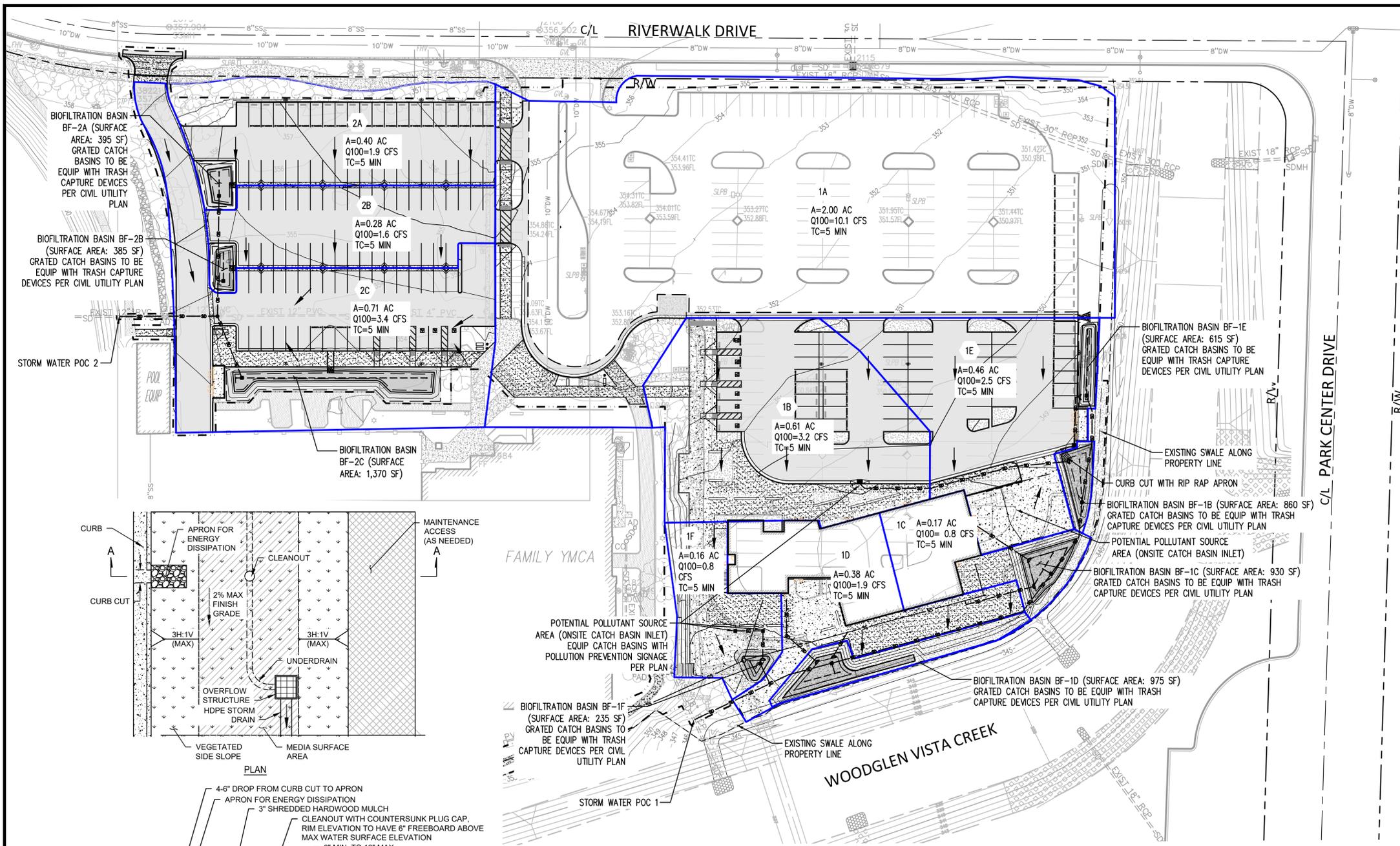
ATTACHMENT 2 BACKUP FOR PDP HYDROMODIFICATION CONTROL MEASURES

This is the cover sheet for Attachment 2.

Mark this box if this attachment is empty because the project is exempt from PDP hydromodification management requirements.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 2a	Hydromodification Management Exhibit (Required)	<input checked="" type="checkbox"/> Included See Hydromodification Management Exhibit Checklist on the back of this Attachment cover sheet.
Attachment 2b	Management of Critical Coarse Sediment Yield Areas (WMAA Exhibit is required, additional analyses are optional) See Section 6.2 of the BMP Design Manual.	<input checked="" type="checkbox"/> Exhibit showing project drainage boundaries marked on WMAA Critical Coarse Sediment Yield Area Map (Required) Optional analyses for Critical Coarse Sediment Yield Area Determination <input type="checkbox"/> 6.2.1 Verification of Geomorphic Landscape Units Onsite <input type="checkbox"/> 6.2.2 Downstream Systems Sensitivity to Coarse Sediment <input type="checkbox"/> 6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite
Attachment 2c	Geomorphic Assessment of Receiving Channels (Optional) See Section 6.3.4 of the BMP Design Manual.	<input checked="" type="checkbox"/> Not performed <input type="checkbox"/> Included <input type="checkbox"/> Submitted as separate stand-alone document
Attachment 2d	Flow Control Facility Design, including Structural BMP Drawdown Calculations and Overflow Design Summary (Required) See Chapter 6 and Appendix G of the BMP Design Manual	<input checked="" type="checkbox"/> Included <input type="checkbox"/> Submitted as separate stand-alone document
Attachment 2e	Vector Control Plan (Required when structural BMPs will not drain in 96 hours)	<input type="checkbox"/> Included <input checked="" type="checkbox"/> Not required because BMPs will drain in less than 96 hours

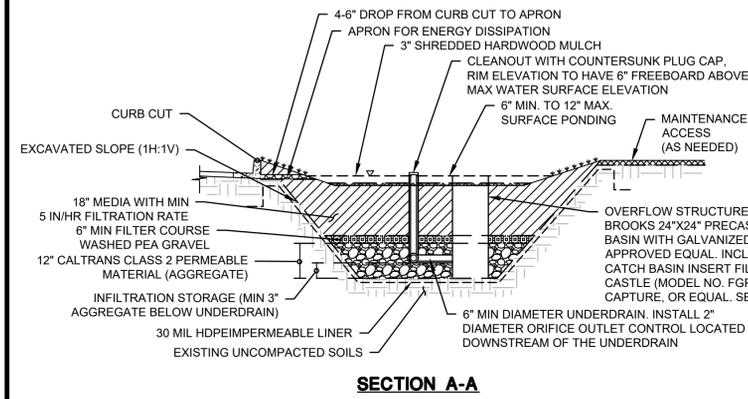
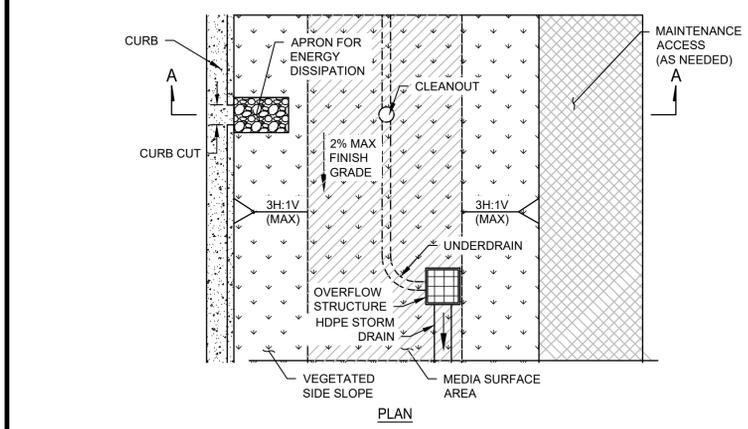


LEGEND

- CURB RAMP
- CONCRETE CROSS GUTTER/RIBBON GUTTER
- SIDEWALK UNDERDRAIN
- CATCH BASIN
- CLEANOUT
- SLOPE ARROW
- NEW CONTOUR
- NEW SPOT ELEVATION
- EXISTING CONTOUR (PER AERIAL SURVEY, ACCURACY OF ± 0.5')
- EXISTING ELEVATION (PER FIELD SURVEY, ACCURACY OF ± 0.1')
- EXISTING SPOT ELEVATION (PER AERIAL SURVEY, ACCURACY OF ± 0.5')
- NEW CONTOUR LINE
- DAYLIGHT LINE
- SAWCUT LINE
- RIDGE LINE
- CONCRETE CURB
- CONCRETE CURB AND GUTTER
- PUBLIC UTILITIES EASEMENT LINE
- DRAINAGE AREA BOUNDARY
- SUBCATCHMENT IDENTIFICATION

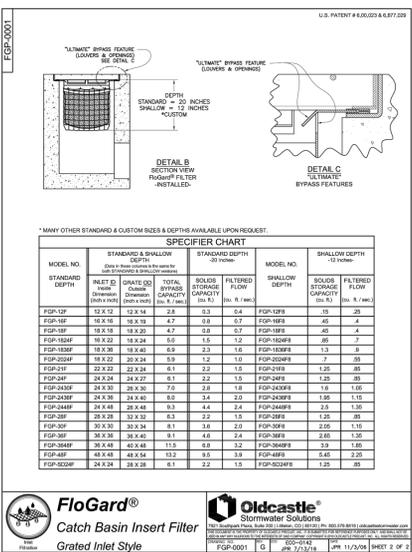
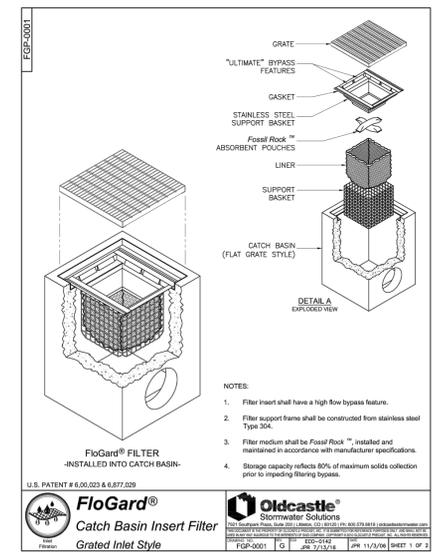
1B
A=AREA (ACRES)
Q=6-HOUR, 100-YEAR STORM EVENT (CFS)
TC=TIME OF CONCENTRATION (MIN)

- GENERAL NOTES:**
- HYDRAULIC SOIL GROUP = C
 - APPROXIMATE DEPTH TO GROUND WATER = 14.5 - 16.1 FT BELOW EXISTING SURFACE
 - NO EXISTING NATURAL HYDROLOGIC FEATURES EXIST WITHIN THE PROJECT LIMITS.
 - THERE ARE NO POTENTIAL CRITICAL COURSE SEDIMENT YIELD AREAS LOCATED WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS.
 - THE CITY OF SANTEE, AS THE PROJECT OWNER, IS RESPONSIBLE FOR THE MAINTENANCE OF PROPOSED BMPS, INCLUDING BIOFILTRATION BASINS AND TRASH CAPTURE DEVICES.



- BIOFILTRATION PROTECTION DURING CONSTRUCTION:**
- PREVENT OVER-COMPACTION OF NATIVE SOILS IN AREAS OF THE BASIN WHERE INFILTRATION WILL OCCUR. DELINEATE THE BIOFILTRATION AREA AND KEEP CONSTRUCTION TRAFFIC OFF. PROTECT SOILS WITH FENCING, PLYWOOD, ETC.
 - PROVIDE EROSION CONTROL IN THE CONTRIBUTING DRAINAGE AREAS OF THE DESIGNATED BIOFILTRATION AREA. STABILIZE UPSLOPE AREAS.
 - DRAINAGE SHOULD BE DIRECTED AWAY FROM BIORETENTION FACILITIES UNTIL UPSLOPE AREAS ARE STABILIZED. THE CONCENTRATION OF FINES COULD PREVENT POST-CONSTRUCTION INFILTRATION AND CAUSE DESIGN FAILURE.
 - IF DRAINAGE IS TO BE ALLOWED THROUGH THE FACILITY DURING CONSTRUCTION LEAVE OR BACKFILL AT LEAST 6 INCHES ABOVE THE FINAL GRADE. TEMPORARILY COVER THE UNDERDRAIN WITH PLASTIC OR FABRIC. LINE OR MULCH THE BIOFILTRATION AREA.
 - BIORETENTION FACILITIES SHOULD REMAIN OUTSIDE THE LIMIT OF DISTURBANCE TO PREVENT SOIL COMPACTION BY HEAVY EQUIPMENT. PROTECT BIORETENTION AREAS WITH SILT FENCE AND CONSTRUCTION FENCING.
 - VERIFY INSTALLATION OF UNDERDRAIN IS CORRECT PRIOR TO PLACING SOIL.

FOR REFERENCE ONLY
BIOFILTRATION BASIN DETAIL
N.T.S.



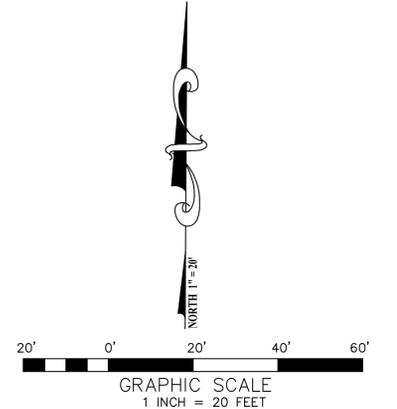
SPECIFIER CHART

MODEL NO.	STANDARD & SHALLOW	STANDARD DEPTH	SHALLOW DEPTH
STANDARD DEPTH (ft)	STANDARD DEPTH (ft)	STANDARD DEPTH (ft)	SHALLOW DEPTH (ft)
FGR-10P	12 X 12	12 X 12	12 X 12
FGR-10S	18 X 18	18 X 18	18 X 18
FGR-10M	18 X 18	18 X 18	18 X 18
FGR-10SP	18 X 24	18 X 24	18 X 24
FGR-20P	24 X 24	24 X 24	24 X 24
FGR-20S	30 X 30	30 X 30	30 X 30
FGR-20M	30 X 30	30 X 30	30 X 30
FGR-20SP	30 X 48	30 X 48	30 X 48
FGR-40P	48 X 48	48 X 48	48 X 48
FGR-40S	60 X 60	60 X 60	60 X 60
FGR-40M	60 X 60	60 X 60	60 X 60
FGR-40SP	60 X 96	60 X 96	60 X 96

FloGard® Catch Basin Insert Filter
Oldcastle® Stormwater Solutions

DMA DATA TABLE

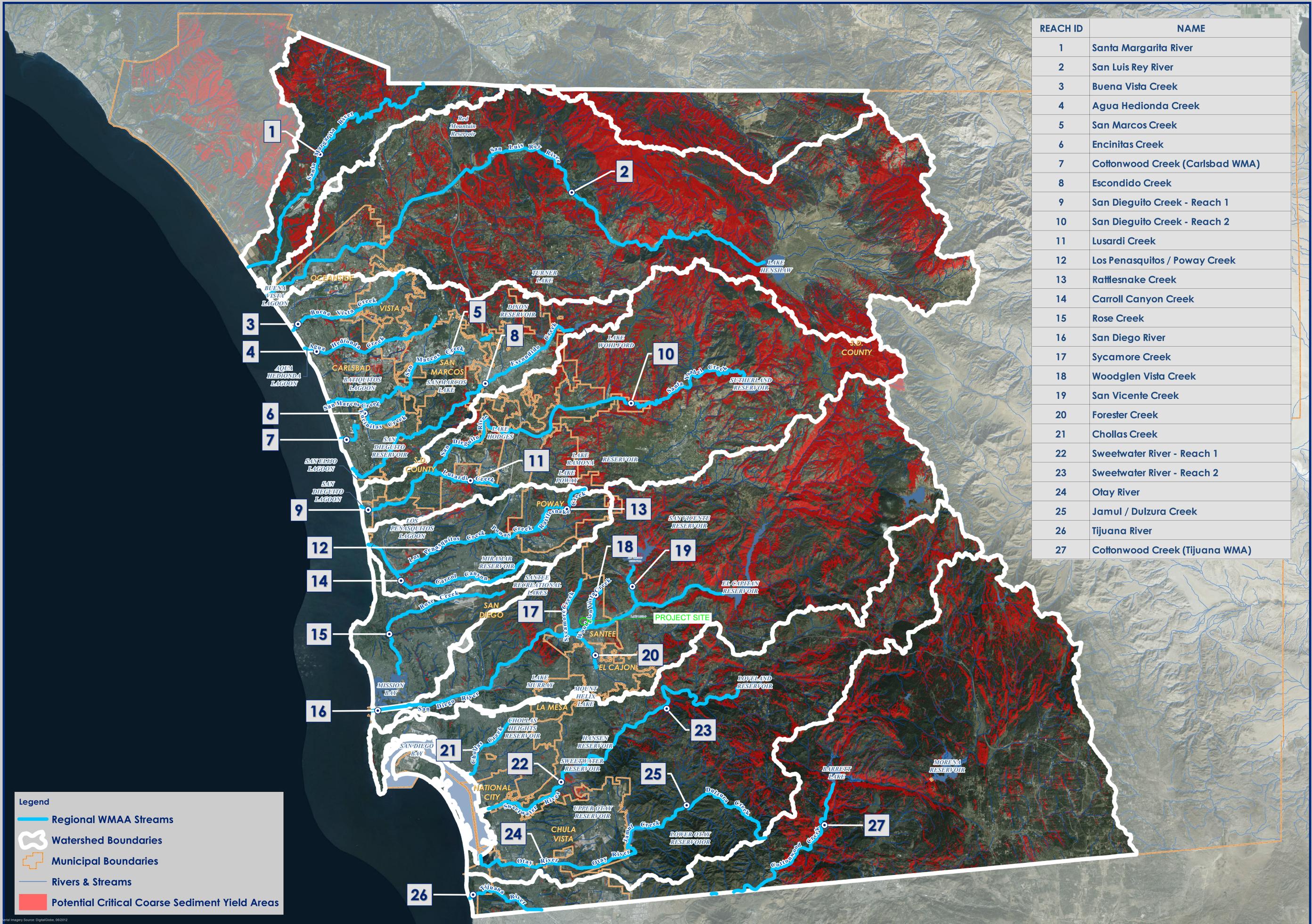
DMA TITLE	TRIBUTARY SIZE (AC)	DRAINS TO EXISTING POINT OF DISCHARGE (NO IMPROVEMENTS PROPOSED)
1A	2.00	BF-1B
1B	0.61	BF-1C
1C	0.17	BF-1D
1D	0.38	BF-1E
1E	0.46	BF-1F
1F	0.16	BF-1A
2A	0.40	BF-2B
2B	0.28	BF-2C
2C	0.71	



SANTEE COMMUNITY CENTER
POST-DEVELOPMENT DRAINAGE
CONDITION
FIGURE A2

PSOMAS
401 B Street, Suite 1600
San Diego, CA 92101
(619) 961-2800 (619) 961-2392 fax
www.psomas.com

FOR REFERENCE ONLY
FLOGARD CATCH BASIN INSERT FILTER
N.T.S.



REACH ID	NAME
1	Santa Margarita River
2	San Luis Rey River
3	Buena Vista Creek
4	Agua Hedionda Creek
5	San Marcos Creek
6	Encinitas Creek
7	Cottonwood Creek (Carlsbad WMA)
8	Escondido Creek
9	San Dieguito Creek - Reach 1
10	San Dieguito Creek - Reach 2
11	Lusardi Creek
12	Los Penasquitos / Poway Creek
13	Rattlesnake Creek
14	Carroll Canyon Creek
15	Rose Creek
16	San Diego River
17	Sycamore Creek
18	Woodglen Vista Creek
19	San Vicente Creek
20	Forester Creek
21	Chollas Creek
22	Sweetwater River - Reach 1
23	Sweetwater River - Reach 2
24	Otay River
25	Jamul / Dulzura Creek
26	Tijuana River
27	Cottonwood Creek (Tijuana WMA)

Legend

- Regional WMAA Streams
- Watershed Boundaries
- Municipal Boundaries
- Rivers & Streams
- Potential Critical Coarse Sediment Yield Areas

Potential Critical Coarse Sediment Yield Areas

Regional San Diego County Watersheds

Attachment 2d

SDHM 3.1
PROJECT REPORT

General Model Information

Project Name: 2025_SCC
Site Name: SCC
Site Address:
City:
Report Date: 2/24/2025
Gage: SANTEE
Data Start: 10/01/1973
Data End: 09/30/2004
Timestep: Hourly
Precip Scale: 1.000
Version Date: 2021/06/28

POC Thresholds

Low Flow Threshold for POC1: 10 Percent of the 2 Year
High Flow Threshold for POC1: 10 Year

Low Flow Threshold for POC2: 10 Percent of the 2 Year
High Flow Threshold for POC2: 10 Year

Landuse Basin Data
Predeveloped Land Use

Pre Basin 1

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
C,NatVeg,Flat	1.79
Pervious Total	1.79
Impervious Land Use	acre
Impervious Total	0
Basin Total	1.79

Element Flows To:
Surface Interflow Groundwater

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Pre Basin 2

Bypass:	No
GroundWater:	No
Pervious Land Use C,NatVeg,Flat	acre 1.39
Pervious Total	1.39
Impervious Land Use	acre
Impervious Total	0
Basin Total	1.39

Element Flows To:	Interflow	Groundwater
Surface		

DRAFT

Mitigated Land Use

Prop Basin 2

Bypass:	No
GroundWater:	No
Pervious Land Use C,NatVeg,Flat	acre 0.34
Pervious Total	0.34
Impervious Land Use IMPERVIOUS-FLAT	acre 1.05
Impervious Total	1.05
Basin Total	1.39

Element Flows To:		
Surface	Interflow	Groundwater
Surface rtial Ret 2	Surface rtial Ret 2	

DRAFT

Prop Basin 1

Bypass:	No
GroundWater:	No
Pervious Land Use C,NatVeg,Flat	acre 0.33
Pervious Total	0.33
Impervious Land Use IMPERVIOUS-FLAT	acre 1.46
Impervious Total	1.46
Basin Total	1.79

Element Flows To:

Surface	Interflow	Groundwater
Surface rtial Ret 1	Surface rtial Ret 1	

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Routing Elements
Predeveloped Routing

DRAFT

Mitigated Routing

Bio Partial Ret 2

Bottom Length: 161.93 ft.
 Bottom Width: 161.93 ft.
 Material thickness of first layer: 0.25
 Material type for first layer: Mulch
 Material thickness of second layer: 1.5
 Material type for second layer: ESM
 Material thickness of third layer: 1.5
 Material type for third layer: GRAVEL
 Underdrain used
 Underdrain Diameter (feet): 0.5
 Orifice Diameter (in.): 0.749612500000001
 Offset (in.): 3
 Flow Through Underdrain (ac-ft.): 21.954
 Total Outflow (ac-ft.): 24.896
 Percent Through Underdrain: 88.18
 Discharge Structure
 Riser Height: 0.5 ft.
 Riser Diameter: 12 in.
 Element Flows To:
 Outlet 1 Outlet 2

Biofilter Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.6019	0.0000	0.0000	0.0000
0.0467	0.6019	0.0084	0.0000	0.0000
0.0934	0.6019	0.0169	0.0000	0.0000
0.1401	0.6019	0.0253	0.0000	0.0000
0.1868	0.6019	0.0337	0.0000	0.0000
0.2335	0.6019	0.0422	0.0000	0.0000
0.2802	0.6019	0.0506	0.0000	0.0000
0.3269	0.6019	0.0590	0.0000	0.0000
0.3736	0.6019	0.0675	0.0000	0.0000
0.4203	0.6019	0.0759	0.0000	0.0000
0.4670	0.6019	0.0843	0.0000	0.0000
0.5137	0.6019	0.0928	0.0000	0.0000
0.5604	0.6019	0.1012	0.0000	0.0000
0.6071	0.6019	0.1096	0.0000	0.0000
0.6538	0.6019	0.1181	0.0000	0.0000
0.7005	0.6019	0.1265	0.0000	0.0000
0.7473	0.6019	0.1349	0.0000	0.0000
0.7940	0.6019	0.1434	0.0000	0.0000
0.8407	0.6019	0.1518	0.0000	0.0000
0.8874	0.6019	0.1602	0.0000	0.0000
0.9341	0.6019	0.1687	0.0000	0.0000
0.9808	0.6019	0.1771	0.0000	0.0000
1.0275	0.6019	0.1855	0.0000	0.0000
1.0742	0.6019	0.1940	0.0000	0.0000
1.1209	0.6019	0.2024	0.0000	0.0000
1.1676	0.6019	0.2108	0.0000	0.0000
1.2143	0.6019	0.2193	0.0000	0.0000
1.2610	0.6019	0.2277	0.0000	0.0000
1.3077	0.6019	0.2361	0.0000	0.0000

1.3544	0.6019	0.2446	0.0000	0.0000
1.4011	0.6019	0.2530	0.0000	0.0000
1.4478	0.6019	0.2614	0.0000	0.0000
1.4945	0.6019	0.2699	0.0000	0.0000
1.5412	0.6019	0.2783	0.0000	0.0000
1.5879	0.6019	0.2868	0.0000	0.0000
1.6346	0.6019	0.2952	0.0000	0.0000
1.6813	0.6019	0.3036	0.0000	0.0000
1.7280	0.6019	0.3121	0.0000	0.0000
1.7747	0.6019	0.3237	0.0000	0.0000
1.8214	0.6019	0.3354	0.0000	0.0000
1.8681	0.6019	0.3471	0.0000	0.0000
1.9148	0.6019	0.3587	0.0000	0.0000
1.9615	0.6019	0.3704	0.0000	0.0000
2.0082	0.6019	0.3821	0.0000	0.0000
2.0549	0.6019	0.3937	0.0000	0.0000
2.1016	0.6019	0.4054	0.0000	0.0000
2.1484	0.6019	0.4171	0.0000	0.0000
2.1951	0.6019	0.4287	0.0000	0.0000
2.2418	0.6019	0.4404	0.0000	0.0000
2.2885	0.6019	0.4521	0.0000	0.0000
2.3352	0.6019	0.4637	0.0000	0.0000
2.3819	0.6019	0.4754	0.0000	0.0000
2.4286	0.6019	0.4871	0.0000	0.0000
2.4753	0.6019	0.4987	0.0000	0.0000
2.5220	0.6019	0.5104	0.0000	0.0000
2.5687	0.6019	0.5221	0.0000	0.0000
2.6154	0.6019	0.5337	0.0000	0.0000
2.6621	0.6019	0.5454	0.0000	0.0000
2.7088	0.6019	0.5571	0.0000	0.0000
2.7555	0.6019	0.5687	0.0000	0.0000
2.8022	0.6019	0.5804	0.0000	0.0000
2.8489	0.6019	0.5921	0.0000	0.0000
2.8956	0.6019	0.6037	0.0000	0.0000
2.9423	0.6019	0.6154	0.0000	0.0000
2.9890	0.6019	0.6271	0.0000	0.0000
3.0357	0.6019	0.6387	0.0000	0.0000
3.0824	0.6019	0.6504	0.0000	0.0000
3.1291	0.6019	0.6621	0.0000	0.0000
3.1758	0.6019	0.6737	0.0000	0.0000
3.2225	0.6019	0.6854	0.0000	0.0000
3.2500	0.6019	0.6923	0.0000	0.0000

Biofilter Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Infiltr(cfs)
3.2500	0.6019	0.6923	0.0000	0.0264	0.0000
3.2967	0.6019	0.7204	0.0000	0.0264	0.0000
3.3434	0.6019	0.7485	0.0000	0.0264	0.0000
3.3901	0.6019	0.7766	0.0000	0.0264	0.0000
3.4368	0.6019	0.8047	0.0000	0.0264	0.0000
3.4835	0.6019	0.8328	0.0000	0.0264	0.0000
3.5302	0.6019	0.8609	0.0000	0.0264	0.0000
3.5769	0.6019	0.8890	0.0000	0.0264	0.0000
3.6236	0.6019	0.9172	0.0000	0.0264	0.0000
3.6703	0.6019	0.9453	0.0000	0.0264	0.0000
3.7170	0.6019	0.9734	0.0000	0.0264	0.0000
3.7637	0.6019	1.0015	0.0000	0.0264	0.0000
3.8104	0.6019	1.0296	0.0000	0.0264	0.0000

3.8571	0.6019	1.0577	0.0000	0.0264	0.0000
3.9038	0.6019	1.0858	0.0000	0.0264	0.0000
3.9505	0.6019	1.1139	0.0000	0.0264	0.0000
3.9973	0.6019	1.1421	0.0000	0.0264	0.0000
4.0440	0.6019	1.1702	0.0000	0.0264	0.0000
4.0907	0.6019	1.1983	0.0000	0.0264	0.0000
4.1374	0.6019	1.2264	0.0000	0.0264	0.0000
4.1841	0.6019	1.2545	0.0000	0.0264	0.0000
4.2308	0.6019	1.2826	0.0000	0.0264	0.0000
4.2500	0.6019	1.2942	0.0000	0.0264	0.0000

DRAFT

Surface rtial Ret 2

Element Flows To:

Outlet 1

Outlet 2

Bio Partial Ret 2

DRAFT

Bio Partial Ret 1

Bottom Length: 197.29 ft.
 Bottom Width: 197.29 ft.
 Material thickness of first layer: 0.25
 Material type for first layer: Mulch
 Material thickness of second layer: 1.5
 Material type for second layer: ESM
 Material thickness of third layer: 1.5
 Material type for third layer: GRAVEL
 Underdrain used
 Underdrain Diameter (feet): 0.5
 Orifice Diameter (in.): 0.830401500000001
 Offset (in.): 3
 Flow Through Underdrain (ac-ft.): 27.587
 Total Outflow (ac-ft.): 31.943
 Percent Through Underdrain: 86.36
 Discharge Structure
 Riser Height: 0.5 ft.
 Riser Diameter: 12 in.
 Element Flows To:
 Outlet 1 Outlet 2

Biofilter Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.8936	0.0000	0.0000	0.0000
0.0522	0.8936	0.0140	0.0000	0.0000
0.1044	0.8936	0.0280	0.0000	0.0000
0.1566	0.8936	0.0420	0.0000	0.0000
0.2088	0.8936	0.0560	0.0000	0.0000
0.2610	0.8936	0.0700	0.0000	0.0000
0.3132	0.8936	0.0840	0.0000	0.0000
0.3654	0.8936	0.0979	0.0000	0.0000
0.4176	0.8936	0.1119	0.0000	0.0000
0.4698	0.8936	0.1259	0.0000	0.0000
0.5220	0.8936	0.1399	0.0000	0.0000
0.5742	0.8936	0.1539	0.0000	0.0000
0.6264	0.8936	0.1679	0.0000	0.0000
0.6786	0.8936	0.1819	0.0000	0.0000
0.7308	0.8936	0.1959	0.0000	0.0000
0.7830	0.8936	0.2099	0.0000	0.0000
0.8352	0.8936	0.2239	0.0000	0.0000
0.8874	0.8936	0.2379	0.0000	0.0000
0.9396	0.8936	0.2519	0.0000	0.0000
0.9918	0.8936	0.2659	0.0000	0.0000
1.0440	0.8936	0.2799	0.0000	0.0000
1.0962	0.8936	0.2938	0.0000	0.0000
1.1484	0.8936	0.3078	0.0000	0.0000
1.2005	0.8936	0.3218	0.0000	0.0000
1.2527	0.8936	0.3358	0.0000	0.0000
1.3049	0.8936	0.3498	0.0000	0.0000
1.3571	0.8936	0.3638	0.0000	0.0000
1.4093	0.8936	0.3778	0.0000	0.0000
1.4615	0.8936	0.3918	0.0000	0.0000
1.5137	0.8936	0.4058	0.0000	0.0000
1.5659	0.8936	0.4198	0.0000	0.0000

1.6181	0.8936	0.4338	0.0000	0.0000
1.6703	0.8936	0.4478	0.0000	0.0000
1.7225	0.8936	0.4618	0.0000	0.0000
1.7747	0.8936	0.4811	0.0000	0.0000
1.8269	0.8936	0.5005	0.0000	0.0000
1.8791	0.8936	0.5198	0.0000	0.0000
1.9313	0.8936	0.5392	0.0000	0.0000
1.9835	0.8936	0.5585	0.0000	0.0000
2.0357	0.8936	0.5779	0.0000	0.0000
2.0879	0.8936	0.5973	0.0000	0.0000
2.1401	0.8936	0.6166	0.0000	0.0000
2.1923	0.8936	0.6360	0.0000	0.0000
2.2445	0.8936	0.6553	0.0000	0.0000
2.2967	0.8936	0.6747	0.0000	0.0000
2.3489	0.8936	0.6940	0.0000	0.0000
2.4011	0.8936	0.7134	0.0000	0.0000
2.4533	0.8936	0.7327	0.0000	0.0000
2.5055	0.8936	0.7521	0.0000	0.0000
2.5577	0.8936	0.7715	0.0000	0.0000
2.6099	0.8936	0.7908	0.0000	0.0000
2.6621	0.8936	0.8102	0.0000	0.0000
2.7143	0.8936	0.8295	0.0000	0.0000
2.7665	0.8936	0.8489	0.0000	0.0000
2.8187	0.8936	0.8682	0.0000	0.0000
2.8709	0.8936	0.8876	0.0000	0.0000
2.9231	0.8936	0.9070	0.0000	0.0000
2.9753	0.8936	0.9263	0.0000	0.0000
3.0275	0.8936	0.9457	0.0000	0.0000
3.0797	0.8936	0.9650	0.0000	0.0000
3.1319	0.8936	0.9844	0.0000	0.0000
3.1841	0.8936	1.0037	0.0000	0.0000
3.2363	0.8936	1.0231	0.0000	0.0000
3.2500	0.8936	1.0282	0.0000	0.0000

