APPENDIX 0A

Pebble Beach Community Services District

BOD Reports, Resolutions, & Certifications

RESOLUTION NO. 26-09
PEBBLE BEACH COMMUNITY SERVICES DISTRICT

CERTIFYING REVISION NO.03 OF THE PEBBLE BEACH COMMUNITY SERVICES DISTRICT SEWER SYSTEM MANAGEMENT PLAN

-oOo-

WHEREAS, the Pebble Beach Community Services District owns a wastewater collection system, responsible for complying with regulatory requirements in operating and maintaining a wastewater collection system; and

WHEREAS, the State Water Resources Control Board requires wastewater collection system owners to develop and maintain a Sewer System Management Plan; and

WHEREAS, the State Water Resources Control Board requires wastewater collection system owners to update their Sewer System Management Plan every six years; and

WHEREAS, the State Water Resources Control Board requires re-certification of Sewer System Management Plan by the Board of Directors when significant updates are made; and

WHEREAS, on this date the Board of Directors has received and reviewed a report from the Principal Engineer identifying significant updates to the District's Sewer System Management Plan.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Pebble Beach Community Services District, as follows that:

1. After considering written staff report and verbal testimony, the Board certifies Revision No. 03 to the District's Sewer System Management Plan.

2. The Board authorizes the General Manager to execute certification documents and update State Water Resources Control Board records related Revision No. 03 of the District's Sewer System Management Plan.

PASSED AND ADOPTED by the Board of Directors of the Pebble Beach Community Services District, Pebble Beach, Monterey County, California, at a regular meeting held on **April 24, 2026,** by the following vote:

AYES: BOARD MEMBERS: Jeffrey B. Froke, Leo M. Laska, Peter B. McKee, Richard D. Verbanec

NOES: BOARD MEMBERS:

ABSENT: BOARD MEMBERS: Richard B. Gebhart

R D Verbanec

Richard D. Verbanec, Board President

ATTEST:

Nicholas R. Becker, Board Secretary

I hereby certify that the foregoing is a full, true and correct copy of Resolution ***No. 26-09 certifying Revision No. 03 of the Pebble Beach Community Services District Sewer System Management Plan*** *adopted by the* ***Board of Directors*** *of the* ***Pebble Beach Community Services District*** *at a regular meeting thereof held on* ***April 24, 2026.***

Nicholas R. Becker, Board Secretary

RESOLUTION NO. 20-10
PEBBLE BEACH COMMUNITY SERVICES DISTRICT

CERTIFY THE PEBBLE BEACH COMMUNITY SERVICES DISTRICT SEWER SYSTEM MANAGEMENT PLAN, REVISION No.2 FIVE YEAR UPDATE

-oOo-

WHEREAS, the Pebble Beach Community Services District owns a wastewater collection system, responsible for complying with regulatory requirements in operating and maintaining a wastewater collection system; and

WHEREAS, the State Water Resources Control Board requires wastewater collection system owners to develop and maintain a Sewer System Management Plan; and

WHEREAS, the State Water Resources Control Board requires wastewater collection system owners to update their Sewer System Management Plan every five years; and

WHEREAS, the State Water Resources Control Board requires re-certification of Sewer System Management Plan by the Board of Directors when significant updates are made; and

WHEREAS, on this date the Board of Directors has received and reviewed a report with conclusions from the District Engineer.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Pebble Beach Community Services District, as follows that:

1. After considering written staff report and verbal testimony, the Board certifies the Pebble Beach Community Service District Sewer System Management Plan, Revision No.2 Five Year Update.

2. The Board authorizes the General Manager to update State Water Resources Control Board records documenting the completion of the five year update and certification of the Pebble Beach Community Services District Sewer System Management Plan, Revision No.2.

PASSED AND ADOPTED by the Board of Directors of the Pebble Beach Community Services District, Pebble Beach, Monterey County, California, at a regular meeting held on **May 29, 2020,** by the following vote:

AYES: BOARD MEMBERS: Peter B. McKee, Jeffrey B. Froke, Richard D. Verbanec, Leo M. Laska

NOES: BOARD MEMBERS:

ABSENT: BOARD MEMBERS: Richard B. Gebhart

Peter B. McKee, Board President

ATTEST:

Mike Niccum, Board Secretary

RESOLUTION NO. 15-07
PEBBLE BEACH COMMUNITY SERVICES DISTRICT

CERTIFY THE PEBBLE BEACH COMMUNITY SERVICES DISTRICT SEWER SYSTEM MANAGEMENT PLAN, REVISION No.1 FIVE YEAR UPDATE

-oOo-

WHEREAS, the Pebble Beach Community Services District owns a wastewater collection system, responsible for complying with regulatory requirements in operating and maintaining a wastewater collection system; and

WHEREAS, the State Water Resources Control Board requires wastewater collection system owners to develop and maintain a Sewer System Management Plan; and

WHEREAS, the State Water Resources Control Board requires wastewater collection system owners to update their Sewer System Management Plan every five years; and

WHEREAS, the State Water Resources Control Board requires re-certification of Sewer System Management Plan by the Board of Directors when significant updateS are made; and

WHEREAS, on this date the Board of Directors has received and reviewed a report with conclusions from the District's Principal Engineer.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Pebble Beach Community Services District, as follows that:

1. After considering written staff report and verbal testimony The Board certifies the Pebble Beach Community Service District Sewer System Management Plan, Revision No.1 Five Year Update

2. The Board authorizes the General Manager to update State Water Resources Control Board records documenting the completion of the five year update and certification of the Pebble Beach Community Services District Sewer System Management Plan, Revision No.1.

PASSED AND ADOPTED by the Board of Directors of the Pebble Beach Community Services District, Pebble Beach, Monterey County, California, at a regular meeting held on **April 24, 2015,** by the following vote:

AYES:	BOARD MEMBERS:	Froke, Gebhart, Laska, McKee, Verbanec
NOES:	BOARD MEMBERS:	None
ABSENT:	BOARD MEMBERS:	None

ATTEST:

Richard B. Gebhart, Board President

Mike Niccum, Board Secretary

I hereby certify that the foregoing is a full, true and correct copy of a **Resolution No. 15-07** ***certifying the Pebble Beach Community Services District Sewer System Management Plan, Revision No.1 Five Year Update*** adopted by the Board of Directors of the Pebble Beach Community Services District at a regular meeting thereof held on **April 24, 2015.**

Mike Niccum
Board Secretary/General Manager

APPENDIX 01A

Pebble Beach Community Services District

SSMP Audit Report

Pebble Beach Community Services District

Sewer System Management Plan Audit Report

October 2025

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Section 1: Executive Summary

1.1 Purpose of the Audit Report

The purpose of this audit report is to present the findings from Pebble Beach Community Services District's (District) internal audit of its Sewer System Management Plan (SSMP). The audit evaluated the effectiveness and implementation of the SSMP, as well as the District's compliance with the requirements outlines in Attachment D of the Statewide Sanitary Sewer Systems General Order (WDR Order 2022-0103-DWQ). It also identified any deficiencies and necessary modifications to correct these deficiencies. Covering the period from May 3, 2022 to May 2, 2025, the audit provides results and recommendations intended to assist the District in preparing for the required SSMP update in 2026. This report will cover audit findings and recommended corrective actions, a statement that sewer system operators' input on the findings has been considered, and a proposed schedule for the Enrollee to address the identified deficiencies.

1.2 Audit Preparation and Considerations

This audit report was informed by the 2025 Sewer System Management Plan Internal Audit completed by the following PBCSD staff, including input from sewer system operators:

- Nicholas Becker, General Manager
- Christopher Simmons, Principal Engineer
- Nicholas Faro, Maintenance Manager
- Alayna Paxton, Environmental Compliance Coordinator

Section 2: Regulatory Background

On December 6, 2022, the State Water Resources Control Board adopted General Order No. 2022-0103-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (WDR).

The waste discharge requirements adopted December 6, 2022, effective June 5, 2023, WDR Order No. 2022-0103-DWQ specify that:

The Enrollee shall conduct an internal audit of its Sewer System Management Plan, and implementation of its Plan, at a minimum frequency of once every three years. The audit period must be conducted for the period after the end of the Enrollee's last required audit period. Within 6 months after the end of the required 3-year audit period (5/3/2022 – 5/2/2025), the Legally Responsible Official shall submit an audit report into the online CIWQS Sanitary Sewer System Database.

Audit reports submitted to the CIWQS Sanitary Sewer System Database will be viewable only to Water Boards staff.

The internal audit shall be appropriately scaled to the size of the system and the number of spills. The Enrollee's sewer system operators must be involved in completing the audit. At a minimum, the audit must:

- Evaluate the implementation and effectiveness of the Enrollee's Sewer System Management Plan in preventing spills;
- Evaluate the Enrollee's compliance with WDR Order No. 2022-0103-DWQ;
- Identify Sewer System Management plan deficiencies in addressing ongoing spills and discharges to waters of the State; and
- Identify necessary modifications to the Sewer System Management Plan to correct deficiencies.

The Enrollee shall submit a complete audit report that includes:

- Audit findings and recommended corrective actions;
- A statement that sewer system operators' input on the findings has been considered; and
- A proposed schedule for the Enrollee to address the identified deficiencies.

Section 3: Audit Findings and Corrective Actions

3.1 Methods of Evaluation

SSMP program compliance was evaluated through a comprehensive review of data and an assessment of each of the eleven required SSMP elements using an audit checklist.

To assess SSMP effectiveness, PBCSD staff analyzed performance charts detailing the number of sanitary sewer spill (spill) occurrences per year, spill rates per 100 miles of pipe per year, and net spill volume in gallons per 1,000 capita per year. These metrics were compared to results from the previous audit period (May 3, 2019 to May 2, 2022). In addition, a detailed list of spills that occurred during the current audit period was reviewed, including information on spill cause, spill volume, volume recovered, and spill category.

To assess SSMP compliance, the audit checklist was used to determine the degree to which each SSMP element meets the requirements of the 2022 WDR. Each element was rated according to the following compliance rating system:

- *Complies (C) – complies with all WDR objectives*
- *Substantially Complies (SC) – complies with most WDR objectives*
- *Partially Complies (PC) – complies with half of the WDR objectives*
- *Marginal Compliance (MC) – complies with less than half of the WDR objectives*
- *Out of Compliance – (NC) does not comply with WDR objectives*
- *Not Applicable – (N/A) is not applicable to this system*

For any element rated below *Complies*, additional discussion was provided to explain the reasoning for the rating and to outline recommended actions for achieving full compliance.

3.2 SSMP Effectiveness and Measures for Improvement

Data indicated that the current SSMP has been effective in reducing the overall spill volume compared to the previous audit period. The District successfully maintained its record of zero Category 1 spills and achieved a reduction in Category 2 spill occurrences, further demonstrating the program's effectiveness in minimizing spill volume and improving overall system performance. Further analysis of the SSMP and the preventative measures implemented during the audit period highlights numerous effective practices and positive outcomes resulting from the current SSMP and staff initiatives, as described in the "Program and System Improvements" section below.

Findings also indicated that root intrusion is the leading cause of spills in Pebble Beach. Addressing this issue is expected to be a key focus in the 2026 SSMP update, which may include revisions to Element 4 of PBCSD's SSMP to incorporate new initiatives aimed at mitigating root-related impacts. These efforts would build upon the progress already achieved through the use of seamless HDPE pipe, as detailed in the "Capital Improvements" section below.

3.3 Program and System Improvements

Throughout the course of this audit period, the District implemented several proactive measures to prevent and reduce sanitary sewer spills. These efforts included multiple capital improvement projects, increased sewer line cleaning activities, and the identification of key storm drain locations to be aware of in the event of a sanitary sewer spill.

Capital Improvements

In 2023, the District completed a capital improvement project that replaced approximately 5,200 feet of clay mainline with seamless HDPE pipe and rehabilitated two pump stations. Data from a recent systemwide CCTV project (conducted in 202) and insights gained throughout the 2023 sewer line replacement project informed the scope of the 2024-2025 sewer line replacement project, which replaced approximately 10,500 feet of clay pipe. Replacement projects for 2026 and beyond will continue to be informed by the 2020 CCTV project, future PBCSD-led CCTV efforts and analysis, and staff input.

Additionally, the District is currently in the design phase for the rehabilitation of two more pump stations, including its largest facility (Seal Rock Pump Station), which manages approximately sixty percent of the District's total wastewater flows.

Key Storm Drain Location

In November of 2024, the District collaborated with Pebble Beach Company staff to identify key storm drain locations to monitor in the event of a sanitary sewer spill. These locations were designated as "key" due to their proximity to sewer system assets and the potential for discharging wastewater to surface waters in the event that a spill is not fully contained and returned to the sanitary sewer system. Identifying these locations in advance helps reduce the risk of a spill escalating to a Category 1 event.

Line Cleaning and Certifications

During the audit period, PBCSD staff focused on enhancing sewer line cleaning and inspection efforts, including upgrades to related equipment. A new CCTV crawler camera was acquired to enable more thorough inspections and is now integrated with advanced data collection and management software. Additionally, one staff member obtained their NASSCO certification and PBCSD hired another employee who already held a NASSCO certification, further improving the quality and accuracy of inspection activities.

3.4 SSMP Compliance and Schedule to Address Deficiencies

Using the checklist in Table 3-1 below, PBCSD staff identified several areas requiring updates to ensure that the SSMP reflects current information and remains fully compliant with the 2022 WDR. While the review highlighted many program strengths, the internal audit also identified the following weaknesses and corresponding recommended corrective actions, and schedule to make corrective actions.

Table 3-1: Compliance Assessment, Corrective Actions, and Schedule

Each SSMP element below is evaluated in accordance with the requirements presented in Section D of WDR Order 2022-0103-DWQ using the following compliance rating system:

- *Complies (C) – complies with all WDR objectives*
- *Substantially Complies (SC) – complies with most WDR objectives*
- *Partially Complies (PC) – complies with half of the WDR objectives*
- *Marginal Compliance (MC) – complies with less than half of the WDR objectives*
- *Out of Compliance – (NC) does not comply with WDR objectives*
- *Not Applicable – (N/A) is not applicable to this system*

Element 1: Sewer System Management Plan Goal and Introduction		Rating
1.0	Is the goal of the Sewer System Management Plan included?	C
1.1	Is a general description of the local sewer system management program and discussion of plan implementation and updates?	C
1.2	Is a schedule for SSMP updates provided, including a schedule for conducting internal audits and milestones for incorporation of activities addressing prevention of sewer spills?	MC
Discussion: A record of previous SSMP updates and adoptions is provided, but no schedule for conducting internal audits or incorporation of preventative activities is included. **Corrective Actions:** In the required update due 5/2/2026, provide a schedule that includes future internal audits, plan updates, and milestones for incorporation of activities addressing prevention of sewer spills.		

1.3	Is a sewer system asset overview provided, including: • Location, including county(ies); • Service area boundary; • Population and community served; • System size, including total length in miles, length of gravity mainlines, length of pressurized (force) mains, and number of pump stations and siphons; • Structures diverting stormwater to the sewer system; • Data management systems; • Sewer system ownership and operation responsibilities between Enrollee and private entities for upper and lower sewer laterals; • Estimated number or percent of residential, commercial, and industrial service connections; • Unique service boundary conditions and challenge(s); and • Reference to an up-to-date map of its sanitary sewer system.	SC
Discussion: Population served and data management systems are not listed or described. Additionally, a sewer atlas map is provided, but it may be beneficial to reference the GIS maps PBCSD utilizes to manage sewer system assets. Additionally, this section should update the mentioned five full-time maintenance personnel to reflect the six full-time personnel currently employed. **Corrective Actions:** In the required SSMP update due 5/2/2026, provide information on population served and data management systems and update the number of full-time maintenance staff employed.		
Element 2: Organization		**Rating**
Is the name of the legally responsible official (LRO) provided and up to date?		SC
Discussion: Information about the LRO is provided but must be updated to reflect new General Manager and LRO, Nick Becker. **Corrective Actions:** In the required SSMP update due 5/2/2026, update LRO information to include Nick Becker as LRO.		
Are position titles, telephone numbers, and email addresses for management, administrative and maintenance positions responsible for implementing specific SSMP elements provided and up to date?		SC

Discussion: Position titles, telephone numbers, and email addresses for the appropriate responsible positions are provided, however, information for the General Manager, Associate Engineer, Environmental Compliance Coordinator and Board of Director titles require updating to reflect current statuses. **Corrective Actions:** In the required SSMP update due 5/2/2026, update the required information to reflect current titles, telephone numbers, and email addresses.	
Is information about organizational lines of authority provided?	SC
Discussion: This information is provided through the PBCSD Organization Chart, however, an updated version of the chart is required to reflect current lines of authority. **Corrective Actions:** In the required SSMP update due 5/2/2026, include the updated organization	
Is a chain of communication for reporting spills from receipt of complaint or other information, including the person responsible for reporting spills to the State and Regional Water Boards and other agencies, as applicable provided?	C
Element 3: Legal Authority	**Rating**
Are copies or electronic links provided for PBCSD's current sewer system use ordinances, service agreements and/or other legally binding procedures to demonstrate the enrollee possesses the legal authority to: • Prevent illicit discharges into its sanitary sewer system from inflow and infiltration (I&I); unauthorized stormwater; chemical dumping; unauthorized debris; roots; fats, oils, and grease; and trash, including rags and other debris that may cause blockages; • Collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure; • Require that sewer system components and connections be properly designed and constructed; • Ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned and/or operated by the Enrollee; • Enforce any violation of its sewer ordinances, service agreements, or other legally binding procedures; and • Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable.	C
Element 4: Operation and Maintenance Program	**Rating**

4.1	Does the SSMP provide up-to-date map(s) of the sanitary sewer system, and procedures for maintaining and providing State and Regional Water Board staff access to the map(s). The map(s) must show gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities within the sewer system service area boundaries.	C
4.2	Does the SSMP provide a scheduling system and a data collection system for preventative operation and maintenance activities conducted by staff and contractors and document data from inspection and maintenance activities including: • Inspection and maintenance activities; • Higher-frequency inspections and maintenance of known problem areas, including areas with tree root problems; • Regular visual and CCTV inspections of manholes and sewer pipes.	C
4.3	Is training provided on a regular basis both in-house and externally for sanitary sewer operations and maintenance staff and contractors covering: • The requirements of General Order 2022-0103-DWQ; • PBCSD's Spill Emergency Response Plan procedures and practice drills; • Skilled estimation of spill volume for field operators; and • Electronic CIWQS reporting procedures for staff submitting data.	C
4.4	Is an inventory of sewer system equipment provided, including the identification of critical replacement and spare parts?	C
Element 5: Design and Performance Provisions		**Rating**
5.1	Does the SSMP provide updated design criteria and construction standards and specifications for the construction, installation, repair, and rehabilitation of existing and proposed system infrastructure components, including but not limited to pipelines, pump stations, and other system appurtenances?	C
5.2	Does the SSMP provide procedures and standards for the inspection and testing of newly constructed, newly installed, repaired and rehabilitated system pipelines, pumps and other equipment and appurtenances?	C

Element 6: Spill Emergency Response Plan	Rating
Does the SSMP provide an up-to-date Spill Emergency Response Plan (SERP) to ensure prompt detection and response to spills to reduce volumes and collect information for prevention of future spills? The SERP must include procedures to: • Notify primary responders, appropriate local officials, and appropriate regulatory agencies of a spill in a timely manner; • Notify other potentially affected entities such as health agencies and water suppliers of spills that potentially affect public health or reach waters of the state; • Comply with the notification, monitoring and reporting requirements of General Order 2022-0103-DWQ, State law and regulations, and applicable Regional Water Board Orders; • Ensure that appropriate staff and contractors implement the SERP and are appropriately trained; • Address emergency system operations, traffic control and other necessary response activities; • Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system; • Minimize and remediate public health impacts on beneficial uses of waters of the State; • Remove sewage from the drainage conveyance system; • Clean the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters; • Implement technologies, practices, equipment and interagency coordination to expedite spill containment and recovery; • Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during and after a spill event; • Conduct post-spill assessments of spill response activities; • Document and report spill events as required by General Order 2022-0103-DWQ; and • Annually, review and assess effectiveness of the SERP, and update the plan as needed.	SC

Discussion: Annual reviews and assessments of SERP effectiveness are mentioned but have yet to be conducted. Additionally, pump stations 1 and 2 have been rehabilitated and the SERPs for these locations need to be updated to reflect these changes.

Corrective Actions: Ensure that reviews and assessments of SERP effectiveness are completed annually going forward by adding them to an internal calendar PBCSD uses to keep track of trainings, reviews and other regulatory requirements and tasks.

In the required SSMP update due 5/2/2026, update SERPs to reflect current pump station layouts.

Element 7: Sewer Pipe Blockage Control Program	Rating
Does the SSMP include procedures for the evaluation of PBCSD's service area to determine whether a sewer pipe blockage control program is needed to control fats, oils, grease, rags and debris? These procedures must include, at a minimum: • An implementation plan and schedule for a public education and outreach program that promotes proper disposal of pipe-blocking substances; • A plan and schedule for the disposal of pipe-blocking substances generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of substances generated within a sanitary sewer system service area; • The legal authority to prohibit discharges to the system and identify measures to prevent spills and blockages; • Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, best management practices requirements, recordkeeping and reporting requirements; • Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the fats, oils, and grease ordinance; • An identification of sanitary sewer system sections subject to fats, oils, and grease blockages and establishment of a cleaning schedule for each section; and • Implementation of source control measures for all sources of fats, oils, and grease reaching the sanitary sewer system for each section identified above.	C

	Element 8: System Evaluation, Capacity Assurance and Capital Improvements	Rating
8.0	Does the SSMP include procedures and activities for: • Routine evaluation and assessment of system conditions; • Capacity assessment and design criteria; • Prioritization of corrective actions; and • A capital improvement plan	C

8.1	Does the SSMP include procedures to: • Evaluate the sanitary sewer system assets utilizing the best practices and technologies available; • Assess the system conditions using visual observations, video surveillance and/or other comparable system inspection methods; • Utilize observations/evidence of system conditions that may contribute to exiting of sewage from the system which can reasonably be expected to discharge into a water of the State; • Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities; • Identify system assets vulnerable to direct and indirect impacts of climate change, including but not limited to: sea level rise; flooding and/or erosion due to increased storm volumes, frequency, and/or intensity; wildfires; and increased power disruptions; and • Identify and justify the amount (percentage) of its system for its condition to be assessed each year; o Prioritize the condition assessment of system areas that: o Hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies; o Are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas; o Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List.	NC

Discussion: It appears a portion of section 8.1 was cut off or accidentally omitted. This section previously held descriptions of maintenance activities that meet the requirements of section 8.1. Because of the missing content, this section has been marked as NC.

Corrective Actions: In the required SSMP update due 5/2/2026, revise this section to include the required information listed above.

8.2	Does the plan include procedures to identify system components that are experiencing or contributing to spills caused by hydraulic deficiency and/or limited capacity, including procedures to identify the appropriate hydraulic capacity of key system elements for: • Dry-weather peak flow conditions that cause or contribute to spill events; • The appropriate design storm(s) or wet weather events that cause or contribute to spill events; • The capacity of key system components; and • Identify the major sources that contribute to the peak flows associated with sewer spills. The capacity assessment must consider: • Data from existing system condition assessments, system inspections, system audits, spill history, and other available information; • Capacity of flood-prone systems subject to increased infiltration and inflow, under normal local and regional storm conditions; • Capacity of systems subject to increased infiltration and inflow due to larger and/or higher-intensity storm events as a result of climate change; • Increases of erosive forces in canyons and streams near underground and aboveground system components due to larger and/or higher-intensity storm events; • Capacity of major system elements to accommodate dry weather peak flow conditions, and updated design storm and wet weather events; and • Necessary redundancy in pumping and storage capacities.	C
8.3	Do the findings of the condition assessments and capacity assessments inform priorities for corrective actions? Prioritization must consider the severity of the consequences of potential spills.	C
8.4	Does the capital improvement plan include the following items: • Project schedules including completion dates for all portions of the capital improvement program; • Internal and external project funding sources for each project; and • Joint coordination between operation and maintenance staff, and engineering staff/consultants during planning, design, and construction of capital improvement projects; and Interagency coordination with other impacted utility agencies.	C

Element 9: Monitoring, Measurement and Program Modifications	Rating
Does the SSMP include an Adaptive Management section that addresses Plan-implementation effectiveness and the steps necessary for Plan improvement, including: • Maintaining relevant information, including audit findings, to establish and prioritize appropriate Plan activities; • Monitoring the implementation and measuring the effectiveness of each Plan Element; • Assessing the success of the preventive operation and maintenance activities; • Updating Plan procedures and activities, as appropriate, based on results of monitoring and performance evaluations; and • Identifying and illustrating spill trends, including spill frequency, locations and estimated volumes.	C
Element 10: Internal Audits	**Rating**
Does the SSMP include internal audit procedures, appropriate to the size and performance of the system, for PBCSD to comply with section 5.4 of General Order 2022-0103-DWQ?	C
Element 11: Communication Program	**Rating**

Does the SSMP include procedures for PBCSD to communicate with:
• The public for:
  • Spills and discharges resulting in the closures of public areas, or that enter a source of drinking water, and
  • The development, implementation and update of the SSMP, including opportunities for public input to SSMP implementation and updates
• Owners/operators of systems that connect into PBCSD's system, including satellite systems, for:
  • System operation, maintenance, and capital improvement related activities.
	C

APPENDIX 02-1

Pebble Beach Community Services District

PBCSD Organization Chart

PEBBLE BEACH COMMUNITY SERVICES DISTRICT

Organizational Chart, March 2026

Established 1982

BOARD OF DIRECTORS

Richard D. Verbanec, President
Peter B. McKee, Vice President
Jeffrey B. Froke, PhD, Director
Richard B. Gebhart, Director
Leo M. Laska, Director

- **Legal Counsel** — Michael Laredo
- **General Manager** — Nicholas R. Becker, P.E.
- **Independent Auditor** — Eide & Bailly, LLP

WASTEWATER COLLECTION & TREATMENT
RECYCLED WATER STORAGE & DISTRIBUTION
UNDERGROUNDING OF OVERHEAD UTILITIES
GARBAGE COLLECTION, DISPOSAL & RECYCLING
SUPPLEMENTAL LAW ENFORCEMENT
FIRE PROTECTION & EMERGENCY MEDICAL SERVICES

- **Maintenance Manager** — Nic Faro
  - **Maintenance Technician** — Kelvin Ellison
  - **Maintenance Technician** — Jesse Huddleson
  - **Maintenance Worker II** — Ryan Casey
  - **Maintenance Worker II** — Travis Edwards
  - **Maintenance Worker I or II** — Vacant
- **Principal Engineer** — Chris Simmons, P. E.
  - **Assistant Engineer** — Delbert Truong
  - **Environmental Compliance Coordinator** — Alayna Paxton
- **Chief Financial Officer** — Marianna Pimentel
  - **Administrative Coordinator** — Yuriana Nuñez
  - **Senior Accountant** — Nancy Johnson
  - **Accountant** — Nijesh Sthapit
  - **Accountant** — Mark Sullivan
- **CAL FIRE Unit Chief** — George Nuñez, Jr.
  - **Fire Prevention Battalion Chief** — Frank Espinoza
    - **5 Cost-Shared Fire Captains**
  - **Operations Battalion Chief** — Tom Bolyard, Dan Fry
    - **5 Cost-Shared Fire Captains**
  - **EMS Chief** — Mike DeLeo
  - **Training Chief** — Andrew Steele

APPENDIX 02-2

Pebble Beach Community Services District

PBCSD Staff Directory

PEBBLE BEACH COMMUNITY SERVICES DISTRICT STAFF ROSTER

Name	Title	Phone	Email
Nick Becker	General Manager	831-647-5605	nbecker@pbcsd.org
Chris Simmons	Associate Engineer	831-647-5609	csimmons@pbcsd.org
Delbert Truong	Assistant Engineer	831-647-5622	dtruong@pbcsd.org
Alayna Paxton	Environmental Compliance Coordinator	831-647-5603	agocke@pbcsd.org
Marianna Pimentel	Chief Financial Officer	831-647-5606	mpimentel@pbcsd.org
Nancy Kay Johnson	Senior Accountant	831-647-5601	njohnson@pbsd.org
Nijesh Sthapit	Accountant	831-647-5611	nsthapit@pbcsd.org
Mark Sullivan	Accounting Technician	831-647-5611	msullivan@pbcsd.org
Yuriana Nunez	Administrative Coordinator	831-647-5600	ynunez@pbcsd.org
Nic Faro	Maintenance Manager	831-647-5620	nfaro@pbcsd.org
Kelvin Ellison	Maintenance Technician	831-647-5621	kellison@pbcsd.org
Travis Edwards	Maintenance Technician	831-647-5621	tedwards@pbcsd.org
Ryan Casey	Maintenance Worker I	831-647-5621	rcasey@pbcsd.org
Jesse Huddleson	Maintenance Technician	831-647-5621	jhuddleson@pbcsd.org

APPENDIX 03-1

Pebble Beach Community Services District

PBCSD Ordinances

0122C-411a WMAM:JTM:dms 7/1/82 8c

ORDINANCE NO. 1

AN ORDINANCE ADOPTING ALL OF THE
EXISTING RESOLUTIONS, RULES, REGULATIONS AND
ORDINANCES OF THE PEBBLE BEACH SANITARY DISTRICT

PEBBLE BEACH COMMUNITY SERVICES DISTRICT

BE IT ORDAINED by the Board of Directors of the Pebble Beach Community Services District, Monterey County, California, that it does hereby adopt all of the resolutions, rules, regulations and ordinances of the Pebble Beach Sanitary District, a predecessor of the Pebble Beach Community Services District, and that this ordinance shall become effective immediately upon the expiration of thirty (30) days from its adoption;

President

ATTEST:

Secretary

(SEAL)

* * * * *

I hereby certify that the foregoing Ordinance was duly and regularly adopted at a meeting of the Pebble Beach Community Services District, Monterey County, California, held on the 2nd day of July, 1982, by the following vote:

AYES, and in favor thereof, Directors: Christin, Durant, Lord, Murphy, Strong

NOES, Directors: None

ABSENT, Directors: None

Secretary

ORDINANCE NO. 17

UNIFORM PLUMBING ORDINANCE OF THE
PEBBLE BEACH COMMUNITY SERVICES DISTRICT

AN ORDINANCE ADOPTING THE INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS UNIFORM PLUMBING CODE; REGULATING THE USE OF PUBLIC AND PRIVATE SEWERS, THE INSTALLATION AND CONNECTION OF BUILDING LATERALS, PROVIDING PERMITS AND FEES, PROVIDING PENALTIES FOR VIOLATION OF THE PROVISIONS HEREOF AND RESCINDING ORDINANCE NO. 9

The Board of the Pebble Beach Community Services District, Monterey County, California, does ordain as follows:

ARTICLE I
GENERAL PROVISIONS

Section 1.1 --- RULES AND REGULATIONS

The following rules and regulations respecting sewer construction and disposal of sewage and drainage of buildings, connection to the sewage system of the Pebble Beach Community Services District are hereby adopted, and all work in respect thereto shall be performed as herein required and not otherwise.

Section 1.2

Pursuant to the provisions of Section 6491.1 of the Health and Safety Code, State of California, the International Association of Plumbing and Mechanical Officials, Uniform Plumbing Code 1988 Edition, as modified by the amendments, deletions, and additions hereafter set forth, is adopted by the Board of the Community Services District, and is incorporated in this Ordinance by reference.

ARTICLE II
PART 1 OF
CODE ADMINISTRATION

This Ordinance shll be known as the Uniform Plumbing Code; it may be cited as such and will be referred to in this Ordinance as "The Code".

Section 20.1 page 1a of Part 1 of the Code entitled "Administrative Authority" is amended to read as follows:

Section 1.1---ADMINISTRATIVE AUTHORITY

Whenever the term "administrative authority" is used in this Code it shall be construed to mean General Manager of the Pebble Beach Community Services District as appointed by the Board of the District, or his authorized representative.

Section 20.3 page 2a of Part 1 of the Code entitled "Violations and Penalties" is amended by deleting the first sentence of the first paragraph therefrom and substituting therefor the following sentence:

Any person, firm, or corporation violating any of the provisions of this Code shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punishable by a fine of not to exceed $100 or by imprisonment in the County Jail for a period not to exceed one month, or by both such fine and imprisonment.

Section 20.7 pages 3a and 4a of Part 1 of the Code is amended by deleting therefrom the "Schedule of Fees" on page 4 of the Code and substituting therefor the following schedule:

SCHEDULE OF FEES

Basic permit fee.	$ 15.00
Inspection fee for new construction	75.00
Inspection fee for other than new construction.	35.00
Connection fee.	.600.00

The above fees may be changed by resolution of the District Board.

ARTICLE III
PART 2 OF CODE ADMINISTRATION

The following sections are added to the Code and entitled "Part 2 - Qualification and Duties of Plumbers".

PART 2
QUALIFICATION AND DUTIES OF PLUMBERS

Section 2.1 --- REGISTRATION OF PLUMBERS

Every plumber operating, conducting and carrying on a trade or business of, or performing plumbing work in the District must have a class C-36 Plumbing contractor license therefor issued by the Contractors State License Board of the State of California and shall register his name and place of business with the Secretary of the Pebble Beach Community Services District Board and pay to said Secretary a fee therefor amounting to $25.00 per calendar year or any portion thereof. At the time of initial payment the Secretary shall provide the plumber without cost a copy of the General Standards and Specifications of the District. It shall not be lawful for any person to carry on, conduct or operate in the trade or business of plumbing in the District unless he is a plumber registered as herein provided, and has filed a copy of insurance carried as set forth in Section 2.2 and 2.3.

Section 2.2 --- INSURANCE

The plumber shall carry public liability and property damage insurance to protect himself and the Pebble Beach Community Services District, its officers or agents, against liability imposed by law for damages on account of bodily injury including resulting death therefrom, suffered or alleged to have been suffered by any person or persons, other than employees of said plumber resulting directly or indirectly from the performance or execution of the work, and also to protect the Community Services District, its officers, employees or agents, against loss from liability imposed by law or damage to any property caused directly or indirectly by the installation of any lateral sewers.

Said public liability and property damage insurance shall be maintained by the plumber in full force and effect during the entire performance of the work in amounts not less than the following:

(1) Limit of Liability for injury or accidental death:

One person. $150,000

One accident. 250,000

(2) Limit of Liability for property damage:

One accident. $100,000

Aggregate liability for loss. . . . 150,000

Section 2.3 --- WORKMEN'S COMPENSATION

The plumber shall maintain adequate workmen's compensation insurance under the laws of the State of California for all labor employed by him or by any subcontractor under him who may come within the protection of such workmen's compensation laws and shall provide where applicable employers general liability insurance for the benefit of his employees and employees of any subcontractor under him not protected by such compensation laws.

Section 2.4 --- STREET OPENING

The plumber shall obtain the necessary bond and permit, for opening streets or for encroachments in streets, required by the Pebble Beach Community Services District, the County or the Pebble Beach Company and shall comply with existing Pebble Beach Community Services District, County and Pebble Beach Company regulations regarding backfill, paving or repaving.

Section 2.5 --- RESPONSIBILITY FOR DEFECTS AND GUARANTEE OF THE WORK PERFORMED

All plumbers shall be held strictly responsible for any and all acts of agents or employees done under this Ordinance by virtue of his or their registration. Upon being notified by the Administrative Authority of any defect arising therefrom in the plumbing system of a building or of any violation of this Ordinance, the person or persons having charge of said work shall immediately correct the same.

The plumber shall warrant and guarantee to correct any defects in an installed lateral sewer line, public sewer line or connection to a public sewer line, including settlement of backfill, for a period of one year after completion.

Section 2.6 --- INSURANCE AND BOND CERTIFICATES

The plumber shall provide proof of insurance and street opening bonds when required by submission of a certificate satisfactory to the District Board, prior to the commencement of any work.

Section 2.7 --- REGISTRATION EXCLUSIVE

Any registered plumber lending his registration certificate to any person or persons or taking out permits in his or their names at the office of the District for the use of any person or persons not regularly registered or who does not comply in every way with the requirements of this Ordinance shall have his or their permit suspended and revoked.

Section 2.8 --- LATERAL SEWER CONNECTION TO COLLECTING SEWER

Section 2.8 (a) -- Application for Installations of Wye Connection. An owner of real property, the agent of an owner, a builder or a plumber registered with the Board desiring to have a lateral sewer installed, repaired, or replaced, relocated or removed, shall make application to the District Manager to do the work. The owner will have his plumber install a Wye and 1/8 bend fitting in the collecting sewer to the satisfaction of the General Manager.

The application shall be in writing and shall correctly describe by lot and block or metes and bounds the property to be connected.

At the time of making an application the applicant shall designate the plumber duly registered by the District to arrange the work. 24 hours advance notice in writing shall be given the District of the time the connection is desired; however, the ultimate determination of the time is to be made by the

District.

The application shall be accompanied by a check payable to the Pebble Beach Community Services District, for the proper amount computed in accordance with the schedule in Section 20.7 of the Code.

Standard drawings showing lateral connections are provided in the District Standard Specifications and incorporated herein.

In the event a wye connection cannot be installed then the General Manager will recommend or advise an alternate method; a saddle or other suitable device acceptable to the District, to be installed by the owner.

Section 2.8 (b) -- Duties of Plumber During the Operation. The plumber laying the lateral shall be responsible for traffic control and public safety of the operation of installing the wye or saddle connection, and shall be responsible for complete excavating, shoring, if required, backfilling, compaction and repaving as required by the public agency at the location of the proposed connection.

The connection of the lateral to the wye and 1/8 bend shall be made by the plumber under the supervision of the General Manager, or his representative.

ARTICLE IV
CHAPTER 3 OF THE CODE

Section 319, page 36 of the Code entitled "Maintenance" is amended by the addition thereto of the following:

Maintenance of building sewers is the sole responsibility of the property owner.

All grease, oil and sand industrial interceptors shall be installed in accordance with Section 708 of the Code.

The plumber shall report to the Community Services District whenever he discovers any stoppage in the Public sewers. The District will remove said stoppage without cost to the property owners.

ARTICLE V
CHAPTER 11 OF THE CODE —— BUILDING SEWERS

Section 1101, page 85 of the Code entitled "Sewer Required" is amended by deleting Section 1101 and substituting therefor the following section:

Section 1101 - SEWER REQUIRED

(a) Every building in which plumbing fixtures are installed, and every premises having drainage piping thereon, shall have a connection to a public sewer. It shall be the responsibility of the applicant to pay for the facilities to deliver sewage to the main line.

(b) Every house or building requiring sewer service shall be separately and independently connected with the public sewer. No two separate owners of adjacent parcels shall be permitted to join on the use of the same building lateral.

(c) This Ordinance is not applicable to the construction of a public sewer where the public sewer must be extended to the premises to be served.

(d) A special permit from the Monterey County Health Department is required for the construction of private disposal systems. Methods and materials used in the construction of private disposal systems will be in accordance with applicable sections of the Code.

(e) On every lot or premises hereafter connected to a public sewer, all plumbing systems or parts thereof, on such lot or premises shall be connected with such public sewer.

Section 1102, pages 86 and 87 of the Code entitled "Damage to Public Sewer or Private Sewage Disposal System" is amended by deleting paragraph (b) and substituting therefor the following paragraph:

(b) No roof leaders, rain, surface or subsurface water, or swimming pools shall be connected to or discharged into any public sewer.

Section 1105, page 86 of the Code, entitled "Size of Building Sewers" is amended by deleting Section 1105 and substituting therefor the following section:

Section 1105 --- SIZE OF BUILDING SEWERS

The minimum size of any building sewer shall be determined or the basis of the total number of fixture units drained by such sewer in accordance with Tables No. 4-3 and 11-2, but in any event the minimum size shall not be less than 4-inches inside diameter.

Section 1120, entitled "Wye Branch and House Trap" is added to the Code, as follows:

Section 1120 --- WYE BRANCH AND HOUSE TRAP

Every house sewer shall include a two-way cleanout and overflow device in accordance with the Standard Specifications of the District.

A cast iron house trap must be placed on the house side of the cleanout. The overflow devices shall be installed in a level position at such location approved in advance by the General Manager. No check valves are allowed.

ARTICLE VI

Copies of the "Uniform Plumbing Code" 1988 edition and of this Ordinance are available for review at all times at the office of the Board of the Community Services District located at Forest Lake and Lopez Roads.

ARTICLE VII

Section 1

All ordinances and parts of ordinances insofar as they conflict with this ordinance are hereby repealed.

Section 2

This Ordinance shall be entered in the minutes of the Board, shall be posted in three public places in the District, to wit, the door of the office of the Board of the District, the Post Offices of Pebble Beach and Pacific Grove, California, and shall take effect upon expiration of one week after the date of the posting.

Section 3

This Ordinance shall be published once in the Monterey Peninsula Herald, a newspaper of general circulation published in the County of Monterey.

* * * * * * * * * *

Passed and adopted at a meeting of the Board of the Pebble Beach Community Services District, duly held on the 19th day of December 1988 by the following vote:

AYES: Durant, Sprenger, Hansen, Murphy, Strong

NOES: NONE

ABSENT: NONE

NORMAN B. HANSEN, PRESIDENT
BOARD OF DIRECTORS

(SEAL)

ATTEST:

BY
IVAN POSUCK
SECRETARY PRO TEM

ORD/17.D88

ORDINANCE NO. 18

AN ORDINANCE ESTABLISHING A FORMULA FOR DETERMINING SEWER CONNECTION FEES FOR THE PEBBLE BEACH COMMUNITY SERVICES DISTRICT

-oOo-

THE BOARD OF DIRECTORS OF THE PEBBLE BEACH COMMUNITY SERVICES DISTRICT DOES ORDAIN AS FOLLOWS:

1. Sewer Connection Fees. Pursuant to the provisions of Government Code §61621 and Health and Safety Code §5474, there is hereby established and levied upon all persons, firms or corporations making connection to a public sewer in the District, or a sewer flowing into a public sewer in the District, a sewer connection fee, the exact sum of which shall be determined annually by Resolution of the Board, or more frequently if this Board deems it appropriate, pursuant to the following formula:

Formula:

C = A/F x D x R

Where:

C = Connection Fee Per Equivalent Residential Unit

A = Total Current Value of All District Assets

F = District's Proportion ~~(2/3)~~ 1/3 AA 3/31/84 of Authorized Flows (gpd)

D = Average Daily Flow Per Capita (gpd)

R = Capita Per Residential Unit.

2. Computation of Flow and Units. a) The District Manager shall from time to time make a determination as to (i) the current value of District assets, (ii) the average daily flow per capita, and (iii) the capita per residential unit, based upon information available to him (e.g., the present information from the Wastewater Treatment Facility Design Criteria and the County Planning Depart-

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ment, which would now indicate that the average daily flow per capita is 100 gpd, that the average number of persons per residential unit in the District is 2.55, and that therefore the average daily flow per residential unit is 255).

b) Equivalent Residential Units, as the basic unit for determining the applicable connection fee, shall be as follows:

Use or Type of Improvement	Equivalent Residential Unit
Single family residence, apartment, townhouse or condominium unit, or other dwelling unit as defined by the Uniform Building Code	1.0
Guest House (without kitchen or kitchen facilities)	0.4
Hotel, motel or rental unit without kitchen facilities	0.4
Hotel, motel or rental unit with kitchen facilities	0.5
Restaurants and other eating establishments	1 unit per each 20 seats*
Cocktail lounge or bar	1 unit per each 30 seats*
Theater and meeting rooms	1 unit per each 50 seats*
All other uses	1 unit per each 24 fixture units (Uniform Plumbing Code)*

*(Note: Above the initial unit the fee shall be determined proportionately.)

//

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c) Whenever in the opinion of the District Manager, the application of the above-described method of determining sewer connection fees are grossly unreasonable or inappropriate, he may calculate an appropriate sewer connection fee, taking into account the anticipated wastewater flow and strength characteristics for the ~~structure~~ structure in question.