Biofilter Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Infiltr(cfs)
3.2500	0.8936	1.0282	0.0000	0.0324	0.0000
3.3022	0.8936	1.0748	0.0000	0.0324	0.0000
3.3544	0.8936	1.1215	0.0000	0.0324	0.0000
3.4066	0.8936	1.1681	0.0000	0.0324	0.0000
3.4588	0.8936	1.2148	0.0000	0.0324	0.0000
3.5110	0.8936	1.2614	0.0000	0.0324	0.0000
3.5632	0.8936	1.3080	0.0000	0.0324	0.0000
3.6154	0.8936	1.3547	0.0000	0.0324	0.0000
3.6676	0.8936	1.4013	0.0000	0.0324	0.0000
3.7198	0.8936	1.4480	0.0000	0.0324	0.0000
3.7720	0.8936	1.4946	0.0000	0.0324	0.0000
3.8242	0.8936	1.5413	0.0000	0.0324	0.0000
3.8764	0.8936	1.5879	0.0000	0.0324	0.0000
3.9286	0.8936	1.6345	0.0000	0.0324	0.0000
3.9808	0.8936	1.6812	0.0000	0.0324	0.0000
4.0330	0.8936	1.7278	0.0000	0.0324	0.0000
4.0852	0.8936	1.7745	0.0000	0.0324	0.0000
4.1374	0.8936	1.8211	0.0000	0.0324	0.0000
4.1896	0.8936	1.8677	0.0000	0.0324	0.0000
4.2418	0.8936	1.9144	0.0000	0.0324	0.0000
4.2940	0.8936	1.9610	0.0000	0.0324	0.0000
4.3462	0.8936	2.0077	0.0000	0.0324	0.0000

4.3984	0.8936	2.0543	0.0000	0.0324	0.0000
4.4505	0.8936	2.1010	0.0000	0.0324	0.0000
4.5027	0.8936	2.1476	0.0000	0.0324	0.0000
4.5549	0.8936	2.1942	0.0000	0.0324	0.0000
4.6071	0.8936	2.2409	0.0000	0.0324	0.0000
4.6593	0.8936	2.2875	0.0015	0.0324	0.0000
4.7115	0.8936	2.3342	0.0022	0.0324	0.0000
4.7500	0.8936	2.3685	0.0032	0.0324	0.0000

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Surface rtial Ret 1

Element Flows To:

Outlet 1

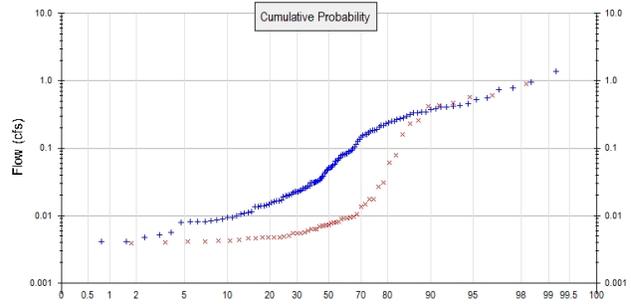
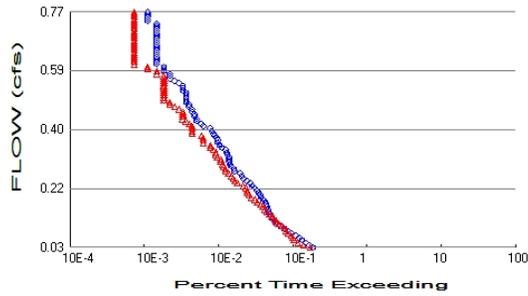
Outlet 2

Bio Partial Ret 1

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Analysis Results

POC 1



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1

Total Pervious Area: 1.79
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1

Total Pervious Area: 0.33
Total Impervious Area: 1.46

Flow Frequency Method: Cunnane

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.338562
5 year	0.491893
10 year	0.769406
25 year	1.17907

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.014617
5 year	0.350192
10 year	0.548751
25 year	0.771831

Duration Flows

The Facility PASSED

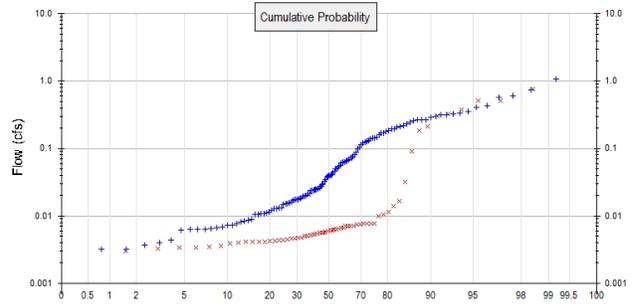
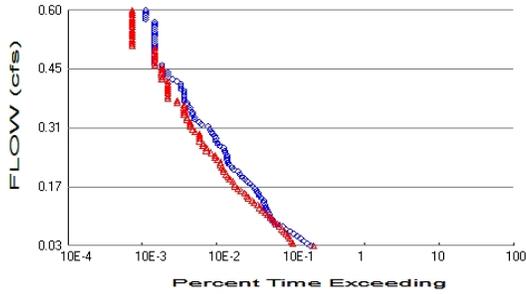
Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0339	510	469	91	Pass
0.0413	451	380	84	Pass
0.0487	411	321	78	Pass
0.0561	361	285	78	Pass
0.0636	330	271	82	Pass
0.0710	303	260	85	Pass
0.0784	259	235	90	Pass
0.0859	235	222	94	Pass
0.0933	209	212	101	Pass
0.1007	184	194	105	Pass
0.1082	160	176	110	Pass
0.1156	153	164	107	Pass
0.1230	145	154	106	Pass
0.1304	140	143	102	Pass
0.1379	136	133	97	Pass
0.1453	129	121	93	Pass
0.1527	127	116	91	Pass
0.1602	123	108	87	Pass
0.1676	120	100	83	Pass
0.1750	116	90	77	Pass
0.1825	110	85	77	Pass
0.1899	103	75	72	Pass
0.1973	99	70	70	Pass
0.2047	94	67	71	Pass
0.2122	90	66	73	Pass
0.2196	83	64	77	Pass
0.2270	78	59	75	Pass
0.2345	72	49	68	Pass
0.2419	65	45	69	Pass
0.2493	59	43	72	Pass
0.2568	56	41	73	Pass
0.2642	53	37	69	Pass
0.2716	45	34	75	Pass
0.2790	44	34	77	Pass
0.2865	40	32	80	Pass
0.2939	39	31	79	Pass
0.3013	38	29	76	Pass
0.3088	38	29	76	Pass
0.3162	38	26	68	Pass
0.3236	36	25	69	Pass
0.3310	35	25	71	Pass
0.3385	34	23	67	Pass
0.3459	30	21	70	Pass
0.3533	28	21	75	Pass
0.3608	27	17	62	Pass
0.3682	27	17	62	Pass
0.3756	26	17	65	Pass
0.3831	24	16	66	Pass
0.3905	23	12	52	Pass
0.3979	22	12	54	Pass
0.4053	21	12	57	Pass
0.4128	17	12	70	Pass
0.4202	16	11	68	Pass

0.4276	14	10	71	Pass
0.4351	14	9	64	Pass
0.4425	13	9	69	Pass
0.4499	13	9	69	Pass
0.4574	12	9	75	Pass
0.4648	12	8	66	Pass
0.4722	11	7	63	Pass
0.4796	11	6	54	Pass
0.4871	10	6	60	Pass
0.4945	10	5	50	Pass
0.5019	10	5	50	Pass
0.5094	10	5	50	Pass
0.5168	10	5	50	Pass
0.5242	9	5	55	Pass
0.5317	9	5	55	Pass
0.5391	9	5	55	Pass
0.5465	8	5	62	Pass
0.5539	7	5	71	Pass
0.5614	6	5	83	Pass
0.5688	6	5	83	Pass
0.5762	6	4	66	Pass
0.5837	5	4	80	Pass
0.5911	5	3	60	Pass
0.5985	5	3	60	Pass
0.6060	4	2	50	Pass
0.6134	4	2	50	Pass
0.6208	4	2	50	Pass
0.6282	4	2	50	Pass
0.6357	4	2	50	Pass
0.6431	4	2	50	Pass
0.6505	4	2	50	Pass
0.6580	4	2	50	Pass
0.6654	4	2	50	Pass
0.6728	4	2	50	Pass
0.6802	4	2	50	Pass
0.6877	4	2	50	Pass
0.6951	4	2	50	Pass
0.7025	4	2	50	Pass
0.7100	4	2	50	Pass
0.7174	4	2	50	Pass
0.7248	4	2	50	Pass
0.7323	4	2	50	Pass
0.7397	3	2	66	Pass
0.7471	3	2	66	Pass
0.7545	3	2	66	Pass
0.7620	3	2	66	Pass
0.7694	3	2	66	Pass

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POC 2



+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #2

Total Pervious Area: 1.39
 Total Impervious Area: 0

Mitigated Landuse Totals for POC #2

Total Pervious Area: 0.34
 Total Impervious Area: 1.05

Flow Frequency Method: Cunnane

Flow Frequency Return Periods for Predeveloped. POC #2

Return Period	Flow(cfs)
2 year	0.262905
5 year	0.381973
10 year	0.597472
25 year	0.915591

Flow Frequency Return Periods for Mitigated. POC #2

Return Period	Flow(cfs)
2 year	0.007763
5 year	0.266186
10 year	0.474116
25 year	0.646797

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0263	508	553	108	Pass
0.0321	449	292	65	Pass
0.0378	413	277	67	Pass
0.0436	367	264	71	Pass
0.0494	330	250	75	Pass
0.0551	303	235	77	Pass
0.0609	267	224	83	Pass
0.0667	235	205	87	Pass
0.0724	210	190	90	Pass
0.0782	182	172	94	Pass
0.0840	161	168	104	Pass
0.0898	154	154	100	Pass
0.0955	145	144	99	Pass
0.1013	140	131	93	Pass
0.1071	135	123	91	Pass
0.1128	131	111	84	Pass
0.1186	127	105	82	Pass
0.1244	123	98	79	Pass
0.1301	119	87	73	Pass
0.1359	118	82	69	Pass
0.1417	110	73	66	Pass
0.1475	103	70	67	Pass
0.1532	99	65	65	Pass
0.1590	94	58	61	Pass
0.1648	90	53	58	Pass
0.1705	83	49	59	Pass
0.1763	78	48	61	Pass
0.1821	71	45	63	Pass
0.1878	65	41	63	Pass
0.1936	60	39	65	Pass
0.1994	56	37	66	Pass
0.2051	53	34	64	Pass
0.2109	46	34	73	Pass
0.2167	44	32	72	Pass
0.2225	40	31	77	Pass
0.2282	39	31	79	Pass
0.2340	38	28	73	Pass
0.2398	38	26	68	Pass
0.2455	38	26	68	Pass
0.2513	36	23	63	Pass
0.2571	35	20	57	Pass
0.2628	34	20	58	Pass
0.2686	30	18	60	Pass
0.2744	28	18	64	Pass
0.2801	27	16	59	Pass
0.2859	27	16	59	Pass
0.2917	26	16	61	Pass
0.2975	24	16	66	Pass
0.3032	23	14	60	Pass
0.3090	22	13	59	Pass
0.3148	21	12	57	Pass
0.3205	17	12	70	Pass
0.3263	16	12	75	Pass

0.3321	14	11	78	Pass
0.3378	14	11	78	Pass
0.3436	13	10	76	Pass
0.3494	13	10	76	Pass
0.3552	12	10	83	Pass
0.3609	12	10	83	Pass
0.3667	11	10	90	Pass
0.3725	11	8	72	Pass
0.3782	10	8	80	Pass
0.3840	10	6	60	Pass
0.3898	10	6	60	Pass
0.3955	10	6	60	Pass
0.4013	10	6	60	Pass
0.4071	9	6	66	Pass
0.4128	9	6	66	Pass
0.4186	9	6	66	Pass
0.4244	8	6	75	Pass
0.4302	7	5	71	Pass
0.4359	6	5	83	Pass
0.4417	6	5	83	Pass
0.4475	6	5	83	Pass
0.4532	5	5	100	Pass
0.4590	5	5	100	Pass
0.4648	5	4	80	Pass
0.4705	4	4	100	Pass
0.4763	4	4	100	Pass
0.4821	4	4	100	Pass
0.4879	4	4	100	Pass
0.4936	4	4	100	Pass
0.4994	4	4	100	Pass
0.5052	4	4	100	Pass
0.5109	4	2	50	Pass
0.5167	4	2	50	Pass
0.5225	4	2	50	Pass
0.5282	4	2	50	Pass
0.5340	4	2	50	Pass
0.5398	4	2	50	Pass
0.5455	4	2	50	Pass
0.5513	4	2	50	Pass
0.5571	4	2	50	Pass
0.5629	4	2	50	Pass
0.5686	4	2	50	Pass
0.5744	3	2	66	Pass
0.5802	3	2	66	Pass
0.5859	3	2	66	Pass
0.5917	3	2	66	Pass
0.5975	3	2	66	Pass

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Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

No PERLND changes have been made.

IMPLND Changes

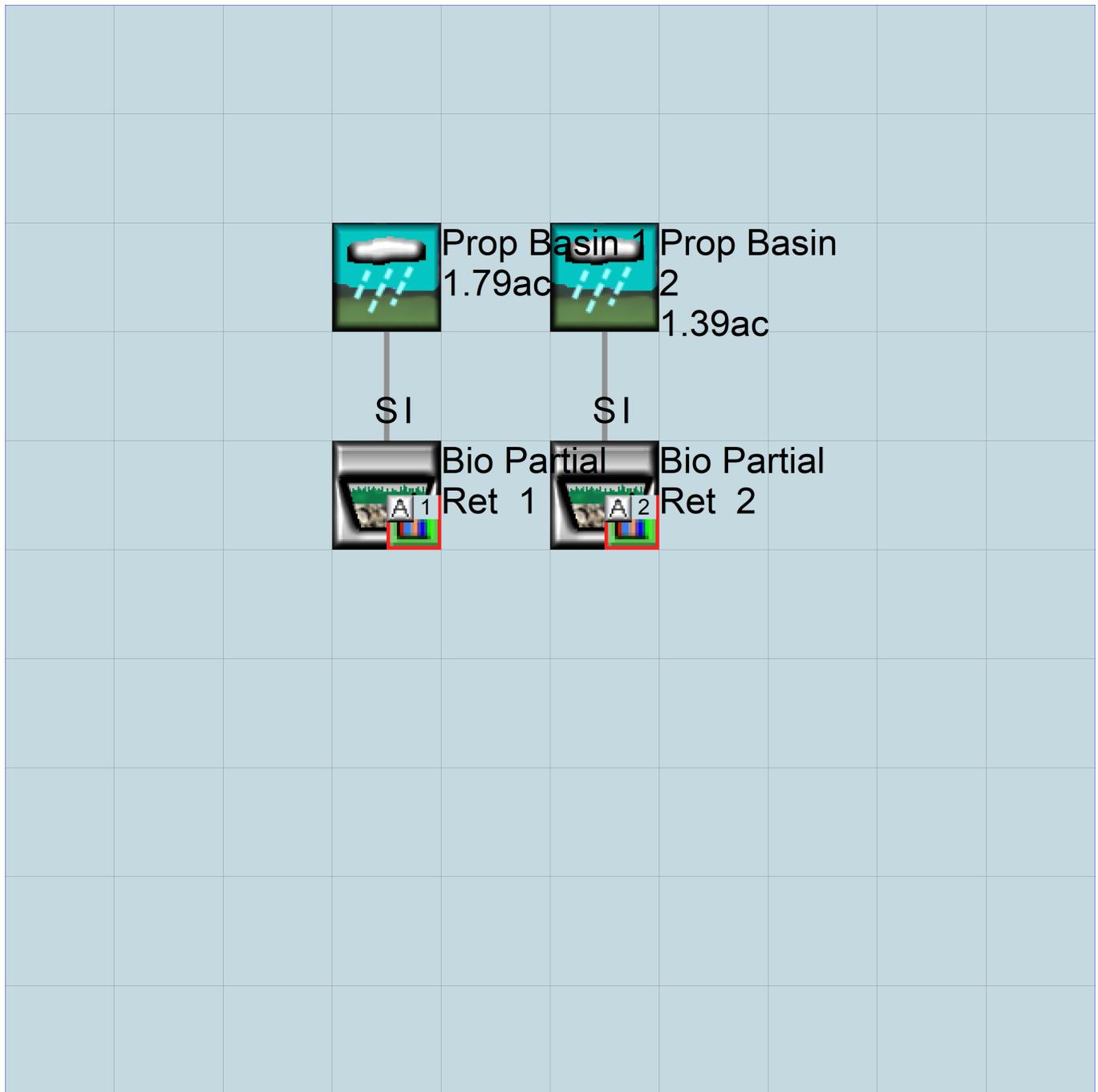
No IMPLND changes have been made.

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Appendix
Predeveloped Schematic



Mitigated Schematic



Predeveloped UCI File

RUN

```
GLOBAL
  WWHM4 model simulation
  START      1973 10 01      END      2004 09 30
  RUN INTERP OUTPUT LEVEL   3      0
  RESUME     0 RUN          1
  UNIT SYSTEM 1
```

```
FILES
<File> <Un#> <-----File Name----->***
<-ID->                                     ***
WDM      26      2025_SCC.wdm
MESSU    25      Pre2025_SCC.MES
          27      Pre2025_SCC.L61
          28      Pre2025_SCC.L62
          30      POC2025_SCC1.dat
          31      POC2025_SCC2.dat
END FILES
```

```
OPN SEQUENCE
  INGRP          INDELT 00:60
  PERLND         19
  COPY           501
  COPY           502
  DISPLY         1
  DISPLY         2
  END INGRP
END OPN SEQUENCE
```

```
DISPLY
  DISPLY-INFO1
  # - #<-----Title----->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
  1   Pre Basin 1          MAX          1   2   30   9
  2   Pre Basin 2          MAX          1   2   31   9
  END DISPLY-INFO1
```

```
END DISPLY
COPY
  TIMESERIES
  # - # NPT NMN ***
  1   1   1
  501 1   1
  502 1   1
  END TIMESERIES
```

```
END COPY
GENER
  OPCODE
  #   # OPCD ***
  END OPCODE
  PARM
  #   #           K ***
  END PARM
```

```
END GENER
PERLND
  GEN-INFO
  <PLS ><-----Name----->NBLKS  Unit-systems  Printer ***
  # - #                               User  t-series  Engr Metr ***
  # - #                               in  out      ***
  19   C,NatVeg,Flat                 1   1   1   1   27   0
  END GEN-INFO
  *** Section PWATER***
```

```
ACTIVITY
  <PLS > ***** Active Sections *****
  # - # ATMP SNOW PWAT  SED  PST  PWG  PQAL MSTL  PEST  NITR  PHOS  TRAC ***
  19   0   0   1   0   0   0   0   0   0   0   0   0
  END ACTIVITY
```

PRINT-INFO

```

<PLS > ***** Print-flags ***** PIVL  PYR
# - # ATMP SNOW PWAT  SED  PST  PWG  PQAL MSTL PEST NITR PHOS TRAC  *****
19  0  0  4  0  0  0  0  0  0  0  0  0  0  1  9
END PRINT-INFO

```

```

PWAT-PARM1
<PLS > PWATER variable monthly parameter value flags ***
# - # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
19  0  1  1  1  0  0  0  0  1  1  0
END PWAT-PARM1

```

```

PWAT-PARM2
<PLS > PWATER input info: Part 2          ***
# - # ***FOREST  LZSN  INFILT  LRSUR  SLSUR  KVARY  AGWRC
19  0  3.8  0.035  100  0.05  2.5  0.915
END PWAT-PARM2

```

```

PWAT-PARM3
<PLS > PWATER input info: Part 3          ***
# - # ***PETMAX  PETMIN  INFEXP  INFILD  DEEPFR  BASETP  AGWETP
19  0  0  2  2  0  0.05  0.05
END PWAT-PARM3

```

```

PWAT-PARM4
<PLS > PWATER input info: Part 4          ***
# - # CEPSC  UZSN  NSUR  INTFW  IRC  LZETP ***
19  0  0.6  0.04  1  0.3  0
END PWAT-PARM4

```

```

MON-LZETPARM
<PLS > PWATER input info: Part 3          ***
# - # JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC ***
19  0.4 0.4 0.4 0.4 0.6 0.6 0.6 0.6 0.6 0.4 0.4 0.4
END MON-LZETPARM

```

```

MON-INTERCEP
<PLS > PWATER input info: Part 3          ***
# - # JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC ***
19  0.1 0.1 0.1 0.1 0.06 0.06 0.06 0.06 0.06 0.1 0.1 0.1
END MON-INTERCEP

```

```

PWAT-STATE1
<PLS > *** Initial conditions at start of simulation
ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
# - # *** CEPS  SURS  UZS  IFWS  LZS  AGWS  GWVS
19  0  0  0.01  0  0.4  0.01  0
END PWAT-STATE1

```

END PERLND

IMPLND

```

GEN-INFO
<PLS ><-----Name-----> Unit-systems  Printer ***
# - # User t-series Engl Metr ***
in out ***

```

```

END GEN-INFO
*** Section IWATER***

```

```

ACTIVITY
<PLS > ***** Active Sections *****
# - # ATMP SNOW IWAT  SLD  IWG IQAL  ***
END ACTIVITY

```

```

PRINT-INFO
<ILS > ***** Print-flags ***** PIVL  PYR
# - # ATMP SNOW IWAT  SLD  IWG IQAL  *****
END PRINT-INFO

```

```

IWAT-PARM1
<PLS > IWATER variable monthly parameter value flags ***
# - # CSNO RTOP VRS  VNN RTLI  ***
END IWAT-PARM1

```



```

END HYDR-PARM2
HYDR-INIT
  RCHRES Initial conditions for each HYDR section ***
  # - # *** VOL Initial value of COLIND Initial value of OUTDGT
  *** ac-ft for each possible exit for each possible exit
<-----><-----> <-----><-----><-----><-----> *** <-----><-----><-----><-----><----->
END HYDR-INIT
END RCHRES

```

```

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
END FTABLES

```

```

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # tem strg<-factor->strg <Name> # # <Name> # # ***
WDM 2 PREC ENGL 1 PERLND 1 999 EXTNL PREC
WDM 2 PREC ENGL 1 IMPLND 1 999 EXTNL PREC
WDM 1 EVAP ENGL 1 PERLND 1 999 EXTNL PETINP
WDM 1 EVAP ENGL 1 IMPLND 1 999 EXTNL PETINP
END EXT SOURCES

```

```

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name> # <Name> # #<-factor->strg <Name> # <Name> tem strg strg***
COPY 501 OUTPUT MEAN 1 1 12.1 WDM 501 FLOW ENGL REPL
COPY 502 OUTPUT MEAN 1 1 12.1 WDM 502 FLOW ENGL REPL
END EXT TARGETS

```

```

MASS-LINK
<Volume> <-Grp> <-Member-><--Mult--> <Target> <-Grp> <-Member->***
<Name> <Name> # #<-factor-> <Name> <Name> # #***
MASS-LINK 12
PERLND PWATER SURO 0.083333 COPY INPUT MEAN
END MASS-LINK 12

MASS-LINK 13
PERLND PWATER IFWO 0.083333 COPY INPUT MEAN
END MASS-LINK 13

END MASS-LINK
END RUN

```

Mitigated UCI File

RUN

GLOBAL

WVHM4 model simulation
START 1973 10 01 END 2004 09 30
RUN INTERP OUTPUT LEVEL 3 0
RESUME 0 RUN 1 UNIT SYSTEM 1
END GLOBAL

FILES

<File>	<Un#>	<-----File Name----->	***
<-ID->			***
WDM	26	2025_SCC.wdm	
MESSU	25	Mit2025_SCC.MES	
	27	Mit2025_SCC.L61	
	28	Mit2025_SCC.L62	
	31	POC2025_SCC2.dat	
	30	POC2025_SCC1.dat	

END FILES

OPN SEQUENCE

INGRP INDELT 00:60

PERLND 19
IMPLND 1
RCHRES 1
RCHRES 2
RCHRES 3
RCHRES 4
COPY 2
COPY 502
COPY 1
COPY 501
DISPLY 2
DISPLY 1

END INGRP

END OPN SEQUENCE

DISPLY

DISPLY-INFO1

#	-	#	<-----Title----->	***	TRAN	PIVL	DIG1	FIL1	PYR	DIG2	FIL2	YRND
2			Surface rtial Ret	2	MAX				1	2	31	9
1			Surface rtial Ret	1	MAX				1	2	30	9

END DISPLY-INFO1

END DISPLY

COPY

TIMESERIES

#	-	#	NPT	NMN	***
1			1	1	
2			1	1	
502			1	1	
501			1	1	

END TIMESERIES

END COPY

GENER

OPCODE

OPCD ***

END OPCODE

PARM

K ***

END PARM

END GENER

PERLND

GEN-INFO

<PLS >	<-----Name----->	NBLKS	Unit-systems	Printer	***		
#	-	#	User	t-series	Engl Metr	***	
			in	out		***	
19	C,NatVeg,Flat	1	1	1	1	27	0

END GEN-INFO

*** Section PWATER***

```

ACTIVITY
  <PLS > ***** Active Sections *****
  # - # ATMP SNOW PWAT  SED  PST  PWG  PQAL MSTL PEST NITR PHOS TRAC ***
  19      0      0      1      0      0      0      0      0      0      0      0      0
END ACTIVITY

PRINT-INFO
  <PLS > ***** Print-flags ***** PIVL  PYR
  # - # ATMP SNOW PWAT  SED  PST  PWG  PQAL MSTL PEST NITR PHOS TRAC *****
  19      0      0      4      0      0      0      0      0      0      0      0      0      1      9
END PRINT-INFO

PWAT-PARM1
  <PLS > PWATER variable monthly parameter value flags ***
  # - # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
  19      0      1      1      1      0      0      0      0      1      1      0
END PWAT-PARM1

PWAT-PARM2
  <PLS > PWATER input info: Part 2          ***
  # - # ***FOREST      LZSN      INFILT      LSUR      SLSUR      KVARV      AGWRC
  19      0      3.8      0.035      100      0.05      2.5      0.915
END PWAT-PARM2

PWAT-PARM3
  <PLS > PWATER input info: Part 3          ***
  # - # ***PETMAX      PETMIN      INFEXP      INFILD      DEEPFR      BASETP      AGWETP
  19      0      0      2      2      0      0.05      0.05
END PWAT-PARM3

PWAT-PARM4
  <PLS > PWATER input info: Part 4          ***
  # - #      CEPSC      UZSN      NSUR      INTFW      IRC      LZETP ***
  19      0      0.6      0.04      1      0.3      0
END PWAT-PARM4

MON-LZETPARM
  <PLS > PWATER input info: Part 3          ***
  # - #      JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
  19      0.4  0.4  0.4  0.4  0.6  0.6  0.6  0.6  0.6  0.4  0.4  0.4
END MON-LZETPARM

MON-INTERCEP
  <PLS > PWATER input info: Part 3          ***
  # - #      JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
  19      0.1  0.1  0.1  0.1  0.06  0.06  0.06  0.06  0.06  0.1  0.1  0.1
END MON-INTERCEP

PWAT-STATE1
  <PLS > *** Initial conditions at start of simulation
  ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
  # - # *** CEPS      SURS      UZS      IFWS      LZS      AGWS      GWVS
  19      0      0      0.01      0      0.4      0.01      0
END PWAT-STATE1

END PERLND

IMPLND
GEN-INFO
  <PLS ><-----Name----->      Unit-systems      Printer ***
  # - #      User t-series Engl Metr ***
  in out ***
  1      IMPERVIOUS-FLAT      1      1      1      27      0
END GEN-INFO
*** Section IWATER***

ACTIVITY
  <PLS > ***** Active Sections *****
  # - # ATMP SNOW IWAT  SLD  IWG IQAL ***
  1      0      0      1      0      0      0
END ACTIVITY

```

```

PRINT-INFO
<ILS > ***** Print-flags ***** PIVL  PYR
# - # ATMP SNOW IWAT  SLD  IWG IQAL  *****
1   0   0   4   0   0   0   1   9
END PRINT-INFO

```

```

IWAT-PARM1
<PLS > I WATER variable monthly parameter value flags  ***
# - # CSNO RTOP  VRS  VNN RTLI  ***
1   0   0   0   0   1
END IWAT-PARM1

```

```

IWAT-PARM2
<PLS >          I WATER input info: Part 2          ***
# - # ***  LSUR      SLSUR      NSUR      RETSC
1   100      0.05      0.011      0.1
END IWAT-PARM2

```

```

IWAT-PARM3
<PLS >          I WATER input info: Part 3          ***
# - # ***PETMAX    PETMIN
1   0          0
END IWAT-PARM3

```

```

IWAT-STATE1
<PLS > *** Initial conditions at start of simulation
# - # ***  RETS      SURS
1   0          0
END IWAT-STATE1

```

END IMPLND

```

SCHEMATIC
<-Source->          <--Area-->          <-Target->          MBLK          ***
<Name> #          <-factor->          <Name> #          Tbl#          ***
Prop Basin 2***
PERLND 19          0.34          RCHRES 1          2
PERLND 19          0.34          RCHRES 1          3
IMPLND 1          1.05          RCHRES 1          5
Prop Basin 1***
PERLND 19          0.33          RCHRES 3          2
PERLND 19          0.33          RCHRES 3          3
IMPLND 1          1.46          RCHRES 3          5

```

```

*****Routing*****
PERLND 19          0.34          COPY 2          12
IMPLND 1          1.05          COPY 2          15
PERLND 19          0.34          COPY 2          13
RCHRES 1          1          RCHRES 2          8
PERLND 19          0.33          COPY 1          12
IMPLND 1          1.46          COPY 1          15
PERLND 19          0.33          COPY 1          13
RCHRES 3          1          RCHRES 4          8
RCHRES 2          1          COPY 502         16
RCHRES 1          1          COPY 502         17
RCHRES 4          1          COPY 501         16
RCHRES 3          1          COPY 501         17
END SCHEMATIC

```

```

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # #<-factor->strg <Name> # # <Name> # # ***
COPY 502 OUTPUT MEAN 1 1 12.1 DISPLY 2 INPUT TIMSER 1
COPY 501 OUTPUT MEAN 1 1 12.1 DISPLY 1 INPUT TIMSER 1

```

```

<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member-> ***
<Name> # <Name> # #<-factor->strg <Name> # # <Name> # # ***
END NETWORK

```

RCHRES

GEN-INFO

RCHRES	Name	Nexits	Unit	Systems	Printer				
# - #	<-----><---->	User	T-series	Engl	Metr	LKFG			
		in out							
1	Surface rtial Re-029	2	1	1	1	28	0	1	***
2	Bio Partial Ret -028	1	1	1	1	28	0	1	***
3	Surface rtial Re-040	2	1	1	1	28	0	1	***
4	Bio Partial Ret -039	1	1	1	1	28	0	1	

END GEN-INFO

*** Section RCHRES***

ACTIVITY

<PLS > ***** Active Sections *****

# - #	HYFG	ADFG	CNFG	HTFG	SDFG	GQFG	OXFG	NUFG	PKFG	PHFG	***
1	1	0	0	0	0	0	0	0	0	0	
2	1	0	0	0	0	0	0	0	0	0	
3	1	0	0	0	0	0	0	0	0	0	
4	1	0	0	0	0	0	0	0	0	0	

END ACTIVITY

PRINT-INFO

<PLS > ***** Print-flags *****

# - #	HYDR	ADCA	CONS	HEAT	SED	GOL	OXRX	NUTR	PLNK	PHCB	PIVL	PYR	*****
1	4	0	0	0	0	0	0	0	0	0	1	9	
2	4	0	0	0	0	0	0	0	0	0	1	9	
3	4	0	0	0	0	0	0	0	0	0	1	9	
4	4	0	0	0	0	0	0	0	0	0	1	9	

END PRINT-INFO

HYDR-PARM1

RCHRES Flags for each HYDR Section *****

# - #	VC	A1	A2	A3	ODFVFG	for each possible exit	ODGTFG	for each possible exit	FUNCT	for each possible exit
1	0	1	0	0	4	5	0	0	0	2 2 2 2 2
2	0	1	0	0	4	0	0	0	0	2 2 2 2 2
3	0	1	0	0	4	5	0	0	0	2 2 2 2 2
4	0	1	0	0	4	0	0	0	0	2 2 2 2 2

END HYDR-PARM1

HYDR-PARM2

# - #	FTABNO	LEN	DELTH	STCOR	KS	DB50	***
1	1	0.01	0.0	0.0	0.0	0.0	***
2	2	0.03	0.0	0.0	0.0	0.0	***
3	3	0.01	0.0	0.0	0.0	0.0	
4	4	0.04	0.0	0.0	0.0	0.0	