RA 3/21/89

3. Special Asset Fee. In addition to the above fee or charge for the privilege of connecting to the District's sewerage facilities, whenever a person, firm or corporation connects to or conveys sewage through a designated Special Asset of the District, being a sewer line or other facility assessed to or specially serving only a limited or designated area within the District boundaries, then a Special Asset Fee, multiplied by the number of equivalent residential units being connected, shall also be charged as part of the sewer connection fee, as follows:

Special Asset	Fee
Improvement Project Nos. 1, 2 and 3	$2,650.00

4. Resolution Establishing Fees. The Resolution of the Board, as specified in section 1 hereinabove, to be enacted annually or as otherwise deemed appropriate, shall adopt a Sewer Connection Fee per Equivalent Residential Unit, pursuant to the formula stated above. The Resolution shall also adopt appropriate fees for a) the cost of inspection of installation of the connection to the District system and b) the cost of a permit to make a physical connection to the District system. No connection to the District sewer system shall be permitted until all fees have been paid.

5. Building Permit Required. The sewer connection, inspection and permit fees, as established by Resolution, shall not be accepted

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until written evidence has been provided to the District that a building permit for the structure in question has been issued by the County of Monterey.

6. Conflicting Ordinances Repealed. All ordinances and resolutions or parts thereof that are in conflict with the terms of this ordinance, are hereby repealed; provided, however, that the sewer connection, inspection and permit fees established by Ordinance No. 17 shall remain in full force and effect until such time as the Board adopts by Resolution new fees to replace same pursuant to the provisions of this Ordinance.

7. Publication. Following adoption, this ordinance shall be published once in The Herald, a newspaper published in the County of Monterey and circulated in the District.

8. Effective Date. This ordinance shall take effect and be in force one (1) week after the date it is published in the newspaper.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of the Pebble Beach Community Services District duly held on March 31, 1989, by the following vote:

AYES: BOARD MEMBERS: Hansen, Durant, Strong, Murphy Sprenger

NOES: BOARD MEMBERS: None

ABSENT: BOARD MEMBERS: None

David Y. Sprenger
President of the Board

ATTEST:

Secretary of the Board

SEAL

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ORDINANCE NO. 19

AN ORDINANCE ESTABLISHING PROCEDURES AND CONTROLS FOR PRETREATMENT OF WASTEWATER PRIOR TO ITS ENTRY INTO THE DISTRICT WASTEWATER SYSTEM

-oOo-

THE BOARD OF DIRECTORS OF THE PEBBLE BEACH COMMUNITY SERVICES DISTRICT DOES ORDAIN AS FOLLOWS:

1. Procedures and Controls Established. The attached PBCSD Pretreatment Ordinance, establishing procedures and controls for pretreatment of wastewater prior to its entry into the District wastewater system, is hereby adopted, to read in its entirety as set forth on the attached twenty-nine (29) pages, marked "Exhibit A" and incorporated herein by this reference thereto.

2. Summary of Ordinance. This ordinance sets forth requirements for direct and indirect discharge into the wastewater system of the District. The ordinance is designed to protect the District's wastewater system and operating personnel, and to prevent introduction of pollutants into the wastewater system which will pass through the system, inadequately treated, or otherwise be incompatible with the system. The ordinance provides for the regulation of direct and indirect discharges to the wastewater system through the issuance of permits to certain non-domestic users and through enforcement of general requirements for the other users, authorizes monitoring and enforcement activities, requires user reporting, assumes that existing customer's capacity will not be preempted, and provides for the setting of fees for the equitable distribution of costs resulting from the program

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established herein. A true and certified copy of the full text of this ordinance is available for inspection at the District offices.

3. Publication. Following adoption, this ordinance shall be published once in The Herald, a newspaper published in the County of Monterey and circulated in the District.

4. Effective Date. This ordinance shall take effect and be in force one (1) week after the date it is published in the newspaper.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of the Pebble Beach Community Services District duly held on March 29, 1991, by the following vote:

AYES: BOARD MEMBERS: Hendrick, Murphy, O'Brien, Sprenger, Strong

NOES: BOARD MEMBERS: None

ABSENT: BOARD MEMBERS: None

President of the Board
George W. Murphy

ATTEST:

Secretary of the Board
Richard Andrews

//

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3/28/91

NC014

PEBBLE BEACH COMMUNITY SERVICES DISTRICT PRETREATMENT ORDINANCE

Prepared for

PEBBLE BEACH COMMUNITY SERVICES DISTRICT

MARCH 1991

Prepared by

ENGINEERING-SCIENCE, INC.

DESIGN · RESEARCH · PLANNING

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OFFICES IN PRINCIPAL CITIES

ES ENGINEERING-SCIENCE

Pebble Beach Community Services District

Pretreatment Ordinance

MARCH 1991

Members of the Board of Directors

George W. Murphy, President

Janice M. O'Brien

David R. Hendrick

David F. Sprenger

John L. Strong

General Manager

Richard Andrews

District Engineer

Vinod M. Badani, Engineering-Science, Inc.

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Section 1 - General Provisions

1.1 Purpose and Policy

This ordinance sets forth uniform requirements for direct and indirect discharges into the wastewater system for Pebble Beach Community Services District and enables the District to comply with all applicable State and Federal laws required by the Clean Water Act of 1977 as amended by the Water Quality Act of 1987 and the General Pretreatment Regulations (40 CFR, Part 403).

The objectives to this ordinance are:

(a) To prevent the introduction of pollutants into the wastewater system which will interfere with the operation of the system or contaminate the resulting sludge;

(b) To protect the District's wastewater system and operating personnel, and to prevent the introduction of pollutants into the wastewater system which will pass through the system, inadequately treated, or otherwise be incompatible with the system;

(c) To improve the opportunity to recycle and reclaim wastewaters and sludges from the system; and

(d) To provide for equitable distribution of the cost of the municipal wastewater system.

This ordinance provides for the regulation of direct and indirect discharges to the wastewater system through the issuance of permits to certain non-domestic users and through enforcement of general requirements for the other users, authorizes monitoring and enforcement activities, requires user reporting, assumes that existing customer's capacity will not be preempted, and provides for the setting of fees for the equitable distribution of costs resulting from the program established herein.

This ordinance shall apply to the Pebble Beach Community Services District and the persons outside the District who are, by contract or agreement with the District, Users of the Wastewater System. Except as otherwise provided herein, the General Manager shall administer, implement, and enforce the provisions of this ordinance.

1.2 Definitions

Unless the context specifically indicates otherwise, the following terms and phrases, as used in this ordinance, shall have the meanings hereinafter designated:

(1) Act or "the Act". The Federal Water Pollution Control Act, also known as the Clean Water Act (CWA), as amended, 33 U.S.C. 1251, et.seq.

(2) Authorized Representative of the Industrial User. An authorized representative of an Industrial User may be: (1) A principal executive officer of at least the level of vice-president, if the Industrial User is a corporation; (2) A general partner or proprietor, if the industrial User is a

partnership or proprietorship, respectively; (3) A duly authorized representative of the individual designated above if such representative is responsible for the overall operation of the facilities from which the indirect discharge originates.

(3) Biochemical Oxygen Demand (BOD). The quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure, five (5) days at 20° centigrade (c) expressed in terms of weight and concentration (milligrams per liter (mg/l)).

(4) Building Sewer. A sewer conveying wastewater from the premises of a User to the POTW.

(5) Bypass. The intentional diversion of waste streams from any portion of a treatment facility.

(6) Categorical Standards. National Categorical Pretreatment Standards or Pretreatment Standard.

(7) Chemical Oxygen Demand (COD). The measure of chemically decomposable material in domestic or industrial wastewaters as represented by the oxygen utilized as determined by the appropriate procedure described in Standard Methods.

(8) Composite Sample. A combination of no fewer than 8 individual samples obtained at equal time intervals for 24 hours or for the duration of the discharge, whichever is shorter.

(9) Discharge. The intentional or unintentional release of a substance into this District's portion of the POTW.

(10) Discharge Limit. A limit on the amount and/or concentration of a pollutant which is discharged to the POTW. This limit is specific for a controlled pollutant. The limit may be expressed as milligrams per liter (mg/l) or similar appropriate units, or as a mass or specific amount per unit of time, or as mass per unit volume or mass of material processed.

(11) District. Pebble Beach Community Services District.

(12) Environmental Protection Agency, or EPA. The U.S. Environmental Protection Agency, or where appropriate the term may also be used as a designation for the Administrator or other duly authorized official of said agency.

(13) Existing Source. Any source which is not a new source or a new indirect discharger.

(14) Food Service Facility. Any facility involved with the preparation and/or sale of food. This includes but is not limited to: restaurants, bakeries, grocery stores and cafeterias.

(15) Grease. All fat, grease, oil, wax or other material determined as such by EPA Method 413.1 of animal, vegetable, petroleum or mineral origin.

(16) Grab Sample. Any individual sample collected in less than 15 minutes on a one-time basis.

(17) Hauler. A person who transports wastewater off-site by other than POTW conveyance system, to the POTW for treatment and disposal.

(18) Hazardous Substance. As listed in 40 CFR Part 300.6 (1988):

Hazardous Substance, as defined by section 101(14) of CERCLA, means:

Any substance designated pursuant to section 311(b) (2) (A) of the CWA; any element, compound, mixture, solution, or substance designated pursuant to section 102 of CERCLA; any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (but not including any waste the regulation of which under the Solid Waste Disposal Act has been suspended by an Act of Congress); any toxic pollutant listed under section 307(a) of the Clean Water Act (CWA); any hazardous air pollutant listed under section 112 of the Clean Air Act; and any imminently hazardous chemical substance or mixture with respect to which the Administrator has taken action pursuant to section 7 of the Toxic Substances Control Act. The term does not include petroleum, including designated as a hazardous substance in the first sentence of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).

(19) Hazardous Waste. A hazardous waste as defined in 40 CFR Part 261.3.

(20) Holding Tank Waste. Any waste from holding tanks such as vessels, chemical toilets, campers, trailers, septic tanks, and vacuum-pump tank trucks.

(21) Indirect Discharge. The discharge or the introduction of regulated pollutants from any wastewater source into the POTW (including holding tank waste discharged into the POTW).

(22) Industrial User. A source of Indirect Discharge of regulated wastes which does not necessarily constitute a "discharge of pollutants" under regulations issued pursuant to section 402, of the Act. (33 U.S.C. 1342).

(23) Industrial Wastewater. Any indirect discharge to the POTW of regulated wastes.

(24) Industrial Wastewater Discharge Permit (PERMIT). A written authorization or contract issued by the District which allows the discharge to the POTW of industrial wastewater containing regulated wastes controlled by this Ordinance.

(25) Interference. The inhibition or disruption of the POTW treatment processes or operations which contributes to a violation of any requirements of the District's. The term includes prevention of sewage sludge use or disposal by the POTW in accordance with 405 of the Act, (33 U.S.C. 1345) or any criteria, guidelines, or regulations developed pursuant to the Solid Waste Disposal Act (SWDA), the Clean Air Act, the Toxic Substances Control Act, or more stringent state criteria (including those contained in any State sludge management plan prepared pursuant to Title IV of SWDA) applicable to the method of disposal or use employed by the POTW.

(26) National Categorical Pretreatment Standard or Pretreatment Standard. Any regulation containing pollutant discharge limits promulgated by the EPA in accordance with Section 307(b) and (c) of the Act (33 U.S.C. 1347) which applies to a specific category of Industrial Users.

(27) National Prohibitive Discharge Standard or Prohibitive Discharge Standard. Any regulation developed under the authority of 307(b) of the Act and 40 CFR, Section 403.5.

(28) National Pollution Discharge Elimination System (NPDES) Permit. A permit issued pursuant to section 402 of the Act (33 U.S.C. 1342).

(29) New Source. Any source, the construction of what is commenced after the publication of proposed regulations prescribing a section 307(c) (33 U.S.C. 1317) Categorical Pretreatment Standard which will be applicable to such source, if such standard is thereafter promulgated within 120 days of proposal in the Federal Register. Where the standard is promulgated later than 120 days after the proposal, a new source means any source, the construction of which is commenced after the date of promulgation of the standard.

(30) Operator. One who operates a business.

(31) Owner. The discharger, user, or permittee.

(32) Pass-Through. A discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit including an increase in the magnitude or duration of a violation.

(33) Permittee. A USER' who has been issued an Industrial Wastewater Discharge Permit.

(34) Person. Any individual, partnership, copartner-ship, firm, company, corporation, association, joint stock company, trust, estate, governmental entity or any other legal entity, or their legal representatives, agents or assigns. The masculine gender shall include the feminine, the singular shall include the plural where indicated by the context.

(35) pH. The negative logarithm (base 10) hydrogen ion concentration expressed in moles per liter of solution.

(36) Pollutant. Something that causes pollution, including but not limited to any dredged point, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discharged equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into the POTW.

(37) Pollution. The man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water.

(38) Pretreatment or Treatment. The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater to a less harmful state prior to, or in lieu of discharging or otherwise introducing such pollutants into a POTW. The reduction or alteration can be obtained by physical, chemical or biological processes, or process changes other means, except as prohibited by 40 CFR Section 403.6(d) by dilution as a substitute for pretreatment.

(39) Pretreatment Requirements. Any substantive or procedural requirement related to pretreatment, other than a National Pretreatment Standard imposed on an industrial User.

(40) Publicly Owned Treatment Works (POTW). A treatment works as defined by section 212 of the Act, (33 U.S.C. 1292) which is owned in this instance by the District. This definition includes any sewers that convey wastewater to the POTW Treatment Plant, but does not include pipes, sewers or other conveyances not connected to a facility providing treatment. For the purposes of this ordinance, "POTW" shall also include any sewers that convey wastewaters to the POTW from persons outside the District who are, by contract or agreement with the District, users of the District's POTW.

(41) POTW Treatment Plant. That portion of the POTW designed to provide treatment to wastewater which is owned by Carmel Area Wastewater District and which by agreement with this District has reserved one-third of the POTW capacity for the treatment of wastewater generated in this District.

(42) Representative Sample. A sample portion of material or wastestream that is as nearly identical in content and consistency as possible to that in the material or wastestream being sampled.

(43) Shall, Will and May. Shall and will are mandatory; may is permissive.

(44) Slug Load. Any pollutant released in a discharge at a flow rate and/or pollutant concentration which will cause interference or upset of the POTW; or, any discrete sample the concentration of which exceeds five times the discharge limit.

(45) Solid Waste. Any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or containing gaseous materials resulting from industrial, commercial, mining, and agricultural operations, and from community activities.

(46) State. State of California.

(47) Storm Water. Any flow occurring during or following any form of natural precipitation and resulting therefrom.

(48) Suspended Solids (TSS). The total suspended matter that floats on the surface of, or is suspended in, water, wastewater or other liquids.

(49) General Manager. The person designated by the District to manage the operation of the POTW within the District and who is charged with certain duties and responsibilities by this Article, or his duly authorized representative.

(50) Toxic Pollutant. Any pollutant or combination of pollutants listed as toxic in regulations promulgated by the Administrator of the Environmental Protection Agency under the provision of CWA 307(a) or other Acts.

(51) Upset. An exceptional incident in which there is unintentional and temporary noncompliance with discharge limits because of factors beyond the reasonable control of the User.

(52) USC. United States Code.

(53) User. Any person or Industrial User who contributes, causes or permits the discharge of wastewater into the District's POTW.

(54) Wastewater. The liquid and water-carried industrial or domestic wastes from dwellings, commercial buildings, industrial facilities, and institutions, together with any groundwater, surface water, and storm water that may be present, whether treated or untreated, which is contributed into or permitted to enter the POTW.

1.3 Superseding Previous Regulations

This Wastewater Ordinance, as adopted 29 March 1991, shall supersede all previous regulations and policies of the District governing items covered in this Ordinance.

1.4 District's Right of Revision

The District reserves the right to establish by ordinance more stringent limitations or requirements on discharges to the wastewater disposal system if deemed necessary to comply with the objectives presented in Section 1.1 of this Ordinance.

1.5 Reference to Plumbing Ordinance

All plumbing ordinances shall remain in full force and effect, and nothing contained herein shall be construed as to waive any requirements contained therein.

Section 2 - Regulations

2.1 Regulated Wastes

2.1.1 General Discharge Prohibitions

No User shall discharge or cause to be discharged to the District's sewerage systems, or to any public sewer that directly or indirectly connects to the District's sewerage system, any waste which will interfere with the operation or performance of the POTW and may have an adverse or harmful effect on sewers, maintenance personnel, personnel or equipment, treatment plant processes or the quality of treatment plan effluent or residue, public or private property, or wastes which may otherwise endanger the public, the environment, or create a public nuisance. No User shall discharge or cause to be discharged to the District's sewerage systems, or to any public sewer that directly or indirectly connects to the District's sewerage systems, any wastes which adversely affect water reclamation processes or the quality of reclaimed water, cause or contribute to a violation of any National Pollutant Discharge Elimination System (NPDES) requirements, or place the District in noncompliance with any of the statutory authorities listed in Title 40, Code of Federal Regulations (CFR), whether or not the User is subject to National Categorical Pretreatment Standards or any other National, State, or local Pretreatment Standards or Requirements.

No User shall discharge or cause to be discharged to a public sewer, which directly or indirectly connects to the District's sewerage systems, the following wastes or wastes in quantities or concentrations in excess of the following restrictions:

(a) Any liquids, solids or gases which by reason of their nature or quantity are, or may be, sufficient either alone or by interaction with other substances to cause fire or explosion or be injurious in any other way to the sewerage system, the POTW, or to the operation of the POTW. This includes but is not limited to wastestreams with a closed cup flashpoint of less than 104°F or 60 °C using the test methods specified in 40 CFR 261.21. At no time, shall two successive readings on an explosion hazard meter, at the point of discharge into the system or at any point in the system be more than ten percent (10%) nor any single reading over twenty percent (20%) of the Lower Explosive Limit (LEL) of the meter. Prohibited materials include, but are not limited to, gasoline, kerosene, naphtha, benzene, toluene, xylene, ethers, alcohols, ketones, aldehydes, solvent, fuel oil, peroxides, chlorates, perchlorates, bromates, carbides, hydrides and sulfides and any other substances which the District, the State or EPA has notified the User is a fire hazard or a hazard to the system.

(b) Solid or viscous substances which may cause obstruction to the flow in a sewer or other interference with the operation of the wastewater treatment facilities such as, but not limited to: grease, any garbage or waste, other

than domestic wastewater, that is not ground sufficiently to pass through a 3/8 inch screen, dead animals, animal guts or tissues, paunch manure, bones, hair, hides or fleshing, entrails, whole blood, feathers, offal, ashes, cinders, sand, spent lime, stone or marble dust, metal, glass, straw, industrial process shavings, diatomaceous earth, grass clippings, rags, spent grains, spent hops, wood, plastics, tar, asphalt residues, mud, or glass grinding wastes or polishing wastes, paper dishes, paper cups, milk containers or other similar paper products whole or ground or materials which tend to solidify in the sewer and obstruct wastewater flow.

(c) Any wastewater having a pH less than 6.0, a pH greater than 8.5, or having any other corrosive or detrimental characteristics capable of causing damage or hazard to the sewerage system or to structures, equipment, and/or personnel of the POTW.

(d) Any wastewater containing toxic or poisonous solids, liquids or gas pollutants in sufficient quantity, either singly or by interaction with other pollutants, to injure or interfere detrimentally with any wastewater treatment process, constitute a hazard to humans, animals, or the environment, create a toxic effect in the receiving waters of the POTW, cause a public nuisance, cause any hazardous condition to occur in the sewerage system, or to exceed the limitation set forth in a Categorical Pretreatment Standard. A toxic pollutant shall include but not be limited to any pollutant identified pursuant to Section 307(a) of the Act.

(e) Any wastewater containing toxic pollutants which result in the presence of toxic gases, vapors or fumes within the POTW and/or the sewerage system in a quantity that may cause acute worker health and safety problems.

(f) Any waste containing excessive quantities or concentrations as defined by the General Manager of petroleum or mineral based cutting oils, commonly called soluble oil which form persistent water emulsions.

(g) Any waste containing excessive quantities or concentrations which result in the clogging or plugging of the collection system or as defined by the General Manager of dispersed biodegradable oils, fats, and greases, such as lard, tallow or vegetable oil.

(h) Any wastes containing excessive quantities or concentrations of the following parameters: iron, boron, cyanide, chromium, phenols, plastic resins, copper, nickel, zinc, lead, mercury, cadmium, selenium, silver, arsenic; or any other materials toxic to humans, animals, the local environment or to biological wastewater treatment processes.

(i) Any noxious or malodorous liquids, gases, or solids which either singly or by interaction with other wastes are sufficient to create a public nuisance or hazard to life or are sufficient to prevent entry into the sewers for maintenance and repair.

(j) Any substance which may cause the POTW's effluent or any other product of the POTW as residues, sludges, or scums, to be unsuitable for reclamation and reuse or to interfere with the reclamation process. In no case, shall a substance discharged to the POTW cause the POTW to be in non-compliance with sludge use or disposal criteria, guidelines or regulations developed under Section 405 of the Act; any criteria, guidelines, or regulations affecting sludge use of disposal developed pursuant to the Solid Waste Disposal Act, the Clean Air Act, the Toxic Substances Control Act, or State criteria applicable to the sludge management method being used.

(k) Any substance which will cause the POTW to violate its NPDES and/or State Disposal System Permit or the receiving water quality standards.

(l) Any wastewater with objectionable color not removed in the treatment process, producing discoloration of the POTW's effluent such as, but not limited to, dye wastes and vegetable tanning solutions.

(m) Any wastewater having a temperature of 60°C (140°F) or higher, or which may cause the temperature of the treatment plant influent to exceed 40°C (104°F).

(n) Any wastes with a concentration of chlorine in excess of 10 mg/L.

(o) Any waste containing excessive quantities or concentrates of toxic aromatic hydrocarbons, chlorinated hydrocarbon or organic phosphorous-type compounds.

(p) Any waste containing substances that may precipitate, solidify, gel, polymerize or become viscous under conditions normally found in the sewerage system.

(q) Any garbage or waste, other than domestic wastewater, that is not ground sufficiently to pass through a 3/8 inch mesh screen.

(r) Any waste containing excessive quantities or concentrations [as defined by the General Manager] of detergents, surface active agents, or other substances, which may cause foaming in the wastewater system.

(s) Any waste containing excessive quantities or concentrations of fluorides, sulfates, borates or any other materials that can pass through treatment facilities and degrade water quality or limit reuse of the wastewater.

(t) Any waste containing excessive quantities or concentrations, as defined by the General Manager, of ammonia.

(u) Any waste containing excessive quantities or concentrations, as defined by the General Manager, of cyanide.