END HYDR-PARM2

HYDR-INIT

RCHRES Initial conditions for each HYDR section *****

# - #	VOL	Initial value of COLIND	Initial value of OUTDGT
1	0	4.0 5.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0
2	0	4.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0
3	0	4.0 5.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0
4	0	4.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0

END HYDR-INIT

END RCHRES

SPEC-ACTIONS

END SPEC-ACTIONS

FTABLES

FTABLE 2

71	4	Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Velocity (ft/sec)	Travel Time (Minutes)
0.000000	0.601944	0.000000	0.000000	0.000000			***

0.046703	0.601944	0.008434	0.000000
0.093407	0.601944	0.016868	0.000000
0.140110	0.601944	0.025301	0.000000
0.186813	0.601944	0.033735	0.000000
0.233516	0.601944	0.042169	0.000000
0.280220	0.601944	0.050603	0.000000
0.326923	0.601944	0.059037	0.000000
0.373626	0.601944	0.067471	0.000000
0.420330	0.601944	0.075904	0.000000
0.467033	0.601944	0.084338	0.000000
0.513736	0.601944	0.092772	0.000000
0.560440	0.601944	0.101206	0.000000
0.607143	0.601944	0.109640	0.000000
0.653846	0.601944	0.118074	0.000000
0.700549	0.601944	0.126507	0.000000
0.747253	0.601944	0.134941	0.000000
0.793956	0.601944	0.143375	0.000000
0.840659	0.601944	0.151809	0.000000
0.887363	0.601944	0.160243	0.000000
0.934066	0.601944	0.168677	0.000000
0.980769	0.601944	0.177110	0.000000
1.027473	0.601944	0.185544	0.000000
1.074176	0.601944	0.193978	0.000000
1.120879	0.601944	0.202412	0.000000
1.167582	0.601944	0.210846	0.000000
1.214286	0.601944	0.219280	0.000937
1.260989	0.601944	0.227713	0.001406
1.307692	0.601944	0.236147	0.002206
1.354396	0.601944	0.244581	0.002606
1.401099	0.601944	0.253015	0.003210
1.447802	0.601944	0.261449	0.003512
1.494505	0.601944	0.269883	0.003995
1.541209	0.601944	0.278316	0.004237
1.587912	0.601944	0.286750	0.004646
1.634615	0.601944	0.295184	0.004851
1.681319	0.601944	0.303618	0.005212
1.728022	0.601944	0.312052	0.005393
1.774725	0.601944	0.320486	0.005719
1.821429	0.601944	0.328919	0.005883
1.868132	0.601944	0.337353	0.006184
1.914835	0.601944	0.345787	0.006334
1.961538	0.601944	0.354220	0.006615
2.008242	0.601944	0.362654	0.006755
2.054945	0.601944	0.371088	0.007019
2.101648	0.601944	0.379521	0.007151
2.148352	0.601944	0.387955	0.007401
2.195055	0.601944	0.396389	0.007525
2.241758	0.601944	0.404822	0.007763
2.288462	0.601944	0.413256	0.007763
2.335165	0.601944	0.421690	0.008060
2.381868	0.601944	0.430123	0.008524
2.428571	0.601944	0.438557	0.009051
2.475275	0.601944	0.446991	0.009593
2.521978	0.601944	0.455424	0.010128
2.568681	0.601944	0.463858	0.010646
2.615385	0.601944	0.472292	0.011145
2.662088	0.601944	0.480725	0.011625
2.708791	0.601944	0.489159	0.012088
2.755495	0.601944	0.497593	0.012534
2.802198	0.601944	0.506027	0.012965
2.848901	0.601944	0.514460	0.013382
2.895604	0.601944	0.522894	0.013786
2.942308	0.601944	0.531328	0.014180
2.989011	0.601944	0.539761	0.014562
3.035714	0.601944	0.548195	0.014936
3.082418	0.601944	0.556629	0.015301
3.129121	0.601944	0.565062	0.015658
3.175824	0.601944	0.573496	0.016009
3.222527	0.601944	0.581930	0.016358
3.250000	0.601944	0.590363	0.026411

END FTABLE 2

FTABLE 1

23 5

Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Outflow2 (cfs)	Velocity (ft/sec)	Travel Time*** (Minutes)***
0.000000	0.601944	0.000000	0.000000	0.000000		
0.046703	0.601944	0.028113	0.000000	0.026411		
0.093407	0.601944	0.056226	0.000000	0.026411		
0.140110	0.601944	0.084338	0.000000	0.026411		
0.186813	0.601944	0.112451	0.000000	0.026411		
0.233516	0.601944	0.140564	0.000000	0.026411		
0.280220	0.601944	0.168677	0.000000	0.026411		
0.326923	0.601944	0.196789	0.000000	0.026411		
0.373626	0.601944	0.224902	0.000000	0.026411		
0.420330	0.601944	0.253015	0.000000	0.026411		
0.467033	0.601944	0.281128	0.000000	0.026411		
0.513736	0.601944	0.309240	0.017087	0.026411		
0.560440	0.601944	0.337353	0.157374	0.026411		
0.607143	0.601944	0.365466	0.369426	0.026411		
0.653846	0.601944	0.393579	0.627270	0.026411		
0.700549	0.601944	0.421691	0.911089	0.026411		
0.747253	0.601944	0.449804	1.200769	0.026411		
0.793956	0.601944	0.477917	1.476083	0.026411		
0.840659	0.601944	0.506030	1.718754	0.026411		
0.887363	0.601944	0.534143	1.915531	0.026411		
0.934066	0.601944	0.562255	2.061968	0.026411		
0.980769	0.601944	0.590368	2.166777	0.026411		
1.000000	0.601944	0.601944	2.287491	0.026411		

END FTABLE 1

FTABLE 4

64 4

Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Velocity (ft/sec)	Travel Time*** (Minutes)***
0.000000	0.893566	0.000000	0.000000		
0.052198	0.893566	0.013993	0.000000		
0.104396	0.893566	0.027985	0.000000		
0.156593	0.893566	0.041978	0.000000		
0.208791	0.893566	0.055971	0.000000		
0.260989	0.893566	0.069963	0.000000		
0.313187	0.893566	0.083956	0.000000		
0.365385	0.893566	0.097949	0.000000		
0.417582	0.893566	0.111941	0.000000		
0.469780	0.893566	0.125934	0.000000		
0.521978	0.893566	0.139927	0.000000		
0.574176	0.893566	0.153919	0.000000		
0.626374	0.893566	0.167912	0.000000		
0.678571	0.893566	0.181905	0.000000		
0.730769	0.893566	0.195897	0.000000		
0.782967	0.893566	0.209890	0.000000		
0.835165	0.893566	0.223882	0.000000		
0.887363	0.893566	0.237875	0.000000		
0.939560	0.893566	0.251868	0.000000		
0.991758	0.893566	0.265860	0.000000		
1.043956	0.893566	0.279853	0.000000		
1.096154	0.893566	0.293846	0.000000		
1.148352	0.893566	0.307838	0.000000		
1.200549	0.893566	0.321831	0.000000		
1.252747	0.893566	0.335824	0.000000		
1.304945	0.893566	0.349816	0.000000		
1.357143	0.893566	0.363809	0.000000		
1.409341	0.893566	0.377802	0.001476		
1.461538	0.893566	0.391794	0.002214		
1.513736	0.893566	0.405787	0.003228		
1.565934	0.893566	0.419780	0.003735		
1.618132	0.893566	0.433772	0.004479		
1.670330	0.893566	0.447765	0.004851		
1.722527	0.893566	0.461758	0.005448		
1.774725	0.893566	0.481114	0.005746		
1.826923	0.893566	0.500471	0.006257		
1.879121	0.893566	0.519827	0.006512		

```

1.931319 0.893566 0.539184 0.006966
1.983516 0.893566 0.558540 0.007193
2.035714 0.893566 0.577897 0.007606
2.087912 0.893566 0.597253 0.007812
2.140110 0.893566 0.616610 0.008194
2.192308 0.893566 0.635966 0.008385
2.244505 0.893566 0.655323 0.008593
2.296703 0.893566 0.674679 0.009080
2.348901 0.893566 0.694036 0.009784
2.401099 0.893566 0.713392 0.010559
2.453297 0.893566 0.732749 0.011340
2.505495 0.893566 0.752105 0.012100
2.557692 0.893566 0.771462 0.012829
2.609890 0.893566 0.790818 0.013525
2.662088 0.893566 0.810175 0.014190
2.714286 0.893566 0.829531 0.014827
2.766484 0.893566 0.848888 0.015438
2.818681 0.893566 0.868244 0.016027
2.870879 0.893566 0.887601 0.016594
2.923077 0.893566 0.906957 0.017143
2.975275 0.893566 0.926314 0.017675
3.027473 0.893566 0.945670 0.018192
3.079670 0.893566 0.965027 0.018695
3.131868 0.893566 0.984383 0.019187
3.184066 0.893566 1.003740 0.019669
3.236264 0.893566 1.023096 0.020150
3.250000 0.893566 1.030869 0.032411

```

```

END FTABLE 4
FTABLE 3

```

```
30 5
```

Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Outflow2 (cfs)	Velocity (ft/sec)	Travel Time*** (Minutes)***
0.000000	0.893566	0.000000	0.000000	0.000000		
0.052198	0.893566	0.046642	0.000000	0.032411		
0.104396	0.893566	0.093284	0.000000	0.032411		
0.156593	0.893566	0.139927	0.000000	0.032411		
0.208791	0.893566	0.186569	0.000000	0.032411		
0.260989	0.893566	0.233211	0.000000	0.032411		
0.313187	0.893566	0.279853	0.000000	0.032411		
0.365385	0.893566	0.326495	0.000000	0.032411		
0.417582	0.893566	0.373137	0.000000	0.032411		
0.469780	0.893566	0.419780	0.000000	0.032411		
0.521978	0.893566	0.466422	0.034569	0.032411		
0.574176	0.893566	0.513064	0.213745	0.032411		
0.626374	0.893566	0.559706	0.471194	0.032411		
0.678571	0.893566	0.606348	0.775552	0.032411		
0.730769	0.893566	0.652991	1.099144	0.032411		
0.782967	0.893566	0.699633	1.413620	0.032411		
0.835165	0.893566	0.746275	1.692395	0.032411		
0.887363	0.893566	0.792917	1.915531	0.032411		
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END FTABLE 3
END FTABLES

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WDM	2	PREC		ENGL	1		IMPLND	1 999	EXTNL PREC

WDM	1	EVAP	ENGL	1	PERLND	1	999	EXTNL	PETINP
WDM	1	EVAP	ENGL	1	IMPLND	1	999	EXTNL	PETINP
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RCHRES	1	HYDR	STAGE	1	1	1	WDM	1006	STAG	ENGL	REPL
RCHRES	1	HYDR	O	1	1	1	WDM	1007	FLOW	ENGL	REPL
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COPY	502	OUTPUT	MEAN	1	1	12.1	WDM	802	FLOW	ENGL	REPL
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RCHRES	3	HYDR	STAGE	1	1	1	WDM	1010	STAG	ENGL	REPL
RCHRES	3	HYDR	O	1	1	1	WDM	1011	FLOW	ENGL	REPL
COPY	1	OUTPUT	MEAN	1	1	12.1	WDM	701	FLOW	ENGL	REPL
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IMPLND	IWATER	SURO		0.083333	RCHRES	INFLOW	IVOL
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MASS-LINK			12				
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MASS-LINK			16				
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MASS-LINK			17				
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END MASS-LINK

END RUN

DRAFT

DRAFT

Mitigated HSPF Message File

ERROR/WARNING ID: 238 1

The continuity error reported below is greater than 1 part in 1000 and is therefore considered high.

Did you specify any "special actions"? If so, they could account for it.

Relevant data are:

DATE/TIME: 1976/ 7/31 24: 0

RCHRES : 1

RELERR	STORS	STOR	MATIN	MATDIF
-1.0000	0.00000	0.0000E+00	0.00000	8.9960E-12

Where:

RELERR is the relative error (ERROR/REFVAL).

ERROR is (STOR-STORS) - MATDIF.

REFVAL is the reference value (STORS+MATIN).

STOR is the storage of material in the processing unit (land-segment or reach/reservior) at the end of the present interval.

STORS is the storage of material in the pu at the start of the present printout reporting period.

MATIN is the total inflow of material to the pu during the present printout reporting period.

MATDIF is the net inflow (inflow-outflow) of material to the pu during the present printout reporting period.

ERROR/WARNING ID: 238 1

The continuity error reported below is greater than 1 part in 1000 and is therefore considered high.

Did you specify any "special actions"? If so, they could account for it.

Relevant data are:

DATE/TIME: 1976/ 7/31 24: 0

RCHRES : 3

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ERROR is (STOR-STORS) - MATDIF.

REFVAL is the reference value (STORS+MATIN).

STOR is the storage of material in the processing unit (land-segment or reach/reservior) at the end of the present interval.

STORS is the storage of material in the pu at the start of the present printout reporting period.

MATIN is the total inflow of material to the pu during the present printout reporting period.

MATDIF is the net inflow (inflow-outflow) of material to the pu during the present printout reporting period.

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ATTACHMENT 3
Structural BMP Maintenance Information

This is the cover sheet for Attachment 3.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 3a	Structural BMP Maintenance Thresholds and Actions (Required)	<input checked="" type="checkbox"/> Included See Structural BMP Maintenance Information Checklist on the back of this Attachment cover sheet.
Attachment 3b	Draft Maintenance Agreement (when applicable)	<input checked="" type="checkbox"/> Included <input type="checkbox"/> Not Applicable

E.12 BF-1 Biofiltration



Location: 43rd Street and Logan Avenue, San Diego, California

MS4 Permit Category
Biofiltration
Manual Category
Biofiltration
Applicable Performance Standard
Pollutant Control
Flow Control
Primary Benefits
Treatment
Volume Reduction (Incidental)
Peak Flow Attenuation (Optional)

Description

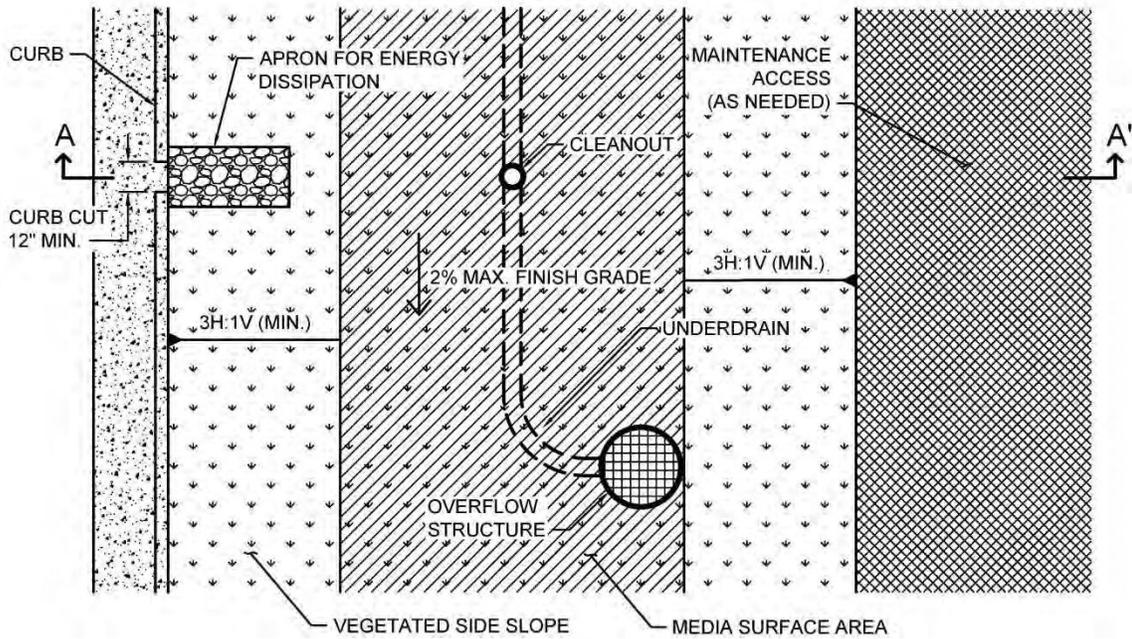
Biofiltration (Bioretention with underdrain) facilities are vegetated surface water systems that filter water through vegetation, and soil or engineered media prior to discharge via underdrain or overflow to the downstream conveyance system. Bioretention with underdrain facilities are commonly incorporated into the site within parking lot landscaping, along roadsides, and in open spaces. Because these types of facilities have limited or no infiltration, they are typically designed to provide enough hydraulic head to move flows through the underdrain connection to the storm drain system. Treatment is achieved through filtration, sedimentation, sorption, biochemical processes and plant uptake.

Typical bioretention with underdrain components include:

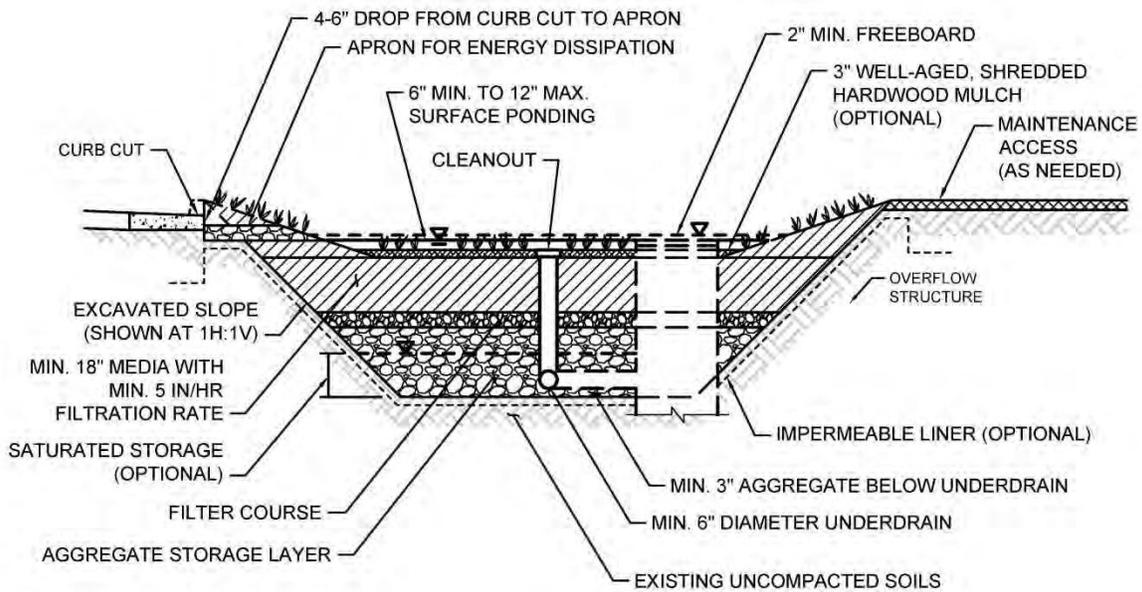
- Inflow distribution mechanisms (e.g, perimeter flow spreader or filter strips)
- Energy dissipation mechanism for concentrated inflows (e.g., splash blocks or riprap)
- Shallow surface ponding for captured flows
- Side slope and basin bottom vegetation selected based on expected climate and ponding depth
- Non-floating mulch layer (Optional)
- Media layer (planting mix or engineered media) capable of supporting vegetation growth
- Filter course layer consisting of aggregate to prevent the migration of fines into uncompacted native soils or the aggregate storage layer
- Aggregate storage layer with underdrain(s)

Appendix E: BMP Design Fact Sheets

- Impermeable liner or uncompacted native soils at the bottom of the facility
- Overflow structure



PLAN
NOT TO SCALE



SECTION A-A'
NOT TO SCALE

Typical plan and Section view of a Biofiltration BMP

Design Adaptations for Project Goals

Biofiltration Treatment BMP for storm water pollutant control. The system is lined or un-lined to provide incidental infiltration, and an underdrain is provided at the bottom to carry away filtered runoff. This configuration is considered to provide biofiltration treatment via flow through the media layer. Storage provided above the underdrain within surface ponding, media, and aggregate storage is considered included in the biofiltration treatment volume. Saturated storage within the aggregate storage layer can be added to this design by raising the underdrain above the bottom of the aggregate storage layer or via an internal weir structure designed to maintain a specific water level elevation.

Integrated storm water flow control and pollutant control configuration. The system can be designed to provide flow rate and duration control by primarily providing increased surface ponding and/or having a deeper aggregate storage layer above the underdrain. This will allow for significant detention storage, which can be controlled via inclusion of an outlet structure at the downstream end of the underdrain.

Design Criteria and Considerations

Bioretention with underdrain must meet the following design criteria. Deviations from the below criteria may be approved at the discretion of the City Engineer if it is determined to be appropriate:

<i>Siting and Design</i>	<i>Intent/Rationale</i>
<input type="checkbox"/> Placement observes geotechnical recommendations regarding potential hazards (e.g., slope stability, landslides, liquefaction zones) and setbacks (e.g., slopes, foundations, utilities).	Must not negatively impact existing site geotechnical concerns.
<input type="checkbox"/> An impermeable liner or other hydraulic restriction layer is included if site constraints indicate that infiltration or lateral flows should not be allowed.	Lining prevents storm water from impacting groundwater and/or sensitive environmental or geotechnical features. Incidental infiltration, when allowable, can aid in pollutant removal and groundwater recharge.

<i>Siting and Design</i>	<i>Intent/Rationale</i>
<input type="checkbox"/> Contributing tributary area shall be ≤ 5 acres (≤ 1 acre preferred).	<p>Bigger BMPs may require additional design features for proper performance.</p> <p>Contributing tributary area greater than 5 acres may be allowed at the discretion of the City Engineer if the following conditions are met: 1) incorporate design features (e.g. flow spreaders) to minimizing short circuiting of flows in the BMP and 2) incorporate additional design features requested by the City Engineer for proper performance of the regional BMP.</p>
<input type="checkbox"/> Finish grade of the facility is $\leq 2\%$.	<p>Flatter surfaces reduce erosion and channelization within the facility.</p>
<i>Surface Ponding</i>	
<input type="checkbox"/> Surface ponding is limited to a 24-hour drawdown time.	<p>Surface ponding limited to 24 hour for plant health.</p>
<input type="checkbox"/> Surface ponding depth is ≥ 6 and ≤ 12 inches.	<p>Surface ponding capacity lowers subsurface storage requirements. Deep surface ponding raises safety concerns.</p> <p>Surface ponding depth greater than 12 inches (for additional pollutant control or surface outlet structures or flow-control orifices) may be allowed at the discretion of the City Engineer if the following conditions are met: 1) surface ponding depth drawdown time is less than 24 hours; and 2) safety issues and fencing requirements are considered (typically ponding greater than 18" will require a fence and/or flatter side slopes) and 3) potential for elevated clogging risk is considered.</p>
<input type="checkbox"/> A minimum of 2 inches of freeboard is provided.	<p>Freeboard provides room for head over overflow structures and minimizes risk of uncontrolled surface discharge.</p>

<i>Siting and Design</i>	<i>Intent/Rationale</i>
<input type="checkbox"/> Side slopes are stabilized with vegetation and are = 3H:1V or shallower.	Gentler side slopes are safer, less prone to erosion, able to establish vegetation more quickly and easier to maintain.
<i>Vegetation</i>	
<input type="checkbox"/> Plantings are suitable for the climate and expected ponding depth. A plant list to aid in selection can be found in Appendix E.20.	Plants suited to the climate and ponding depth are more likely to survive.
<input type="checkbox"/> An irrigation system with a connection to water supply should be provided as needed.	Seasonal irrigation might be needed to keep plants healthy.
<i>Mulch (Mandatory)</i>	
<input type="checkbox"/> A minimum of 3 inches of well-aged, shredded hardwood mulch that has been stockpiled or stored for at least 12 months is provided.	Mulch will suppress weeds and maintain moisture for plant growth. Aging mulch kills pathogens and weed seeds and allows the beneficial microbes to multiply.
<i>Media Layer</i>	
<input type="checkbox"/> Media maintains a minimum filtration rate of 5 in/hr over lifetime of facility. An initial filtration rate of 8 to 12 in/hr is recommended to allow for clogging over time; the initial filtration rate should not exceed 12 inches per hour.	A filtration rate of at least 5 inches per hour allows soil to drain between events. The initial rate should be higher than long term target rate to account for clogging over time. However an excessively high initial rate can have a negative impact on treatment performance, therefore an upper limit is needed.

<i>Siting and Design</i>	<i>Intent/Rationale</i>
<p>Media is a minimum 18 inches deep, meeting either of these two media specifications:</p> <p>City of San Diego Low Impact Development Design Manual (page B-18) (July 2011, unless superseded by more recent edition) or County of San Diego Low Impact Development Handbook: Appendix G -Bioretention Soil Specification (June 2014, unless superseded by more recent edition).</p> <p>Alternatively, for proprietary designs and custom media mixes not meeting the media specifications contained in the City or County LID Manual, the media meets the pollutant treatment performance criteria in Section F.1.</p>	<p>A deep media layer provides additional filtration and supports plants with deeper roots.</p> <p>Standard specifications shall be followed.</p> <p>For non-standard or proprietary designs, compliance with F.1 ensures that adequate treatment performance will be provided.</p>
<p>Media surface area is 3% of contributing area times adjusted runoff factor or greater.</p>	<p>Greater surface area to tributary area ratios: a) maximizes volume retention as required by the MS4 Permit and b) decrease loading rates per square foot and therefore increase longevity.</p> <p>Adjusted runoff factor is to account for site design BMPs implemented upstream of the BMP (such as rain barrels, impervious area dispersion, etc.). Refer to Appendix B.2 guidance.</p> <p>Use Worksheet B.5-1 Line 26 to estimate the minimum surface area required per this criteria.</p>
<p>Where receiving waters are impaired or have a TMDL for nutrients, the system is designed with nutrient sensitive media design (see fact sheet BF-2).</p>	<p>Potential for pollutant export is partly a function of media composition; media design must minimize potential for export of nutrients, particularly where receiving waters are impaired for nutrients.</p>
<i>Filter Course Layer</i>	
<p>A filter course is used to prevent migration of fines through layers of the facility. Filter fabric is not used.</p>	<p>Migration of media can cause clogging of the aggregate storage layer void spaces or subgrade. Filter fabric is more likely to clog.</p>

<i>Siting and Design</i>		<i>Intent/Rationale</i>
<input type="checkbox"/>	Filter course is washed and free of fines.	Washing aggregate will help eliminate fines that could clog the facility and impede infiltration.
<input type="checkbox"/>	Filter course calculations assessing suitability for particle migration prevention have been completed.	Gradation relationship between layers can evaluate factors (e.g., bridging, permeability, and uniformity) to determine if particle sizing is appropriate or if an intermediate layer is needed.
<i>Aggregate Storage Layer</i>		
<input type="checkbox"/>	Class 2 Permeable per Caltrans specification 68-1.025 is recommended for the storage layer. Washed, open-graded crushed rock may be used, however a 4-6 inch washed pea gravel filter course layer at the top of the crushed rock is required.	Washing aggregate will help eliminate fines that could clog the aggregate storage layer void spaces or subgrade.
<input type="checkbox"/>	The depth of aggregate provided (12-inch typical) and storage layer configuration is adequate for providing conveyance for underdrain flows to the outlet structure.	Proper storage layer configuration and underdrain placement will minimize facility drawdown time.
<i>Inflow, Underdrain, and Outflow Structures</i>		
<input type="checkbox"/>	Inflow, underdrains and outflow structures are accessible for inspection and maintenance.	Maintenance will prevent clogging and ensure proper operation of the flow control structures.
<input type="checkbox"/>	Inflow velocities are limited to 3 ft/s or less or use energy dissipation methods. (e.g., riprap, level spreader) for concentrated inflows.	High inflow velocities can cause erosion, scour and/or channeling.
<input type="checkbox"/>	Curb cut inlets are at least 12 inches wide, have a 4-6 inch reveal (drop) and an apron and energy dissipation as needed.	Inlets must not restrict flow and apron prevents blockage from vegetation as it grows in. Energy dissipation prevents erosion.
<input type="checkbox"/>	Underdrain outlet elevation should be a minimum of 3 inches above the bottom elevation of the aggregate storage layer.	A minimal separation from subgrade or the liner lessens the risk of fines entering the underdrain and can improve hydraulic performance by allowing perforations to remain unblocked.
<input type="checkbox"/>	Minimum underdrain diameter is 6 inches.	Smaller diameter underdrains are prone to clogging.

<i>Siting and Design</i>	<i>Intent/Rationale</i>
<input type="checkbox"/> Underdrains are made of slotted, PVC pipe conforming to ASTM D 3034 or equivalent or corrugated, HDPE pipe conforming to AASHTO 252M or equivalent.	Slotted underdrains provide greater intake capacity, clog resistant drainage, and reduced entrance velocity into the pipe, thereby reducing the chances of solids migration.
<input type="checkbox"/> An underdrain cleanout with a minimum 6-inch diameter and lockable cap is placed every 250 to 300 feet as required based on underdrain length.	Properly spaced cleanouts will facilitate underdrain maintenance.
<input type="checkbox"/> Overflow is safely conveyed to a downstream storm drain system or discharge point. Size overflow structure to pass 100-year peak flow for on-line infiltration basins and water quality peak flow for off-line basins.	Planning for overflow lessens the risk of property damage due to flooding.

Conceptual Design and Sizing Approach for Storm Water Pollutant Control Only

To design bioretention with underdrain for storm water pollutant control only (no flow control required), the following steps should be taken:

1. Verify that siting and design criteria have been met, including placement requirements, contributing tributary area, maximum side and finish grade slopes, and the recommended media surface area tributary ratio.
2. Calculate the DCV per Appendix B based on expected site design runoff for tributary areas.
3. Use the sizing worksheet presented in Appendix B.5 to size biofiltration BMPs.

Conceptual Design and Sizing Approach when Storm Water Flow Control is Applicable

Control of flow rates and/or durations will typically require significant surface ponding and/or aggregate storage volumes, and therefore the following steps should be taken prior to determination of storm water pollutant control design. Pre-development and allowable post-project flow rates and durations should be determined as discussed in Chapter 6 of the manual.

1. Verify that siting and design criteria have been met, including placement requirements, contributing tributary area, maximum side and finish grade slopes, and the recommended media surface area tributary ratio.

Appendix E: BMP Design Fact Sheets

2. Iteratively determine the facility footprint area, surface ponding and/or aggregate storage layer depth required to provide detention storage to reduce flow rates and durations to allowable limits. Flow rates and durations can be controlled from detention storage by altering outlet structure orifice size(s) and/or water control levels. Multi-level orifices can be used within an outlet structure to control the full range of flows.
3. If bioretention with underdrain cannot fully provide the flow rate and duration control required by this manual, an upstream or downstream structure with significant storage volume such as an underground vault can be used to provide remaining controls.
4. After bioretention with underdrain has been designed to meet flow control requirements, calculations must be completed to verify if storm water pollutant control requirements to treat the DCV have been met.

E.13 Nutrient Sensitive Media Design

Some studies of bioretention with underdrains have observed export of nutrients, particularly inorganic nitrogen (nitrate and nitrite) and dissolved phosphorus. This has been observed to be a short-lived phenomenon in some studies or a long term issue in some studies. The composition of the soil media, including the chemistry of individual elements is believed to be an important factor in the potential for nutrient export. Organic amendments, often compost, have been identified as the most likely source of nutrient export. The quality and stability of organic amendments can vary widely.

The biofiltration media specifications contained in the County of San Diego Low Impact Development Handbook: Appendix G -Bioretention Soil Specification (June 2014, unless superseded by more recent edition) and the City of San Diego Low Impact Development Design Manual (page B-18) (July 2011, unless superseded by more recent edition) were developed with consideration of the potential for nutrient export. These specifications include criteria for individual component characteristics and quality in order to control the overall quality of the blended mixes. As of the publication of this manual, the June 2014 County of San Diego specifications provide more detail regarding mix design and quality control.

The City and County specifications noted above were developed for general purposes to meet permeability and treatment goals. In cases where the BMP discharges to receiving waters with nutrient impairments or nutrient TMDLs, the biofiltration media should be designed with the specific goal of minimizing the potential for export of nutrients from the media. Therefore, in addition to adhering to the City or County media specifications, the following guidelines should be followed:

1. Select plant palette to minimize plant nutrient needs

A landscape architect or agronomist should be consulted to select a plant palette that minimizes nutrient needs. Utilizing plants with low nutrient needs results in less need to enrich the biofiltration soil mix. If nutrient quantity is then tailored to plants with lower nutrient needs, these plants will generally have less competition from weeds, which typically need higher nutrient content. The following practices are recommended to minimize nutrient needs of the plant palette:

- **Utilize native, drought-tolerant plants and grasses where possible.** Native plants generally have a broader tolerance for nutrient content, and can be longer lived in leaner/lower nutrient soils.
- **Start plants from smaller starts or seed.** Younger plants are generally more tolerant of lower nutrient levels and tend to help develop soil structure as they grow. Given the lower cost of smaller plants, the project should be able to accept a plant mortality rate that is somewhat higher than starting from larger plants and providing high organic content.