(v) Any waste containing excessive quantities or concentrations, as defined by the General Manager, of undissolved or dissolved solids.

(w) Any waste containing excessive quantities or concentrations, as defined by the General Manager, of BOD, COD, or other oxygen demanding substances.

(x) Any waste containing excessive quantities or concentrations, as defined by the General Manager, of mercaptans, sulfides, phenols, or any strongly odorous material or material tending to create odors.

(y) Any wastes containing dissolved sulfides above a concentration of 0.1 mg/L or wastes which contribute to excessive sulfide production, as defined by the General Manager.

(z) Any amount of Hazardous Substance in excess of those defined in Section 1.2 of this Ordinance.

(aa) Any hazardous waste discharged to any portion of the POTW or treatment plant by truck, rail or dedicated pipe line.

(ab) Any pollutants, including oxygen demanding pollutants (BOD, etc.) released at a flow rate and/or pollutant concentration which a User knows or has reason to know will cause Interference to the POTW. In no case shall a slug load have a flow rate or contain concentration or qualities or pollutants that exceed for any time period longer than fifteen (15) minutes more than five (5) times the average twenty-four (24) hour concentration, quantities, or flow during normal operation.

(ac) Any wastewater containing any radioactive wastes or isotopes of such half life or concentration as may exceed limits established by the General Manager in compliance with applicable State or Federal regulations.

(ad) Any wastewater which causes a hazard to human life or creates a public nuisance.

When the General Manager determines that a User(s) is contributing to the POTW, any of the above enumerated substances in such amounts as to interfere with the operation of the POTW, the General Manager shall: (1) Advise the User(s) of the impact of the discharge on the POTW: and (2) Develop effluent limitations for such User to correct the Interference with the POTW.

The General Manager shall, from time to time, establish quantitative or other limitations applicable to industrial waste discharges when in his judgment it is necessary to protect the District's wastewater system or to be in compliance with state or local law or Federal Regulations. Such limitations shall apply at the industrial wastewater monitoring facility prior to mixing with domestic wastewaters. Wastewater discharges in excess of the limits established by the General Manager or any state law or applicable Federal Pretreatment Standards shall constitute excessive concentrations or quantities prohibited by this Section.

The General Manager shall establish quantitative limitations for users which, because of their location, quantity or quality of discharge, can degrade the quality of wastewater treatment plant effluent or residue to a level that prevents or inhibits efforts to reuse or dispose of the water or residue or causes any unusual operation or maintenance problems in the sewerage system.

2.1.2 Disposal of Vehicle-Transported Liquid Wastes to the Sewerage System

No person shall discharge or cause to be discharged any wastes from septic tanks, seepage pits, cesspools, chemical toilets or other approved wasteholding devices, any industrial liquid wastes or any other liquid wastes from a vacuum pumping truck or other liquid transport vehicles, directly or indirectly to the District's sewerage facilities. Except however, during emergency operations or maintenance of the wastewater collection system, wastewater may be transported from inoperative sections of the system to operative sections.

2.1.3 Medical and Infectious Wastes

No person shall discharge solid wastes from hospitals, clinics, offices of medical doctors, dentists, mortuaries, morgues, long term health care, medical laboratories or other medical facilities to the POTW including, but not limited to hypodermic needles, syringes, instruments, utensils or other paper and plastic items of a disposal nature, or wastes excluded by other provisions of this Ordinance.

2.1.4 Prohibition of Dilution and Excessive POTW Hydraulic Loading

No user shall dilute and/or cause excessive POTW hydraulic loading problems; including but not limited to:

(1) Any water added for the purpose of diluting wastes which would otherwise exceed maximum concentration limits.

(2) Any rain water, storm water runoff, groundwater, street drainage, roof drainage, yard drainage, water from yard fountains, ponds, swimming pools, lawn sprays or uncontaminated water except where prior approval for such discharge is given by the General Manager.

2.2 Prohibition of Bypass

Bypass of untreated industrial wastewater to the sewer is prohibited. The General Manager may take enforcement action against the User for bypass, unless:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which

occurred during normal periods of equipment downtime or preventative maintenance;

(3) The Permittee submitted notices as required under Section 5.6 of this Ordinance.

The General Manager may approve an anticipated bypass, after considering its adverse affects, if the General Manager determines that it will meet the conditions listed above.

2.3 Slug Loading

All Users shall prevent discharge of slug loads into the POTW of prohibited, hazardous or other waste material which are regulated through this Ordinance. Such protection shall be provided and maintained at the User's expense. Detailed plans shall be submitted to the General Manager for review. No User shall commence discharge to the POTW without accidental discharge protection facilities or procedures.

2.4 Accidental Discharges

Each User shall provide protection from accidental discharge of prohibited materials or other substances regulated by this Ordinance. Facilities to prevent accidental discharge of prohibited materials shall be provided and maintained at the owner or User's own cost and expense. Detailed plans showing facilities and construction of the facility. No User who commences discharge to the POTW after the effective date of this ordinance shall be permitted to introduce pollutants into the system until accidental discharge procedures have been approved by the District. Review and approval of such plans and operating procedures shall not relieve the industrial User from the responsibility to modify the User's facility as necessary to meet the requirements of this Ordinance.

In the case of an accidental discharge, bypass, upset, spill, or slug load, which may endanger people, the environment, and/or the POTW, it is the responsibility of the User to notify the District within 24 hours from the time the permittee becomes aware of the incident. The notification shall include location of discharge, type of waste, concentration and volume, and corrective actions.

2.4.1 Written Notice

Within five (5) days following an accidental discharge; the User shall submit to the General Manager a detailed written report describing the cause of the discharge and the measures to be taken by the User to prevent similar future occurrences. Such notification shall not relieve the User of any expense, loss, damage, or other liability which may be incurred as a result of damage to the POTW, or any other damage to person or property; nor shall such notification relieve the User of any fines, civil penalties, or other liability which may be imposed by this article or other applicable law.

2.4.2 Notice to Employees

A notice shall be permanently posted on the User's bulletin board or other prominent place advising employees whom to call in the event of a discharge.

Employers shall insure that all employees who may cause or suffer such a dangerous discharge to occur are advised of the emergency notification procedure.

2.5 Federal Categorical Pretreatment Standards

Upon the promulgation of the Federal Categorical Pretreatment Standards for a particular industrial categorical, the Federal Standard, if more stringent than limitations imposed under this Ordinance for sources in that subcategory, shall immediately supersede the limitations imposed under this Ordinance. The General Manager shall notify all affected Users of the applicable reporting requirements under 40 CFR, Section 403.12.

2.6 Specific Pollutant Limitations

The amount and nature of allowed discharges for each Categorical Industrial User will be specified on the Permit. Each Categorical Industrial User shall not exceed the Federal Standards established by the EPA in accordance with the Clean Water Act of 1987 as defined in Section 1.2 of this Ordinance. Categorical Users currently discharging wastewater in excess of these standards shall limit the discharges to conform to the categorical standards referenced above, within 180 days of the effective date of this Ordinance using Best Available Technology (BAT) methods as established by the EPA. A User can request an extension of up to six months by demonstrating the needs.

2.7 State Requirements and Limitations

State requirements and limitations on discharges shall apply in any case where they are more stringent than Federal requirements and limitations or those is this ordinance.

SECTION 3 - FEES

3.1 Purpose

It is the purpose of this section to provide for the recovery of costs from Users of the District's wastewater disposal system for the implementation of the program established herein. The applicable charges or fees shall be as set forth by resolution of the Board of Directors.

3.2 Charges and Fees

The following fees shall be established by the Board of Directors:

a. Fees for monitoring, inspections and surveillance procedures including consultant costs. Once per month sampling is required; if sample indicates compliance, any additional sampling in that month should not be at the cost of the User if it also indicates compliance.

b. Fees for reviewing accidental discharge procedures and construction including consultant cost.

c. Fees for permit applications.

These fees relate solely to the matters covered by this Ordinance and are separate from all other fees chargeable by the District.

SECTION 4 - DISCHARGE PERMIT APPLICATION AND REQUIREMENTS

4.1 Wastewater Dischargers

It shall be unlawful to discharge without a permit to the POTW any wastewater except as authorized by the General Manager in accordance with the provisions of this Ordinance.

4.2 Wastewater Discharge Permits

4.2.1 For Industrial Wastewater Discharge

Except as hereafter provided, no person shall discharge or cause to be discharged any industrial wastewaters directly or indirectly to sewerage facilities owned by the District without first obtaining a District Industrial Wastewater Discharge Permit (Permit). A District Permit shall be obtained prior to commencement of any construction of new or modified facilities which will discharge industrial wastewater to the sewer. A separate Permit shall be required for each industrial wastewater connection to a public sewer discharging directly or indirectly to the District's sewerage system. The use of a sewer connection which is the subject of a Permit by anyone other than the person named in the Permit is prohibited. A Permit or Permit revision shall also be obtained by dischargers who use industrial wastewater.

The General Manager may exempt certain classes of dischargers of industrial wastewaters from the requirement to obtain a Permit if the quantity and quality of the wastewater is determined to be unlikely to create significant effects on the District's sewerage system or produce violations of state law or Federal Regulations.

The Permit may require pretreatment of industrial wastewaters before discharge, consolidation of wastewater discharge connections, prohibition of discharge of certain wastewater components or characteristics, batch treatment and discharge, restriction of discharge of certain wastewater components or characteristics, and such other conditions as may be required to effectuate the purposes of the Ordinance.

A Permit shall be required for vehicle service stations or garages, laundries, dry cleaners, and all food service facilities, except those who use insignificant amounts of oil and grease as determined by the General Manager and that do not cook meats and do not serve on washable dishes. These businesses however, shall be responsible for insuring that the industrial wastewater discharges originating from their operations are in compliance with the provisions set forth in this Ordinance.

No person shall discharge industrial wastewaters in excess of the quantity or quality limits stated in the Permit. The violation of any Permit condition or requirement shall constitute a violation of this Ordinance and shall be punishable as provided by law. Any person who, as determined by the General Manager, significantly increases or

decreases flow rate or significantly alters the quality of wastewater discharge shall immediately apply for and obtain a Permit revision.

All Industrial Users proposing to connect to or to contribute to the POTW shall obtain a Wastewater Discharge Permit before connecting to or contributing to the POTW. All existing Industrial Users connected to or contributing to the POTW shall obtain a Wastewater Discharge Permit within one hundred and eighty (180) days after the effective date of this Ordinance.

4.2.2 Application

Users required to obtain a Wastewater Discharge Permit shall complete and file with the District, an application in the form prescribed by the District and accompanied by the fee as prescribed in Section 3 of this Ordinance. New users shall apply at least ninety (90) days prior to connecting to or contributing to the POTW. In support of the application, the User shall submit, in units and terms appropriate for evaluation, the following information:

a) Name, address,, and location (if different from address);

b) Wastewater constituents and characteristics including but not limited to those mandated in Section 2 of this Ordinance as determined by a certified analytical laboratory; sampling and analysis shall be performed in accordance with procedures established in Section 5.3 of this Ordinance and by the EPA pursuant to Section 304(g) of the Act and contained in the 40 CFR, Part 136, as amended;

c) Time and duration of discharge;

d) Average daily and peak wastewater flow rates, including daily, monthly and seasonal variations if any;

e) Site plans, floor plans, mechanical and plumbing plans and details to show all sewers, sewer connections, and appurtenances by the size, location and elevation;

f) Description of activities; facilities and processes on the premises including all materials which are or could be discharged;

g) Any other information as may be deemed by the District to be necessary to evaluate the permit application.

h) An authorized representative of the Industrial User will be required to sign the Permit Application as prescribed in Section 5.5 of this Ordinance.

The District will evaluate the data furnished by the User and may require additional information. After evaluation and acceptance of the data furnished, the District may issue a Wastewater Discharge Permit subject to terms and conditions provided herein.

4.2.3 Modifications

The General Manager may modify a Permit for Users to make the corrections or allowances for changes in the permitted activity listed in this section. Any Permit modification not processed as a minor modification under this section must be made for cause. Minor modifications may only:

(1) Correct typographical errors;

(2) Allow for change in ownership or operational control of a facility where the General Manager determines that no other change in the Permit is necessary, provided that a written agreement containing a specific date for transfer of Permit responsibility, coverage, and liability between the current and new Permittees has been submitted to the General Manager;

(3) Change the construction schedule for a discharger which is a new source. No such change shall affect a discharger's obligation prior to discharge;

(4) Except as provided for above, a Permit may be transferred by the Permittee to new owner or operator only if the Permit has been modified and reissued, or a minor modification make to identify the new Permittee and incorporate such other requirements as may be necessary under this Ordinance.

4.2.4 Conditions

Wastewater Discharge Permits shall be expressly subject to all provisions of this Ordinance and all other applicable regulations, User charges and fees established by the District. Permits may contain the following:

a) Limits on the average and maximum wastewater constituents and characteristics;

b) Limits on average and maximum rate of discharge;

c) Requirements for installation and maintenance of inspection and sampling facilities;

d) Specifications for monitoring programs which may include sampling locations, frequency of sampling, number, types and standards for tests and reporting schedule;

e) Compliance schedules;

f) Requirements for submission of technical reports discharge reports (see Section 5);

g) Requirements for maintaining and retaining records relating to wastewater discharge as specified by the District, and affording District access thereto;

h) Requirements for notification of the District or any new introduction of wastewater constituents or any substantial change in the volume or character of the wastewater constituents being introduced into the wastewater treatment system.

i) Requirements for notification of slug discharges as per Sections 2.3 and 2.4;

j) Other conditions as deemed appropriate by the District to ensure compliance with this Ordinance.

4.2.5 Duration

Permits shall be issued for a specified time period, not to exceed five (5) years. A permit may be issued for a period less than a year or may be stated to expire on a specific date. The User shall submit a new application with appropriate fees 90 days before the existing Permit expires. The terms and conditions of the permit may be subject to modification by the District during the term of the permit as limitations or requirements as identified in Section 2 are modified or other just cause exists. Any changes or new conditions in the permit shall include a reasonable time schedule for compliance.

4.2.6 Transfer

Wastewater Discharge Permits are issued to a specific User for a specific operation. A wastewater discharge permit shall not be reassigned or transferred or sold to a new owner, new User, different premises, or a new or changed operation without the approval of the District. The General Manager may require modification or reissuance of the Permit to change the name of the User and incorporate such other requirements as may be necessary under this Section.

4.2.7 Appeal Procedures

Any person aggrieved by any decision of the General Manager with respect to the issuance of the Wastewater Discharge Permit may appeal to the District by filing with the General Manager. The District shall thereupon fix a time and place for hearing such appeal. The General Manager shall thereupon give notice to such person of the time and place of hearing by serving it personally or by depositing it in the United States Post Office, postage prepaid, addressed to such person at his last known address.

4.2.8 Comment Period

The Permit holder may comment in writing to the General Manager within 30 days from the date of the mailing of the Permit to the holder.

4.2.9 Reopener Clause

The Permit shall be modified to incorporate an applicable standard after the Permit is issued if that standard or limitation is more stringent than the limitation in the Permit, or controls a pollutant not limited in the Permit.

4.2.10 Termination of Permits

The following are causes for terminating a Permit during its term, or for denying a Permit renewal application:

(1) Noncompliance by the Permittee with any condition of the Permit;

(2) The Permittee's failure in the application or during the Permit issuance process to disclose fully all relevant facts, or the Permittee's misrepresentation of any relevant facts at any time;

(3) A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by Permit modification or termination; or

(4) A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the Permit.

4.3 Monitoring Facilities

The District will require to be provided and operated at the User's own expense, monitoring facilities to allow inspection, sampling, and flow measurement of the Building Sewer and/or internal drainage systems. The monitoring facility should normally be situated on the User's premises.

As a condition of the Permit, all discharged industrial wastewater shall pass through a designated sampling location. There shall be ample room in or near such sampling manhole or facility to allow accurate sampling and preparation of samples for analysis. The facility, sampling, and measuring equipment shall be maintained at all times, in a safe and proper operating condition at the expense of the User.

4.4 Pretreatment

The General Manager may require an industrial discharger to provide wastewater pretreatment systems or facilities when the General Manager determines that it is necessary or advisable to treat industrial flows prior to discharge to the sewer, to restrict or prevent the discharge to the sewer of certain waste constituents, to comply with any State discharge or pretreatment requirements, to comply with Federal Pretreatment Standards, or to accomplish any pretreatment result required by the General Manager in order to effectuate the purposes of the Ordinance. Any pretreatment facilities required by the General Manager shall be provided and maintained at the expense of the industrial wastewater discharger. Pretreatment systems or facilities shall not be installed or operated without the prior written approval of the General Manager. The requirement for such approval, however, shall not absolve the industrial discharger of the responsibility for meeting any industrial wastewater discharge limitation imposed by the District or by the State or Federal Government. If inspections or other information reveal that pretreatment systems and facilities are not installed or operated in conformance with the plans and procedures submitted to and approved by the District, or are not operated in compliance with the discharge requirements and limitations

imposed by the District, the industrial discharger shall make such modifications as are necessary to meet such requirements. All pretreatment systems determined by the General Manager to require engineering design shall have plans prepared and signed by a civil, chemical, or mechanical engineer registered in the State of California.

Gravity separation interceptors, control manholes or other monitoring facilities, and spill containment systems, may be required by the General Manager as he deems necessary to remove prohibited settleable and floatable solids, to facilitate inspection, flow measurement and sampling, and to prevent discharge to the sewer of quantities of prohibited or restricted materials. Spill containment systems shall conform to guidelines established by the General Manager.

4.5 Confidential Information

Except for data determined to be confidential under 40 CFR Part 2, information and data on a User obtained from reports, questionnaires, permit applications, permits, effluent data and monitoring programs and from inspections shall be available to the public or other governmental agency without restriction unless the User specifically requests and is able to demonstrate to the satisfaction of the District that the release of such information would divulge information, processes or methods of production entitled to protection as trade secrets of the User.

When requested by the person furnishing a report, the portions of a report which might disclose trade secrets or secret processes shall not be made available upon written request to governmental agencies for uses related to this Ordinance, the National Pollutant Discharge Elimination System (NPDES) Permit, State Disposal System permit and/or the Pretreatment Programs; provided, however, that such portions of a report shall be available for use by the State or any state agency in judicial review or enforcement proceedings involving the person furnishing the report. Wastewater constituents and characteristics will not be recognized as confidential information.

Information accepted by the District as confidential, shall not be transmitted to any governmental agency or to the general public by the District until and unless a ten-day notification is given to the User and approved by the User.

4.6 Separation of Wastes

All domestic wastewaters from the rest rooms, showers, drinking fountains, and similar sources shall be kept separate from all industrial wastewaters until the industrial wastewaters have passed through any required pretreatment facility or device and the industrial wastewater monitoring facility. The General Manager may waive this condition and may use the combined wastewater formula to determine discharge Permit limits.

4.7 Grease Interceptors and Gravity Separating Devices

4.7.1 Restaurants

All restaurants or food service facilities, except those identified in Section 4.2.1 shall install an approved grease interceptor which is of sufficient size so as to prevent excessive discharges of grease into the District's sewerage system. The interceptor

size shall be based on the most recent version of the Uniform Plumbing Code (UPC). The grease interceptor shall be easily accessible for inspection by the General Manager. Exceptions to the installation of a grease interceptor shall be determined on a case-by-case basis by the General Manager. The General Manager shall take into account the following items when determining exceptions:

(1) Size of restaurant;
(2) Meals served per day;
(3) Daily water usage based upon water bills;
(4) Seating capacity;
(5) Dishwasher and garbage disposal facilities on-hand; and
(6) Other criteria the General Manager deems applicable.

4.7.2 Vehicle Service Stations and Garages

Vehicle service stations or garages shall be required to install a gravity separating device designed to prevent the discharge of sand, silt, oil and grease to the District's sewerage system.

4.7.3 Laundries and Dry Cleaners

After the effective date of this Ordinance, all new laundries and dry cleaners or similar establishments shall install a gravity separating device of a size and design approved by the General Manager. They shall also install any other pretreatment facility required by the General Manager to ensure their compliance with all requirements and specifications of this Ordinance. Establishments in existence prior to this date shall install an appropriate pretreatment system if in the opinion of the General Manager the system is warranted.

4.7.4 Existing Gravity Separating Device and Grease Interceptors

If the General Manager finds that a grease interceptor or gravity separating device installed prior to the effective date of this Ordinance is incapable or retaining adequately the grease or sand and oil in the wastewater flow from a service station, restaurant or similar establishment, the General Manager shall give the proprietor a written notice requiring that an adequate interceptor or gravity separating device be installed within a reasonable time period.

4.7.5 Maintenance of Grease Interceptors and Gravity Separating Devices

Any grease interceptor or gravity separating device required by this Ordinance shall be readily accessible for inspection and properly maintained to assure that the accumulations of grease or sand and oil do not impair its efficiency or pass out with the effluent. All Users required to use and maintain a grease interceptor or gravity separating device shall maintain a maintenance record. This record shall include the date, the name of the person who cleaned it and the disposal site of the waste. The report shall be reviewed by the General Manager at each routine inspection. Persons hauling wastes and wastewater removed from these interceptors or gravity separating devices shall be registered to do so by the proper permitting agency. An interceptor or gravity separating device shall not be considered properly maintained if material accumulations total more than 25 percent of the operating fluid capacity. The District

will endeavor to inspect all grease interceptors and gravity separating device at least yearly. If it is found that it is improperly maintained or adequate records are not being kept, a warning will be issued to the Owner and/or User of the property. If on subsequent inspections it is found that one of the above conditions continues to exist, a fine shall be levied against the owner and/or User of the property. (See Section 7).

4.7.6 Use of Chemical Additives

The use of chemical, biological, or enzymatic additives to emulsify or digest accumulated grease by-products is prohibited without the consent of the General Manager. All additives will be considered on a case-by-case basis. Approval criteria includes an approved on-site test program to be provided by and at the expense of the User.

4.8 Duty to Comply

The User must comply with all conditions of the Permit. Any Permit noncompliance constitutes a violation of the Ordinance and is grounds for enforcement action as provided in Section 6.

4.9 Duty to Mitigate

The User shall take all reasonable steps to minimize or prevent any discharge in violation of the Permit which has a reasonable likelihood of adversely affecting human health or the environment.