2. Minimize excess nutrients in media mix

Once the low-nutrient plant palette is established (item 1), the landscape architect and/or agronomist should be consulted to assist in the design of a biofiltration media to balance the interests of plant establishment, water retention capacity (irrigation demand), and the potential for nutrient export. The following guidelines should be followed:

- **The mix should not exceed the nutrient needs of plants.** In conventional landscape design, the nutrient needs of plants are often exceeded intentionally in order to provide a factor of safety for plant survival. This practice must be avoided in biofiltration media as excess nutrients will increase the chance of export. The mix designer should keep in mind that nutrients can be added later (through mulching, tilling of amendments into the surface), but it is not possible to remove nutrients, once added.
- **The actual nutrient content and organic content of the selected organic amendment source should be determined when specifying mix proportions.** Nutrient content (i.e., C:N ratio; plant extractable nutrients) and organic content (i.e., % organic material) are relatively inexpensive to measure via standard agronomic methods and can provide important information about mix design. If mix design relies on approximate assumption about nutrient/organic content and this is not confirmed with testing (or the results of prior representative testing), it is possible that the mix could contain much more nutrient than intended.
- **Nutrients are better retained in soils with higher cation exchange capacity.** Cation exchange capacity can be increased through selection of organic material with naturally high cation exchange capacity, such as peat or coconut coir pith, and/or selection of inorganic material with high cation exchange capacity such as some sands or engineered minerals (e.g., low P-index sands, zeolites, rhyolites, etc). Including higher cation exchange capacity materials would tend to reduce the net export of nutrients. Natural silty materials also provide cation exchange capacity; however potential impacts to permeability need to be considered.
- **Focus on soil structure as well as nutrient content.** Soil structure is loosely defined as the ability of the soil to conduct and store water and nutrients as well as the degree of aeration of the soil. Soil structure can be more important than nutrient content in plant survival and biologic health of the system. If a good soil structure can be created with very low amounts of organic amendment, plants survivability should still be provided. While soil structure generally develops with time, biofiltration media can be designed to promote earlier development of soil structure. Soil structure is enhanced by the use of amendments with high humus content (as found in well-aged organic material). In addition, soil structure can be enhanced through the use of organic material with a distribution of particle sizes (i.e., a more heterogeneous mix).

- **Consider alternatives to compost.** Compost, by nature, is a material that is continually evolving and decaying. It can be challenging to determine whether tests previously done on a given compost stock are still representative. It can also be challenging to determine how the properties of the compost will change once placed in the media bed. More stable materials such as aged coco coir pith, peat, biochar, shredded bark, and/or other amendments should be considered.

With these considerations, it is anticipated that less than 10 percent organic amendment by volume could be used, while still balancing plant survivability and water retention. If compost is used, designers should strongly consider utilizing less than 10 percent by volume.

3. Design with partial retention and/or internal water storage

An internal water storage zone, as described in Fact Sheet PR-1 is believed to improve retention of nutrients. For lined systems, an internal water storage zone worked by providing a zone that fluctuates between aerobic and anaerobic conditions, resulting in nitrification/denitrification. In soils that will allow infiltration, a partial retention design (PR-1) allows significant volume reduction and can also promote nitrification/denitrification.

Acknowledgment: This fact sheet has been adapted from the Orange County Technical Guidance Document (May 2011). It was originally developed based on input from: Deborah Deets, City of Los Angeles Bureau of Sanitation, Drew Ready, Center for Watershed Health, Rick Fisher, ASLA, City of Los Angeles Bureau of Engineering, Dr. Garn Wallace, Wallace Laboratories, Glen Dake, GDML, and Jason Schmidt, Tree People. The guidance provided herein does not reflect the individual opinions of any individual listed above and should not be cited or otherwise attributed to those listed.

E.14 BF-3 Proprietary Biofiltration Systems

The purpose of this fact sheet is to help explain the potential role of proprietary BMPs in meeting biofiltration requirements, when full retention of the DCV is not feasible. The fact sheet does not describe design criteria like the other fact sheets in this appendix because this information varies by BMP product model.

Criteria for Use of a Proprietary BMP as a Biofiltration BMP

A proprietary BMP may be acceptable as a “biofiltration BMP” under the following conditions:

- (1) The BMP meets the minimum design criteria listed in Appendix F, including the pollutant treatment performance standard in Appendix F.1;
- (2) The BMP is designed and maintained in a manner consistent with its performance certifications (See explanation in Appendix F.2); and
- (3) The BMP is acceptable at the discretion of the City Engineer. The City Engineer has no obligation to accept any proprietary biofiltration BMP.

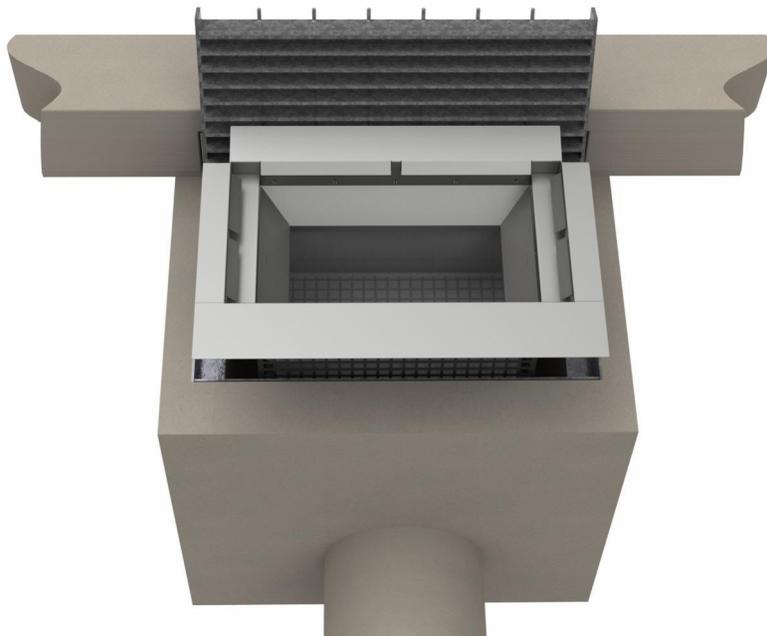
Guidance for Sizing a Proprietary BMP as a Biofiltration BMP

Proprietary biofiltration BMPs must meet the same sizing guidance as non-proprietary BMPs. Sizing is typically based on capturing and treating 1.50 times the DCV not reliably retained. Guidance for sizing biofiltration BMPs to comply with requirements of this manual is provided in Appendix F.2.



FLOGARD +PLUS®

Replacement & Repair Instruction Manual



FloGard Plus Replacement and Repair

Parts of the FloGard Plus Inlet Filter-

1. FloGard Stainless Steel Support Frame
2. Fossil Rock Absorbent Pouches
3. Liner
4. GeoGrid Support Basket & Cable

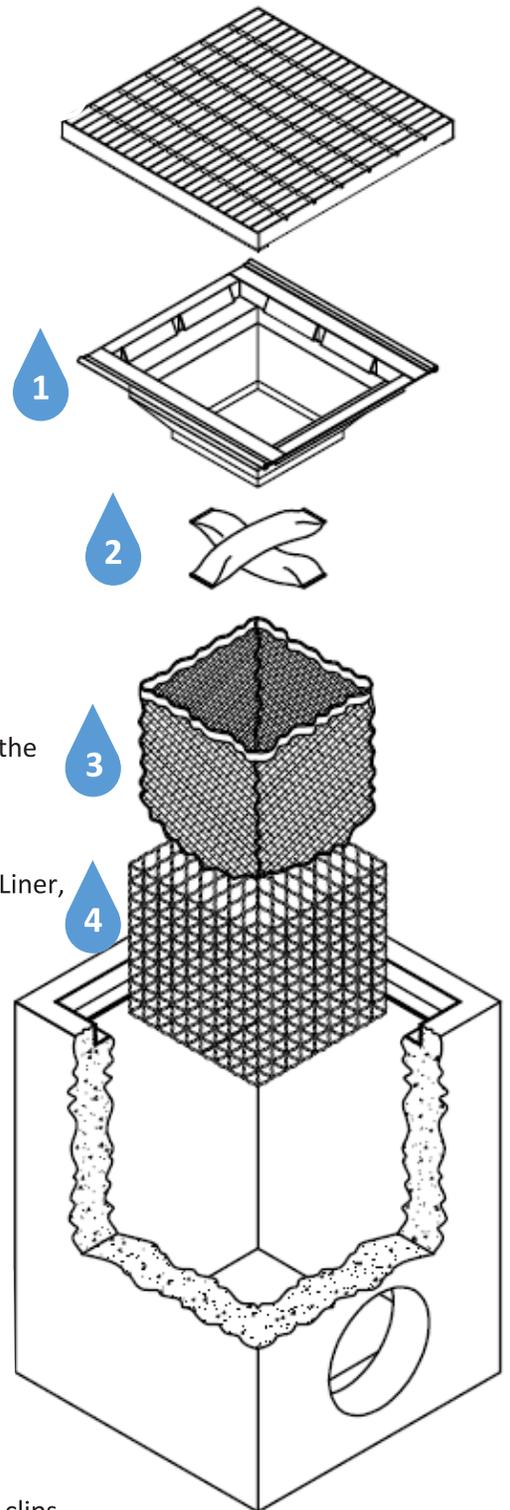
* Grate and Basin NOT INCLUDED

Disassembly:

1. Clear FloGard of any existing debris by hand or vacuum.
2. Unclip and remove the Fossil Rock pouches from the inside Liner.
3. Lift the FloGard from the catch basin.
4. Using a slotted screw driver, carefully pry open the metal tabs holding the GeoGrid and Cable in place. Separate the GeoGrid and Liner from the FloGard frame.
5. Unclip the Liner from the inside of the GeoGrid. If you are reusing the Liner, rinse thoroughly with water and inspect for tears. (If torn, mend with stainless steel wire or replace the Liner).
6. Rinse and inspect the GeoGrid Basket and the reinforcing cable. (If torn, mend with stainless steel wire or replace the GeoGrid).
7. Rinse and inspect the Stainless Steel FloGard frame.

Reassembly:

1. Fully expand the GeoGrid Basket and orient to the FloGard frame. Hook cable and GeoGrid to the FloGard frame metal tabs and close the tabs using slotted screwdriver. Move around the FloGard until all tabs are closed and GeoGrid is secured to the Frame.
2. Expand and orient the Liner, locating the clips at each corner and side. Push the Liner through the center of the FloGard frame and secure the clips to the GeoGrid Basket close to the top support cable. Push the Liner to expand inside of the basket.
3. Clip new Fossil Rock Rubberizer pouches to the inside of the Liner.
4. Lower FloGard back into the basin, replace grate.



FLOGARD +PLUS®

OUR MARKETS



BUILDING
STRUCTURES



COMMUNICATIONS



WATER



ENERGY



TRANSPORTATION

Attachment 3b

RECORDING REQUESTED BY:

City of Santee, CA

AFTER RECORDING MAIL TO:

City Clerk
City of Santee
10601 Magnolia Avenue
Santee, CA 92071-1266

ABOVE SPACE FOR RECORDER'S USE

AGREEMENT TO PERFORM STORM WATER FACILITIES MAINTENANCE

NO RECORDATION FEE REQUIRED; THIS DOCUMENT IS EXEMPT FROM RECORDING FEES PURSUANT TO CALIFORNIA GOVERNMENT CODE SECTIONS 27383

DOCUMENTARY TRANSFER TAX DUE \$ 0

Assessor's Parcel No. _____

Project No. _____

This AGREEMENT for the maintenance and repair of certain Storm Water Management Facilities is entered into between _____ (hereinafter referred to as "Owner") and the City of Santee (hereinafter referred to as "City") for the benefit of the City, the successors in interest to the City, and the public generally.

RECITALS

A. Owner is the owner of certain real property located in the City of Santee, California, more particularly described in **Exhibit "A"** hereto (hereinafter referred to as the "Property"), and has proposed that the Property be developed as _____ (insert brief description of type of project, e.g., "a 100 unit residential subdivision") _____ in accordance with applications for Tentative Map No. ____

_____, Development Review No. _____, Conditional Use Permit No. _____, Grading Permit No. _____ which are on file with the City. This Agreement is required as a condition of approval for such development as set forth in Resolution Nos. _____.

B. In accordance with the City of Santee's Storm Water Management and Discharge Control Ordinance, (Santee Municipal Code, Chapter 9.06), the City of Santee Subdivision Ordinance, the City of Santee Zoning Ordinance, the City of Santee Grading Ordinance and/or other ordinances or regulations of the City which regulate land development and urban runoff, Owner has prepared and submitted to the City, a site specific Storm Water Quality Management Plan (hereinafter the SWQMP), prepared by _____ and dated _____ as it currently exists or may hereafter be amended and which is on file with the City's Department of Development Services. The SWQMP proposes that storm water runoff from the Property be treated by the use of various storm water management facilities which are identified in the SWQMP as "Best Management Practices" or "BMP's":

The precise location and extent of the BMP's are described and shown in the SWQMP. The SWQMP specifies the frequency, manner, and standards by which the BMP's must be repaired and maintained in order to retain their effectiveness, as set forth in the Operation and Maintenance Section included in the SWMP.

C. The information contained in the SWQMP and the Owner's representation that the BMP's will be maintained pursuant to the SWQMP have been relied upon by City in approving Owner's development applications. It is the purpose of this Agreement to assure that the BMP's are maintained in perpetuity, by creating obligations which are enforceable against the Owner and the Owner's successors in interest in the Property. It is intended that these obligations be enforceable notwithstanding other provisions related to BMP maintenance which are provided by law.

AGREEMENT

NOW, THEREFORE, for consideration of City's approval of the above development applications and the mutual covenants set forth herein, IT IS HEREBY AGREED AS FOLLOWS:

1. **Maintenance of Storm Water Management Facilities.** Owner agrees, for itself and its successors in interest, to all or any portion of the Property, to comply in all respects with the requirements of the Storm Water Management and Discharge Control Ordinance and the SWQMP with regard to the maintenance

of all BMP's as designated in the SWQMP, and in particular agrees to perform, at its sole cost, expense and liability, the following "Maintenance Activities": all inspections, cleaning, repairs, servicing, maintenance and other actions specified in the SWQMP, with respect to all of the BMP's listed at Recital "B" above, at the times and in the manner specified in the SWQMP as it currently exists or may be amended or modified as provided herein. Owner shall initiate, perform and complete all Maintenance Activities at the required time, without request or demand from City or any other agency. Owner further agrees that "Maintenance Activities" shall include replacement or modification of the BMP's in the event that the BMP fails to provide the necessary water quality treatment, it is found that the BMP was not installed correctly, or in the event that the BMP is not functioning as intended. Replacement shall be with an identical type, size and model of BMP, except that:

(a) The City Engineer may authorize substitution of an alternative BMP if he or she determines that it will function as good or better than the failed BMP. The City requires that proposed modifications be submitted for review and approval prior to making any changes in the field, and that the Storm Water Quality Management Plan be revised or amended and resubmitted for approval; and

(b) Pursuant to Section 9.06.200 of the Storm Water Management and Discharge Control Ordinance, any discharge that would result in or contribute to a violation of the City's NPDES Permit and any amendment, revision or re-issuance thereof, either separately considered or when combined with other discharges, is prohibited. Liability for any such discharge shall be the responsibility of the owner(s) causing or responsible for the discharge. Owner agrees that if the BMP, in the judgment of the Director of Development Services, is inappropriate or inadequate to the circumstances and has or may result in a violation of water quality standards, the BMP must be modified or replaced with an upgraded BMP to prevent any actual or potential violation.

2. Annual Inspection and Certification by Owner

Owner agrees to provide documentation of BMP maintenance as required for the City to ensure that all storm water BMPs are properly maintained and are functioning as intended, in compliance with the site specific Storm Water Quality Management Plan. Owner shall provide annual certification that BMPs have been properly maintained for the time period of *September 1 to August 31, each year. This documentation is due to the City prior to September 15th of each year.* Structural BMPs for which annual certification is required includes, but is not limited to: drainage inserts; detention basins; hydrodynamic separators; swales; filters;

bioretention facilities; and Low Impact Development Integrated Management Practices (LID IMPs).

3. **Notices.** Owner further agrees that it shall, prior to transferring ownership of any land on which any of the above BMP's are located, and also prior to transferring ownership of any such BMP, provide clear written notice of the above maintenance obligations associated with that BMP to the transferee. The Storm Water Quality Management Plan and all associated records must also be provided to all subsequent owners upon transfer of property title.

4. **City's Right to Perform Maintenance.** It is agreed that City shall have the right, but not the obligation, to elect to perform any or all of the Maintenance Activities if, in the City's sole judgment, Owner has failed to perform the same. It is recognized and understood that the City makes no representation that it intends to or will perform any of the Maintenance Activities, and any election by the City to perform any of the Maintenance Activities, shall in no way relieve Owner of its continuing maintenance obligations under this agreement. If the City elects to perform any of the Maintenance Activities, it is understood that the City shall be deemed to be acting as the agent of the Owner and said work shall be without warranty or representation by City as to safety or effectiveness, shall be deemed to be accepted by Owner "as is", and shall be covered by Owner's indemnity provisions below.

If the City performs any of the Maintenance Activities, after City has served written notice to the Owner to perform the same, and the Owner has failed to do so within a reasonable time stated in the City's written notice, then Owner shall pay all of the City's costs incurred in performing the Maintenance Activities within sixty days of receipt of an invoice for those costs.

5. **Right of Entry and Inspection by City.** Owner hereby grants to City a perpetual right of entry over, under and across Owner's Property, for purposes of accessing the BMP's and performing inspection of the BMP's or any of the Maintenance Activities related to maintenance of the BMP's. City shall have the right, at any time and without prior notice to Owner, to enter upon any part of said area as may be necessary or convenient for such purposes. Owner shall at all times maintain the Property so as to make the City's access clear and unobstructed. City is required to perform periodic inspection of Structural BMPs. Owner agrees to pay reasonable fees levied by the City on Owners of BMPs for the costs of managing the BMP inspection and maintenance tracking program.

6. **Administration of Agreement for City.** City hereby designates its Department of Development Services with responsibility and authority to administer this Agreement on behalf of City. Any notice or communication related to the

implementation of this Agreement desired or required to be delivered to City shall be addressed to:

Director of Development Services
City of Santee
10601 Magnolia Avenue
Santee, CA 92071

The City Engineer is also granted authority to enter into appropriate amendments to this Agreement on behalf of City, provided that the amendment is consistent with the purposes of this Agreement as set forth above.

7. **Defense and Indemnity.** City shall not be liable for, and Owner and its successors in interest shall defend and indemnify City and the employees and agents of City, against any and all claims, demands, liability, judgments, awards, fines, mechanic's liens or other liens, labor disputes, losses, damages, expenses, charges or costs of any kind or character, including attorneys' fees and court costs (hereinafter collectively referred to as "CLAIMS"), related to this Agreement and arising either directly or indirectly from any act, error, omission or negligence of Owner, Owner's successors, or their contractors, licensees, agents, servants or employees, including, without limitation, claims caused by the concurrent negligent act, error or omission, whether active or passive of City. Owner shall have no obligation, however, to defend or indemnify City from a claim if it is determined by a court of competent jurisdiction that such claim was caused by the sole negligence or willful misconduct of City. Nothing in this Agreement, in the City's approval of the subdivision or other applications or plans and specifications, or inspection of the work, is intended to acknowledge responsibility for any such matter, and City shall have absolutely no responsibility or liability therefore unless otherwise provided by applicable law.

8. **Common Interest Developments.** If the Property is developed as a "Common Interest Development" as defined in Civil Code section 4100 which will include membership in or ownership of an "Association" as defined in Civil Code section 4080, then the following provisions of this Paragraph 7 shall apply during such time as the Property is encumbered by a "Declaration" as defined in Civil Code section 4135, and the Common Area, as "Common Area" is defined in Civil Code section 4095, of the Property is managed and controlled by the Association:

(a) The Association, through its Board of Directors, shall assume full responsibility to perform the MAINTENANCE ACTIVITIES pursuant to this Agreement, and shall undertake all actions and efforts necessary to accomplish the MAINTENANCE ACTIVITIES, including but not limited to, levying regular or special assessments against each member of the

Association sufficient to provide funding for the MAINTENANCE ACTIVITIES, conducting a vote of the membership related to such assessments if required by law. In the event insufficient votes have been obtained to authorize an assessment, the Association shall seek authority from a court of competent jurisdiction for a reduced percentage of affirmative votes necessary to authorize the assessment, re-conducting the vote of the membership in order to obtain the votes necessary to authorize an assessment, and the Association shall take all action authorized by the Declaration or California law to collect delinquent assessments, including but not limited to, the recording and foreclosure of assessment liens.

(b) No provision of the Declaration, nor any other governing document of the Association or grant of authority to its members, shall grant or recognize a right of any member or other person to alter, improve, maintain or repair any of the Property in any manner which would impair the functioning of the BMP's to manage drainage or storm water runoff as described in the SWQMP. In the event of any conflict between the terms of this Agreement and the Declaration or other Association governing documents, the provisions of this Agreement shall prevail.

9. **Agreement Binds Successors and Runs With the Property.** It is understood and agreed that the terms, covenants and conditions herein contained shall constitute covenants running with the land and shall be binding upon the heirs, executors, administrators, successors and assigns of Owner and City, shall be deemed to be for the benefit of all persons owning any interest in the Property (including the interest of City or its successors in the easement granted herein). It is the intent of the parties hereto that this Agreement shall be recorded and shall be binding upon all persons purchasing or otherwise acquiring all or any lot, unit or other portion of the Property, who shall be deemed to have consented to and become bound by all the provisions hereof.

10. **Owner's Continuing Responsibilities Where Work Commenced or Permit Obtained.** Notwithstanding any other provision of this Agreement, no transfer or conveyance of the Property or any portion thereof shall in any way relieve Owner of or otherwise affect Owner's responsibilities for installation or maintenance of BMP's which may have arisen under the ordinances or regulations of City referred to in Recital B above, or other federal, state or local laws, on account of Owner having obtained a permit which creates such obligations or having commenced grading, construction or other land disturbance work.

11. **Amendment and Release.** The terms of this Agreement may be modified only by a written amendment approved and signed by the Director of Development Services and by the Owner or Owner's successor(s) in interest. This

Agreement may be terminated and Owner and the Property released from the covenants set forth herein, by a Release which City may execute if it determines that another mechanism will assure the ongoing maintenance of the BMP's or that it is no longer necessary to assure such maintenance.

12. **Agreement is Intended to Supplement Not Supercede.** This Agreement is intended to supplement and not supercede the requirements of the Chapter 9.06 of the Santee Municipal Code – Storm Water Management and Discharge Control. The requirements listed herein are in addition to the requirements set forth in the Code including Civil Actions and Enforcement Powers established under the Code.

13. **Governing Law and Severability.** This Agreement shall be governed by the laws of the State of California. Venue in any action related to this Agreement shall be in the Superior Court of the State of California, County of San Diego, East County Division. In the event that any of the provisions of this Agreement are held to be unenforceable or invalid by any court of competent jurisdiction, the validity, and enforceability of the remaining provisions shall not be affected thereby.

IN WITNESS WHEREOF, the parties have executed this Agreement on the _____ day of _____, 201__.

CITY OF SANTEE:

By: _____
Melanie Kush
Director of Development Services

OWNERS: _____

By: _____
(sign here)

(print name here)

(title of signatory)

By: _____
(sign here)

(print name here)

(title of signatory)

(All OWNERS must sign)

(Proper notary acknowledgment of execution by OWNER must be attached.)

(President or vice-president **and** secretary or assistant secretary must sign for corporations. If only one officer signs, the corporation must attach a resolution certified by the secretary or assistant secretary under corporate seal empowering that officer to bind the corporation.)

**CITY OF SANTEE
CERTIFICATE OF ACCEPTANCE
FOR
AGREEMENT TO PERFORM STORM WATER FACILITIES MAINTENANCE**

This AGREEMENT by and between the City of Santee, a municipal corporation, and _____ is accepted for recording by the undersigned officers on behalf of the City of Santee pursuant to authority granted by Resolution No. 148-89 of the Santee City Council adopted on August 9, 1989.

Date: _____

By: _____

Melanie Kush
Director of Development Services

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California }
County of San Diego }

On _____
(date), before me, Patsy Bell, Santee City Clerk (name and title of the officer), personally appeared _____

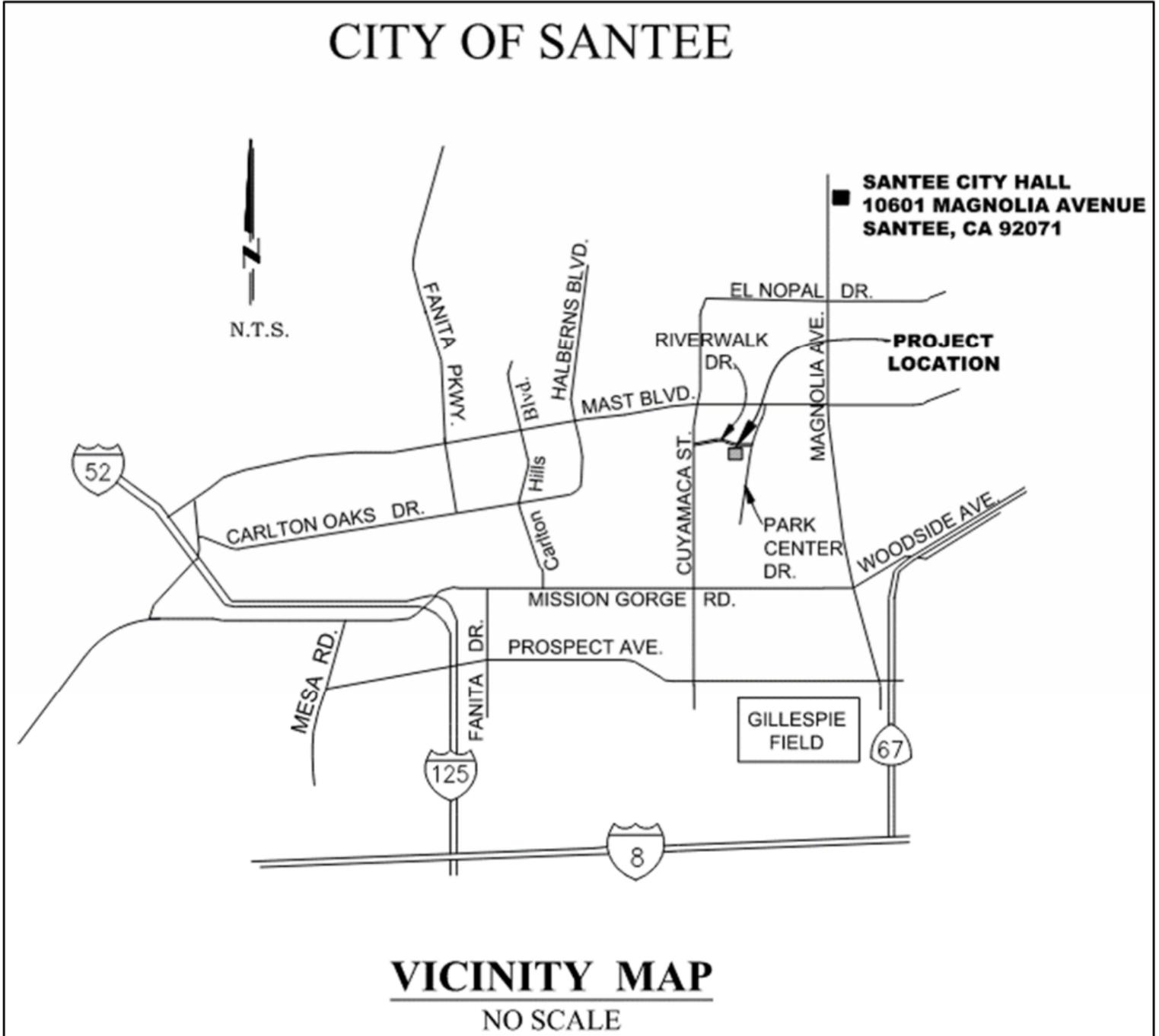
(Name(s) of Signer(s)), who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Patsy Bell, City Clerk [Seal]

EXHIBIT 'A'



ATTACHMENT 4

Copy of Plan Sheets Showing Permanent Storm Water BMPs

This is the cover sheet for Attachment 4.

Use this checklist to ensure the required information has been included on the plans:

The plans must identify:

- Structural BMP(s) with ID numbers matching Form I-6 Summary of PDP Structural BMPs
- The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit
- Details and specifications for construction of structural BMP(s)
- Signage indicating the location and boundary of structural BMP(s) as required by the [City Engineer]
- How to access the structural BMP(s) to inspect and perform maintenance
- Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
- Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
- Recommended equipment to perform maintenance
- When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management
- Include landscaping plan sheets showing vegetation requirements for vegetated structural BMP(s)
- All BMPs must be fully dimensioned on the plans
- When proprietary BMPs are used, site-specific cross section with outflow, inflow, and model number shall be provided. Photocopies of general brochures are not acceptable.

I

GENERAL NOTES

- AN ENCROACHMENT PERMIT SHALL BE OBTAINED FROM THE DEPARTMENT OF DEVELOPMENT SERVICES PRIOR TO THE START OF ANY CONSTRUCTION WITHIN THE LIMITS OF THE PUBLIC RIGHT-OF-WAY INCLUDING BUT NOT LIMITED TO UTILITY CONNECTIONS OR GRADING.
- ACCEPTANCE OF THESE IMPROVEMENTS AS SHOWN DOES NOT CONSTITUTE APPROVAL OF ANY CONSTRUCTION OUTSIDE THE PROJECT BOUNDARY.
- ALL UNDERGROUND UTILITIES WITHIN THE STREET RIGHT-OF-WAY SHALL BE CONSTRUCTED, TESTED AND CONNECTED PRIOR TO CONSTRUCTION OF BERMS, CURBS, CROSS-GUTTERS, SIDEWALKS, RETAINING WALLS OR FINAL PAVING.
- THE EXISTENCE AND LOCATION OF EXISTING UNDERGROUND FACILITIES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORD DATA AND FIELD SURVEYS. TO THE BEST OF OUR KNOWLEDGE, EXISTING FACILITIES ARE SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT ANY EXISTING FACILITIES SHOWN HEREON AND TO MAKE A REASONABLE AND DILIGENT SEARCH TO DETERMINE ANY OTHER WHICH ARE NOT OF RECORD OR NOT SHOWN ON THESE PLANS AND TO PROTECT THE SAME. ANY FACILITIES SO LOCATED SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND INCLUDED ON THE AS-BUILT DRAWINGS FOR THIS PROJECT.
- LOCATION AND ELEVATION OF IMPROVEMENTS TO BE MET BY WORK TO BE DONE SHALL BE CONFIRMED BY FIELD MEASUREMENTS PRIOR TO CONSTRUCTION OF NEW WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING EXPLORATORY EXCAVATIONS AND LOCATING EXISTING UNDERGROUND FACILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO ALLOW FOR REVISIONS TO PLANS IF REVISIONS ARE NECESSARY BECAUSE OF CHANGES IN LINE OR GRADE DUE TO THE ACTUAL LOCATION OF THE EXISTING FACILITIES.
- THE CONTRACTOR SHALL NOTIFY THE SAN DIEGO GAS AND ELECTRIC COMPANY PRIOR TO STARTING WORK NEAR S.D.G. & E. FACILITIES AND SHALL COORDINATE HIS WORK WITH COMPANY REPRESENTATIVES.
NOTICE: FOR LOCATION OF ELECTRICAL CABLES AND GAS PIPING AND APPURTENANCES CONTACT THE SAN DIEGO GAS AND ELECTRIC COMPANY. TELEPHONE: 811.
- THE CONTRACTOR SHALL NOTIFY THE SBC PACIFIC BELL TELEPHONE COMPANY PRIOR TO STARTING WORK NEAR PACIFIC BELL FACILITIES AND SHALL COORDINATE HIS WORK WITH COMPANY REPRESENTATIVES.
NOTICE: FOR LOCATION OF CABLES AND APPURTENANCES CONTACT AT&T.
- THE CONTRACTOR SHALL NOTIFY PADRE DAM MUNICIPAL WATER DISTRICT 48 HRS. PRIOR TO STARTING WORK NEAR PADRE DAM FACILITIES AND SHALL COORDINATE HIS WORK WITH DISTRICT REPRESENTATIVES.
NOTICE: FOR LOCATION OF WATER AND SEWER FACILITIES AND APPURTENANCES CONTACT PADRE DAM. TELEPHONE: 811.
- THE CONTRACTOR SHALL NOTIFY COX CABLE TV PRIOR TO STARTING WORK NEAR COX CABLE FACILITIES AND SHALL COORDINATE HIS WORK WITH COMPANY REPRESENTATIVES.
NOTICE: FOR LOCATION OF CABLES AND APPURTENANCES CONTACT COX CABLE. TELEPHONE: 811.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE UTILITY AGENCIES, ADVISE THEM OF THE PROPOSED IMPROVEMENTS, AND COORDINATE RELOCATIONS, IF NEEDED.
- POWER SOURCES AND RUNS SERVING STREET LIGHTS SHALL BE SHOWN ON THE "AS-BUILT" IMPROVEMENT DRAWINGS. ALL SOURCES SHALL BE LOCATED WITHIN THE DEDICATED RIGHT-OF-WAY, OR WITHIN EASEMENTS DEDICATED TO THE CITY OF SANTEE.
- CITY OF SANTEE - INSPECTION REQUIREMENTS:
A. CONTRACTOR SHALL INFORM THE CITY PROJECT ENGINEER 48 HRS. IN ADVANCE OF COMMENCING WORK. PHONE (619) 258-4100 EXT 168.
B. THE CONTRACTOR SHALL GIVE A MINIMUM OF 24 HRS. NOTICE ON REQUESTS FOR INSPECTION. CONTRACTOR SHALL SCHEDULE ALL INSPECTIONS THROUGH SANTEEPORTAL.ORG.
C. ANY WORK PERFORMED WITHOUT THE BENEFIT OF INSPECTION IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL RELOCATE STREET SIGNS WHEN CONDITIONS SO DICTATE. CONTRACTOR SHALL PROTECT AND ASSUME RESPONSIBILITY FOR ALL OTHER TRAFFIC CONTROL DEVICES. CONTRACTOR SHALL REPLACE TRAFFIC STRIPING, STREET MARKINGS, AND CURB MARKINGS REMOVED OR DAMAGED BY HIS WORK.
- SIDEWALK JOINT LOCATIONS SHALL BE INSTALLED IN ACCORDANCE WITH REGIONAL STANDARD DRAWING NO. G-9. CURB OR CURB AND GUTTER JOINT LOCATIONS SHALL INCLUDE EXPANSION JOINTS AT CURB RETURNS, ADJACENT TO WALLS AND STRUCTURES AND AT 45 FOOT INTERVALS. WEAKENED PLANE JOINTS SHALL BE PLACED EVERY 15' AND GROOVED JOINTS PLACED EVERY 5'. ALL CONCRETE JOINTS SHALL CONFORM TO REGIONAL STANDARD DRAWING NO. G-10. SIDEWALKS SHALL BE REMOVED TO THE NEAREST JOINT. REFER TO PROJECT SPECIFICATIONS SECTION 32 13 FOR FURTHER INFORMATION.
- SIDEWALKS AND BIKEPATHS ARE DESIGNED TO HAVE CLEAR UNOBSTRUCTED ACCESS. THESE FACILITIES SHALL BE KEPT CLEAR OF STREET LIGHTS, FIRE HYDRANTS, METER BOXES, TRANSFORMERS, ELECTRICAL PULL BOXES, BLOWOFFS, AIR VENTS OR OTHER SIMILAR OBSTRUCTIONS AT ALL TIMES AND SHALL MAINTAIN 4' MINIMUM CLEARANCE.
- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ADEQUACY OF DESIGN AND CONSTRUCTION IN ACCORDANCE WITH THE SPECIFIED GENERAL STANDARDS OF CONSTRUCTION LISTED HEREON, AND TO PROTECT THE WORK AT ALL TIMES DURING THE COURSE OF CONSTRUCTION. FAILED OR DAMAGED WORK SUCH AS CRACKED SIDEWALKS, CURB AND GUTTER, CROSS GUTTERS, DRIVEWAY APRONS AND SO FORTH, SHALL BE REPLACED TO THE NEAREST JOINT OR SCORE LINE IN EACH DIRECTION PRIOR TO PLACEMENT OF THE FINAL PAVEMENT COURSE.
- THE CONTRACTOR SHALL ENFORCE SAFETY MEASURES AND REGULATIONS INCLUDING THE DESIGN, CONSTRUCTION AND MAINTENANCE FOR CONFORMING TO ALL LOCAL, STATE, AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL, DISPOSAL, AND COORDINATION OF ALL PRIVATE FACILITIES, FENCES, WALLS, DEBRIS, LANDSCAPING AND IRRIGATION WITHIN THE RIGHT OF WAY WHICH REQUIRES REMOVAL FOR CONSTRUCTION PURPOSES. EACH INDIVIDUAL OWNER EFFECTED SHALL BE NOTIFIED 5 DAYS IN ADVANCE PRIOR TO DEMOLITION OR REMOVAL OF PRIVATE PROPERTY WITHIN THE RIGHT OF WAY.
- NO WORK OUTSIDE THE RIGHT OF WAY SHALL BE CONDUCTED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE CITY.
- SOME UTILITIES MAY BE RELOCATED BY THE UTILITY COMPANIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THAT ALL UTILITIES ARE RELOCATED PRIOR TO START OF WORK BY CONTACTING THE CITY.
- CONTRACTOR SHALL BE PROPERLY LICENSED BY THE TIME THE CONTRACT IS AWARDED, PURSUANT TO THE PROVISIONS OF PUBLIC CONTRACT CODE 20103.5.