4.10 Proper Operation and Maintenance

The User shall at all times properly operate and maintain all facilities and systems or used by the User to achieve compliance with the conditions of the Permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a User only when the operation is necessary to achieve compliance with conditions of the Permit.

4.11 Permit Actions

The Permit may be modified, suspended, or revoked for cause. The filing of a request by the User for a Permit modification, reissuance, or a notification of planned changes or anticipated noncompliance does not prevent any Permit condition.

4.12 Duty to Provide Information

The User shall furnish to the General Manager, within a reasonable time, any information which the General Manager may request to determine whether cause exists for modifying, revoking and reissuing, or to determine compliance with the Permit. The User shall also furnish to the General Manager upon request, copies of records required to be kept by the Permit.

4.13 Civil and Criminal Liability

Except as provided in Sections 2.2 through 2.4, nothing in the Permit shall be construed to relieve the Permittee from civil or criminal penalties for noncompliance.

SECTION 5 - MONITORING, REPORTING, NOTIFICATION, AND INSPECTION REQUIREMENTS

5.1 Reporting Requirements For Permittee

5.1.1 Compliance Date Report For Categorical Users

Within 90 days following the date for final compliance with applicable pretreatment standards or, in the case of a New Source, following commencement of the introduction of wastewater into the POTW, any User subject to pretreatment standards and requirements shall submit to the General Manager a report indicating the nature and concentration of all pollutants in the discharge from the regulated process which are limited by pretreatment standards and requirements. The report shall also include all applicable reporting requirements as listed in Sections 5.2 through 5.8 of this Ordinance. The report shall state whether the applicable pretreatment standards or requirements are being met on a consistent basis and, if not, what additional Operation & Maintenance and/or pretreatment is necessary to bring the User into compliance with the applicable pretreatment standards or requirements. This statement shall be signed by an authorized representative of the Industrial User using the certification presented in Section 5.5, and certified to by a qualified professional.

5.1.2 Periodic Compliance Reports for Categorical Users

Any User subject to a pretreatment standard, after the compliance date of such pretreatment standard, or, in the case of a New Source, after commencement of the discharge into the POTW, shall submit to the General Manager during the months of June and December, a report indicating the nature and concentration, of pollutants in the effluent which are limited by such pretreatment standards. The report shall also include all applicable reporting requirements as listed in Sections 5.2 through 5.8. At the discretion of the General Manager and in consideration of such factors as local high or low flow rates, holidays, budget cycles, etc., the General Manager may agree to alter the months during which the above reports are to be submitted. This report shall be signed by an Authorized Representative of the Industrial User using the declaration indicated in Section 5.5, and certified by a qualified professional.

5.2 Inspection and Sampling

The District shall inspect the facilities of any User to ascertain whether the purpose of this Ordinance is being met and all requirements are being complied with. Persons or occupants of premises where wastewater is created or discharged shall allow the District or their representative ready access at all reasonable times to all parts of the premises for the purposes of inspection, sampling, examining or copying any records that must be kept under conditions of the Permit, and/or in the performance of any of their duties. Inspection may include any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under the Permit.

The District shall have the right to set up on the User's property such devices as are necessary to conduct sampling inspection, compliance monitoring and/or metering operations for any substances or parameters at any location for the purposes of assuring Permit compliance or as otherwise authorized by the Ordinance.

Where a User has security measures in force which would require proper identification and clearance before entry into their premises, the User shall make necessary arrangements with their security guards so that upon presentation of suitable identification, personnel from the District will be permitted to enter, without delay, for the purposes of performing their specific responsibilities.

5.3 Monitoring, Sampling and Records

(1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. Samples should be taken immediately downstream from pretreatment facilities if such exist or immediately downstream from the process if no pretreatment exists.

(2) The User shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the Permit, and records of all data used to complete the application for the Permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the General Manager at any time.

(3) Records of monitoring information shall include:

(a) The date, exact place, and time of sampling or measurements;
(b) The individual(s) who performed the sampling or measurements
(c) The date(s) analyses were performed;
(d) The individual(s) who performed the analyses;
(e) The analytical techniques or methods used; and
(f) The results of such analyses.

(4) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in the Permit.

(5) A minimum of four (4) grab samples must be used for pH, cyanide, total phenols, oil and grease, sulfide, and volatile organics. For all other pollutants, 24-hour composite samples must be obtained through flow proportional composite sampling techniques where feasible. As specified in the User's Permit, the General Manager may permit 24-hour time composite sampling where flow proportioned composite sampling for any User that demonstrates flow proportional sampling is infeasible.

(6) Complete records shall be kept by each permittee who owns and operates a grease interceptor. Records shall include, but are not limited to, interceptor pumping amounts, pumping frequency and waste grease

disposal amounts and frequency. The permittee shall maintain grease records for no less than three years and shall provide copies of any kept record for the District upon request.

5.4 Reporting Requirements

An authorized representative of the Industrial User will be required to sign all reports submitted by the User as prescribed in Section 5.5 of this Ordinance.

5.4.1 Planned Changes

The Permittee shall give notice to the General Manager as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source, the term "new source" means any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced after the publication of proposed Pretreatment Standards under Section 307(c) of the Clean Water Act which will be applicable to such source if such Standards are thereafter promulgated in accordance with that section; or,

(2) Any anticipated facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants must be reported by submission of a new Permit application or, if such changes will not violate the discharge limitations specified in the Permit, by notice to the District. Following such notice, the Permit may be modified to specify and limit any pollutants not previously limited or change existing limits or other requirements. Approval must be obtained prior to any new discharges. The User shall allow 180 days for review.

5.4.2 Anticipated Noncompliance

The User shall give advance notice to the General Manager of any planned changes in the permitted facility or activity which may result in noncompliance with Permit requirements.

5.4.3 Self Monitoring Reports

Monitoring results shall be reported at the intervals specified in the Permit.

(1) Monitoring results must be reported in a Self-Monitoring Report (SMR);

(2) If the User monitors any pollutant more frequently than required by the Permit, using test procedures approved under 40 CFR Part 136 or as specified in the Permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the SMR;

(3) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the General Manager in the Permit.

5.4.4 Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim final requirements contained in any compliance schedule of the Permit shall be submitted no later than 14 days following each schedule date.

5.5 Signatory Requirement

All applications, reports, or information submitted to the General Manager shall be signed and certified by an Authorized Representative of the Industrial User. These submittals shall be subject to the provision of 18 U.S.C. Section 1001 relating to false statements and fraud and the provisions of Section 309(c)(2) of the Clean Water Act governing false statements.

Each submittal shall contain the following completed certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Executed on the _____ day of _____ at _____

_____ [Signature]

_____ [Typed Name]

_____ [Title]

5.6 Notification of Bypass

5.6.1 Anticipated Bypass

If the Permittee knows in advance of the need for a bypass, it shall submit prior oral and written notice to the General Manager, if possible at least ten days before the date of the bypass.

5.6.2 Unanticipated Bypass

The Permittee shall submit notification of an unanticipated bypass as required in Section 2.4 of this Ordinance.

5.7 Notification of Spill or Slug Loading

The Permittee shall submit notification of a spill or slug loading to the sewerage system as required in Section 2.4 of this Ordinance.

5.8 Notification of Hazardous Waste Discharge

An Industrial User shall notify the General Manager, the EPA Regional Waste Management Division Director, and State hazardous waste authorities in writing of any discharge in the POTW of a substance, which, if otherwise disposed of, would be hazardous waste under 40 CFR Part 261. Such notification must include:

(1) The name of the hazardous waste as set forth in 40 CFR Part 261;

(2) The EPA hazardous waste number;
(3) The type of discharge (continuous, batch, or defined other); and
(4) Certification that the User has a program in place to reduce the volume and toxicity of hazardous wastes generated to the degree it has determined to be economically practical.

5.9 Other Noncompliance Notification

The User shall report all instances of noncompliance at the time monitoring reports are submitted. The reports shall contain the information listed in Section 2.4.

SECTION 6 - ENFORCEMENT

6.1 Notification of Violation

Whenever the District finds that any User has violated or is violating Wastewater Discharge Permit terms, conditions, limitations, requirements, and instructions, including any Federal Pretreatment Standards or any effluent limits adopted by the District or required by state law, or any prohibition, limitation of requirements contained within this Ordinance, the District may serve upon such person a written Notification of Violation (NOV) stating the nature of the violation. The NOV shall be served either personally or by certified mail, return receipt requested. The NOV may include but not be limited to:

(1) An order for corrective action;
(2) A schedule to attain compliance;
(3) An order to show cause either in writing or in person;
(4) An order to cease discharge;
(5) A suspension or revocation of the user's permit; and/or
(6) An order to respond in writing to the allegations.

Additional Orders and changes to a suspension or revocation may follow the initial Order at the discretion of the General Manager or as additional information becomes available. Within 30 days of the date of the notice, a plan for the satisfactory correction thereof or appropriate response shall be submitted to the District by the User.

Upon review of a response to NOV, the General Manager may accept the response as complete and satisfactory, or incomplete and unsatisfactory.

If the response to the NOV is complete and satisfactory, the General Manager shall consider the issue regarding the NOV closed. The General Manager will notify the User in writing regarding the closure of the NOV. The closure of the NOV does not preclude further enforcement action.

If the response to the NOV is incomplete and unsatisfactory, the General Manager shall report those findings to the Board of Directors who may, but are not limited to, require any nonsubmitted or additional information, suspend or revoke the User's Permit, order the User to cease discharge, and/or seek civil penalties as they apply to the violations.

6.2 Notification of Permit Suspension

The District may suspend the wastewater treatment service and/or a Wastewater Discharge Permit when such suspension is necessary, in the opinion of the District, in order to stop an actual or threatened discharge which presents or may present: an imminent or substantial endangerment to the health or welfare of persons or to the environment; causes interference to or pass through of the POTW; or causes the District to violate any condition of its NPDES Permit.

Any person notified of a suspension of the wastewater treatment service and/or the Wastewater Discharge Permit shall immediately stop or eliminate the discharge. In the event of a failure of the person to comply voluntarily with the suspension order, the District shall take such steps as deemed necessary including immediate severance of the sewer connection, to prevent or minimize damage to the POTW system or endangerment to any individuals. A detailed written statement submitted by the User describing the causes of the harmful discharge and the measures taken to prevent any future occurrence shall be submitted to the District within 15 days of the date of occurrence.

The District shall, by written statement, reinstate the Wastewater Discharge Permit and/or the wastewater treatment service upon proof to the satisfaction of the General Manager of the elimination of the non-complying discharge. Costs incurred by the District in suspending the Permit and disconnecting the industrial sewer shall be paid by the User before reinstatement of the Permit.

6.3 Revocation of Permit

The General Manager may revoke a Permit, in accordance with the procedures of Section 6 of this Ordinance, upon finding that the Permit holder has violated any provisions of this Ordinance which includes but is not limited to:

(1) Failure to factually report the wastewater constituents and characteristics of the User's discharge;
(2) Failure to report significant changes in operations, or wastewater constituents and characteristics that might impact the User's discharge;

(3) Refusal of reasonable access to the User's premises for the purpose of inspection or monitoring; or,
(4) Violation of conditions of the Permit.

Any Permit holder whose Permit has been revoked shall immediately cease all discharge of any industrial wastewater to the POTW.

In the event of a failure of the User to comply voluntarily with the Notification of Permit revocation, the General Manager shall take such steps as necessary to insure compliance.

Before any further discharge of industrial wastewater may be made by the User, he must apply for and obtain a new Permit for Industrial Wastewater Discharge, pay all charges that would be required upon initial application, and pay all delinquent fees, charges and such other sums as the Permit holder may owe to the District. Costs incurred by the District in revoking the Permit and disconnecting the industrial sewer shall be paid by the User before issuance of a new Permit.

6.4 Legal Action

If any person discharges sewage, industrial wastes or other wastes into the District's wastewater disposal system contrary to the provisions of this Ordinance, Federal or State Pretreatment Requirements, or any order of the District, such discharge is hereby declared to be a public nuisance and the District legal counsel upon order by the Board of Directors may commence an action for appropriate legal and/or equitable relief in the Superior Court of this county. In any such action the District shall be entitled to an award of court cost and attorney's fees incurred by it in connection therewith.

SECTION 7 - PENALTY: COSTS

7.1 Civil Penalties

Any User who is found to have violated an Order of the Board of Directors or who willfully or negligently failed to comply with any provision of this Ordinance and/or any requirement of a Notification of Violation written and issued in compliance with this Ordinance, and the order, rules, regulations and permits issued hereunder, shall be fined no more than Six Thousand Dollars ($6,000) per day for each offense and/or violation. Each day on which a violation shall occur or continue shall be deemed a separate and distinct offense. In addition to the penalties provided herein, the District may recover reasonable attorney's fees, court costs, court reporters' fees and other expenses of litigation by appropriate suit at law against the person found to have violated this Ordinance or the orders, rules, regulations, and permits issued hereunder. These provisions and penalties are pursuant to in accordance with the Clean Water Act of 1987 (40 CFR Part) and U.S. Government Code Sections 54739-54740.

The civil penalties for non-submittal of reports, non-compliance with the reporting and/or application requirements required in this Ordinance or Permit, or failure to complete an increment of progress of a compliance schedule, shall not exceed One Thousand Dollars ($1,000) for each day in which the requirements are not fulfilled.

7.2 Falsifying Information

Any person who knowingly makes any false statement, representation or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to this Ordinance, or Wastewater Discharge Permit, or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required under this Ordinance, shall, be fined no more than Six Thousand Dollars ($6,000). These provisions and penalties are pursuant to and in accordance with U.S. Government Code Sections 54739-54740.

7.3 Collection of Fees

The amount of any fee or charge imposed by the provisions of this Ordinance including interest and penalty assessments shall be deemed a debt owed to the District. An action in the name of the District may be commenced in any court of competent jurisdiction for the amount of any delinquent fees or charges and if legal action is brought by the District or its assignee to enforce collection of any amount charged and due under this chapter, any judgment rendered in favor of the District shall include costs of suit incurred by the District or its assignee including a reasonable attorney's fee.

7.4 Termination of Service

In order to effect its powers, the District may enter upon private property for the purpose of inspection and maintenance of sanitary and waste disposal facilities and terminate service to a property in which a violation of any rule, regulation, or of this Ordinance is found to exist.

Prior to termination of service, however, the District Board of Directors shall notify, in writing, the Owner of such property that service is intended to be so terminated and conduct a hearing thereon as herein provided. Such notice will be mailed to the Owner at the address shown on the Permit. The notice shall state the date of proposed termination of service and the reasons therefore and the date the Board of Directors will hold a hearing upon such intended termination. Such hearing will not be held less than ten (10) days subsequent to the giving of notice as herein required.

SECTION 8 - SEVERABILITY

If any provision, paragraph, word, section or article of this Ordinance is invalidated by any court of competent jurisdiction, the remaining provisions, paragraphs, words, sections, and chapters shall not be affected and shall continue in full force and effect.

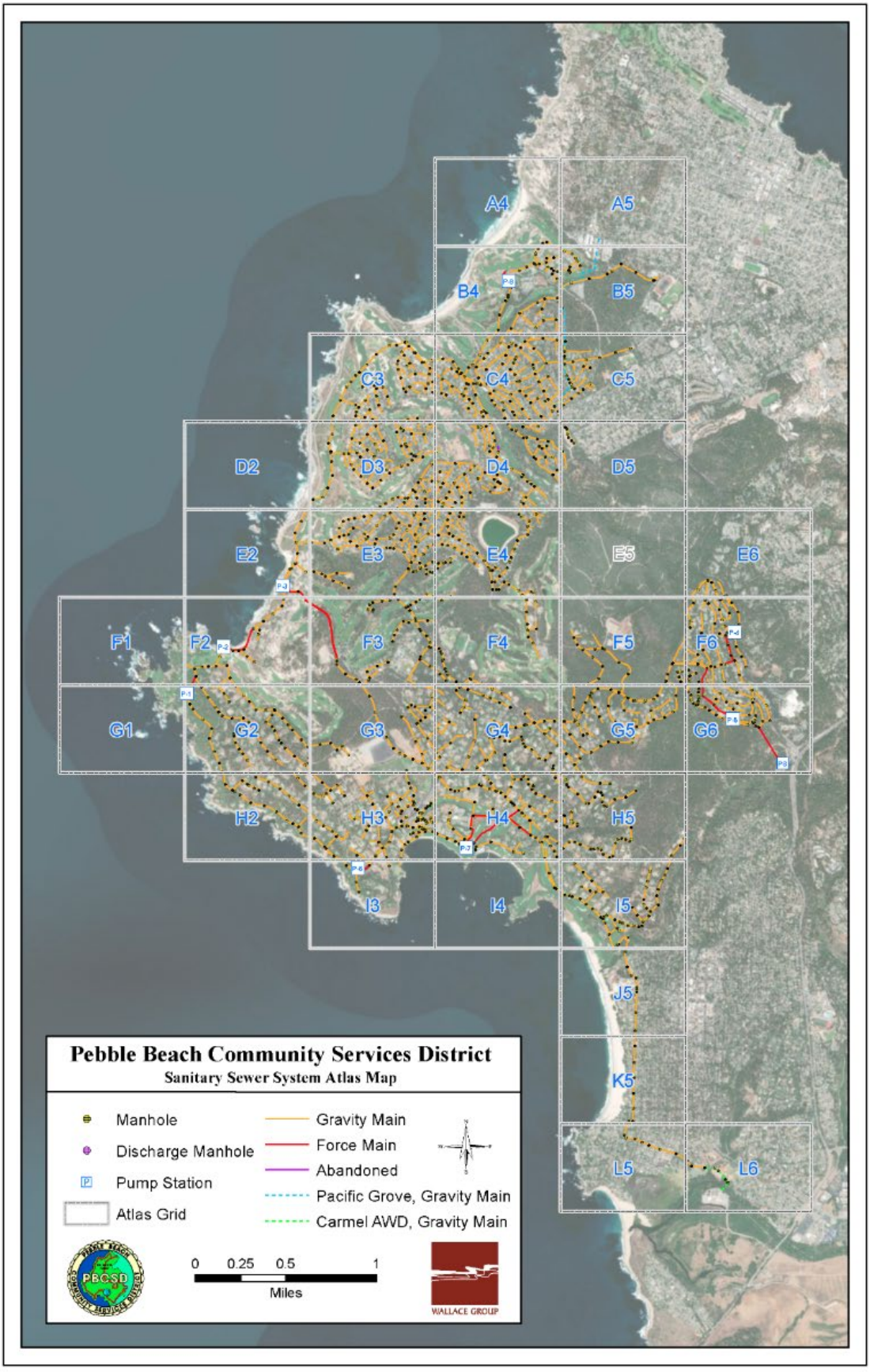
SECTION 9 - CONFLICT

All other Ordinances and parts of other Ordinances inconsistent or conflicting with any part of this Ordinance are hereby repealed to the extent of such inconsistency or conflict.

APPENDIX 04-1

Pebble Beach Community Services District

Collection System Overview Mapping


A4
A5
B4
B5
C3
C4
C5
D2
D3
D4
D5
E2
E3
E4
E5
E6
F1
F2
F3
F4
F5
F6
G1
G2
G3
G4
G5
G6
H2
H3
H4
H5
I3
I4
I5
J5
K5
L5
L6
Pebble Beach Community Services District
Sanitary Sewer System Atlas Map
Manhole
Discharge Manhole
Pump Station
Atlas Grid
Gravity Main
Force Main
Abandoned
Pacific Grove, Gravity Main
Carmel AWD, Gravity Main
0 0.25 0.5 1
Miles
PBCSD
WALLACE GROUP

SHEET A4

[redacted]

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

A5

		A4	A5		
		B4	B5		
	C3	C4	C5		
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

SUNSET DR

Spanish Bay Golf Course

0 100 200 300 400
Feet

N

[redacted]

1 6" 199'
2 6" 205'
3 6" 379'

B4

SHEET A5

[redacted]

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

A4

B5

SUNSET DR

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

[redacted]

A4

SHEET B4

Spanish Bay Golf Course

P-8

P-8 Flow Meter

SPANISH BAY CIR

SPANISH BAY DR

SPANISH BAY CIR

SPANISH BAY RD

17 MILE DR

SLOAT RD

SLOAT RD

TREASURE RD

B5

C4

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

		A4	A5		
		B4	B5		
	C3	C4	C5		
D2	D3	D4	D5		
E2	E3	E4	E5	E6	
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

A5

B4

C5

SHEET B5

Pacific Grove

Pacific Grove Gate

Old Mission Linen (Out of Service)

Pacifice Grove H.S. & Elementary School

SUNSET DR

17 MILE DR

CONGRESS RD

MAJELLA RD

RE RD

6" 379'
6" 243'
6" 161'
6" 104'
6" 149'
6" 155'
6" 279'
6" 140'
6" 162'
6" 100'
6" 187'
6" 70'
6" 620'
6" 302'
6" 176'
6" 545'
6" 706'
6" 352'
8" 495'
8" 580'

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400
Feet

N

SHEET C3

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

C4

		A4	A5		
		B4	B5		
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

D3

MPCC Dunes Golf Course

17 MILE DR

CORAL DR

SAND DUNES RD

LAKE RD

PEISANO RD

CORMORANT RD

CUSTOMS RD

VALDEZ RD

PIONEER RD

STEVENSON DR

CAYUSE RD

WRANGLER'S TRL

B4

D4

C3

C5

SHEET C4

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

		A4	A5		
		B4	B5		
	C3	C4	C5		
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