STORMWATER POLLUTION PREVENTION NOTES:

- APPROPRIATE EROSION PREVENTION AND SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED AT ALL TIMES.
- THE TOPS OF ALL SLOPES SHALL HAVE A DIKE OR TRENCH TO PREVENT WATER FROM FLOWING OVER THE CRESTS OF SLOPES.
- CLEAN GRAVEL ONLY WILL BE USED IN GRAVEL BAGS.
- CATCH BASINS, DESILTING BASINS, GRAVEL BAGS, CHECK DAMS AND STORM DRAIN SYSTEMS SHALL BE INSTALLED TO THE SATISFACTION OF THE CITY ENGINEER. THESE FACILITIES SHALL BE CLEANED ON A REGULAR BASIS, AND KEPT FREE OF SOIL ACCUMULATION.
- GRAVEL BAG CHECK DAMS SHALL BE PLACED IN UNPAVED AREAS WITH GRADIENTS IN EXCESS OF 2%, IN OTHER GRADED OR EXCAVATED AREAS AS REQUIRED BY THE DEPARTMENT OF DEVELOPMENT SERVICES, AND AT OR NEAR EVERY POINT WHERE CONCENTRATED FLOWS LEAVE THE DEVELOPMENT.
- GRAVEL BAGS SHALL BE PLACED ON THE UPSTREAM SIDE OF ALL DRAINAGE INLETS TO MINIMIZE SILT BUILDUP IN THE INLETS AND PIPES.
- THE CONTRACTOR SHALL IMMEDIATELY REPAIR ANY ERODED SLOPES.
- ROADWAYS AND ENTRANCES TO AND FROM THE SITE SHALL BE SWEEPED ON A REGULAR BASIS TO KEEP THEM FREE OF SOIL ACCUMULATION.
- CONTRACTOR SHALL HAVE WATER TRUCKS AND EQUIPMENT ON-SITE TO MINIMIZE AIRBORNE DUST CREATED FROM GRADING AND HAULING OPERATIONS OR EXCESSIVE WIND CONDITIONS. WATERING SHALL BE PERFORMED ON A CONTINUOUS BASIS ANY TIME THESE CONDITIONS ARE PRESENT AND AT ALL OTHER TIMES AS DIRECTED BY THE CITY ENGINEER. ADDITIONAL DUST CONTROL MEASURES SHALL BE IMPLEMENTED AS NEEDED.
- STOCKPILES SHALL BE COVERED AT THE END OF EACH WORKING DAY AND PRIOR TO PREDICTED RAIN EVENTS. ASPHALT SHALL BE STORED ON A LAYER OF PLASTIC SHEETING, OR EQUIVALENT.
- ALL PORTABLE TOILETS SHALL HAVE A SECONDARY CONTAINMENT AND NOT BE LOCATED NEAR A STORM DRAIN (I.E. CATCH BASIN OR STREET).
- INACTIVE SLOPES SHALL BE PROTECTED AND STABILIZED WITHIN 10 CALENDAR DAYS OF LAST BEING WORKED, OR ON THE DIRECTION OF THE CITY. ACTIVE SLOPES SHALL BE STABILIZED DURING RAIN.
- EROSION CONTROL ON SLOPES SHALL BE MITIGATED BY INSTALLING LANDSCAPING AS PER APPROVED LANDSCAPE PLANS AS REQUIRED BY THE DEVELOPMENT REVIEW CONDITIONS.
- VEHICLE MAINTENANCE, REPAIR AND STORAGE BMPS WILL BE IMPLEMENTED INCLUDING: USE OF DRIP PANS OR EQUIVALENT UNDER VEHICLE STORED OVERNIGHT; DAILY INSPECTION FOR LEAKS AND SPILLS; PROMPT REMOVAL OF SPILLS; AVAILABILITY OF OIL-ABSORBENT SPILL REMOVAL MATERIALS ON SITE.
- HEAVY EQUIPMENT WILL NOT BE STORED ON THE PUBLIC RIGHT-OF-WAY.
- TRASH SHALL BE PLACED IN DUMPSTERS. OFFCUTS FROM FRAMING WILL BE STORED APPROPRIATELY AND NOT ALLOWED TO ACCUMULATE IN STOCKPILES AROUND THE SITE.
- TRASH DUMPSTERS WILL HAVE LIDS. THE LIDS WILL REMAIN CLOSED AND THE DUMPSTERS WILL NOT BE OVERFILLED. ADDITIONAL TRASH PICK UPS SHALL BE MADE AS NECESSARY.
- LIQUID MATERIALS WILL BE STORED IN CLOSED CONTAINERS IN SECONDARY CONTAINMENT AND UNDER COVER. SOLID MATERIALS WILL BE STORED ON PALLETS AND BE COVERED DURING RAIN.
- A MATERIALS WASHOUT WILL BE AVAILABLE ONSITE WHENEVER LIQUID MATERIALS ARE USED. THE WASHOUT WILL FULLY CONTAIN THOSE MATERIALS AND THE SURROUNDING AREA SHALL BE KEPT FREE OF SPILLS.
- DISCHARGE OF POTABLE WATER (SUCH AS FROM POWERWASHING OR FILLING WATER TRUCKS) WILL BE PREVENTED.
- 125 PERCENT OF THE MATERIALS REQUIRED TO MAINTAIN STORM WATER BMPS SHALL BE PRESENT ON THE SITE AT ALL TIMES.
- STORMWATER CONTROL MEASURES SHOWN HEREON ARE BEST MANAGEMENT PRACTICES FOR THIS SITE BASED ON THE ANTICIPATED PROGRESS OF THE WORK. ADDITIONAL MEASURES MAY BE REQUIRED AT ANY TIME AT THE DISCRETION OF THE CITY ENGINEER AS THE WORK PROGRESSES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE ADEQUATE PROTECTION IS IN PLACE AT ALL TIMES TO PREVENT ANY DISCHARGE OF POLLUTANTS, INCLUDING SEDIMENT, FROM THE EXPOSED SITE AREAS. BMPS WILL BE MAINTAINED UNTIL REMOVAL.
- SILT FENCING SHALL BE INSTALLED AROUND THE PERIMETER OF ALL GRADING WORK AND THE PERIMETER OF THE IMPROVEMENT AREA.

ENGINEER OF WORK'S DESIGN CERTIFICATION

I, SARAH CURRAN, HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THIS PROJECT, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSIONS CODE, AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS.

I, UNDERSTAND THAT THE CHECK OF PROJECT DRAWINGS AND SPECIFICATIONS BY THE CITY OF SANTEE IS CONFINED TO A REVIEW ONLY AND DOES NOT RELIEVE ME AS THE ENGINEER OF WORK OF MY RESPONSIBILITIES FOR PROJECT DESIGN.

I FURTHER UNDERSTAND THAT UPON APPROVAL OF THESE PLANS BY THE CITY ENGINEER, THE PLANS BECOME THE PROPERTY OF THE CITY OF SANTEE IN ACCORDANCE WITH THE CITY PUBLIC WORKS STANDARDS. AS SUCH, I HEREBY RELINQUISH RIGHT OF OWNERSHIP TO THE CITY TO USE THESE PLANS AS THEY MAY DEEM NECESSARY

SIGNED: *Sarka* DATE: 04/04/2025
R.C.E. # C69620, MY REGISTRATION EXPIRES ON 06/30/26.

NONRESIDENTIAL FLOOD STATEMENT

I, SARAH CURRAN, A REGISTERED CIVIL ENGINEER HEREBY CERTIFY THAT:

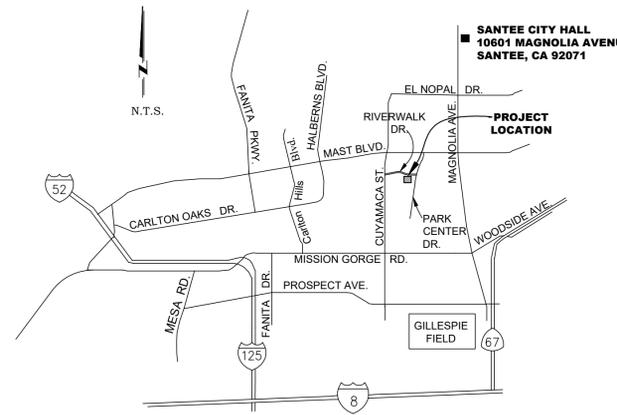
- THE PAD ELEVATIONS SHOWN ON THIS AS-BUILT GRADING PLAN HAVE BEEN VERIFIED BY ME AND THAT SAID ELEVATIONS ARE AT A MINIMUM OF ONE FOOT ABOVE THE BASE FLOOD ELEVATION AS ESTABLISHED BY THE BASE FLOOD DISCHARGE RATES SET FORTH IN THE FLOOD DAMAGE PREVENTION ORDINANCE - CHAPTER 11.36 OF THE SANTEE MUNICIPAL CODE, OR
- THE STRUCTURES ON THIS PROPERTY HAVE BEEN FLOOD PROOFED TO OR ABOVE THE BASE FLOOD ELEVATION AS ESTABLISHED BY THE BASE FLOOD DISCHARGE RATES SET FORTH IN THE FLOOD DAMAGE PREVENTION ORDINANCE - CHAPTER 15.52 OF THE SANTEE MUNICIPAL CODE.

SIGNED: *Sarka* DATE: 04/04/2025
R.C.E. # C69620, MY REGISTRATION EXPIRES ON 06/30/26.

SANTEE COMMUNITY CENTER

(CIP 2018-31)

CITY OF SANTEE



VICINITY MAP
NO SCALE

STANDARD SPECIFICATIONS:

- STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK") 2021 EDITION.
- CITY OF SANTEE DEVELOPMENT SERVICES STANDARDS, LATEST EDITION.
- CALIFORNIA DEPARTMENT OF TRANSPORTATION, "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" 2014 REVISION 6 EDITION.
- STANDARD SPECIFICATIONS OF THE PADRE DAM MUNICIPAL WATER DISTRICT, WATER AGENCY STANDARDS, W.A.S.

STANDARD DRAWINGS:

- CITY OF SANTEE STANDARD DRAWINGS.
- SAN DIEGO REGIONAL STANDARD DRAWINGS (R.S.D.) AS RECOMMENDED BY THE REGIONAL STANDARDS COMMITTEE, MAINTAINED AND PUBLISHED BY THE SAN DIEGO COUNTY DEPARTMENT OF PUBLIC WORKS, 2018 EDITION.
- STANDARD DRAWINGS OF THE PADRE DAM MUNICIPAL WATER DISTRICT, WATER AGENCY STANDARDS, W.A.S.
- STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION 2021 EDITION.

LEGAL DESCRIPTION:

SITE ADDRESS: 10129 RIVERWALK DRIVE
SANTEE, CA 92071

APN: 381-051-14-00

ALL THOSE PORTIONS OF BLOCKS 2 AND 3 OF THE SUBDIVISION OF LOTS "H" AND "O", PER MAP NO. 817, RECORDED APRIL 2, 1896.

SHEET INDEX:

SHEET NO.	DESCRIPTION
C1.0	TITLE SHEET AND GENERAL NOTES
C1.1	EXISTING CONDITIONS PLAN
C1.2	DEMOLITION PLAN
C1.3	GRADING AND PAVING PLAN
C1.4	PARKING LOT GRADING AND PAVING PLAN
C1.5	HORIZONTAL CONTROL PLAN
C1.6	PARKING LOT HORIZONTAL CONTROL PLAN
C1.7	HORIZONTAL CONTROL PLAN TABLES
C1.8	TRAFFIC SIGNAGE AND STRIPING PLAN
C1.9	CIVIL UTILITY PLAN
C1.10	CIVIL DETAILS
C1.11	CIVIL DETAILS
C1.12	EROSION CONTROL PLAN

BENCHMARK:

THE BENCHMARK USED FOR THIS SURVEY IS GPS STATION "FP7" PER RECORD OF SURVEY 20986, BEING A STANDARD STREET SURVEY MONUMENT, M-10, WITH PUNCH ONLY, LOCATED ON A 5.00' OFFSET SOUTH ALONG THE CENTERLINE OF COTTONWOOD AVENUE FROM THE CENTERLINE INTERSECTION OF PALM GLEN DRIVE AND COTTONWOOD AVENUE AS DERIVED FROM MAP NO. 7349.

ELEVATION: 355.96 FEET FROM SAID RECORD OF SURVEY 20986. FOR THE PURPOSE OF THIS SURVEY IT IS 356.05 FEET.

DATUM: NAVD88



CITY RESUBMITTAL
03/05/2025

SEWER & WATER AGENCY

APPROVED BY: *[Signature]* DATE: _____
DIRECTOR OF ENGINEERING & PLANNING

RCE NO. _____ EXP _____

PDMWD PROJECT/FILE NAME _____ PDMWD JOB NO. _____ SERVICE AREA _____

VALID FOR ONE YEAR FROM THE DATE OF SIGNATURE. SIGNATURE OF THESE PLANS IS NOT A COMMITMENT TO SERVE. ACTUAL FIELD CONDITIONS MAY REQUIRE CHANGES TO THE WATER, SEWER, AND/OR RECYCLED WATER PLANS. THE DEVELOPER AND/OR ITS ENGINEER OF WORK SHALL BE RESPONSIBLE FOR MAKING ANY NECESSARY CHANGES AT NO ADDITIONAL COST TO THE DISTRICT.

CITY OF SANTEE

FIRE DEPARTMENT
DEPUTY FIRE CHIEF _____ DATE _____

COMMUNITY SERVICES DEPARTMENT
PUBLIC SERVICES MANAGER _____ DATE _____

ENGINEERING DIVISION
CITY ENGINEER RCE NO. 60112 EXPIRES: 06/30/2026 DATE _____

PLANNING DIVISION
PROJECT PLANNER _____ DATE _____

TRAFFIC SECTION
PRINCIPAL TRAFFIC ENGINEER _____ DATE _____

CITY OF SANTEE DEPARTMENT OF DEVELOPMENT SERVICES
IMPROVEMENT PLANS FOR: **SANTEE COMMUNITY CENTER**
TITLE SHEET AND GENERAL NOTES

CITY W.O. NO. **CIP 2018-31** DRAWING NO. **C1.0**
SHEET X OF X



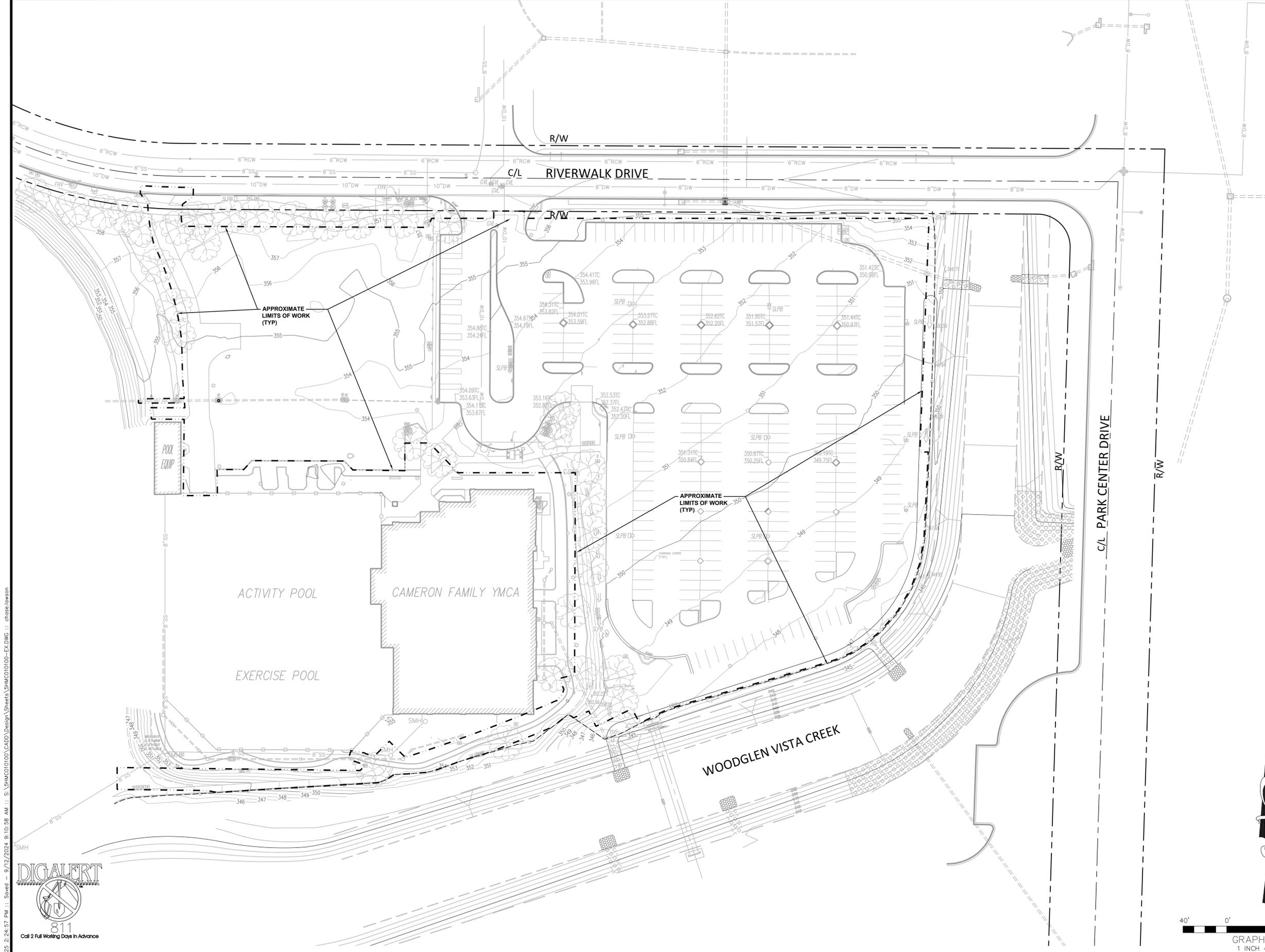
CONSTRUCTION RECORD	REFERENCES	DATE	BY	REVISIONS	ACPTD

DESIGNED BY	DRAWN BY	CHECKED BY	REVIEWED
SKC	GPY	EH	

PLANS PREPARED UNDER THE SUPERVISION OF SARAH CURRAN DATE 04/04/2025 RCE NO. C69620 EXPIRES 06/30/2026 PROJECT ENGINEER

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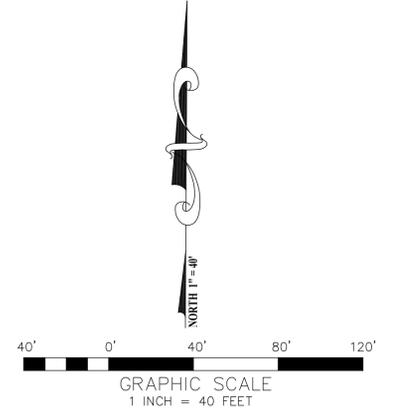
IMPROVEMENT PLANS - SANTEE COMMUNITY CENTER, CIP 2018-31



LEGEND AND ABBREVIATIONS

AC	ASPHALTIC CONCRETE
AD	AREA DRAIN
BFP	BACKFLOW PREVENTION ASSEMBLY
BW	BOTTOM OF WALL
CATV	CABLE TELEVISION
CMU	CONCRETE MASONRY UNIT
C/O	SANITARY SEWER CLEANOUT
CONC	CONCRETE/CONCRETE SPOT EL.
CP	CONCRETE PEDESTAL
CPAD	CONCRETE PAD
CR	COMMUNICATION RISER
DI	DROP INLET
DIA	DIAMETER
DECID	DECIDUOUS
ECCB	ELECTRIC CABINET
EC	EDGE OF CONCRETE
EL	ELEVATION
ELEC	ELECTRIC
EUC	EUCALYPTUS
EVC	ELECTRIC VEHICLE CHARGING STATION
EVT	ELECTRIC VAULT
EP	EDGE OF PAVEMENT
FDC	FIRE DEPARTMENT CONNECTION
FF	FINISHED FLOOR
FHV	FIRE HYDRANT VALVE
FL	FLOWLINE
GB	GRADE BREAK
GRD	GROUND
GR	GROUNDING ROD
HCR	HANDICAP RAMP
HDOP	HANDICAP
IR	IRRIGATION CONTROL VALVE
OHG	OVERHANG
LS	LANDSCAPE
RD	3" PVC ROOF DRAIN
(N)	NORTH
(S)	SOUTH
SW	SIDEWALK
TC	TOP OF CURB
TOP	TOP OF SLOPE
TRW	TREE WELL
TW	TOP OF WALL
UD	SIDEWALK UNDERDRAIN
VG	VALLEY GUTTER
BL	BOLLARD
FH	FIRE HYDRANT
GV	GAS VALVE
ICV	IRRIGATION CONTROL VALVE
LP	LIGHT ON POLE/LANDSCAPE LIGHT
PED	PEDESTAL
SN	ROAD/TRAFFIC SIGN
WTVL	WATER VALVE
CB	CATCH BASIN
SDMH/CO	STORM DRAIN MANHOLE & CLEANOUT
SMH	SEWER MANHOLE
CI	CURB INLET
RIP RAP	RIP RAP
DG WALK	DG WALK
CONCRETE	CONCRETE
RIVER BED	RIVER BED
GRAVEL PARKING LOT	GRAVEL PARKING LOT
WALL	WALL
TOP OF SLOPE	TOP OF SLOPE
TOE OF SLOPE	TOE OF SLOPE
TOP FACE OF CURB OR EDGE OF PAVEMENT	TOP FACE OF CURB OR EDGE OF PAVEMENT
FLOWLINE OF SWALE	FLOWLINE OF SWALE
CHAINLINK FENCE	CHAINLINK FENCE
WOOD FENCE	WOOD FENCE
WROUGHT IRON FENCE	WROUGHT IRON FENCE
UNDERGROUND COMMUNICATION	UNDERGROUND COMMUNICATION
UNDERGROUND ELECTRIC	UNDERGROUND ELECTRIC
UNDERGROUND GAS	UNDERGROUND GAS
UNDERGROUND DOMESTIC WATER	UNDERGROUND DOMESTIC WATER
UNDERGROUND RECLAIM WATER	UNDERGROUND RECLAIM WATER
UNDERGROUND SANITARY SEWER	UNDERGROUND SANITARY SEWER
UNDERGROUND STORM DRAIN	UNDERGROUND STORM DRAIN
EXISTING CONTOUR LINE	EXISTING CONTOUR LINE
TREE	TREE

- GENERAL NOTES**
- BASE CONDITIONS SHOWN HEREON AS EXISTING CONDITIONS ARE BASED ON A SURVEY DATED MARCH 23, 2022, PREPARED BY PSOMAS, AND PUBLICLY AVAILABLE RECORD AS-BUILT DRAWINGS.
 - SEE THE GEOTECHNICAL INVESTIGATION REPORT, SANTEE COMMUNITY CENTER, DATED MARCH 18, 2022, PREPARED BY GROUP DELTA CONSULTANTS, INC.. CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW AND COMPLY WITH RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT.

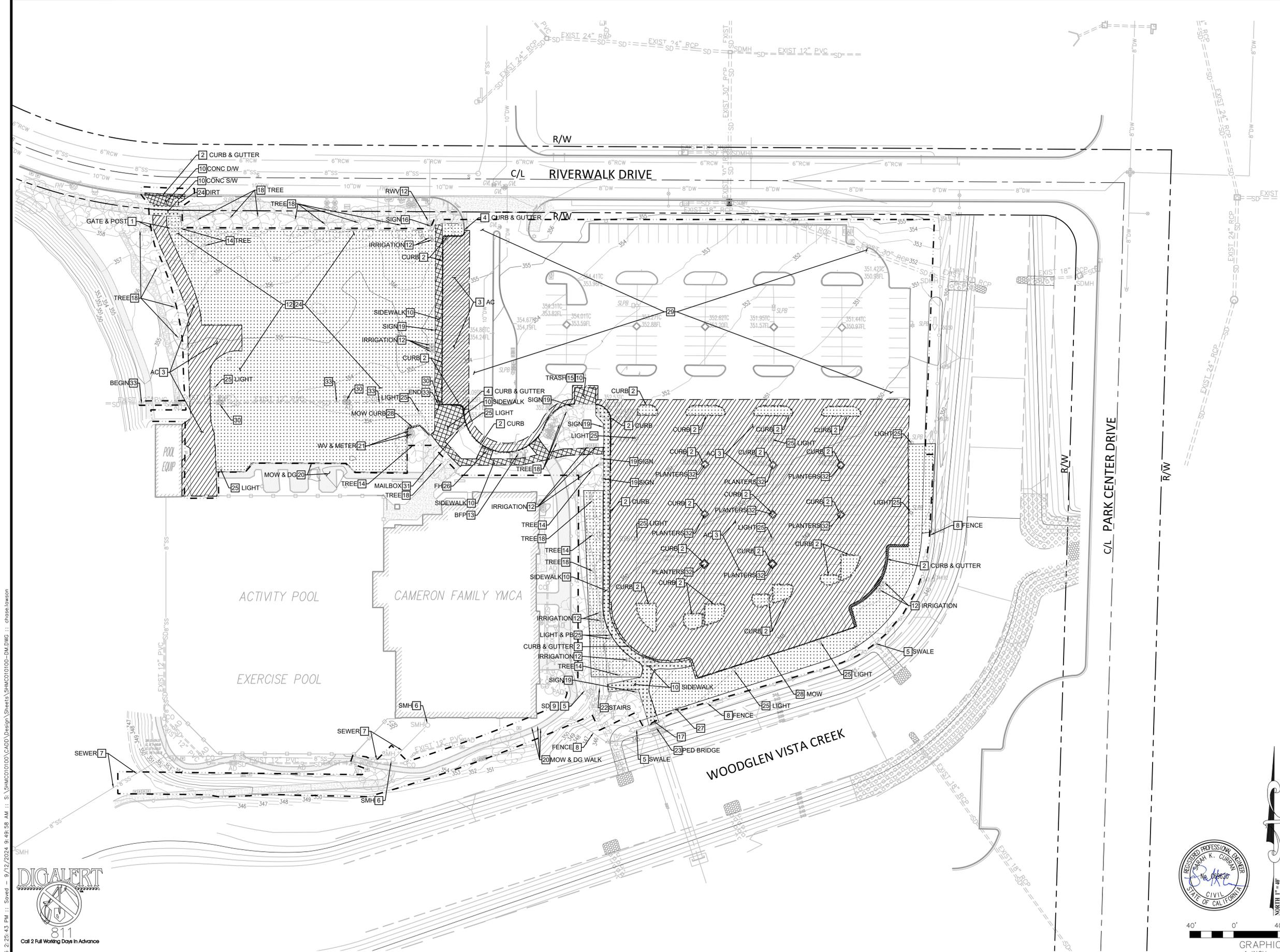


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 811
 Call 2 Full Working Days in Advance



CONSTRUCTION RECORD		REFERENCES	DATE	BY	REVISIONS	ACPTD	BENCH MARK THE BENCHMARK USED FOR THIS SURVEY IS GPS STATION "FP7" PER RECORD OF SURVEY 20986, BEING A STANDARD STREET SURVEY MONUMENT, M-10 WITH PUNCH ONLY. ELEVATION: 355.96 FEET FROM RDS 20986, FOR THE PURPOSES OF THIS SURVEY IT IS 356.05 FEET. DATUM: NAVD88	SCALE HORIZ: AS SHOW VERT: AS SHOW	DESIGNED BY SKC	DRAWN BY GPY	CHECKED BY EH	REVIEWED	CITY OF SANTEE IMPROVEMENT PLANS FOR:	DEPARTMENT OF DEVELOPMENT SERVICES	CITY W.O. NO. CIP 2018-31	DRAWING NO. C1.1 SHEET X OF X
CONTRACTOR									SARAH CURRAN		04/04/2025	PROJECT ENGINEER	SANTEE COMMUNITY CENTER EXISTING CONDITIONS PLAN			
INSPECTOR											06/30/2026					
DATE COMPLETED																

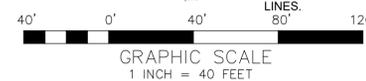
IMPROVEMENT PLANS - SANTEE COMMUNITY CENTER, CIP 2018-31



- LEGEND**
- REMOVE EXIST ASPHALT PAVEMENT AND AGGREGATE BASE
 - REMOVE EXIST CONCRETE PAVEMENT AND PERIMETER CURB/GUTTERS/SIDEWALK (WHERE OCCURS)
 - REMOVE EXIST LANDSCAPING AND IRRIGATION
 - REMOVE EXIST CONCRETE MOW CURB
 - SAWCUT LINE
 - REMOVE EXIST FENCE/GATE
 - EXISTING NATURAL SWALE
 - APPROXIMATE LIMITS OF WORK

- DEMOLITION NOTES**
- 1 REMOVE AND DISPOSE GATE AND GATE POSTS.
 - 2 REMOVE AND DISPOSE CONCRETE CURB OR CURB & GUTTER.
 - 3 REMOVE AND DISPOSE AC PAVEMENT AND BASE, FULL DEPTH, WHEEL STOPS, AND ADA PARKING SIGNAGE.
 - 4 PROTECT CURB & GUTTER IN PLACE.
 - 5 PROTECT DRAINAGE STRUCTURE IN PLACE.
 - 6 PROTECT SEWER MANHOLE IN PLACE.
 - 7 PROTECT SEWER LINE IN PLACE.
 - 8 PROTECT FENCE IN PLACE.
 - 9 PROTECT STORM DRAIN PIPE IN PLACE.
 - 10 REMOVE CONCRETE PAVEMENT & SIDEWALK.
 - 11 NOT USED.
 - 12 REFER TO LANDSCAPE SHEETS L2, 10 AND L2.11 FOR IRRIGATION DEMOLITION AND DISPOSE.
 - 13 PROTECT IN PLACE BACK FLOW PREVENTER AND FIRE PIPE CONNECTION.
 - 14 REMOVE AND DISPOSE TREE AND TRUNKS.
 - 15 REMOVE AND DISPOSE OF TRASH ENCLOSURE AND FOOTINGS.
 - 16 PROTECT SIGN.
 - 17 PROTECT REMOVABLE BOLLARD IN PLACE.
 - 18 PROTECT TREE.
 - 19 REMOVE & DISPOSE SIGN.
 - 20 PROTECT MOW CURB AND DG WALK.
 - EXISTING YMCA WATER METERS (2) TO BE REMOVED BY PADRE DAM MUNICIPAL WATER DISTRICT AFTER RELOCATION INSTALL (SEE UTILITIES PLAN). BACKFLOW PREVENTERS (2) TO BE REMOVED BY CONTRACTOR AFTER RELOCATION INSTALL (SEE UTILITIES PLAN).
 - 22 REMOVE AND DISPOSE WOOD STAIRS.
 - 23 PROTECT IN PLACE PEDESTRIAN BRIDGE.
 - 24 REMOVE GRASS FIELD AND AGGREGATE BASE.
 - 25 REMOVE LIGHT STANDARD POLE FOOTING AND PULL BOX.
 - 26 PROTECT FIRE HYDRANT IN PLACE.
 - 27 PROTECT UNDERGROUND ELECTRICAL PULL BOX.
 - 28 REMOVE AND DISPOSE MOW CURB.
 - 29 PROTECT EXIST CURBS, STRIPES, ASPHALT CONCRETE, PLANTERS, IRRIGATION, LANDSCAPING, ELECTRICAL AND LIGHTING IN PLACE.
 - 30 REMOVE AND DISPOSE EXISTING CATCH BASIN.
 - 31 PROTECT IN PLACE EXISTING MAIL BOX.
 - 32 REMOVE AND DISPOSE EXISTING TREES AND ROOT BARRIERS IN ISLAND PLANTERS.
 - 33 REMOVE AND DISPOSE PVC STORM DRAIN.

- GENERAL DEMOLITION NOTES**
1. PRIOR TO ANY DEMOLITION OR EXCAVATION FOR THIS CONTRACT CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE PLANS HAS BEEN OBTAINED FROM AVAILABLE RECORDS ONLY AND MAY NOT REFLECT ALL EXISTING UTILITIES.
 2. LOCATION OF ALL EXISTING UTILITIES SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION OF WORK. ACCURATE VERIFICATION AS TO SIZE, LOCATION AND DEPTH OF EXISTING UNDERGROUND SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY.
 3. CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN HEREON AND ANY OTHER EXISTING LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.
 4. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITY AGENCIES PRIOR TO STARTING HIS WORK WITH UTILITY REPRESENTATIVES. FOR LOCATION OF UNDERGROUND UTILITIES AND APPURTENANCES, CONTACT "UNDERGROUND SERVICE ALERT" AT 811.
 5. EXIST ABANDONED UNDERGROUND UTILITIES TO BE REMOVED AND DISPOSED.
 6. WITHIN DEMOLITION AREA, REMOVE ALL TREES, ROOTS, SHRUBS, STRUCTURES, FENCING, STRUCTURAL FOUNDATIONS, PAVED PATHS AND STAIRS, CONCRETE PAVEMENT, ASPHALT PAVEMENT, CURBS, GUTTERS, GROUND COVER, AND ANY EXISTING IMPROVEMENTS NOT SPECIFICALLY NOTED TO REMAIN. REMOVE ALL MISCELLANEOUS TRASH FROM SITE.
 7. UNLESS OTHERWISE NOTED, ALL EXISTING UNDERGROUND UTILITIES AND ASSOCIATED STRUCTURES SHALL BE PROTECTED IN PLACE.
 8. REFERENCE MECHANICAL, ELECTRICAL AND TELECOMMUNICATION PLANS FOR DEMOLITION AND INSTALLATION OF M, E, & T UTILITIES AND STRUCTURES.
 9. REFERENCE LANDSCAPE PLANS FOR TREE PROTECTION AND REMOVALS.
 10. REFERENCE LANDSCAPE PLANS FOR DEMOLITION AND INSTALLATION OF IRRIGATION LINES.
 11. SHOULD ANY EXISTING UTILITY NOT SHOWN HEREON BE ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER PRIOR TO DEMOLITION OF SUCH UTILITY.
 12. CONTRACTOR SHALL USE A 3RD PARTY UNDERGROUND LOCATION SERVICE TO DETERMINE THE LOCATION OF ALL ELECTRICAL, WATER, SEWER, AND IRRIGATION LINES.



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 Call 2 Full Working Days In Advance



CONSTRUCTION RECORD	REFERENCES	DATE	BY	REVISIONS	ACPTD	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY	REVIEWED	CITY OF SANTEE	DEPARTMENT OF DEVELOPMENT SERVICES	CITY W.O. NO.	DRAWING NO.
						HORIZ: AS SHOW VERT: AS SHOW	SKC	GPY	EH		IMPROVEMENT PLANS FOR:	SANTEE COMMUNITY CENTER	CIP 2018-31	C1.2
CONTRACTOR _____ INSPECTOR _____ DATE COMPLETED _____						BENCH MARK THE BENCHMARK USED FOR THIS SURVEY IS GPS STATION "FP7" PER RECORD OF SURVEY 20986, BEING A STANDARD STREET SURVEY MONUMENT, M-10 WITH PUNCH ONLY. ELEVATION: 365.96 FEET FROM RDS 20986, FOR THE PURPOSES OF THIS SURVEY IT IS 356.05 FEET. DATUM: NAVD88		DATE: 04/04/2025 EXPIRES: 06/30/2026		PROJECT ENGINEER _____		SHEET X OF X		

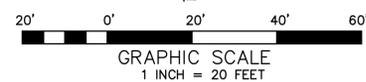
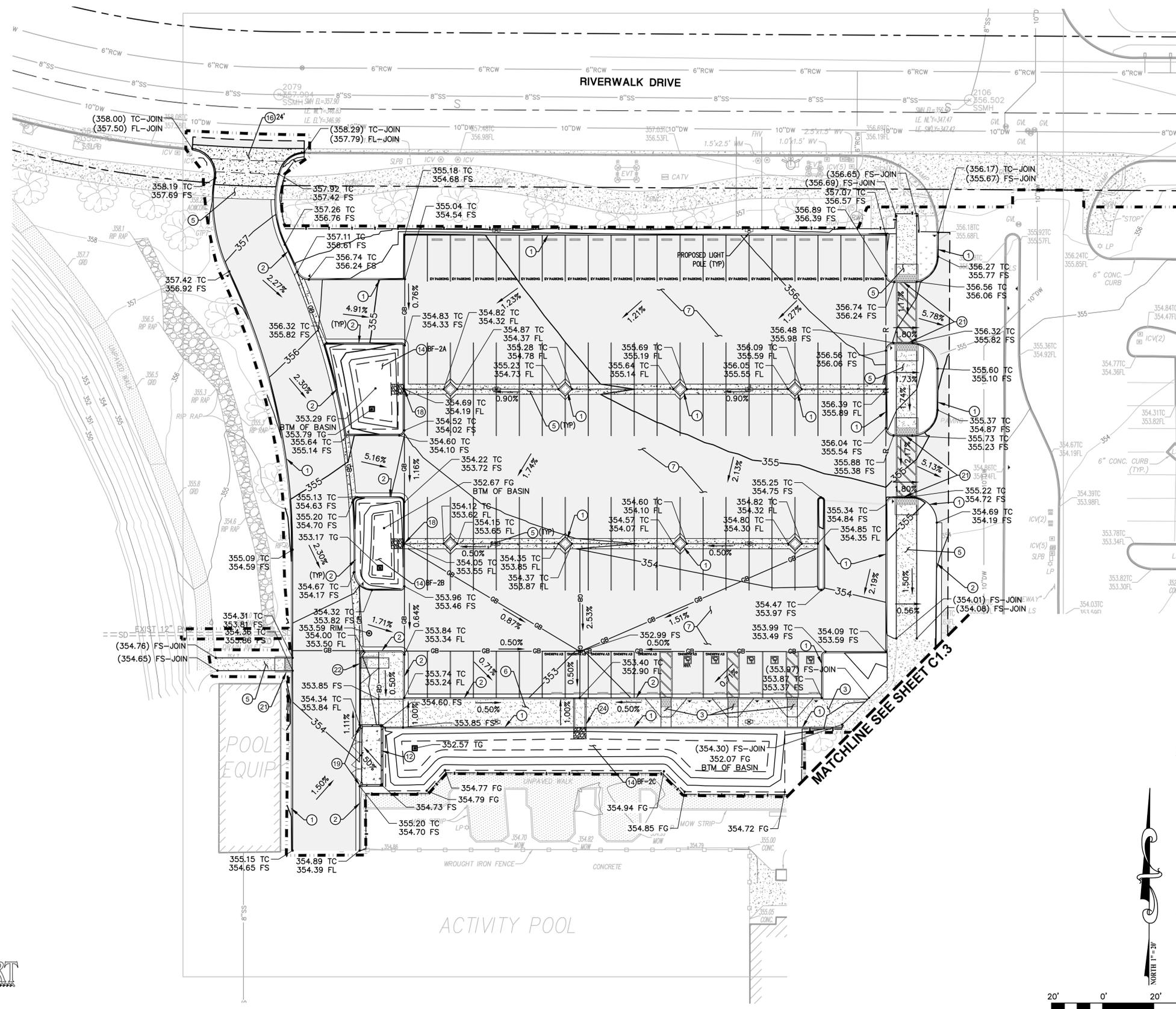
IMPROVEMENT PLANS - SANTEE COMMUNITY CENTER, CIP 2018-31

LEGEND	
	CURB RAMP
	CONCRETE CROSS GUTTER/RIBBON GUTTER
	CATCH BASIN
	CLEANOUT
	SLOPE ARROW
	NEW CONTOUR
	NEW SPOT ELEVATION
	EXISTING CONTOUR (PER AERIAL SURVEY, ACCURACY OF ± 0.5')
	EXISTING ELEVATION (PER FIELD SURVEY, ACCURACY OF ± 0.1')
	EXISTING SPOT ELEVATION (PER AERIAL SURVEY, ACCURACY OF ± 0.5')
	NEW CONTOUR LINE
	DAYLIGHT LINE
	SAWCUT LINE
	RIDGE LINE
	GRADE BREAK
	CONCRETE CURB
	CONCRETE CURB AND GUTTER
	LIMITS OF WORK
	CONCRETE VEHICULAR PAVEMENT
	AC PAVEMENT
	CONCRETE SIDEWALK

- GRADING NOTES**
- CONSTRUCT CONCRETE CURB PER SDRSD G-01 6" CURB FACE UNLESS NOTED OTHERWISE.
 - CONSTRUCT CONCRETE CURB AND GUTTER PER SDRSD G-02 3" CURB FACE TYPE H.
 - CONSTRUCT TYPE A CURB RAMP PER SDRSD G-27.
 - CONSTRUCT CROSS GUTTER PER SDRSD G-12 WIDTH PER PLANS.
 - CONSTRUCT CONCRETE SIDEWALK PER DETAIL 4 SHEET C1.10.
 - CONSTRUCT CONCRETE VEHICULAR PAVEMENT PER DETAIL 3 SHEET C1.10.
 - CONSTRUCT ASPHALT CONCRETE PAVEMENT PER DETAIL 2 SHEET C1.10.
 - CONSTRUCT FENCE PER LANDSCAPE PLAN.
 - CONSTRUCT CURB CUT WITH RIP RAP APRON PER DETAIL 2 SHEET C1.11.
 - NOT USED.
 - CONSTRUCT CURBSIDE GRATED CATCH BASIN PER SPPWC STD 303 SINGLE GRATE W/4.77' (FP) WITH CASE F LOCAL DEPRESSION AT CATCH BASIN PER SPPWC STD 313-4.
 - CONSTRUCT TRASH ENCLOSURE PER ARCHITECT PLAN.
 - CONSTRUCT SEAT WALL PER LANDSCAPE PLAN.
 - CONSTRUCT BIOFILTRATION BASIN PER DETAIL 1 SHEET C1.11.
 - EXISTING PEDESTRIAN BRIDGE TO REMAIN.
 - CONSTRUCT CONCRETE DRIVEWAY (ALLEY TYPE) PER SDRSD G-14E.
 - CONSTRUCT 8" CURB WITH SIDEWALK UNDERDRAIN PER SDRSD D-27.
 - CONSTRUCT 12" CURB CUT PER DETAIL 2 ON SHEET 1 SHEET C1.11.
 - CONSTRUCT TYPE A 6" ROLLED CURB ALONG CONCRETE PAVEMENT ACCESS PER SDRSD G-4A WITH 3" LONG CURB TRANSITION ON EACH END PER SDRSD G-04B.
 - INSTALL DEMOUNTABLE POST PER SDRSD M-16.
 - CONSTRUCT TYPE D-3 CURB RAMP PER SDRSD G-31.
 - CONSTRUCT TYPE D-2 CURB PAMP PER SDRSD G-31.
 - CONSTRUCT COBBLE ENERGY DISSIPATION PER DETAIL 4 ON SHEET C1.11.
 - CONSTRUCT SIDEWALK UNDERDRAIN PER DETAIL 5 ON SHEET C1.11.
 - ELECTRICAL EQUIPMENT SEE MEP PLANS FOR EQUIPMENT AND PAD CONSTRUCTION DETAILS.

- GENERAL GRADING NOTES**
- CONTRACTOR SHALL PROTECT IN PLACE OR ADJUST WHERE NECESSARY ALL EXISTING UTILITY LINES, WHETHER SHOWN OR NOT SHOWN ON THESE PLANS, THAT LAY WITHIN THE LIMITS OF THE NEW CONSTRUCTION, AND ARE NOT SPECIFICALLY MARKED TO BE REMOVED OR ABANDONED.
 - FINAL MANHOLE, VALVE BOXES AND VAULTS RIM ELEVATIONS SHALL BE ADJUSTED TO MEET FINAL GRADES.
 - CONTRACTOR TO VERIFY ALL EXISTING UTILITIES THAT ARE IN CONFLICT WITH THE PROJECT PRIOR TO THE START OF CONSTRUCTION AND NOTIFY THE ENGINEER OF RECORD OF ANY FOUND CONFLICTS. CONTRACTOR SHALL USE A 3RD PARTY UNDERGROUND UTILITY SERVICE TO DETERMINE THE LOCATION OF ALL ELECTRICAL, WATER, SEWER, AND IRRIGATION LINES.
 - THE LOCATION AND PROTECTION OF ALL UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
 - JOIN ELEVATIONS SHOW APPROXIMATE. NEW CONCRETE JOINS SHALL MATCH EXISTING ELEVATIONS.
 - BUILDING PAD PREPARATION REFERENCE SHEET S0.01 FOR SOIL (GROUND) IMPROVEMENTS AND SHEET S3.02 FOR ADDITIONAL REQUIRED EXCAVATION AND CERTIFIED FILL BENEATH BUILDING.

- SPECIAL GEOTECHNICAL NOTES**
- GROUND IMPROVEMENT SPECIALTY CONTRACTOR SHALL SUBMIT PLANS AND DESIGN CALCULATIONS PRIOR TO CONSTRUCTION FOR APPROVAL. THE PLANS SHALL BE REVIEWED BY THE GEOTECHNICAL ENGINEER OF RECORD FOR CONCURRENCE THAT THEY MEET THE DESIGN INTENT NOTED IN THE PROJECT GEOTECHNICAL REPORT. THE GROUND IMPROVEMENT DESIGN PACKAGE SHALL INCLUDE QUALITY CONTROL PROCEDURES TO CONFIRM THE DESIGN BEARING CAPACITY AND LIQUEFACTION POTENTIAL MEET THE DESIGN INTENT. THE QUALITY CONTROL PROCEDURES SHALL INCLUDE AN INDICATOR MODULUS TEST (MT) PROGRAM AND A GROUND IMPROVEMENT TEST SECTION TO INDICATE PRE- AND POST- IMPROVEMENT BORINGS AND/OR CPTS ALONG WITH LIQUEFACTION ANALYSIS TO INDICATE THAT THE POST-GROUND IMPROVEMENT MEETS THE DESIGN INTENT.
 - ALL GRADING WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS AND RECOMMENDATIONS CONTAINED IN THE PROJECT SPECIFIC GEOTECHNICAL REPORT, PROJECT NUMBER IR786, BY GROUP DELTA, DATED JUNE 15, 2022.



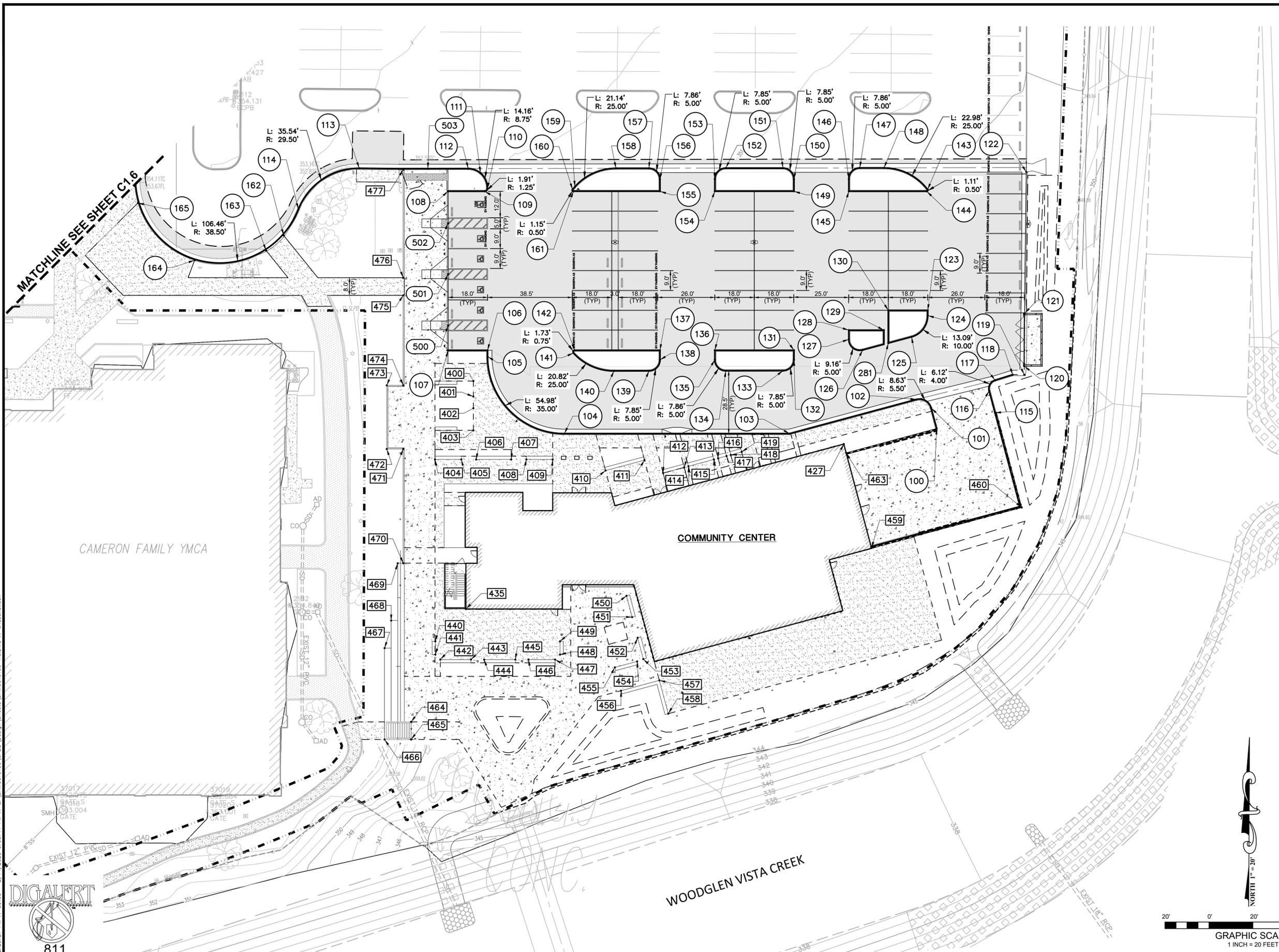
CONSTRUCTION RECORD	REFERENCES	DATE	BY	REVISIONS	ACPTD	BENCH MARK	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY	REVIEWED	CITY OF SANTEE	DEPARTMENT OF DEVELOPMENT SERVICES	CITY W.O. NO.	DRAWING NO.
						THE BENCHMARK USED FOR THIS SURVEY IS GPS STATION "FP7" PER RECORD OF SURVEY 20986, BEING A STANDARD STREET SURVEY MONUMENT, M-10 WITH PUNCH ONLY. ELEVATION: 355.96 FEET FROM ROS 20986, FOR THE PURPOSES OF THIS SURVEY IT IS 356.05 FEET. DATUM: NAVD88	HORIZ: AS SHOW VERT: AS SHOW	SKC	GPY	EH		IMPROVEMENT PLANS FOR:	SANTEE COMMUNITY CENTER	CIP 2018-31	C1.4
								PLANS PREPARED UNDER THE SUPERVISION OF SARAH CURRAN		DATE: 04/04/2025	BY: PROJECT ENGINEER				SHEET X OF X
								RCE NO. C69620		EXPIRES: 06/30/2026					

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IMPROVEMENT PLANS - SANTEE COMMUNITY CENTER, CIP 2018-31

LEGEND

- CONCRETE CURB
- CONCRETE CURB AND GUTTER
- - - SAWCUT LINE
- - - PROPERTY LINE
- - - LIMITS OF WORK
- [Pattern] LANDSCAPE PER LANDSCAPE PLANS
- [Pattern] CONCRETE VEHICULAR PAVEMENT
- [Pattern] AC PAVEMENT
- [Pattern] CONCRETE SIDEWALK



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 811
 Call 2 Full Working Days In Advance

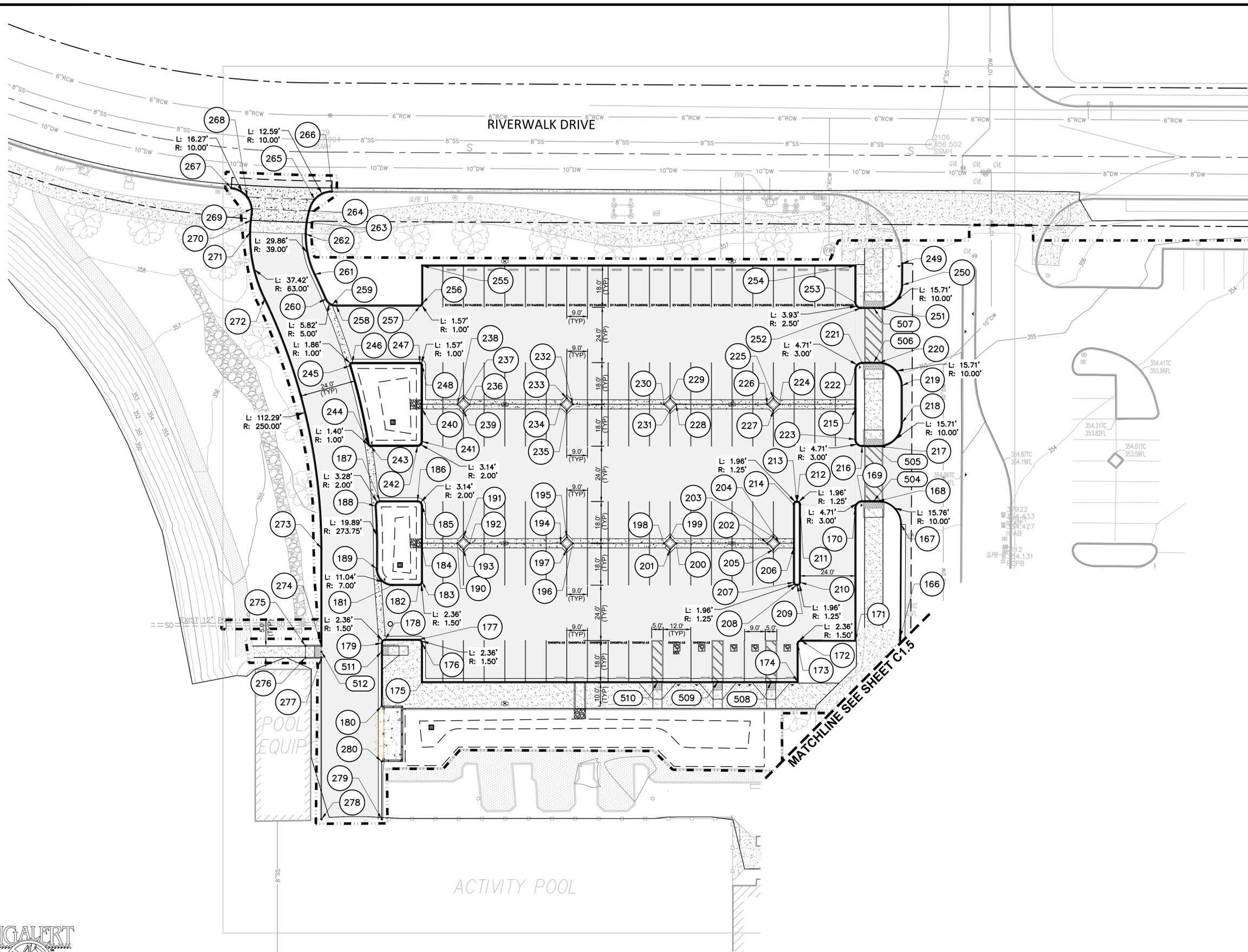


CONTRACTOR	REFERENCES	DATE	BY	REVISIONS	ACPTD	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY	REVIEWED	CITY OF SANTEE	DEPARTMENT OF DEVELOPMENT SERVICES	CITY W.O. NO.	DRAWING NO.
						HORIZ: AS SHOW VERT: AS SHOW	SKC	GPY	EH		IMPROVEMENT PLANS FOR:	SANTEE COMMUNITY CENTER	CIP 2018-31	C1.5
BENCH MARK THE BENCHMARK USED FOR THIS SURVEY IS GPS STATION "FP7" PER RECORD OF SURVEY 20986, BEING A STANDARD STREET SURVEY MONUMENT, M-10 WITH PUNCH ONLY. ELEVATION: 365.96 FEET FROM RDS 20986, FOR THE PURPOSES OF THIS SURVEY IT IS 336.05 FEET. DATUM: NAVD88						PLANS PREPARED UNDER THE SUPERVISION OF SARAH CURRAN RCE NO. C69620		DATE 04/04/2025 EXPIRES 06/30/2026		PROJECT ENGINEER		SHEET X OF X		

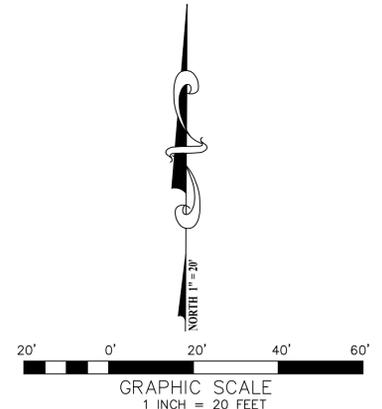
IMPROVEMENT PLANS - SANTEE COMMUNITY CENTER, CIP 2018-31

LEGEND

- CONCRETE CURB
- CONCRETE CURB AND GUTTER
- SAWCUT LINE
- - - - - PROPERTY LINE
- - - - - LIMITS OF WORK
- [Pattern] LANDSCAPE PER LANDSCAPE PLANS
- [Pattern] CONCRETE VEHICULAR PAVEMENT
- [Pattern] AC PAVEMENT
- [Pattern] CONCRETE SIDEWALK



MATCHLINE SEE SHEET C1.5



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CONTRACTOR		REFERENCES		DATE	BY	REVISIONS	ACPTD	BENCH MARK THE BENCHMARK USED FOR THIS SURVEY IS GPS STATION "FP7" PER RECORD OF SURVEY 20986, BEING A STANDARD STREET SURVEY MONUMENT, M-10 WITH PUNCH ONLY. ELEVATION: 355.96 FEET FROM RODS 20986, FOR THE PURPOSES OF THIS SURVEY IT IS 356.05 FEET. DATUM: NAVD88		SCALE	DESIGNED BY	DRAWN BY	CHECKED BY	REVIEWED	CITY OF SANTEE	DEPARTMENT OF DEVELOPMENT SERVICES	CITY W.O. NO.	DRAWING NO.
INSPECTOR										HORIZ: AS SHOW	SKC	GPY	EH		IMPROVEMENT PLANS FOR:		CIP 2018-31	C1.6
DATE COMPLETED										VERT: AS SHOW	SARAH CURRAN			BY: PROJECT ENGINEER	SANTEE COMMUNITY CENTER			SHEET X OF X
											RCE NO. C69620		DATE 04/04/2025					
													EXPIRES 06/30/2026					

IMPROVEMENT PLANS - SANTEE COMMUNITY CENTER, CIP 2018-31

SHEET C1.5 POINT TABLES

CURB/EP COORDINATES		
POINT #	NORTHING	EASTING
100	1890106.64	6338566.13
101	1890115.91	6338563.64
102	1890119.79	6338556.91
103	1890104.27	6338499.03
104	1890104.27	6338396.38
105	1890139.27	6338361.38
106	1890142.10	6338361.38
107	1890142.11	6338343.40
108	1890214.23	6338343.38
109	1890214.23	6338360.05
110	1890215.42	6338361.30
111	1890222.58	6338358.11
112	1890224.57	6338352.54
113	1890224.71	6338302.82
114	1890206.06	6338275.08
115	1890113.68	6338592.74
116	1890123.67	6338590.06
117	1890128.53	6338592.74
118	1890131.03	6338600.78
119	1890131.04	6338606.08

CURB/EP COORDINATES		
POINT #	NORTHING	EASTING
120	1890134.86	6338606.11
121	1890158.86	6338606.26
122	1890223.00	6338607.02
123	1890160.23	6338562.08
124	1890157.84	6338562.08
125	1890148.18	6338554.67
126	1890142.20	6338532.38
127	1890147.03	6338526.08
128	1890151.23	6338526.08
129	1890151.23	6338542.08
130	1890160.23	6338544.08
131	1890142.11	6338501.08
132	1890137.83	6338501.08
133	1890132.83	6338496.09
134	1890132.78	6338469.98
135	1890137.78	6338464.97
136	1890142.11	6338464.97
137	1890142.10	6338439.97
138	1890137.72	6338439.97
139	1890132.72	6338434.98

CURB/EP COORDINATES		
POINT #	NORTHING	EASTING
140	1890132.70	6338419.03
141	1890140.84	6338400.52
142	1890142.10	6338401.08
143	1890215.03	6338562.01
144	1890214.23	6338561.62
145	1890214.23	6338526.08
146	1890219.88	6338526.08
147	1890224.88	6338531.08
148	1890224.88	6338542.14
149	1890214.23	6338501.08
150	1890219.79	6338501.08
151	1890224.79	6338496.08
152	1890224.79	6338469.97
153	1890219.79	6338464.97
154	1890214.23	6338464.97
155	1890214.23	6338439.97
156	1890219.70	6338439.97
157	1890224.70	6338434.97
158	1890224.70	6338419.88
159	1890216.27	6338401.17

CURB/EP COORDINATES		
POINT #	NORTHING	EASTING
160	1890215.07	6338400.10
161	1890214.23	6338400.48
162	1890194.25	6338268.38
163	1890187.39	6338260.36
164	1890182.95	6338227.77
165	1890208.94	6338201.95
281	1890145.34	6338544.08

CENTER OF CURB RAMP COORDINATES		
POINT #	NORTHING	EASTING
500	1890153.35	6338343.40
501	1890176.60	6338343.40
502	1890199.73	6338343.39
503	1890224.54	6338334.13

BLDG/WALL COORDINATES		
POINT #	NORTHING	EASTING
400	1890128.11	6338354.89
401	1890121.11	6338354.89
402	1890115.77	6338354.89
403	1890105.77	6338354.89
404	1890092.52	6338337.40
405	1890092.52	6338349.40
406	1890092.52	6338356.15
407	1890092.52	6338372.15
408	1890092.52	6338379.06
409	1890092.52	6338391.06
410	1890087.48	6338415.14
411	1890092.25	6338432.93
412	1890086.35	6338441.41
413	1890088.92	6338451.02
414	1890089.44	6338452.95
415	1890092.54	6338464.54
416	1890093.06	6338466.47
417	1890094.10	6338470.34
418	1890094.61	6338472.27
419	1890095.94	6338477.21