Spanish Bay Golf Course

MPCC Country Club

SPANISH BAY RD

17 MILE DR

ELK RUN RD

OAK KNOLL RD

GALLEON RD

SLOAT RD

HOPI RD

FOREST LODGE RD

PARADISE PARK RD

MAJELLA RD

COYOTE RD

LOST BARRANCA

PRESIDIO RD

LASAUEN RD

RANCHO RD

MARINERS WAY

ORTEGA RD

LAUREL LANE

CONGRESS RD

SAWMILL GULCH RD

SEAGULL RD

MISSION RD

CLUB RD

WRANGLERS TRL

LUPIN LANE

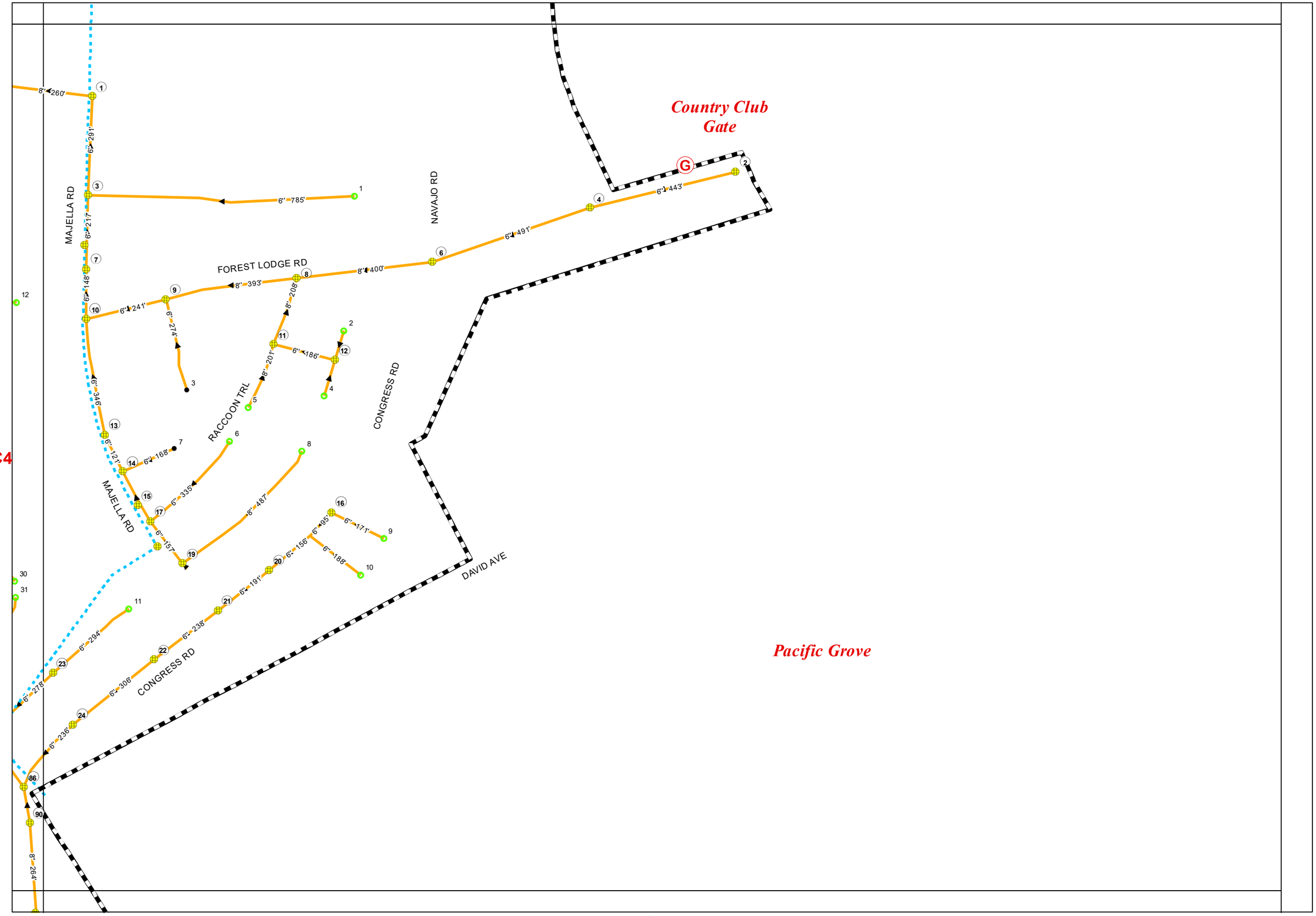
THE OLD DR

STEVENSON DR

B5

C4

D5



SHEET C5

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

SHEET D2

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

D3

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

E2

C3

D2

D4

E3

OCEAN DR

17 MILE DR

OCEAN RD

WHALERS WAY

STEVENSON DR

SAN CARLOS RD

BRONCHO RD

MATADOR RD

SOMBRERO RD

VALDEZ RD

VAQUERO RD

ADOBE LANE

OXEN TR

RODEO RD

HACIENDA DR

OASIS RD

BIRD ROCK RD

TRAPPERS TRL

HERMITAGE RD

PINTO LN

SHERMAN RD

MPCC Shore Course

SHEET D3

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

C4

D3

D5

E4

MPCC Country Club

MPCC Dunes Course

BRONCHO RD

QUARRY RD

SLOAT RD

CRESCENT DR

SHERIDAN LN

ARROYO DR

BIRD ROCK RD

SAWMILL GULCH RD

CONGRES

PELICAN RD

COLTON RD

CHAPARRAL RD

ARROWHEAD RD

SHERMAN RD

DANA RD

LARKIN RD

AZTEC DR

STRAWBERRY HILL RD

LOPEZ RD

CIRCLE E RD

LOOKOUT RD

SHEET D4

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

		A4	A5		
		B4	B5		
	C3	C4	C5		
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

C5

D4

SHEET D5

[redacted]

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

Pacific Grove

SHAFTER AVE

FUNSTON AVE

BUENA VISTA AVE

BUENA VISTA AVE

AUSTIN AVE

CONGRESS RD

HIKING TRAIL HT

HIKING TRAIL HT

8"-156'

8"-153'

6"-135'

8"-104'

6"-542'

6"-536'

6"-183'

8"-399'

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

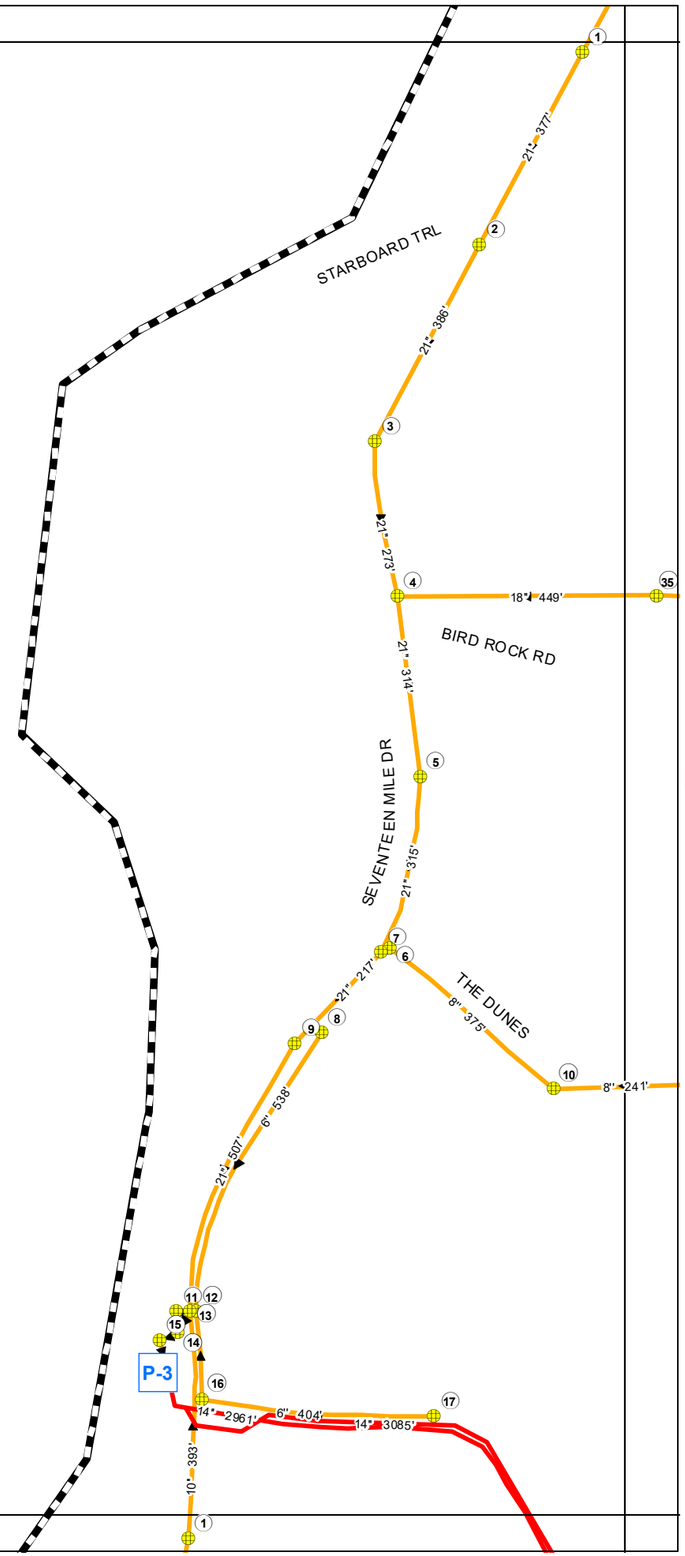
0 100 200 300 400

Feet

N

[redacted]

D2



F2

SHEET E2

E3

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400
Feet

N

D3

E2

E4

F3

MPCC Shore Course

Indian Village

Spyglass Hill Golf Course

BIRD ROCK RD

MARCHETA LANE

MARCHETA LN

PARKWAY DR

HACIENDA DR

BIRD ROCK RD

LIVE OAK DR

PATIO DR

HERDERS RD

LARIAT LANE

STEVENSON DR

HERMITAGE RD

SLOAT RD

MIDDLE RANCH RD

INDIAN VILLAGE RD

SPYGLASS WOODS DR

SHEET E3

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

D4

E3

F4

SHEET E4

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

		A4	A5		
		B4	B5		
	C3	C4	C5		
D2	D3	D4	D5		
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

Forest Lake Reservoir

Poppy Hills Golf Course

Spyglass Hill Golf Course

SLOAT RD

STRAWBERRY HILL RD

EL TORO RD

MIDDLE RANCH RD

MESTRES DR

LOPEZ RD

MES A LN

SPYGLASS WOODS DR

FOREST LAKE RD

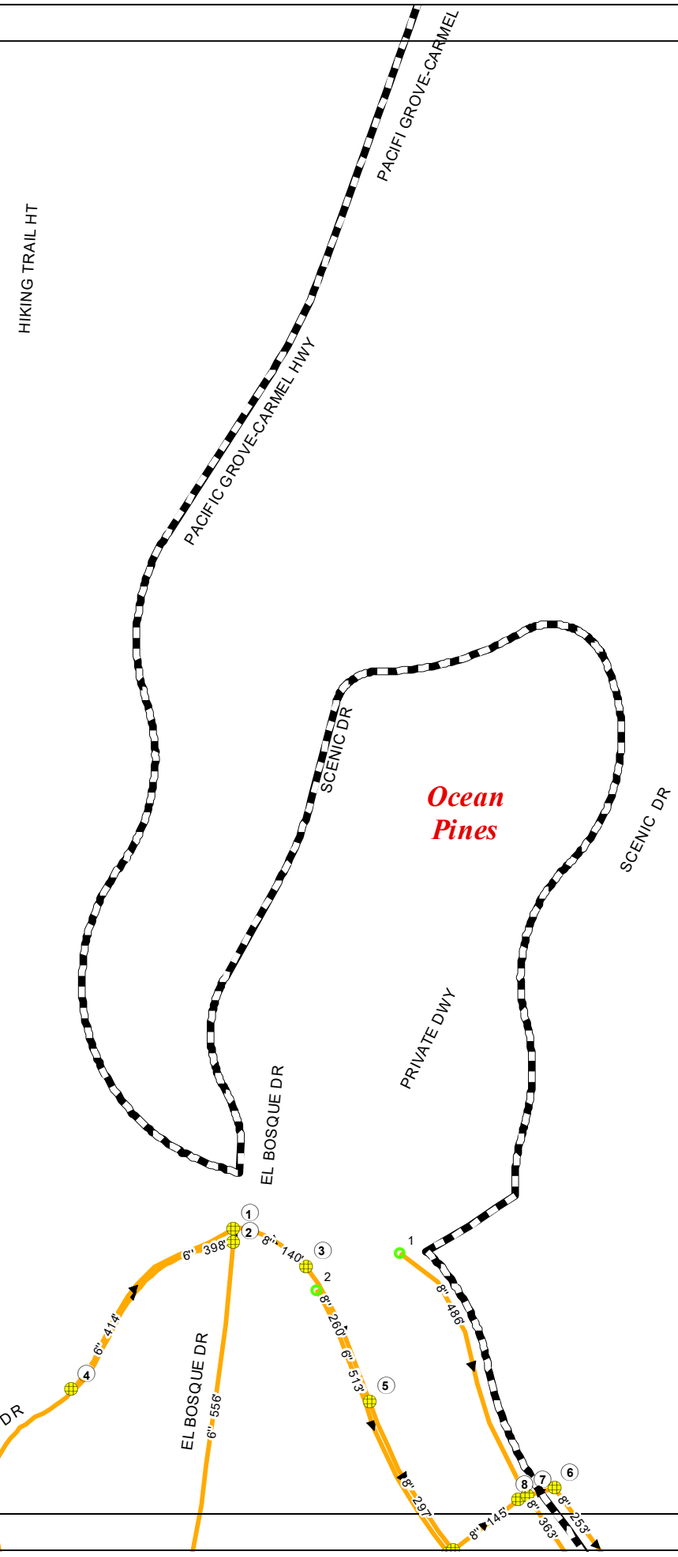
HAWKINS WAY

LAKE CT

MADRONE LN

FOREST WAY

CONGRESS RD



SHEET E6

[redacted]

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400
Feet

N

[redacted]

F6

SHEET F1

[redacted]

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

F2

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400
Feet

N

[redacted]

G1

E2

F1

F3

G2

SHEET F2

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

P-2

Cypress Point Golf Course

SEVENTEEN MILE DR

SIGNAL HILL RD

14" 3065'

14" 2961'

10" 222'

10" 344'

10" 351'

10" 364'

6" 167'

6" 200'

4" 1282'

6" 187'

6" 159'

8" 273'

8" 168'

6" 294'

6" 266'

8" 221'

8" 288'

6" 324'

8" 226'

6" 200'

6" 210'

6" 322'

8" 222'

6" 379'

4" 648'

8" 346'

6" 417'

6" 295'

6" 186'

E3

F2

F4

G3

SPYGLASS HILL RD

STEVENSON DR

Spyglass Hill Golf Course

FOUNDERS LN

BRISTOL LN

SILVER CT

STEVENSON DR

Stevenson High School

FACULTY DR

FOREST LAKE RD

BRISTOL CURVE

SHEET F3

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

		A4	A5		
		B4	B5		
	C3	C4	C5		
D2	D3	D4	D5		
E2	E3	E4	E5	E6	
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

E4

F3

F5

G4

FOREST LAKE RD

LOPEZ RD

VISCAINO RD

WATERTANK DWY

LISBON LN

Stevenson High School

Poppy Hill Golf Course

74 — 6" 272' — 2 — 6" 282' — 53

5 — 6" 229'

27 — 8" 171' — 11 — 8" 195' — 12 — 13 — 8" 154' — 14 — 15 — 8" 242' — 16 — 17 — 8" 110' — 19 — 8" 311' — 23 — 8" 192' — 1

6" 349' — 18 — 6" 276' — 22

1 — 6" 342' — 20 — 21 — 6" 201' — 4

21 — 8" 347' — 24 — 8" 325'

1 — 8" 180' — 1 — 8" 356' — 4 — 8" 351' — 6 — 8" 169' — 8 — 8" 207' — 9 — 8" 229' — 10 — 6" 109' — 6" 371' — 3

1 — 8" 274' — 3 — 8" 231' — 1

2 — 8" 224' — 7 — 8" 254' — 8

SHEET F4

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

SHEET F5

[redacted]

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

		A4	A5		
		B4	B5		
	C3	C4	C5		
D2	D3	D4	D5		
E2	E3	E4	E5	E6	
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400
Feet

N

[redacted]

F4

F6

G5

SUNRIDGE RD

HAUL RD

Pebble Beach Company Corporation Yard

LOPEZ RD

SPRUANCE RD

SUNRIDGE RD

COSTANILLA WY

SUNRIDGE RD

SUNRIDGE RD

PINE MEADOWS WY

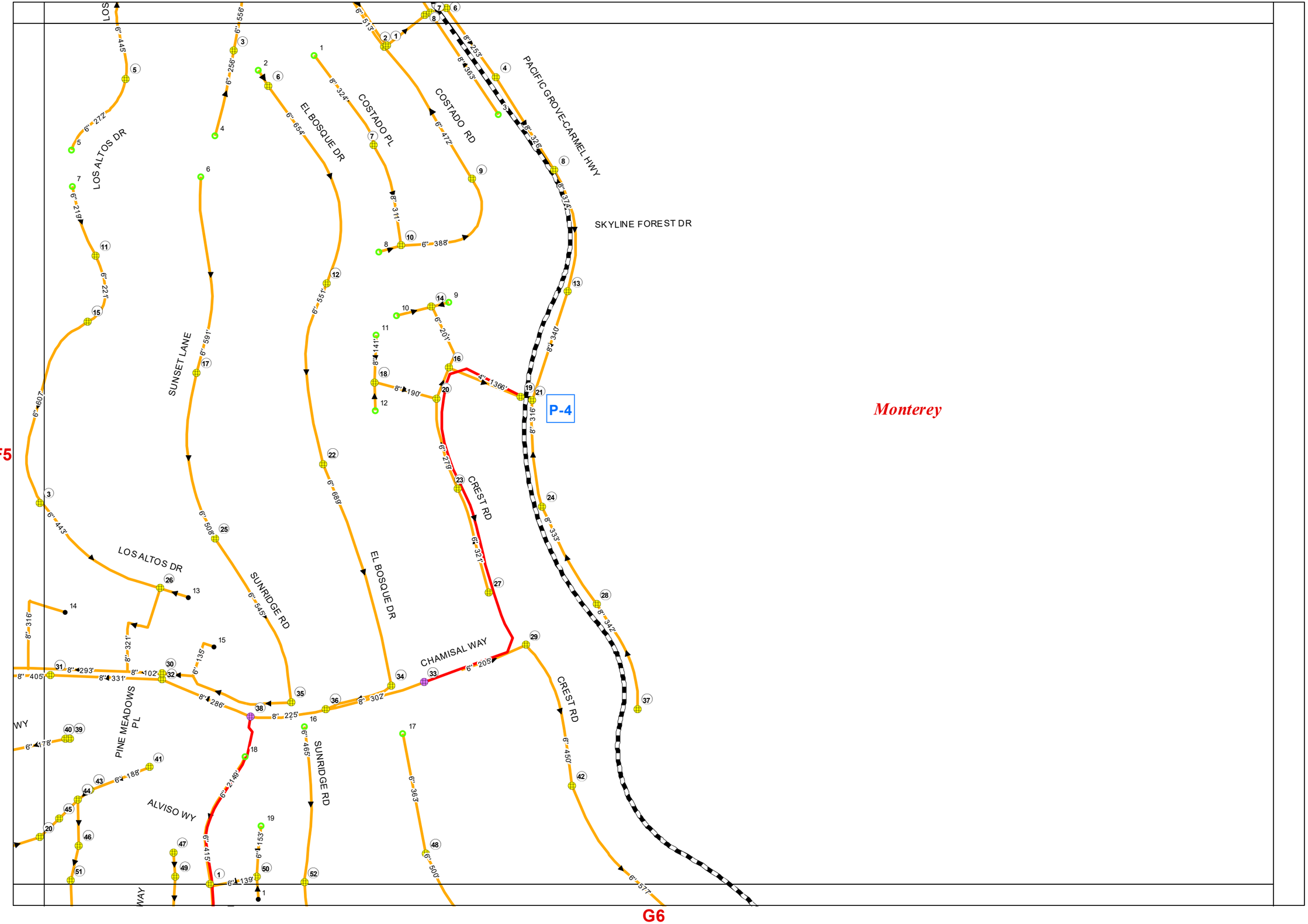
RHONDA RD

E6

F5

G6

SHEET F6



Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

F1

P-1

6

G2

SHEET G1

[redacted]

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

			A4	A5		
			B4	B5		
		C3	C4	C5		
	D2	D3	D4	D5		
	E2	E3	E4	E5	E6	
F1	F2	F3	F4	F5	F6	
G1	G2	G3	G4	G5	G6	
	H2	H3	H4	H5		
		I3	I4	I5		
				J5		
				K5		
				L5	L6	

0 100 200 300 400

Feet

N

[redacted]

F2

H2

G1

G3

P-1

PORTOLA RD

PORQUE LN

PORQUE LN

SEVENTEEN MILE DR

MADRE LANE

PORTOLA RD

SOMBRIA CT

SOMBRIA LN

SEVENTEEN MILE DR

PADRE LN

PORTOLA RD

SOMBRIA LN

LAURELES LN

PORTOLA RD

Cypress Point Golf Course

SHEET G2

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

F3

SHEET G3

[redacted]

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

Cypress Point Golf Course

STEVENSON DR

DRAKE RD

FOREST LAKE RD

OLEADA RD

RONDA RD

RIATA RD

PORTOLA RD

PBCo. Old Driving Range

PBCo. Equestrian Field

PBCo. Equestrian Center

PBCo. New Driving Range

G2

G4

H3

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

F4

SHEET G4

Poppy Hill Golf Course

CANTERA CT

DOUGLAS WAY

VISCAINO RD

CORTEZ RD

LISBON LANE

LISBON LN

RONDA RD

RHONDA RD

BONIFACIO RD

OLEADA RD

RIATA RD

ALVARADO LN

PALMERO WY

G3

G5

H4

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

		A4	A5		
		B4	B5		
	C3	C4	C5		
D2	D3	D4	D5		
E2	E3	E4	E5	E6	
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

F5

H5

G4

G6

RHONDA RD

SPRUANCE RD

FLAVIN LN

SUNRIDGE RD

ATAJO WAY

MORA LANE

FERGUSON LANE

DEER PATH

GRIFFIN RD

VISCAINO RD

SHEET G5

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

F6

G5

SHEET G6

PINE MEADOWS WAY

SUNSET LN

EL BOSQUE DR

SUNSET LN

HIGHWAY 68

CREST RD

SUNRIDGE RD

SUNSET LANE

SCENIC DR

SUNRIDGE RD

HWY 68/SOUTH BOUND 1 HWY

17 MILE DR.

CABRILLO HWY

P-5

PS

Community Hospital of Monterey Peninsula

Hwy 1 Gate

Carmel Hill Fire Station

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

		A4	A5		
		B4	B5		
	C3	C4	C5		
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