BLDG/WALL COORDINATES		
POINT #	NORTHING	EASTING
427	1890099.52	6338523.80
435	1890024.66	6338351.48
440	1890009.98	6338337.56
441	1890003.98	6338337.56
442	1890001.73	6338339.81
443	1890001.73	6338353.81
444	1890001.73	6338359.81
445	1890001.73	6338374.03
446	1890001.73	6338380.03
447	1890001.73	6338392.15
448	1890003.98	6338394.40
449	1890009.98	6338394.40
450	1890030.64	6338424.69
451	1890020.98	6338427.28
452	1890011.58	6338429.80
453	1890001.93	6338432.38
454	1890000.88	6338429.56
455	1889998.16	6338419.39
456	1889987.58	6338422.23
457	1889992.26	6338439.70

BLDG/WALL COORDINATES		
POINT #	NORTHING	EASTING
458	1889977.15	6338443.75
459	1890052.40	6338536.43
460	1890070.73	6338604.91
463	1890095.50	6338524.88
464	1889973.43	6338326.48
465	1889965.43	6338326.48
466	1889965.43	6338314.40
467	1890006.93	6338314.40
468	1890019.43	6338317.40
469	1890045.43	6338320.40
470	1890045.43	6338322.90
471	1890097.27	6338322.90
472	1890097.27	6338315.41
473	1890126.18	6338315.41
474	1890126.18	6338322.90
475	1890167.03	6338322.90
476	1890175.03	6338322.90
477	1890224.02	6338322.90

SHEET C1.6 POINT TABLES

CURB/EP COORDINATES		
POINT #	NORTHING	EASTING
166	1890220.21	6338200.78
167	1890269.07	6338201.04
168	1890279.12	6338191.04
169	1890279.12	6338184.10
170	1890276.12	6338181.10
171	1890218.71	6338181.10
172	1890218.71	6338157.45
173	1890217.21	6338155.95
174	1890200.72	6338155.95
175	1890200.71	6337992.49
176	1890217.57	6337992.49
177	1890219.07	6337990.99
178	1890219.07	6337976.41
179	1890217.57	6337974.91
180	1890190.22	6337974.91
181	1890242.71	6337979.74
182	1890242.71	6337990.99
183	1890244.21	6337992.49
184	1890258.84	6337992.49
185	1890277.12	6337992.49
186	1890279.12	6337990.49
187	1890279.12	6337974.17

CURB/EP COORDINATES		
POINT #	NORTHING	EASTING
188	1890276.99	6337972.18
189	1890249.75	6337972.74
190	1890260.84	6338007.84
191	1890263.48	6338010.49
192	1890260.84	6338013.13
193	1890258.19	6338010.49
194	1890260.84	6338052.84
195	1890263.48	6338055.49
196	1890260.84	6338058.13
197	1890258.19	6338055.49
198	1890260.84	6338097.84
199	1890263.48	6338100.49
200	1890260.84	6338103.13
201	1890258.19	6338100.49
202	1890260.84	6338142.84
203	1890263.48	6338145.49
204	1890260.84	6338148.13
205	1890258.19	6338145.49
206	1890258.84	6338154.36
207	1890243.96	6338154.36
208	1890242.71	6338155.61
209	1890242.71	6338155.84

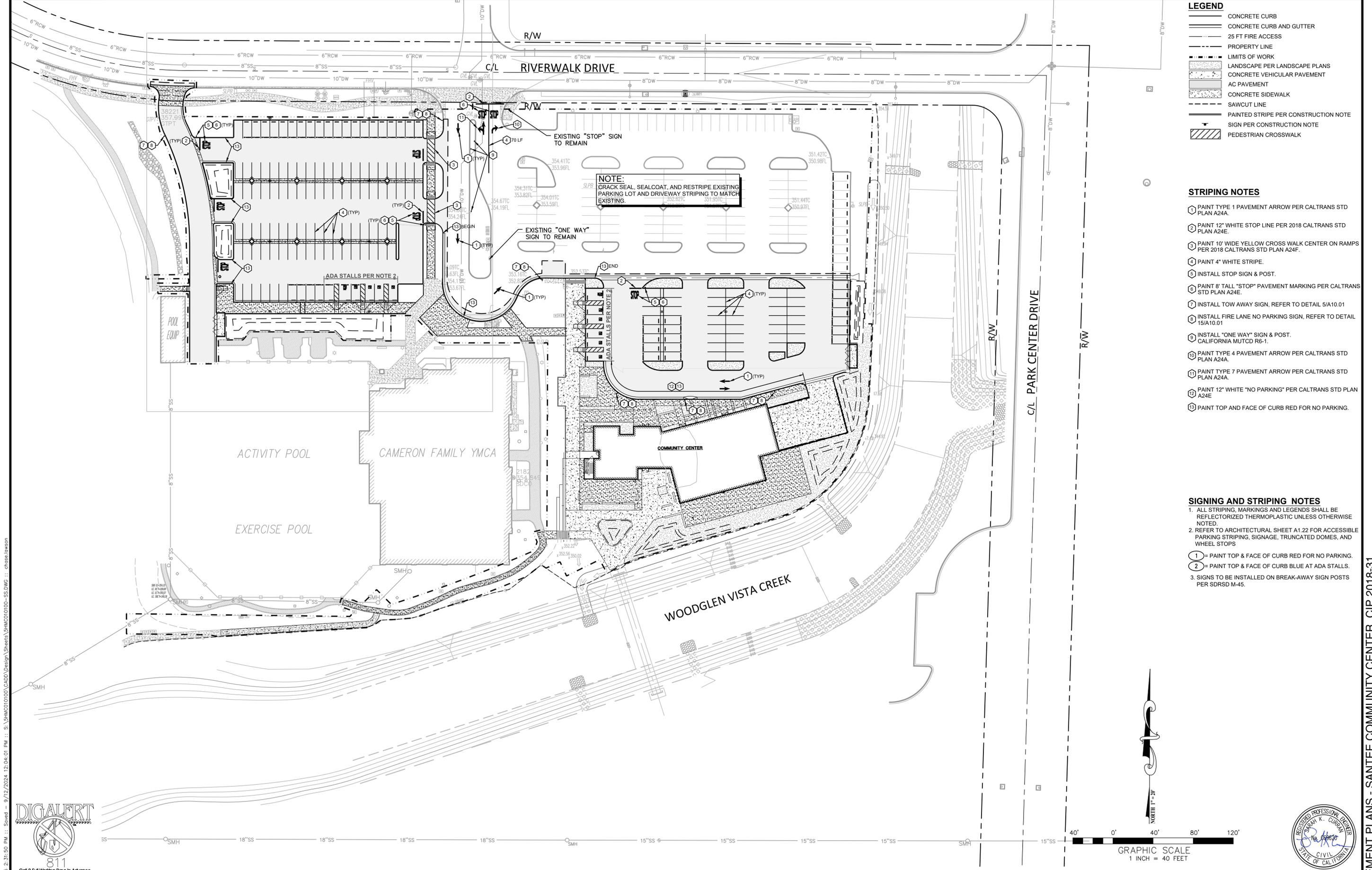
CURB/EP COORDINATES		
POINT #	NORTHING	EASTING
210	1890243.96	6338157.09
211	1890277.71	6338157.09
212	1890278.96	6338155.84
213	1890278.96	6338155.61
214	1890277.71	6338154.36
215	1890319.09	6338181.10
216	1890302.96	6338184.10
217	1890302.96	6338191.44
218	1890312.96	6338201.44
219	1890329.15	6338201.44
220	1890339.15	6338191.44
221	1890339.15	6338184.10
222	1890336.15	6338181.10
223	1890305.96	6338181.10
224	1890321.09	6338148.13
225	1890323.73	6338145.49
226	1890321.09	6338142.84
227	1890318.44	6338145.49
228	1890321.09	6338103.13
229	1890323.73	6338100.49
230	1890321.09	6338097.84
231	1890318.44	6338100.49

CURB/EP COORDINATES		
POINT #	NORTHING	EASTING
232	1890321.09	6338058.13
233	1890323.73	6338055.49
234	1890321.09	6338052.84
235	1890318.44	6338055.49
236	1890321.09	6338013.13
237	1890323.73	6338010.49
238	1890321.09	6338007.84
239	1890318.44	6338010.49
240	1890319.09	6337992.49
241	1890305.02	6337992.49
242	1890303.02	6337990.49
243	1890303.02	6337969.99
244	1890303.86	6337969.01
245	1890337.86	6337961.05
246	1890339.15	6337962.00
247	1890339.15	6337991.49
248	1890338.15	6337992.49
249	1890382.27	6338201.65
250	1890372.81	6338201.60
251	1890362.86	6338191.55
252	1890362.87	6338183.60
253	1890365.37	6338181.10

CURB/EP COORDINATES		
POINT #	NORTHING	EASTING
254	1890381.21	6338181.10
255	1890381.21	6337992.61
256	1890364.84	6337992.61
257	1890363.84	6337991.61
258	1890363.84	6337955.04
259	1890364.19	6337953.21
260	1890366.86	6337950.45
261	1890377.49	6337945.61
262	1890395.04	6337941.74
263	1890400.05	6337942.15
264	1890405.04	6337943.21
265	1890410.02	6337945.64
266	1890413.45	6337953.22
267	1890414.93	6337909.28
268	1890411.05	6337916.34
269	1890405.92	6337918.35
270	1890400.93	6337917.97
271	1890395.82	6337917.65
272	1890367.08	6337923.88
273	1890258.53	6337948.68
274	1890216.32	6337948.68
275	1890216.32	6337941.68

CURB/EP COORDINATES		
POINT #	NORTHING	EASTING
276	1890211.33	6337941.68
277	1890211.33	6337948.68
278	1890141.15	6337948.68
279	1890141.13	6337974.91
280	1890166.22	6337974.91

CENTER OF CURB RAMP COORDINATES		
POINT #	NORTHING	EASTING
504	1890279.12	6338189.19
505	1890302.96	6338189.19
506	1890339.15	6338189.19
507	1890362.87	6



- LEGEND**
- CONCRETE CURB
 - CONCRETE CURB AND GUTTER
 - 25 FT FIRE ACCESS
 - PROPERTY LINE
 - LIMITS OF WORK
 - LANDSCAPE PER LANDSCAPE PLANS
 - CONCRETE VEHICULAR PAVEMENT
 - AC PAVEMENT
 - CONCRETE SIDEWALK
 - SAWCUT LINE
 - PAINTED STRIPE PER CONSTRUCTION NOTE
 - SIGN PER CONSTRUCTION NOTE
 - PEDESTRIAN CROSSWALK

- STRIPING NOTES**
- 1 PAINT TYPE 1 PAVEMENT ARROW PER CALTRANS STD PLAN A24A.
 - 2 PAINT 12" WHITE STOP LINE PER 2018 CALTRANS STD PLAN A24E.
 - 3 PAINT 10' WIDE YELLOW CROSS WALK CENTER ON RAMPS PER 2018 CALTRANS STD PLAN A24F.
 - 4 PAINT 4" WHITE STRIPE.
 - 5 INSTALL STOP SIGN & POST.
 - 6 PAINT 8' TALL "STOP" PAVEMENT MARKING PER CALTRANS STD PLAN A24E.
 - 7 INSTALL TOW AWAY SIGN, REFER TO DETAIL 5/A10.01
 - 8 INSTALL FIRE LANE NO PARKING SIGN, REFER TO DETAIL 15/A10.01
 - 9 INSTALL "ONE WAY" SIGN & POST. CALIFORNIA MUTCD R6-1.
 - 10 PAINT TYPE 4 PAVEMENT ARROW PER CALTRANS STD PLAN A24A.
 - 11 PAINT TYPE 7 PAVEMENT ARROW PER CALTRANS STD PLAN A24A.
 - 12 PAINT 12" WHITE "NO PARKING" PER CALTRANS STD PLAN A24E
 - 13 PAINT TOP AND FACE OF CURB RED FOR NO PARKING.

- SIGNING AND STRIPING NOTES**
1. ALL STRIPING, MARKINGS AND LEGENDS SHALL BE REFLECTORIZED THERMOPLASTIC UNLESS OTHERWISE NOTED.
 2. REFER TO ARCHITECTURAL SHEET A1.22 FOR ACCESSIBLE PARKING STRIPING, SIGNAGE, TRUNCATED DOMES, AND WHEEL STOPS
 - 1 = PAINT TOP & FACE OF CURB RED FOR NO PARKING.
 - 2 = PAINT TOP & FACE OF CURB BLUE AT ADA STALLS.
 3. SIGNS TO BE INSTALLED ON BREAK-AWAY SIGN POSTS PER SDRSD M-45.

NOTE:
CRACK SEAL, SEALCOAT, AND RESTRIPE EXISTING PARKING LOT AND DRIVEWAY STRIPING TO MATCH EXISTING.

EXISTING "STOP" SIGN TO REMAIN

EXISTING "ONE WAY" SIGN TO REMAIN

ADA STALLS PER NOTE 2

ADA STALLS PER NOTE 2

ACTIVITY POOL

CAMERON FAMILY YMCA

COMMUNITY CENTER

EXERCISE POOL

WOODGLEN VISTA CREEK



CONSTRUCTION RECORD	REFERENCES	DATE	BY	REVISIONS	ACPTD

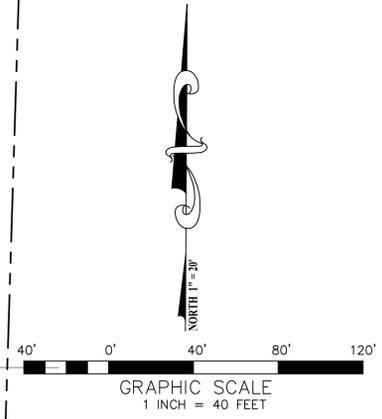
CONTRACTOR	INSPECTOR	DATE COMPLETED

BENCH MARK
THE BENCHMARK USED FOR THIS SURVEY IS GPS STATION "FP7" PER RECORD OF SURVEY 20986, BEING A STANDARD STREET SURVEY MONUMENT, M-10 WITH PUNCH ONLY. ELEVATION: 365.96 FEET FROM ROS 20986, FOR THE PURPOSES OF THIS SURVEY IT IS 356.05 FEET. DATUM: NAVD88

SCALE
HORIZ: AS SHOW
VERT: AS SHOW

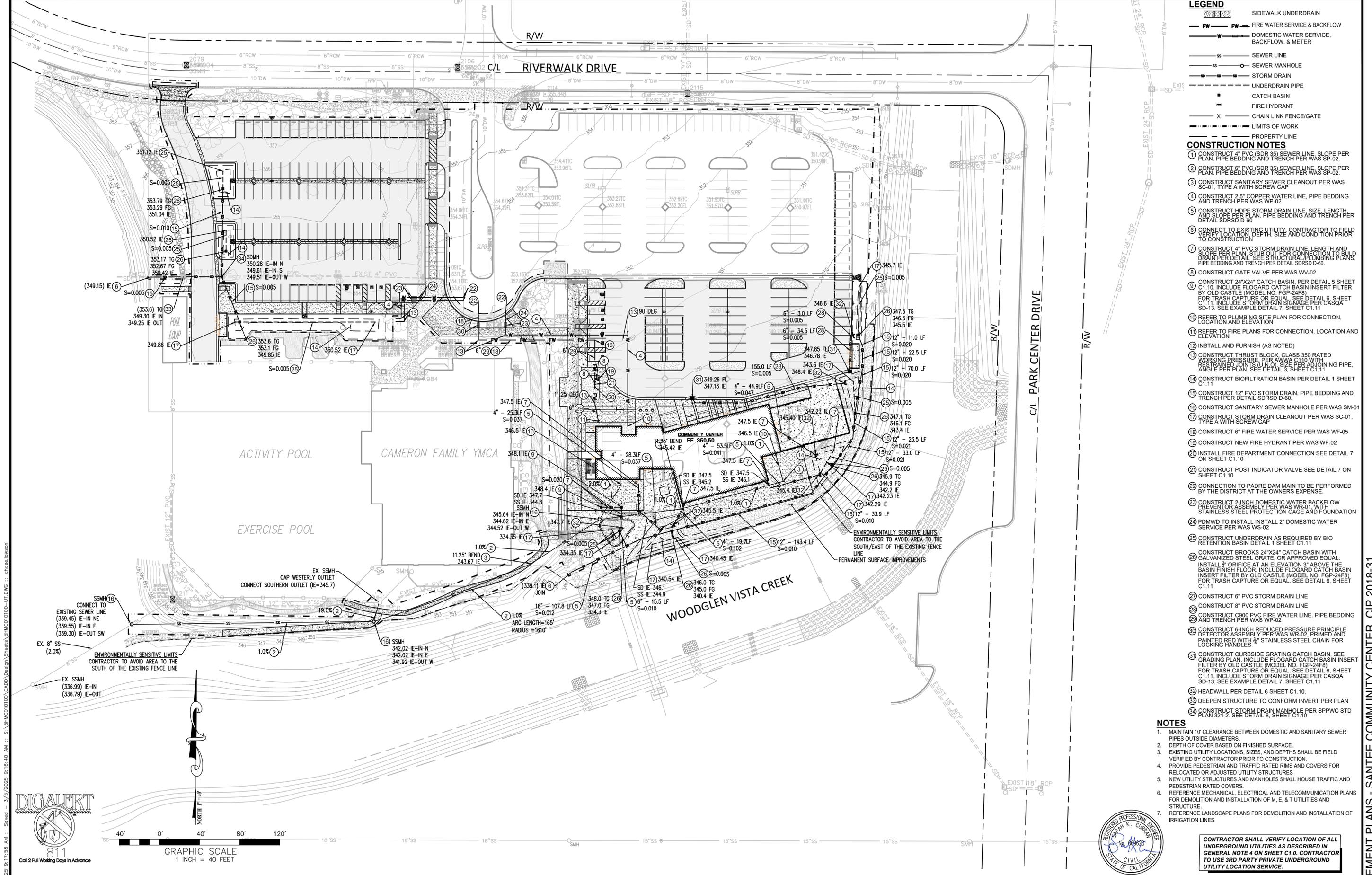
DESIGNED BY	DRAWN BY	CHECKED BY	REVIEWED
SKC	GPY	EH	
PLANS PREPARED UNDER THE SUPERVISION OF SARAH CURRAN		DATE: 04/04/2025	BY: PROJECT ENGINEER
RCE NO. C69620	EXPIRES: 06/30/2026		

CITY OF SANTEE	DEPARTMENT OF DEVELOPMENT SERVICES	CITY W.O. NO.	DRAWING NO.
IMPROVEMENT PLANS FOR: SANTEE COMMUNITY CENTER TRAFFIC SIGNAGE AND STRIPING PLAN		CIP 2018-31	C1.8
			SHEET X OF X



Plotted: 3/4/2025 2:31:50 PM :: Saved: 9/12/2024 12:04:01 PM :: S:\SHM\010100\CADD\Design\Sheets\SHM\010100-SS.DWG :: chase.lawson
 Call 2 Full Working Days In Advance

IMPROVEMENT PLANS - SANTEE COMMUNITY CENTER, CIP 2018-31



- LEGEND**
- SIDEWALK UNDERDRAIN
 - FIRE WATER SERVICE & BACKFLOW
 - DOMESTIC WATER SERVICE, BACKFLOW, & METER
 - SEWER LINE
 - SEWER MANHOLE
 - STORM DRAIN
 - UNDERDRAIN PIPE
 - CATCH BASIN
 - FIRE HYDRANT
 - CHAIN LINK FENCE/GATE
 - LIMITS OF WORK
 - PROPERTY LINE

- CONSTRUCTION NOTES**
1. CONSTRUCT 4" PVC (SDR 35) SEWER LINE. SLOPE PER PLAN. PIPE BEDDING AND TRENCH PER WAS SP-02.
 2. CONSTRUCT 6" PVC (SDR 35) SEWER LINE. SLOPE PER PLAN. PIPE BEDDING AND TRENCH PER WAS SP-02.
 3. CONSTRUCT SANITARY SEWER CLEANOUT PER WAS SC-01, TYPE A WITH SCREW CAP.
 4. CONSTRUCT 2" COPPER WATER LINE. PIPE BEDDING AND TRENCH PER WAS WF-02.
 5. CONSTRUCT HDPE STORM DRAIN LINE. SIZE, LENGTH, AND SLOPE PER PLAN. PIPE BEDDING AND TRENCH PER DETAIL SDRSD D-60.
 6. CONNECT TO EXISTING UTILITY. CONTRACTOR TO FIELD VERIFY LOCATION, DEPTH, SIZE AND CONDITION PRIOR TO CONSTRUCTION.
 7. CONSTRUCT 4" PVC STORM DRAIN LINE. LENGTH AND SLOPE PER PLAN. STUB OUT FOR CONNECTION TO BUILD DRAIN PER DETAIL. SEE STRUCTURAL/PLUMBING PLANS. PIPE BEDDING AND TRENCH PER DETAIL SDRSD D-60.
 8. CONSTRUCT GATE VALVE PER WAS WV-02.
 9. CONSTRUCT 24"x24" CATCH BASIN. PER DETAIL 5 SHEET C1.10. INCLUDE FLOGARD CATCH BASIN INSERT FILTER BY OLD CASTLE (MODEL NO. FGP-24F8) FOR TRASH CAPTURE OR EQUAL. SEE DETAIL 6, SHEET C1.11. INCLUDE STORM DRAIN SIGNAGE PER CASQA SD-13. SEE EXAMPLE DETAIL 7, SHEET C1.11.
 10. REFER TO PLUMBING SITE PLAN FOR CONNECTION, LOCATION AND ELEVATION.
 11. REFER TO FIRE PLANS FOR CONNECTION, LOCATION AND ELEVATION.
 12. INSTALL AND FURNISH (AS NOTED).
 13. CONSTRUCT THRUST BLOCK, CLASS 350 RATED WORKING PRESSURE. PER AWWA C110 WITH RESTRAINED JOINTS (U.N.O.). SIZE PER ADJOINING PIPE. ANGLE PER PLAN. SEE DETAIL 3, SHEET C1.11.
 14. CONSTRUCT BIOFILTRATION BASIN PER DETAIL 1 SHEET C1.11.
 15. CONSTRUCT 12" PVC STORM DRAIN. PIPE BEDDING AND TRENCH PER DETAIL SDRSD D-60.
 16. CONSTRUCT SANITARY SEWER MANHOLE PER WAS SM-01, TYPE A WITH SCREW CAP.
 17. CONSTRUCT STORM DRAIN CLEANOUT PER WAS SC-01, TYPE A WITH SCREW CAP.
 18. CONSTRUCT 6" FIRE WATER SERVICE PER WAS WF-05.
 19. CONSTRUCT NEW FIRE HYDRANT PER WAS WF-02.
 20. INSTALL FIRE DEPARTMENT CONNECTION SEE DETAIL 7 ON SHEET C1.10.
 21. CONSTRUCT POST INDICATOR VALVE SEE DETAIL 7 ON SHEET C1.10.
 22. CONNECTION TO PADRE DAM MAIN TO BE PERFORMED BY THE DISTRICT AT THE OWNERS EXPENSE.
 23. CONSTRUCT 2-INCH DOMESTIC WATER BACKFLOW PREVENTOR ASSEMBLY PER WAS WR-01, WITH STAINLESS STEEL PROTECTION CAGE AND FOUNDATION.
 24. PDMWD TO INSTALL. INSTALL 2" DOMESTIC WATER SERVICE PER WAS WS-02.
 25. CONSTRUCT UNDERDRAIN AS REQUIRED BY BIO RETENTION BASIN DETAIL 1 SHEET C1.11.
 26. CONSTRUCT BROOKS 24"x24" CATCH BASIN WITH GALVANIZED STEEL GRATE OR APPROVED EQUAL. INSTALL 7" ORIFICE AT AN ELEVATION 3" ABOVE THE BASIN FINISH FLOOR. INCLUDE FLOGARD CATCH BASIN INSERT FILTER BY OLD CASTLE (MODEL NO. FGP-24F8) FOR TRASH CAPTURE OR EQUAL. SEE DETAIL 6, SHEET C1.11. INCLUDE STORM DRAIN SIGNAGE PER CASQA SD-13. SEE EXAMPLE DETAIL 7, SHEET C1.11.
 27. CONSTRUCT 6" PVC STORM DRAIN LINE.
 28. CONSTRUCT 8" PVC STORM DRAIN LINE.
 29. CONSTRUCT C900 PVC FIRE WATER LINE. PIPE BEDDING AND TRENCH PER WAS WF-02.
 30. CONSTRUCT 6-INCH REDUCED PRESSURE PRINCIPLE DETECTOR ASSEMBLY PER WAS WR-02, PRIMED AND PAINTED RED WITH #8 STAINLESS STEEL CHAIN FOR LOCKING HANDLES.
 31. CONSTRUCT CURBSIDE GRATING CATCH BASIN. SEE GRADING PLAN. INCLUDE FLOGARD CATCH BASIN INSERT FILTER BY OLD CASTLE (MODEL NO. FGP-24F8) FOR TRASH CAPTURE OR EQUAL. SEE DETAIL 6, SHEET C1.11. INCLUDE STORM DRAIN SIGNAGE PER CASQA SD-13. SEE EXAMPLE DETAIL 7, SHEET C1.11.
 32. HEADWALL PER DETAIL 6 SHEET C1.10.
 33. DEEPEN STRUCTURE TO CONFORM INVERT PER PLAN.
 34. CONSTRUCT STORM DRAIN MANHOLE PER SPPWC STD PLAN 321-2. SEE DETAIL 8, SHEET C1.10.

- NOTES**
1. MAINTAIN 10' CLEARANCE BETWEEN DOMESTIC AND SANITARY SEWER PIPES OUTSIDE DIAMETERS.
 2. DEPTH OF COVER BASED ON FINISHED SURFACE.
 3. EXISTING UTILITY LOCATIONS, SIZES, AND DEPTHS SHALL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.
 4. PROVIDE PEDESTRIAN AND TRAFFIC RATED RIMS AND COVERS FOR RELOCATED OR ADJUSTED UTILITY STRUCTURES.
 5. NEW UTILITY STRUCTURES AND MANHOLES SHALL HOUSE TRAFFIC AND PEDESTRIAN RATED COVERS.
 6. REFERENCE MECHANICAL, ELECTRICAL AND TELECOMMUNICATION PLANS FOR DEMOLITION AND INSTALLATION OF M, E, & T UTILITIES AND STRUCTURE.
 7. REFERENCE LANDSCAPE PLANS FOR DEMOLITION AND INSTALLATION OF IRRIGATION LINES.

CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES AS DESCRIBED IN GENERAL NOTE 4 ON SHEET C1.0. CONTRACTOR TO USE 3RD PARTY PRIVATE UNDERGROUND UTILITY LOCATION SERVICE.

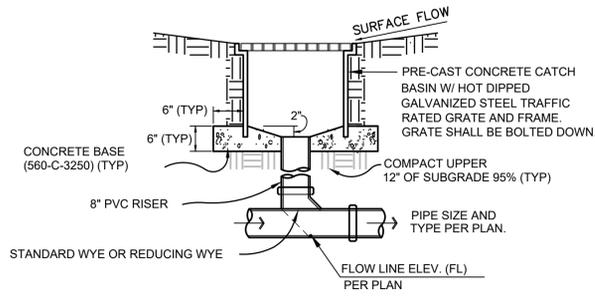


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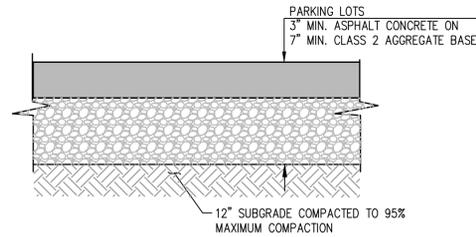
IMPROVEMENT PLANS - SANTEE COMMUNITY CENTER, CIP 2018-31

CONSTRUCTION RECORD		REFERENCES	DATE	BY	REVISIONS	ACPTD	BENCH MARK THE BENCHMARK USED FOR THIS SURVEY IS GPS STATION "FP7" PER RECORD OF SURVEY 20986, BEING A STANDARD STREET SURVEY MONUMENT, M-10 WITH PUNCH ONLY. ELEVATION: 365.96 FEET FROM RDS 20986. FOR THE PURPOSES OF THIS SURVEY IT IS 336.05 FEET. DATUM: NAVD88	SCALE HORIZ: AS SHOW VERT: AS SHOW	DESIGNED BY SKC	DRAWN BY GPY	CHECKED BY EH	REVIEWED	CITY OF SANTEE IMPROVEMENT PLANS FOR:	DEPARTMENT OF DEVELOPMENT SERVICES	CITY W.O. NO. CIP 2018-31	DRAWING NO. C1.9 SHEET X OF X
CONTRACTOR	INSPECTOR	DATE COMPLETED							PLANS PREPARED UNDER THE SUPERVISION OF SARAH CURRAN RCE NO. C69620	DATE 04/04/2025	EXPIRES 06/30/2026	PROJECT ENGINEER	SANTEE COMMUNITY CENTER CIVIL UTILITY PLAN			





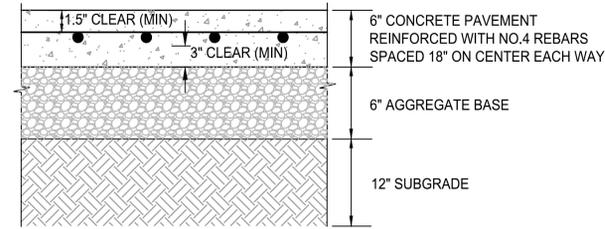
CATCH BASIN DETAIL 5
N.T.S. C1.10



NOTE:

1. AC STRUCTURAL SECTIONS ARE FOR ESTIMATING PURPOSES ONLY AND SHALL BE BASED ON SUBGRADE TESTS BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF BASE MATERIAL.
2. OVER EXCAVATE AND RECOMPACT 1-FT BELOW PAVEMENT SECTION PER GEOTECHNICAL REPORT.

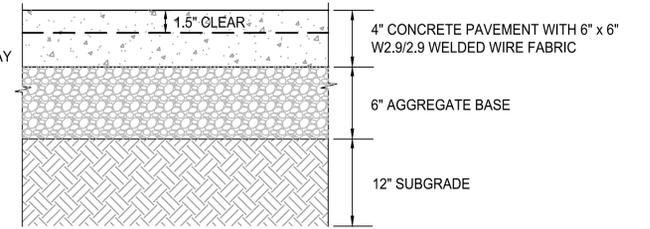
ASPHALT PAVEMENT DETAIL 2
N.T.S. C1.10



NOTE:

1. OVER EXCAVATE AND RECOMPACT 1-FT BELOW PAVEMENT SECTION PER GEOTECHNICAL REPORT.

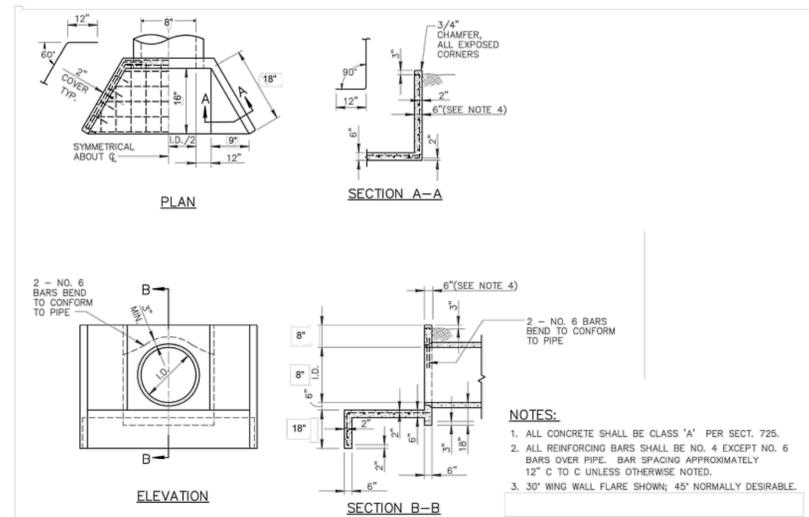
CONCRETE VEHICULAR PAVEMENT DETAIL 3
N.T.S. C1.10



NOTE:

1. OVER EXCAVATE AND RECOMPACT 1-FT BELOW PAVEMENT SECTION PER GEOTECHNICAL REPORT.

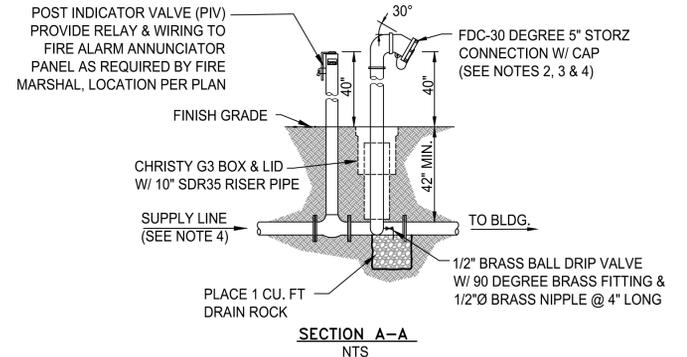
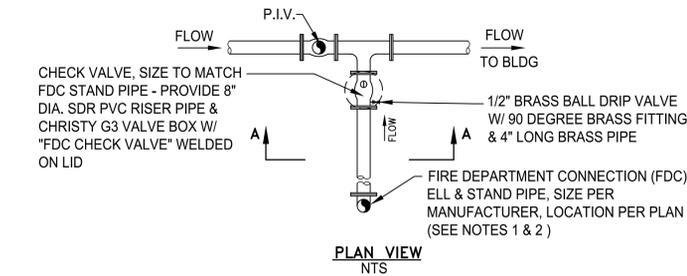
CONCRETE WALK DETAIL 4
N.T.S. C1.10



8" HEADWALL 6
N.T.S. C1.10

NOTES:

1. ALL CONCRETE SHALL BE CLASS "A" PER SECT. 725.
2. ALL REINFORCING BARS SHALL BE NO. 4 EXCEPT NO. 6 BARS OVER PIPE. BAR SPACING APPROXIMATELY 12" C TO C UNLESS OTHERWISE NOTED.
3. 30° WING WALL FLARE SHOWN; 45° NORMALLY DESIRABLE.