G2

H3

Lone Cypress

17 MILE DR

BALLANTRAE LN

PADRE LN

17 MILE DR

SHEET H2

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

G3

H2

H4

I3

SOMBRIA LANE

PORTOLA RD

ALVA LANE

ONDULADO RD

ARBOR LANE

STEVENSON DR

Peter Hay Golf Course

Fairway One

SEVENTEEN MILE DR

Lodge Area

CYPRESS DR

17 MILE DR

PADRE LN

SUSAN WAY

CABRILLO RD

SHEET H3

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

G4

SHEET H4

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

			A4	A5	
			B4	B5	
		C3	C4	C5	
		D2	D3	D4	D5	
		E2	E3	E4	E5	E6
	F1	F2	F3	F4	F5	F6
	G1	G2	G3	G4	G5	G6
		H2	H3	H4	H5	
			I3	I4	I5	
					J5	
					K5	
					L5	L6

0 100 200 300 400
Feet

N

H3

H5

I4

Casa Palmero

P-7

RIATA RD

VENADERO RD

17 MILE DR

RITA RD

PALMERO WAY

CYPRESS DR

STILLWATER LANE

WHITMAN LANE

WHITMAN PL

LIVE OAK MEADOW

DEL CIERVO RD

G5

H4

I5

SHEET H5

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

		A4	A5		
		B4	B5		
	C3	C4	C5		
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

SPRUANCE RD

SONADO RD

PALMERO WY

CORTE LANE

MIDWOOD LANE

DON LANE

DEL CIERVO RD

KINGSLEY CT

CRESPI LN

Macomber Estates

H3

99
8"-211'
2
17 MILE DR
8"-339'
CABRILLO H
P-6
6"-502'
8"-324'
1
4
4"-400'
CYPRESS DR
8"-294'
5
8"-291'
17 MILE DR
6
6"-276'
3
98
6"-210'
1
17 MILE DR

Ghost Tree

SHEET I3

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

I4

			A4	A5		
			B4	B5		
		C3	C4	C5		
	D2	D3	D4	D5		
	E2	E3	E4	E5	E6	
F1	F2	F3	F4	F5	F6	
G1	G2	G3	G4	G5	G6	
	H2	H3	H4	H5		
		I3	I4	I5		
				J5		
				K5		
				L5	L6	

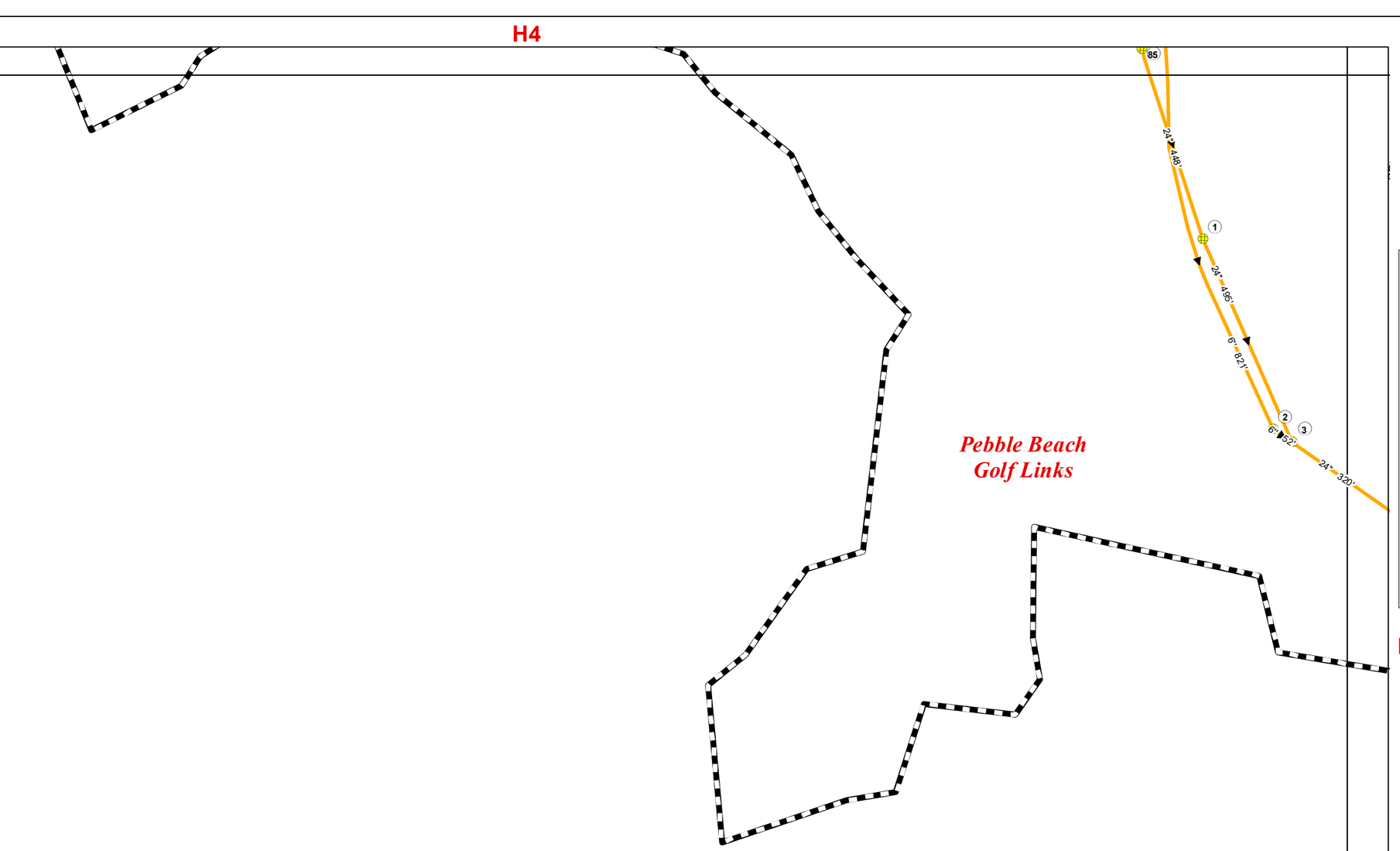
0 100 200 300 400
Feet

N

H4

I3

I5



SHEET I4

[redacted]

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

		A4	A5		
		B4	B5		
	C3	C4	C5		
D2	D3	D4	D5		
E2	E3	E4	E5	E6	
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

[redacted]

H5

I4

J5

DEL CIERVO RD

17 MILE DR

CRESPI LANE

SEVENTEEN MILE DR

KINGSLEY CT

MACOMBER DR

Macomber Estates

SEVENTEEN MILE DR

Pebble Beach Golf Links

Carmel Meter

CARMEL WAY

LINCOLN ST

2ND AVE

MONTE VERDE ST

PALOU AVE

1ST AVE

SHEET I5

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

I5

SHEET J5

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

50 49 36" 22" 1 2ND AVE G Carmel Gate CARMELO ST N CAMINO REAL LOPEZ AVE ALOU AVE N CASANOVA ST

27" 451' 2 N SAN ANTONIO AVE 27" 270' 3 27" 148' 4 27" 339' 5 6 7

Carmel By The Sea

OCEAN AVE

27" 668' 8 SAN ANTONIO AVE 27" 533' 9 8TH AVE 27" 449'

		A4	A5		
		B4	B5		
	C3	C4	C5		
D2	D3	D4	D5		
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

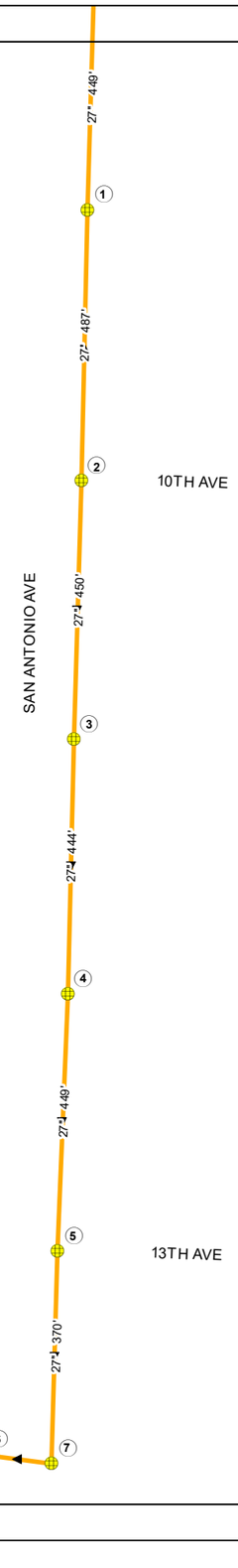
0 100 200 300 400

Feet

N

K5

J5



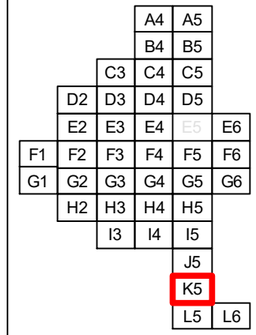
L5

SHEET K5

Sanitary Sewer System

Legend

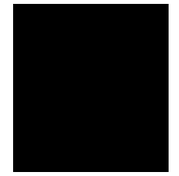
- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid



0 100 200 300 400

Feet

N



K5

SAN ANTONIO AVE

15TH AVE

MONTE VERDE ST

27" 425'

27" 256'

27" 242'

27" 210'

27" 338'

27" 487'

27" 387'

1 2 3 4 5 6 7 1

L6

SHEET L5

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

SHEET L6

[redacted]

Sanitary Sewer System

Legend

- Manholes
- Abandoned Manhole
- Discharge Manhole
- Cleanouts
- Cap
- Meter
- Pump Station
- Gravity Main
- Force Main
- Abandoned
- Pacific Grove, Gravity Main
- Carmel AWD, Gravity Main
- PBCSD Boundary
- Atlas Grid

LASUEN DR

RIO RD

PBCSD Ownership Boundary

L5

27" 387'

27" 198'

27" 397'

1

2

3

DOLORES ST

Carmel Area Wastewater District Treatment Plant

			A4	A5	
			B4	B5	
		C3	C4	C5	
	D2	D3	D4	D5	
	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
	H2	H3	H4	H5	
		I3	I4	I5	
				J5	
				K5	
				L5	L6

0 100 200 300 400

Feet

N

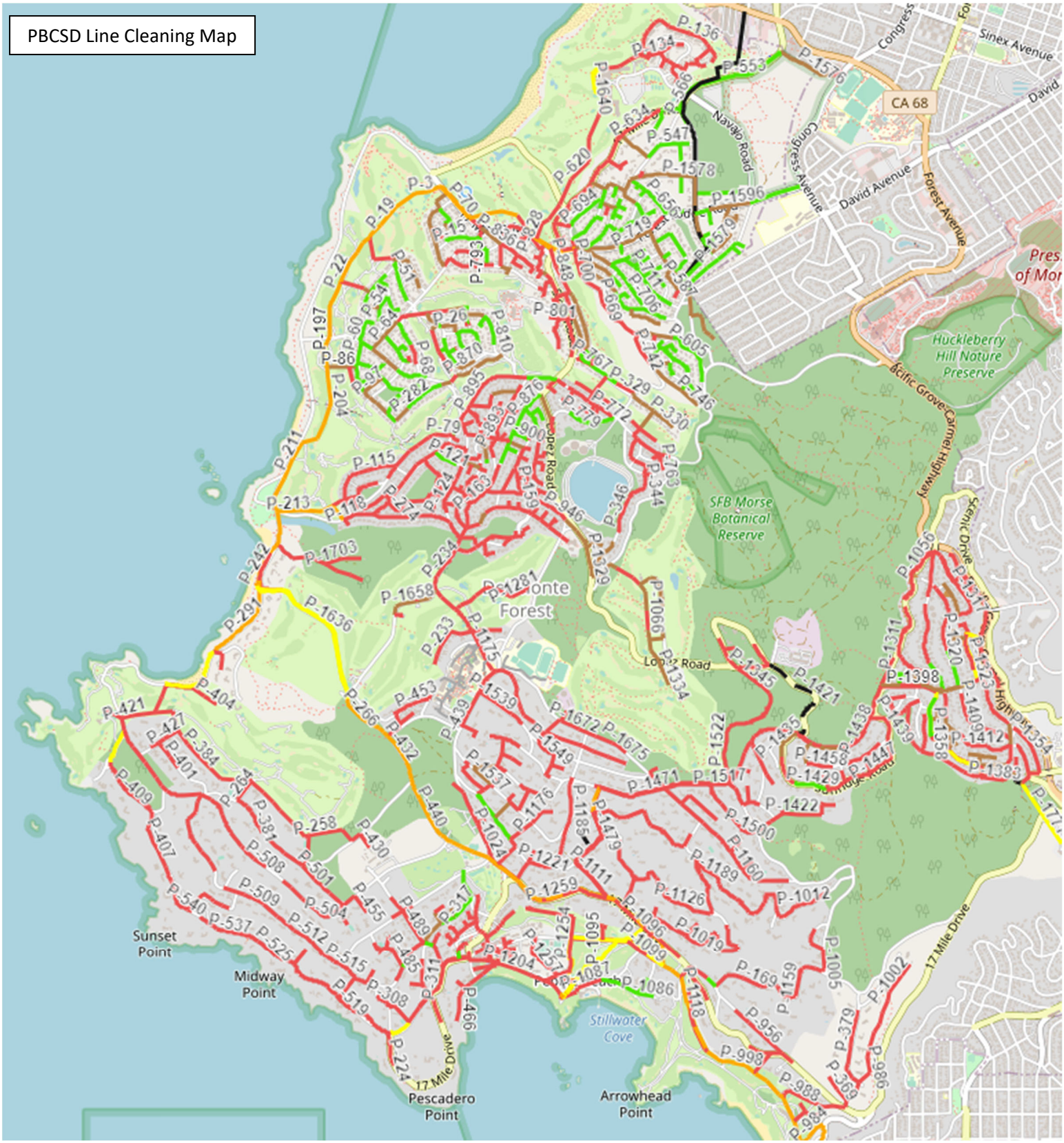
[redacted]

APPENDIX 04-2

Pebble Beach Community Services District

Preventative Maintenance Measures

PBCSD Line Cleaning Map



PBCSD Routine Preventative Operation and Maintenance List

A summary of Routine Preventative Operations & Maintenance includes, but is not limited to, the following:

Daily O&M Procedures

1. Review SCADA System
2. Record flow at Carmel Metering Station in gpm (This is done M,W,F with pump station readings)
3. Clean an average of a 1/3 of a mile of wastewater pipeline daily, in order to clean 100%of the wastewater collection system on an annual basis
    a. Enter wastewater pipelines that have been cleaned into Mobile MMS

Weekly O&M Procedures

1. Each Monday, Wednesday & Friday, record flow in gpm, from the following wastewater flow meters:
    a. Pump Station P-3
    b. Pump Station P-5
    c. Pump Station P-7
2. Each Monday, Wednesday & Friday, inspect each pump station and perform the following procedures:
    a. Test air prior to entering pump station: Pump Station P-4, Pump Station P-5
    b. Record pump run-times in hours
    c. Inspect each pump
    d. Inspect sump pump
    e. Bump each pump to check seals for leaks
    f. Cycle each valve monthly
    g. Inspect breakers
    h. Inspect wet well
    i. Inspect surge tank: Pump Station P-3, Pump Station P-5
    j. Inspect ASCO switch

l. Inspect cathodic protection

3. Run generator at pump stations P-3, P-5, and P-7 for 30 minutes each month
4. Inspect flow meters at Pump Stations P-3, P-5 and P-7

Monthly O&M Procedures

1. Inspect commercial FOG interceptors/traps

Annual O&M Procedures

1. Clean 100% of clay wastewater pipelines
2. Inspect pump clearances and change oil annually
3. Clean and inspect swing check valves

Additional O&M Procedures

1. CCTV wastewater pipelines to identify problems as necessary
    a. Enter wastewater pipelines that have been televised into Mobile MMS
2. Perform spot-repairs within the wastewater collection system as necessary
3. Locate and mark wastewater pipeline for USA North as necessary
4. Inspect private service lines as necessary
5. Connect private service lines to PBCSD collection lines as necessary
6. Replace manhole frames and covers as necessary
7. Distribute and connect portable generators at P-1, P-2, P-4, and P-6 for storm events
8. Replace pump seals as necessary
9. Replace back-up alarm batteries at each pump station every 5 years
10. Replace UPS at each pump station every 5 years
11. Skim FOG from wet wells as necessary
12. Clean identified trouble mainlines (high maintenance areas) quarterly, (Medium maintenance) bi-annually
13. Clean lines that correspond with feedback, complaints and spills bi-annually
14. Replace glycol, inspect pump clearances and wear-rigns every 3 years. (P-7, P-3)

APPENDIX 04-3

Pebble Beach Community Services District

Training, Assessment, & Certification Records

CWEA TECHNICAL CERTIFICATION PROGRAM

Certificate of Competence

This is to certify

Kelvin Ellison

Having submitted acceptable evidence of qualifications by education, training and experience, this individual is hereby granted this certification of competency in

COLLECTION SYSTEM MAINTENANCE GRADE 2

Certificate number: 1072211

Expires: 7/31/2026

Kathryn Gies, President
California Water Environment Association

CALIFORNIA WATER ENVIRONMENT ASSOCIATION
Founded 1928

Kevin Street, Chair
Technical Certification Program

CWEA TECHNICAL CERTIFICATION PROGRAM

Certificate of Competence

This is to certify

Jesse Huddleson

Having submitted acceptable evidence of qualifications by education, training and experience, this individual is hereby granted this certification of competency in

COLLECTION SYSTEM MAINTENANCE GRADE 2

Certificate number: 1308232450 Expires: 8/31/2026

Kathryn Gies, President
California Water Environment Association

CALIFORNIA WATER ENVIRONMENT ASSOCIATION
Founded 1928

Kevin Street, Chair
Technical Certification Program

CWEA TECHNICAL CERTIFICATION PROGRAM

Certificate of Competence

This is to certify

Nicholas Faro

Having submitted acceptable evidence of qualifications by education, training and experience, this individual is hereby granted this certification of competency in

MECHANICAL TECHNOLOGIST GRADE 3

Certificate number: 1308217245 Expires: 6/30/2025

Charles Greely, President
California Water Environment Association

CALIFORNIA WATER ENVIRONMENT ASSOCIATION
Founded 1928

John Vogel, Chair
Technical Certification Program

CWEA TECHNICAL CERTIFICATION PROGRAM

Certificate of Competence

This is to certify

Ryan Casey

Having submitted acceptable evidence of qualifications by education, training and experience, this individual is hereby granted this certification of competency in

COLLECTION SYSTEM MAINTENANCE GRADE 1

Certificate number: 1308231680 Expires: 12/31/2025

Gilbert D Barela

Gilbert Barela, President
California Water Environment Association

CALIFORNIA WATER ENVIRONMENT ASSOCIATION
Founded 1928

John H. Vogel

John Vogel, Chair
Technical Certification Program

CWEA TECHNICAL CERTIFICATION PROGRAM

Certificate of Competence

This is to certify

Travis Edwards

Having submitted acceptable evidence of qualifications by education, training and experience, this individual is hereby granted this certification of competency in

COLLECTION SYSTEM MAINTENANCE GRADE 4

Certificate number: 1308240102 Expires: 10/31/2026

Kathryn Gies, President
California Water Environment Association

CALIFORNIA WATER ENVIRONMENT ASSOCIATION
Founded 1928

Kevin Street, Chair
Technical Certification Program

CWEA TECHNICAL CERTIFICATION PROGRAM

Certificate of Competence

This is to certify

Travis Edwards

Having submitted acceptable evidence of qualifications by education, training and experience, this individual is hereby granted this certification of competency in

MECHANICAL TECHNOLOGIST GRADE 1

Certificate number: 1308239556 Expires: 8/31/2026

Kathryn Gies, President
California Water Environment Association

CALIFORNIA WATER ENVIRONMENT ASSOCIATION
Founded 1928

Kevin Street, Chair
Technical Certification Program

NASSCO

PACP | LACP | MACP Version 8

CERTIFICATE

OF COMPLETION

PROUDLY PRESENTED TO

Travis Edwards

Certification Number: U-1019-70307240

Expiration Date: 7/23/2028

Sheila Joy

Sheila Joy
Executive Director

Note: The individual is not an employee or partner of NASSCO. The individual acknowledges and agrees that NASSCO does not supervise or control the individual and that NASSCO shall not be responsible for any acts or omissions of the individual.

State of California

State Water Resources Control Board

IN ACCORDANCE WITH DIVISION 104, PART 1, CHAPTER 4, ARTICLE 3 OF
THE HEALTH AND SAFETY CODE

Jesse L. Huddleson

IS AUTHORIZED TO OPERATE OR SUPERVISE THE OPERATION OF A WATER DISTRIBUTION SYSTEM
AND IS HEREBY GRANTED THIS CERTIFICATE FOR

Water Distribution Operator

Grade D1

Operator Number: 55576
Issued May 2022

E. Joaquin Esquivel
Chair

NASSCO

PACP | LACP | MACP Version 8

CERTIFICATE

OF COMPLETION

PROUDLY PRESENTED TO

Jesse Huddleson

Certification Number: P0049614-082024

Expiration Date: 8/7/2027

Sheila Joy

Sheila Joy
Executive Director

NASSCO · PIPELINE ASSESSMENT CERTIFICATION PROGRAM · PACP

NASSCO · LATERAL ASSESSMENT CERTIFICATION PROGRAM · LACP

NASSCO · MANHOLE ASSESSMENT CERTIFICATION PROGRAM · MACP

Note: The individual is not an employee or partner of NASSCO. The individual acknowledges and agrees that NASSCO does not supervise or control the individual and that NASSCO shall not be responsible for any acts or omissions of the individual.