FIRE DEPARTMENT CONNECTION AND POST INDICATOR VALVE DETAIL 7
N.T.S. C1.10

NOTES:

1. FIRE MARSHAL SHALL SPECIFY LOCATION OF FIRE DEPARTMENT CONNECTION (FDC). CLEARANCE AROUND FDC SHALL BE 3 FEET RIGHT, LEFT, REAR, AND 20 FEET IN FRONT.
2. A METAL SIGN WITH RAISED LETTERS AT LEAST 1 INCH IN SIZE SHALL BE MOUNTED ON ALL FIRE DEPARTMENT CONNECTIONS SERVICING AUTO SPRINKLERS, STANDPIPES OR FIRE PUMPS. SUCH SIGNS SHALL READ "AUTO SPRINKLER", "STANDPIPE", OR "TEST CONNECTION" AS APPLICABLE. WHERE THE FDC DOES NOT SERVE THE ENTIRE BUILDING A SIGN SHALL BE PROVIDED INDICATING THE PORTIONS OF THE BUILDING TO BE SERVED.
3. FIRE PROTECTION FACILITIES ARE OWNED AND MAINTAINED BY THE CUSTOMER.
4. ASSEMBLIES AND PIPING ON FIRE LINES SHALL BE FM/UL AND CONFORM TO THE APPLICABLE NFPA. THRUST BLOCKING AND/OR MECHANICAL RESTRAINTS SHALL BE PROVIDED AS NECESSARY.
5. STANDPIPE MATERIALS AND DEVICES MUST BE OF SUFFICIENT STRENGTH TO WITHSTAND A MINIMUM OF 200 PSI.
6. ALL FERROUS MATERIAL PRODUCTS THAT WILL INTERACT WITH THE SOIL WHEN INSTALLED SHALL BE PROPERLY COATED FOR CORROSION PROTECTION PER GEOTECH REPORT.

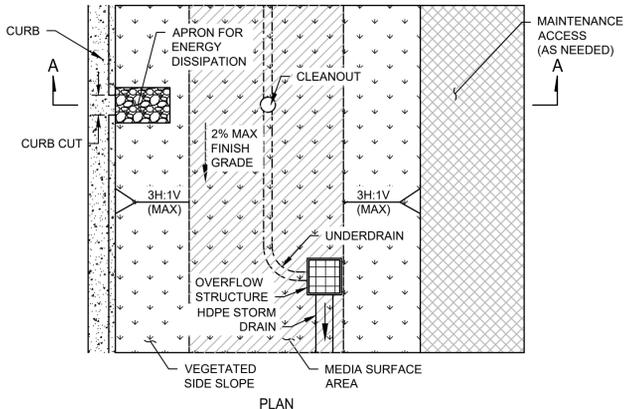
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IMPROVEMENT PLANS - SANTEE COMMUNITY CENTER, CIP 2018-31

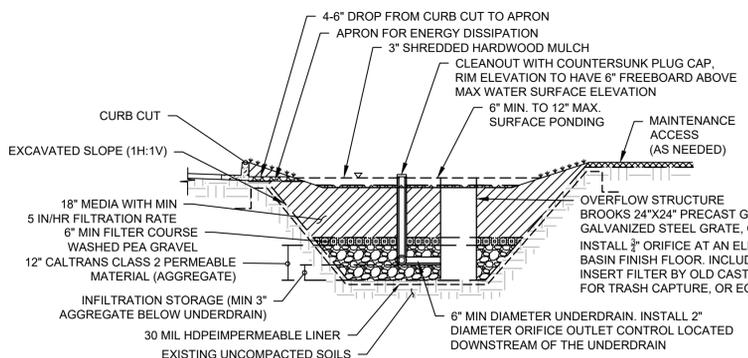


CONSTRUCTION RECORD	REFERENCES	DATE	BY	REVISIONS	ACPTD	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY	REVIEWED	CITY OF SANTEE	DEPARTMENT OF DEVELOPMENT SERVICES	CITY W.O. NO.	DRAWING NO.
CONTRACTOR						HORIZ: AS SHOW	SKC	GPY	EH		IMPROVEMENT PLANS FOR:	SANTEE COMMUNITY CENTER	CIP 2018-31	C1.10
INSPECTOR						VERT: AS SHOW	PLANS PREPARED UNDER THE SUPERVISION OF SARAH CURRAN	DATE 04/04/2025	EXPIRES 06/30/2026	BY: PROJECT ENGINEER		SANTEE COMMUNITY CENTER		
DATE COMPLETED							RCE NO. C69620					CIVIL DETAILS		SHEET X OF X

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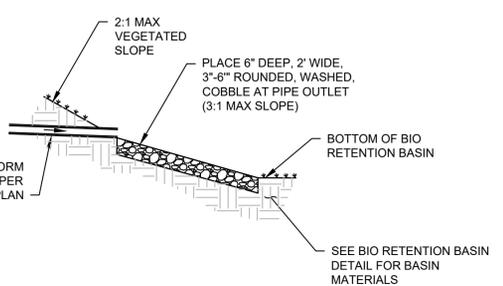
PLAN



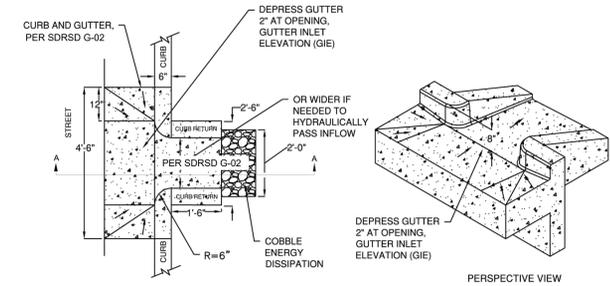
SECTION A-A

- BIOFILTRATION PROTECTION DURING CONSTRUCTION:**
1. PREVENT OVER-COMPACTION OF NATIVE SOILS IN AREAS OF THE BASIN WHERE INFILTRATION WILL OCCUR. DELINEATE THE BIOFILTRATION AREA AND KEEP CONSTRUCTION TRAFFIC OFF. PROTECT SOILS WITH FENCING, PLYWOOD, ETC.
 2. PROVIDE EROSION CONTROL IN THE CONTRIBUTING DRAINAGE AREAS OF THE DESIGNATED BIOFILTRATION AREA. STABILIZE UPSLOPE AREAS.
 3. DRAINAGE SHOULD BE DIRECTED AWAY FROM BIORETENTION FACILITIES UNTIL UPSLOPE AREAS ARE STABILIZED. THE CONCENTRATION OF FINES COULD PREVENT POST-CONSTRUCTION INFILTRATION AND CAUSE DESIGN FAILURE.
 4. IF DRAINAGE IS TO BE ALLOWED THROUGH THE FACILITY DURING CONSTRUCTION LEAVE OR BACKFILL AT LEAST 6 INCHES ABOVE THE FINAL GRADE. TEMPORARILY COVER THE UNDERDRAIN WITH PLASTIC OR FABRIC. LINE OR MULCH THE BIOFILTRATION AREA.
 5. BIORETENTION FACILITIES SHOULD REMAIN OUTSIDE THE LIMIT OF DISTURBANCE TO PREVENT SOIL COMPACTION BY HEAVY EQUIPMENT. PROTECT BIORETENTION AREAS WITH SILT FENCE AND CONSTRUCTION FENCING.
 6. VERIFY INSTALLATION OF UNDERDRAIN IS CORRECT PRIOR TO PLACING SOIL.

BIOFILTRATION BASIN DETAIL 1
N.T.S. C1.11



COBBLE ENERGY DISSIPATION AT STORM PIPE OUTLETS 4
N.T.S. C1.11



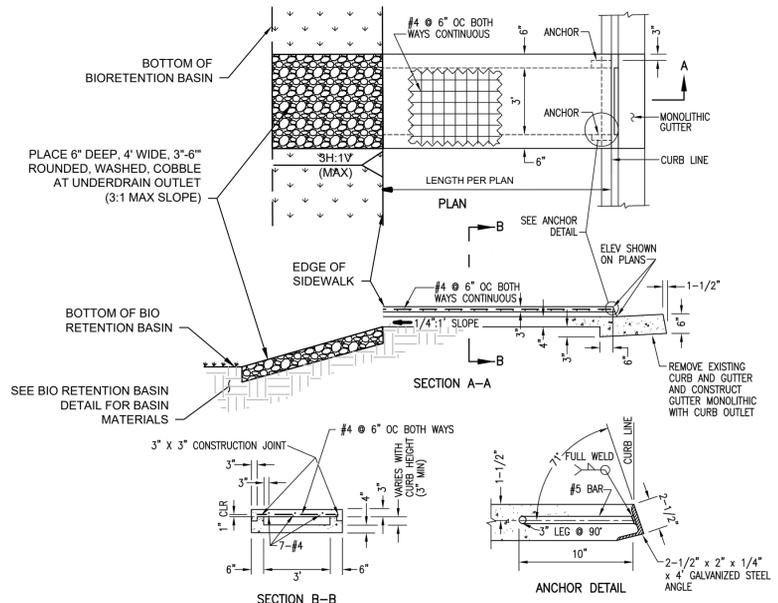
PLAN VIEW

PERSPECTIVE VIEW

- BIORETENTION DESIGN NOTES**
1. FOR USE WITH STORMWATER FACILITIES WITH SIDE SLOPES.
 2. PROVIDE SPOT ELEVATIONS ON PLANS (F.E., O.E., G.I.E., I.E.). REFER TO GRADING SHEETS FOR SPOT ELEVATIONS.
 3. CURB AND WALL DETAILS MAY BE MODIFIED BY CIVIL AND GEOTECHNICAL ENGINEERS SUBJECT TO APPROVAL BY CITY ENGINEER.
 4. WHERE INLET FLOW VELOCITY IS HIGH, EXTEND COBBLE INTO FACILITY, BUT AVOID EXCESSIVE USE.

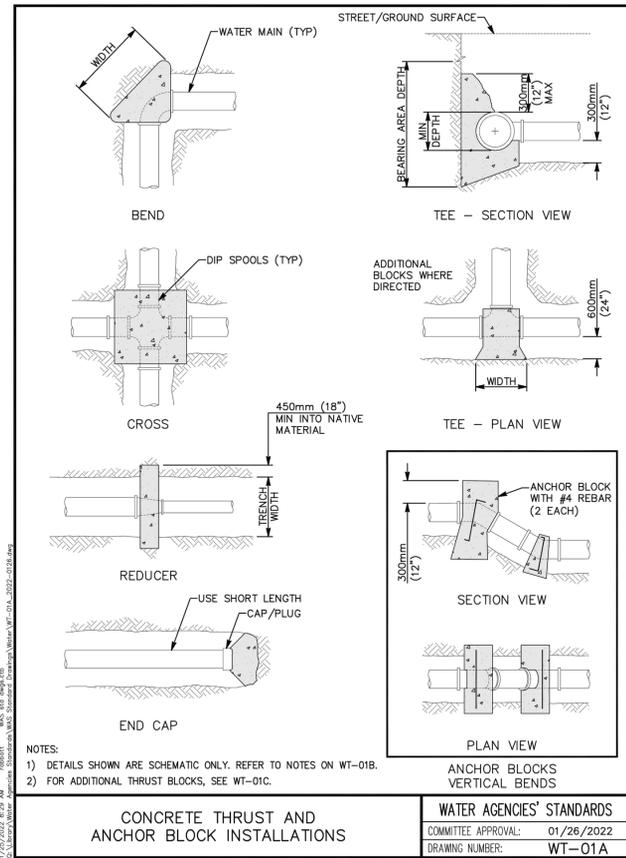
- CONSTRUCTION NOTES**
1. AFTER CONSTRUCTION PLACE SAND BAGS AT GUTTER OPENINGS TO KEEP STORM FLOWS FROM ENTERING FACILITY UNTIL VEGETATION IS ESTABLISHED.

CURB CUT INLET DETAIL 2
N.T.S. C1.11



- NOTES:**
1. CONCRETE SHALL BE 500-C-3250.
 2. SLOPE OF DRAINAGE CHANNEL TO BE SLOPED TOWARDS BIORETENTION BASIN. SLOPES OF FINISHED SIDEWALK PER PLAN.
 3. SIDEWALK FINISH TO MATCH ADJACENT SIDEWALK.
 4. PROVIDE 3/16 TOOLED GROOVE IN TOP SLAB IN LINE WITH BACK OF ADJACENT CURB.
 5. THIS DETAIL IS A MODIFICATION OF SDRSD D-25A.

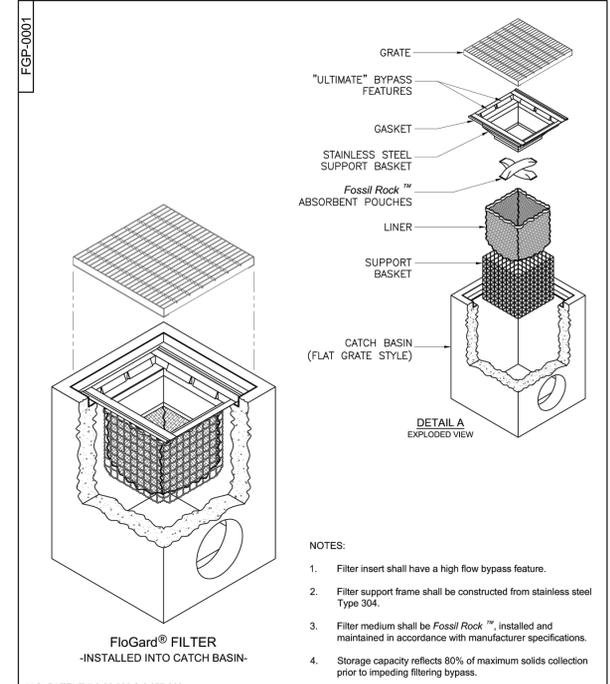
SIDEWALK UNDERDRAIN 5
N.T.S. C1.11



CONCRETE THRUST AND ANCHOR BLOCK INSTALLATIONS

WATER AGENCIES' STANDARDS
COMMITTEE APPROVAL: 01/26/2022
DRAWING NUMBER: WT-01A

THRUST BLOCK DETAIL 3
N.T.S. C1.11

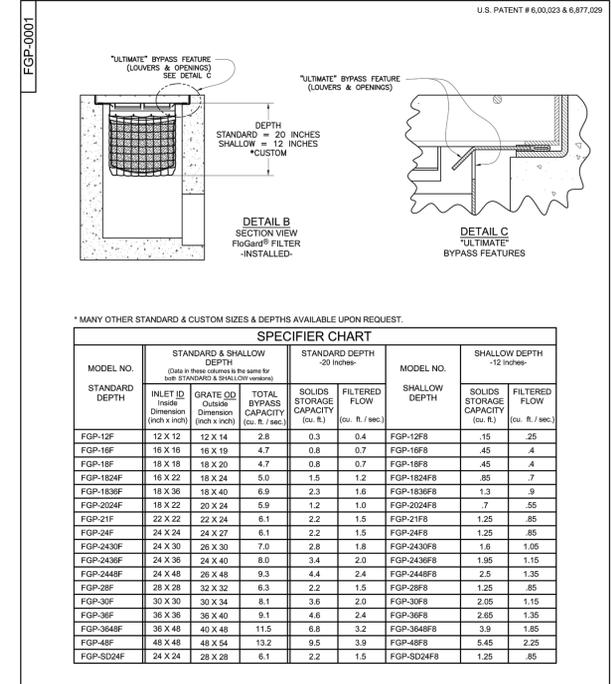


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* MANY OTHER STANDARD & CUSTOM SIZES & DEPTHS AVAILABLE UPON REQUEST.

MODEL NO.	STANDARD & SHALLOW DEPTH				STANDARD DEPTH		SHALLOW DEPTH	
	INLET ID Inside Dimension (inch x inch)	GRATE OD Outside Dimension (inch x inch)	TOTAL BYPASS CAPACITY (cu. ft. / sec.)	SOLIDS STORAGE CAPACITY (cu. ft.)	FILTERED FLOW (cu. ft. / sec.)	SHALLOW DEPTH	SOLIDS STORAGE CAPACITY (cu. ft.)	FILTERED FLOW (cu. ft. / sec.)
FGP-12F	12 X 12	12 X 14	2.8	0.3	0.4	FGP-12FB	.15	.25
FGP-16F	16 X 16	16 X 19	4.7	0.8	0.7	FGP-16FB	.45	.4
FGP-18F	18 X 18	18 X 20	4.7	0.8	0.7	FGP-18FB	.45	.4
FGP-1824F	18 X 22	18 X 24	5.0	1.5	1.2	FGP-1824FB	.85	.7
FGP-1836F	18 X 36	18 X 40	6.9	2.3	1.6	FGP-1836FB	1.3	.9
FGP-2024F	18 X 22	20 X 24	5.9	1.2	1.0	FGP-2024FB	.7	.55
FGP-21F	22 X 22	22 X 24	6.1	2.2	1.5	FGP-21FB	1.25	.85
FGP-24F	24 X 24	24 X 27	6.1	2.2	1.5	FGP-24FB	1.25	.85
FGP-2436F	24 X 30	28 X 30	7.0	2.8	1.8	FGP-2436FB	1.6	1.05
FGP-2436F	24 X 36	24 X 40	6.0	3.4	2.0	FGP-2436FB	1.85	1.15
FGP-2448F	24 X 48	28 X 48	9.3	4.4	2.4	FGP-2448FB	2.5	1.35
FGP-28F	28 X 28	32 X 32	6.3	2.2	1.5	FGP-28FB	1.25	.85
FGP-30F	30 X 30	30 X 34	8.1	3.6	2.0	FGP-30FB	2.05	1.15
FGP-36F	36 X 36	36 X 40	9.1	4.6	2.4	FGP-36FB	2.65	1.35
FGP-3648F	36 X 48	40 X 48	11.5	6.8	3.2	FGP-3648FB	3.9	1.85
FGP-48F	48 X 48	48 X 54	13.2	9.5	3.9	FGP-48FB	5.45	2.25
FGP-SD24F	24 X 24	28 X 28	6.1	2.2	1.5	FGP-SD24FB	1.25	.85

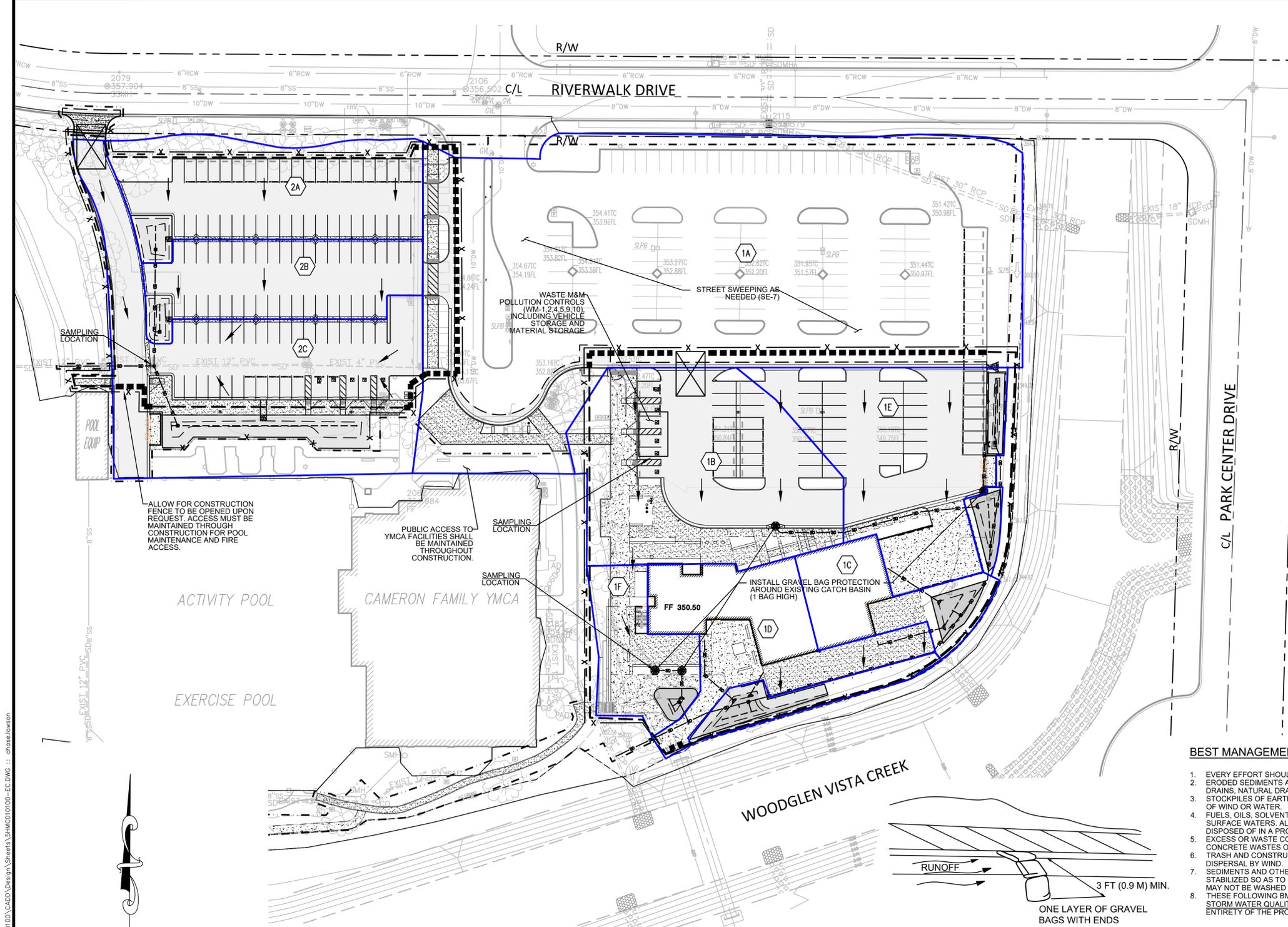
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FLOGARD CATCH BASIN INSERT FILTER 6
N.T.S. C1.11

CONSTRUCTION RECORD	REFERENCES	DATE	BY	REVISIONS	ACPTD	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY	REVIEWED	CITY OF SANTEE	DEPARTMENT OF DEVELOPMENT SERVICES	CITY W.O. NO.	DRAWING NO.
						HORIZ: AS SHOW	SKC	GPY	EH		CITY OF SANTEE	DEPARTMENT OF DEVELOPMENT SERVICES	CIP 2018-31	C1.11
CONTRACTOR						VERT: AS SHOW	PLANS PREPARED UNDER THE SUPERVISION OF SARAH CURRAN DATE 04/04/2025 RCE NO. C69620 EXPIRES 06/30/2026			PROJECT ENGINEER	IMPROVEMENT PLANS FOR	SANTEE COMMUNITY CENTER	CIP 2018-31	C1.11
INSPECTOR														
DATE COMPLETED														SHEET X OF X

IMPROVEMENT PLANS - SANTEE COMMUNITY CENTER, CIP 2018-31

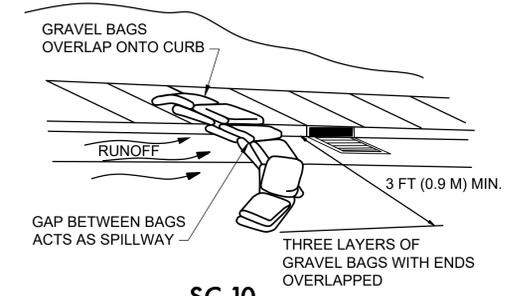


LEGEND

- INSTALL CONTINUOUS SILT FENCE PER CALTRANS CONSTRUCTION SITE BMP MANUAL (2017) SC-1
- INSTALL CONTINUOUS GRAVEL BAG CHECK DAM ON TOP OF EXISTING PAVEMENT (NO GAPS) (SE-6)
- INSTALL GRAVEL BAG INLET PROTECTION AT ALL INLETS EXPOSED TO CONSTRUCTION RUNOFF PER DETAIL THIS SHEET. (SE-10)
- LIMITS OF WORK
- INSTALL TEMPORARY CONSTRUCTION FENCING. MAINTAIN 4' MINIMUM WALKWAY CLEARANCE WHERE FENCE IS INSTALLED ON SIDEWALK. AREAS OF SOIL DISTURBANCE TO BE LIMITED TO WITHIN THE PROPOSED FENCE LINE.
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING TREE
- FLOW ARROW
- CONSTRUCTION ENTRANCE PER CALTRANS CONSTRUCTION SITE BMP MANUAL (2017) (TC-1)
- PROPOSED DRAINAGE MANAGEMENT AREA (DMA). SEE PROPOSED DMA EXHIBIT FOR MORE DETAIL.

GENERAL NOTES

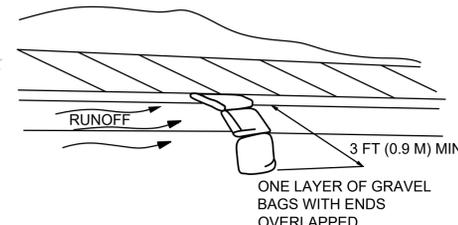
1. REFER TO THE LATEST EDITION OF THE CALIFORNIA STORMWATER BEST MANAGEMENT PRACTICE HANDBOOK FOR THE BMP OUTLINED ON THIS PLAN.
2. INSTALL INLET PROTECTION ON ALL EXISTING INLETS PRIOR TO DEMOLITION.
3. SAMPLING LOCATIONS SHOWN MAY BE MODIFIED IN THE FIELD DURING STORM EVENTS AT THE DISCRETION OF THE QSP.
4. THE LOCATION AND PROTECTION OF ALL UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.



SC-10
GRAVEL BAG INLET PROTECTION
N.T.S.

BEST MANAGEMENT PRACTICES:

1. EVERY EFFORT SHOULD BE MADE TO ELIMINATE THE DISCHARGE OF NON-STORMWATER FROM THE PROJECT SITE AT ALL TIMES.
2. ERODED SEDIMENTS AND OTHER POLLUTANTS MUST BE RETAINED ON-SITE AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEET FLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES OR WIND.
3. STOCKPILES OF EARTH AND OTHER CONSTRUCTION RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCES OF WIND OR WATER.
4. FUELS, OILS, SOLVENTS, AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.
5. EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE PUBLIC WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON-SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.
6. TRASH AND CONSTRUCTION RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND.
7. SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAY. ACCIDENTAL DEPOSITIONS MUST BE SWEEPED UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.
8. THESE FOLLOWING BMPs AS OUTLINED IN, BUT NOT LIMITED TO, THE LATEST EDITION OF THE CASQA CONSTRUCTION BMP ONLINE HANDBOOK OR CALTRANS STORM WATER QUALITY HANDBOOKS (CONSTRUCTION SITE BMP MANUAL) MAY APPLY DURING THE CONSTRUCTION OF THIS PROJECT AND APPLY TO THE ENTIRETY OF THE PROJECT SITE.

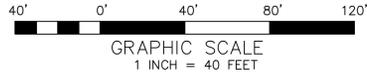


GRAVEL BAG CHEVRON
N.T.S.

CITY OF SANTEE STORMWATER-SPECIFIC BMP NOTES:

- THIS PROJECT SHALL COMPLY WITH ALL REQUIREMENTS OF THE CITY OF SANTEE AND STATE OF CALIFORNIA WATER QUALITY CONTROL BOARD, SAN DIEGO REGION
1. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES (BMPs) DURING ALL PHASES OF CONSTRUCTION.
 2. SUFFICIENT BMPs MUST BE INSTALLED TO PREVENT SILT, MUD, OR OTHER CONSTRUCTION DEBRIS FROM BEING TRACKED INTO THE ADJACENT STREET(S) OR STORM WATER CONVEYANCE SYSTEMS DUE TO CONSTRUCTION VEHICLES OR ANY OTHER CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING ANY SUCH DEBRIS THAT MAY BE IN THE STREET OR CONVEYANCE SYSTEM AT THE ENDS OF EACH WORK DAY OR AFTER A STORM EVENT THAT CAUSED A BREACH IN THE INSTALLED CONSTRUCTION BMPs.
 3. STORM WATER POLLUTION PREVENTION DEVICES AND OR PRACTICES SHALL BE MODIFIED AS NEEDED AS THE PROJECT PROGRESSES TO ENSURE EFFECTIVENESS. IF AT ANY TIME, BMPs ARE FOUND TO BE INTENTIONALLY DISABLED, RUN-OVER, REMOVED, OR OTHERWISE INEFFECTIVE, THEY SHALL BE MODIFIED AND REPLACED IMMEDIATELY.
 4. TRASH AND CONSTRUCTION SOLID WASTES SHALL BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OR RAINWATER AND DISPERSAL BY WIND. THE STORAGE OF ALL CONSTRUCTION MATERIALS AND CONSTRUCTION WASTES MUST BE PROTECTED AGAINST THE POTENTIAL RELEASE OF POLLUTANTS INTO THE ENVIRONMENT.
 5. A CONCRETE WASHOUT SHALL BE PROVIDED ON ALL PROJECTS WHICH PROPOSE THE CONSTRUCTION OF ANY CONCRETE IMPROVEMENTS THAT ARE TO BE POURED IN PLACE ON THE SITE.
 6. ALL BMPs SHALL BE MAINTAINED IN WORKING ORDER AT ALL TIMES. ALL SLOPES THAT ARE CREATED OR DISTURBED BY CONSTRUCTION ACTIVITY MUST BE PROTECTED AGAINST EROSION AND SEDIMENT TRANSPORT AT ALL TIMES.
 7. IF TRENCHING/DIGGING ACTIVITIES ARE NOT COMPLETED WITHIN ONE DAY, PROPER BMPs WILL BE IMPLEMENTED.
 8. IF DEBRIS OR MATERIALS WILL BE STORED FOR LONGER THAN ONE DAY, PROPER BMPs WILL BE IMPLEMENTED.

EROSION CONTROL		EQUIPMENT TRACKING CONTROL	
EC1	SCHEDULING	TC1	TEMPORARY CONSTRUCTION ENTRANCE/EXIT
EC2	PRESERVATION OF EXISTING VEGETATION		
TEMPORARY SEDIMENT CONTROL		NON-STORMWATER MANAGEMENT	
SE6	GRAVEL BAG BERM	NS1	WATER CONSERVATION PRACTICES
SE7	STREET SWEEPING	NS3	PAVING AND GRINDING OPERATIONS
SE8	SANDBAG BARRIER	NS6	ILLICIT CONNECTION/DISCHARGE
SE10	TEMPORARY DRAINAGE INLET PROTECTION	NS7	POTABLE WATER/IRRIGATION
		NS8	VEHICLE AND EQUIPMENT CLEANING
		NS9	VEHICLE AND EQUIPMENT FUELING
		NS10	VEHICLE AND EQUIPMENT MAINTENANCE
		NS15	DEMOLITION ADJACENT TO WATER
WIND EROSION CONTROL			
WE1	WIND EROSION CONTROL		
WASTE MANAGEMENT & MATERIAL POLLUTION CONTROL			
WM1	MATERIAL DELIVERY AND STORAGE		
WM2	MATERIAL USE		
WM3	STOCKPILE MANAGEMENT		
WM4	SPILL PREVENTION AND CONTROL		
WM5	SOLID WASTE MANAGEMENT		
WM9	SANITARY/SEPTIC WASTE MANAGEMENT		
WM10	LIQUID WASTE MANAGEMENT		



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 Call 2 Full Working Days in Advance

IMPROVEMENT PLANS - SANTEE COMMUNITY CENTER, CIP 2018-31

CONTRACTOR	INSPECTOR	DATE COMPLETED	CONSTRUCTION RECORD	REFERENCES	DATE	BY	REVISIONS	ACPTD	BENCH MARK THE BENCHMARK USED FOR THIS SURVEY IS GPS STATION "FP7" PER RECORD OF SURVEY 20986, BEING A STANDARD STREET SURVEY MONUMENT, M-10 WITH PUNCH ONLY. ELEVATION: 355.96 FEET FROM RGS 20986, FOR THE PURPOSES OF THIS SURVEY IT IS 356.05 FEET. DATUM: NAVD88	SCALE HORIZ: AS SHOW VERT: AS SHOW	DESIGNED BY SKC	DRAWN BY GPY	CHECKED BY EH	REVIEWED	BY	CITY OF SANTEE DEPARTMENT OF DEVELOPMENT SERVICES	CITY W.O. NO. CIP 2018-31	DRAWING NO. C1.12	SHEET X OF X
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