Pebble Beach Community Services District

Maintenance Staff Safety Trainings

Date	Training	Source
1/12/2023	UST Designated Operator Training	Thornton Environmental, INC.
1/26/2023	Cold Weather	DKF
2/2/2023	Chainsaw Safety	DKF
2/23/2023	Head Protection	DKF/Chris Simmons
5/18/2023	Spill Emergency Response Plan/Updated SSMP	Internal
5/22/2023	Sexual Harassment Prevention	Michael Laredo
5/23/2023	Confined Space	Internal
5/24/2023	Trench & Excavation	ACWA JPIA/Lee Patton
8/9/2023	Hazard Identification	ACWA JPIA
8/22/2023	CPR/First Aid/AED	CAL FIRE/Red Cross
10/10/2023	Defensive Driver	ACWA JPIA
11/17/2023	Fall Protection	ACWA JPIA
12/20/2023	Respiratory Protection	DKF
12/20/2023	UST Designated Operator Training	Thornton Environmental, INC.
1/4/2024	Traffic Control & Excavation	DKF/Rudy Schroeder
2/28/2024	Electrical Safety Basics for the Non-Electrician	DKF
3/14/2024	Lock Out Tag Out	DKF
5/8/2024	Spill Emergency Response Plan/General SSMP Training	Internal
5/9/2024	Defensive Driver	ACWA JPIA
6/17/2024	Workplace Violence Prevention	Jim Persons
7/18/2024	Heavy Equipment: Combination Hydro-Vac & CCTV - Strategies for Safe and Efficient Use	DKF
7/23/2024	Fall Protection	DKF
8/6/2024	Sonetics	DKF
9/26/2024	Bloodborne Pathogens	DKF
10/15/2024	Confined Space, Entrant/Attendant	DKF
12/12/2024	UST Designated Operator Training	Thornton Environmental, INC.
1/28/2025	Cranes/Hoists: Rigging Safety	DKF
2/11/2025	Cal OSHA	DKF
3/11/2025	Respiratory Protection	Fast Response On-Site Testing
3/27/2025	Lock Out Tag Out	DKF
4/10/2025	Confined Space	DKF
4/17/2025	Qualified Electrical Low Voltage Worker Training	DKF
5/6/2025	Hearing Conservation	DKF
5/21/2025	Spill Emergency Response Plan/General SSMP Training	Internal
6/4/2025	Respiratory Protection	DKF
9/11/2025	Underground Marking & Locating	DKF
9/16/2025	Bloodborne Pathogens	DKF
12/8/2025	UST Designated Operator Training	Thornton Environmental, INC.

APPENDIX 04-4

Pebble Beach Community Services District

Critical Equipment & Parts Inventory

PBCSD Critical Parts and Equipment List

Replacement Parts

SIZE	DESCRIPTION	APPROXIMATE QUANTITY
2”	Pipe – PVC	100’
4”	Calder Coupling	10
4”	Coupling – CP to Plastic/CIP	5
4”	Coupling – HDPE	15
4”	Coupling – PVC	5
4”	Coupling – VCP to Plastic/CIP	10
4”	Coupling – VCP to VCP	10
4”	Sewer Relief Valve	5
4”	2-way cleanout – ABS	1
4”	2-way cleanout – PVC	5
4”	16° Bend – PVC	5
4”	22° Bend – PVC	5
6”	Calder Coupling	10
6”	Coupling – CP to Plastic/CIP	15
6”	Coupling – Plastic to CIP	30
6”	Coupling – PVC	5
6”	Coupling – VCP to VCP	15
6” x 4”	Coupling – VCP to Plastic/CIP	15
6”	Pipe – VCP	10’
6” x 4”	Wye – PVC	6
6” x 4”	Wye – VCP	6
6” x 6”	Wye - VCP	6
6”	16° Bend – PVC	5
6”	22° Bend – PVC	5
6”	90° Bend – PVC	1
8”	Coupling – CP to Plastic/CIP	10
8”	Coupling – Plastic to CIP	10
8”	Coupling – VCP to Plastic/CIP	10
8”	Coupling – PVC	10
8” x 6”	Coupling – VCP to Plastic/CIP	5
8”	Pipe – PVC	120’
8”	Pipe – VCP	10’

PBCSD Critical Parts and Equipment List

8” x 6”	Reducer – PVC	1
8” x 6”	Wye – PVC	0
8” x 4”	Wye – VCP	2
4”	Calder Couplings	2
6”	Calder Couplings	2
8”	Calder Couplings	2
10”	Coupling – VCP to Plastic/CIP	10
12”	Coupling – Plastic to CIP	5
12”	Coupling – VCP to Plastic/CIP	5
12”	Coupling – VCP to VCP	5
4”	Pipe - PVC	65’
6”	Pipe - PVC	78’
8”	Pipe - PVC	45’
18”	Pipe – PVC	120’
18”	Pipe – C100 PVC	100’
24”	Pipe – VCP	30’

Vehicles

NAME	DESCRIPTION
PB-1	Engineering/Maintenance Utility Truck
PB-2	Vac-Con Line Cleaning & Vacuum Truck
PB-3	Televising Truck
PB-4	Maintenance Utility Truck
PB-5	Maintenance Supervisor Utility Truck
PB-6	Dump Truck
PB-7	Crane/Utility Service Truck
PB-8	High Pressure Line Cleaning Truck

PBCSD Critical Parts and Equipment List

Equipment

QUANTITY	DESCRIPTION
1	Portable, trailer-mounted, 10-inch centrifugal wastewater pump
1	6” Portable Wastewater Pump
4	Portable, trailer-mounted, 60 kilowatt diesel generator
1	Backhoe Loader
1	Portable Pipeline Televising Inspection System
1	Easement Line Cleaning Machine
1	Portable Rodder

APPENDIX 04-5

Pebble Beach Community Services District

Vendor & Suppliers Contact Info

List of District Suppliers

In the event of an emergency, local retailers are available to supply additional needed equipment and parts on short notice:

• Ferguson Enterprises: Sand City, 666 Redwood Avenue	(831) 899-4500
• Ferguson Waterworks: Salinas, 66 Tarp Circle	(831) 424-3330
• Applied Industrial Technologies, Salinas, 1083 Harkins Rd	(831) 757-6171
• Green Rubber Kennedy AG, Salinas, 1310 Dayton St.	(831) 753-6100
• Edges Electrical, Monterey, 310 Ramona Ave	(831) 373-4786
• Martin's Irrigation Supply, Seaside, 420 Olympia Ave	(831) 394-4106
• Rain For Rent, Salinas, 469 El Camino Rd.	(831) 422-7813
• Iconix Waterworks Salinas, 1359 Dayton St.	(831) 757-7776
• Rexell, Salinas, 1315 Dayton St.	(831) 751-9354

APPENDIX 05-1

Pebble Beach Community Services District

Wastewater Collection System Standard Specifications: April 2010

PEBBLE BEACH
COMMUNITY SERVICES DISTRICT

Wastewater Collection System STANDARD SPECIFICATIONS

April 2010

1 DEFINITION OF TERMS & ABBREVIATIONS

Whenever the following terms or abbreviations are used in PBCSD Standard Specifications, or other Contract Documents, where PBCSD Standard Specifications govern, they shall be defined as follows:

ABS – Acrylonitrile Butadiene Styrene

AC – Alternating Current

Acceptance – That action by the Board acknowledging that all provisions of the Agreement between PBCSD and the Applicant, or Permitee, have been fulfilled in all respects.

AGC – Associated General Contractors of America

Applicant – Any property owner in PBCSD who makes application to PBCSD for sewer service, or enters into an agreement with PBCSD for such service.

ASTM – American Society of Testing Materials

AWWA – American Water Works Association

ASCE – American Society of Civil Engineers

ASME – American Society of Mechanical Engineers

AASHTO – American Association of State Highway and Transportation Officials

Board– The Board of Directors for Pebble Beach Community Services District

Bond – Bid, performance, and payment bonds and other instruments of security furnished by the Contractor and his or her surety in accordance with the Contract Documents.

Building Sewer – See Sewer Service

Cal/OSHA – California Division of Occupational Safety and Health

Caltrans – California Department of Transportation

CAWD – Carmel Area Waste District

CCTV – Closed-Circuit Televise

CIP – Cast Iron Pipe

CISPI – Cast Iron Soil Pipe Institute

Contract – A legal agreement between two, or more, parties.

Contract Documents – Consists of drawings (or plans) and specifications, or exact reproductions thereof, which show the scope and character of the Work to be performed by a Contractor under Contract, and have been approved by PBCSD.

Contractor – The person, firm, corporation, or organization that performs the Work.

COP – Capital Outlay Program

CP – Concrete Pipe

CSWRCB – California State Water Resources Control Board

District – Pebble Beach Community Services District

District Engineer – A registered civil engineer in the State of California appointed by PBCSD to undertake the duties and powers assigned by PBCSD Standard Specifications, acting directly or through authorized representatives. The District Engineer may appoint a designated representative to perform any duties outlined in these Standard Specifications.

Enrollee – The legal public entity that owns a sanitary sewer system, as defined by the GWDR, which has submitted a complete and approved application for coverage under the GWDR. This is also called a sewer system agency or wastewater collection system agency, and in the case of this SSMP, is PBCSD.

Final Acceptance – See Acceptance.

FOG – Fats, Oils, and Grease

Force Main – A PBCSD-owned sewer, or portion thereof, constructed or proposed to be constructed, that delivers wastewater under pressure from a pump station to a manhole, or other point of discharge.

FT – Feet

GIS – Geographical Information System: A database linked with mapping, which includes various layers of information used by government officials. Examples of information found on a GIS can include a sewer map; sewer features such as pipe location, diameter, material, condition, last date cleaned or repaired. The GIS also typically contains base information such as streets and parcels.

GPM – Gallons Per Minute

GWDR – General Waste Discharge Requirements: See WDR.

HDPE – High Density Polyethylene

Hg – Mercury

HP – Horsepower

I/I –Infiltration and Inflow

InfoSys – Pebble Beach Community Services District's Information Systems Database

LRO – Legally Responsible Official

MRP – Monitoring and Reporting Program

NPDES – National Pollution Discharge Elimination System

O&M – Operations and Maintenance

PBCSD – Pebble Beach Community Services District

PCF – Pound per Cubic Foot

Pipe Segment – The section of pipeline between two manholes, or between two cleanouts, or between a manhole and a cleanout, etc.

Private Contract Work – Work done pursuant to a Contract between a Contractor and an Applicant.

Project – Improvements or development within PBCSD which connects more than one (1) user to the wastewater collection system.

Project Engineer – A registered civil engineer in the State of California that prepares Contract Documents and monitors construction of the Work.

PVC – Polyvinyl Chloride

PSI – Pound per Square Inch

PSIG – Pound per Square Inch Gauge

Questys – Pebble Beach Community Services District's electronic filing system

ROW – Rights-of-Way

RPM – Revolutions Per Minute

Sanitary Sewer System – Any system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks used to collect and convey wastewater to the publicly owned treatment facility. Temporary storage and conveyance facilities are considered to be part of the sanitary sewer system and discharges into these temporary storage facilities are not to be considered SSOs.

SCADA – Supervisory Control and Data Acquisition

SDR – Standard Dimension Ratio

Sewer Interceptor – A PBCSD-owned sewer, or portion thereof, constructed or proposed to be constructed, that receives wastewater from one or more sewer mains and delivers directly to a wastewater treatment facility.

Sewer Lateral – see Sewer Service.

Sewer Main – a PBCSD-owned sewer, or portion thereof, constructed or proposed to be constructed, capable of receiving wastewater from one (1) or more sewer services and delivering to a sewer interceptor.

Sewer Service – a privately owned sewer line, or portion thereof, constructed or proposed to be constructed on private property from the plumbing outlets of the building to the connection point on the PBCSD wastewater collection system.

Service Lateral – See Sewer Service.

SSMP – Sewer System Management Plan: A series of written site specific programs that address how a collection system owner/operator conducts their daily business as is outlined in the WDR. Each SSMP is unique for an individual discharger, and includes provisions to provide proper and efficient management, operation, and maintenance of sanitary sewer systems, while taking into consideration risk management and cost benefit analysis. It also must contain a spill response plan. Certification is offered by technically qualified and experienced persons and provides a useful cost effective means for ensuring that SSMPs are developed and implemented appropriately.

SSO – Sanitary Sewer Overflow

Standard Drawings – Show the scope and character of standard Work, which are part of the Standard Specifications.

Standard Specifications – The Pebble Beach Community Services District's Wastewater Collection System Standard Specifications.

Subcontractor and Sub-subcontractor – A Subcontractor is a person, firm, corporation, or organization who has a direct contract with the Contractor to perform any of the Work at the project site. A Sub-subcontractor is a person, firm, corporation, or organization who has a direct or indirect contract with the Subcontractor to perform any of the Work at the project site.

TDH – Total Dynamic Head

UPWWF – Ultimate Peak Wet Weather Flow

UPS – Uninterruptable Power Supply

VCP – Vitrified Clay Pipe

Wastewater Collection System – See Sanitary Sewer System.

WDR – Waste Discharge Requirements: Similar to a NPDES permit, but with significant differences. A WDR is an authorization to discharge waste with certain conditions, which can be issued on an individual basis or to a group of dischargers. WDRs do not sunset, unlike NPDES permits, and are most commonly issued by the Regional Water Boards. The Statewide General WDR for Sanitary Sewer Systems was adopted by the SWCRB and will be implemented by the Regional Water Boards and SWRCB.

WEF – Water Environment Federation

Work – Includes labor, materials, equipment and incidentals necessary to produce the construction required by the Contract Documents and the Contract, and any obligations, duties and responsibilities necessary to the successful completion of the construction assigned to or undertaken by the Contractor under the Contract.

Approved, Directed, Satisfactory, Proper, Acceptable, Required, Necessary, and/or Equal – Considered Approved, Directed, Satisfactory, Proper, Acceptable, Required, Necessary, and/or Equal in the opinion of the District Engineer.

2 GENERAL CONDITIONS

2.1 GENERAL

These Standard Specifications establish standards of work, materials, and construction procedures for improvements to the existing wastewater collection system of the Pebble Beach Community Services District (PBCSD). These Standard Specifications are not intended to establish general requirements or special conditions for a particular job, but rather are to be used as technical standards for all wastewater collection system improvements work within PBCSD.

These Standard Specifications apply to work contracted by others for dedication to and acceptance by PBCSD. Current PBCSD Plumbing Code Ordinance shall be considered as a part of these Standard Specifications and is included herewith as Appendix A. PBCSD Plumbing Code applies to individual service connections to the existing sewerage system.

The technical provisions of these Standard Specifications also apply to construction of work under direct contract with PBCSD. These Standard Specifications are to be used as a guide for the preparation of Contract Documents for PBCSD wastewater collection system improvements projects, and for performance testing and inspection of construction and connection work within PBCSD.

2.2 SUPPLEMENTARY SPECIFICATIONS

2.2.1 General

Wherever reference is made within PBCSD Standard Specifications to certain standard specifications, these supplemental specifications shall be construed to mean the standards, with all subsequent amendments, changes or additions that are in effect at the date of preparation of the Contract Documents.

2.2.2 California Department of Transportation

The PBCSD Standard Specifications shall be used in conjunction with California Department of Transportation Standard Specifications, which shall be referred herein to as State Standard Specifications or Caltrans SS. In the case of conflict between the PBCSD Standard Specifications and the Caltrans SS, PBCSD Standard Specifications shall prevail.

2.3 PROCESSING CONTRACT DOCUMENTS

2.3.1 General

Contract Documents for Private Contract Work shall be prepared by a Project Engineer and checked and approved by the District Engineer. Contract Documents must be approved by the District Engineer prior to starting Work.

It is expected that the Project Engineer shall thoroughly investigate the project site conditions and, from the information gained therefrom, prepare a complete set of Contract

Documents based upon PBCSD Standard Specifications, modified where necessary to suit particular work conditions. Special provisions, specification addenda and/or notes on the plans shall be provided when deemed necessary and shall be considered as part of the Contract Documents for the Work.

2.3.2 Preliminary Submittal

Prior to preparation of detailed Contract Documents for a particular project, the Project Engineer shall submit to the District Engineer for review and approval a Preliminary Plan for the Work, including, but not limited to the following:

- Description of project, including subdivision tract maps, contour maps, type of development, number of units, etc;
- Calculations for design flow projections;
- Proposed horizontal and vertical alignment of new sewer mains showing ground contours along the alignment;
- Proposed connection point to the existing wastewater collection system; and
- Evaluation of capacity restrictions in downstream sewer mains and interceptors, and pump stations.

The District Engineer must approve the Preliminary Plan prior to preparation of detailed Contract Documents. The Project Engineer shall revise the Preliminary Plan to the satisfaction of the District Engineer. The Work shall include all off-site improvements necessary to increase the capacity of existing facilities to accommodate the capacity requirements of the project, as determined by the Project Engineer and the District Engineer.

2.3.3 Plan Check Submittal Process

Based on the approved Preliminary Plan, the Project Engineer shall prepare and submit three (3) copies of detailed Contract Documents, as well as three (3) sets of updated project data such as recorded subdivision tract maps, to the District Engineer for review. The District Engineer will review the Contract Documents and project data and return them with comments to the Project Engineer.

The Project Engineer shall revise the Contract Documents to the satisfaction of the District Engineer and shall submit three (3) reproducible copies of the revised Contract Documents as well as one set of electronic Contract Documents to the District Engineer. Upon favorable review, the reproducible Contract Documents will be certified as follows by the District Engineer and returned to the Project Engineer:

PEBBLE BEACH COMMUNITY SERVICES DISTRICT REVIEW
Accepted for Compliance with PBCSD Standards By:

_____

PBCSD District Engineer Date

2.3.4 Plan Check and Inspection Fees

Following approval of the Preliminary Plan, PBCSD will establish plan check fees and inspection fees for the Work based on estimates of level of effort required in each particular case. If the actual total cost exceeds the estimated fees, the Applicant shall pay the difference to PBCSD. If the actual total cost is less than the estimated fees, PBCSD will refund the difference to the Applicant.

2.3.5 Responsibility of the Project Engineer

In accordance with the Civil and Professional Engineers Act of the California Business and Professions Code, all Contract Documents shall be prepared by a registered civil engineer in the State of California, or by a subordinate employee under his or her direction, and shall be signed by the registered civil engineer to indicate his or her responsibility for the design. Contract Documents submitted to the District Engineer for approval shall have thereon the name and registration number of the Project Engineer who prepared the Contract Documents, or the name of the engineering firm and the name and registration number of the Project Engineer under whose direction the Contract Documents were prepared.

2.3.6 Approval by District Engineer

Approval of Contract Documents by the District Engineer will not relieve the Applicant or the Project Engineer of any responsibility because of errors in the Contract Documents, either of commission or omission. Any such errors, when brought to the attention of the Project Engineer by the District Engineer, shall be promptly remedied. Approval of Contract Documents by PBCSD for any Work indicates only that the design is acceptable to PBCSD in that it meets the minimum design standards established in PBCSD Standard Specifications.

2.3.7 Requirements for Grading Plans

All Work involving cut and fill of existing grade shall be approved and certified by a registered geotechnical engineer and shall include all required retaining walls, slopes, drainage features and other work required to maintain a stable finished grade.

2.3.8 Changes to Approved Contract Documents

Changes may be made in the approved Contract Documents upon approval of the District Engineer. To request such approval, the Project Engineer shall submit no less than two (2) sets of duplicate drawings of the original design, upon which the proposed changes shall be shown. If the changes are acceptable to the District Engineer, the District Engineer will certify the drawings and return one set of drawings to the Project Engineer.

2.4 RECORD DRAWINGS

After completion of the Work and prior to its Acceptance, the Project Engineer shall prepare "As-Built" record drawings from the latest revised set of drawings showing clearly all changes in location and elevation of constructed Work. The record drawings shall

accurately show the Work as actually constructed. The Project Engineer shall submit the final "As-Built" record drawings to the District Engineer for final approval. Upon approval by the District Engineer and, prior to Final Acceptance, the Project Engineer shall furnish PBCSD with one set of prints and one set of electronic copies of the record drawings.

2.5 COMPLIANCE WITH LAWS AND REGULATIONS

The Contractor and Applicant shall keep themselves fully informed of all existing and future State and Federal laws and all municipal ordinances and regulations of PBCSD and the County of Monterey which in any manner affect those engaged or employed in the Work, or the materials used in the Work, or which in any way affects the conduct or the Work, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same.

All Work shall comply in every respect with all the governing laws, regulations and ordinances of PBCSD which shall be considered for the purpose of the Contract to which PBCSD Standard Specifications refer, a part thereof. The Contractor and Applicant shall give to the proper authorities all necessary notices relative to the Work, and shall obtain and pay for all such permits, licenses, notices, inspections or tests required.

2.6 CONTRACTOR'S RESPONSIBILITY

2.6.1 Defective Work

All work which is defective in its construction or deficient in any of the requirements of PBCSD Standard Specifications or the Contract Documents shall be remedied or removed and replaced by the Contractor in an acceptable manner. Compensation will not be allowed for such corrections. Defective work shall be made good, and unsuitable materials shall be rejected, notwithstanding the fact that such defective work and unsuitable materials have been previously overlooked or approved by the District Engineer or Project Engineer.

2.6.2 Responsibility for the Work

Until formal acceptance of the Work by the District Engineer, the Contractor shall have the charge and care thereof and shall bear the risk of injury or damage to any part thereof by the action of the elements or from any other cause whether arising from the execution or from the non-execution of the Work. The Contractor shall rebuild, repair, restore and make good all injuries or damages to any portion of the Work occasioned by any of the above causes before Final Acceptance and shall bear the expense thereof, except such injuries or damages occasioned by acts of the federal government, the public enemy, or force majeure.

2.6.3 Safety

2.6.3.1 General

The Contractor is responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work until Final Acceptance of the Work. The Contractor shall designate a competent person whose duty shall be the prevention of

hazards and accidents. Before starting Work, the Contractor shall prepare a project safety plan. The Contractor must conform to all applicable laws and regulations of State of California Division of Occupational Safety and Health. The Contractor shall provide himself or herself with copies of these rules and orders, which may be obtained from the State Offices, Sacramento, California or from www.dir.ca.gov.

2.6.3.2 Trench Excavation Safety Measures

Before excavating any trenches 5 feet or more in depth, the Contractor shall prepare and submit to the Project Engineer for approval a detailed plan showing the design of shoring, bracing, sloping or other provisions to be made for workers' protection from the hazard of caving-in during the excavation of the trench or during the pipe installation therein. If the plan varies from the shoring system standards established Cal/OSHA, the plan must be prepared by a registered civil or structural engineer at the Contractor's expense.

2.6.3.3 General Safety

The Contractor shall take all necessary measures to protect the Work and prevent accidents during construction. The Contractor shall provide and maintain sufficient night lights, barricades, safeguards, temporary sidewalks, temporary bridges, danger signals, watchmen, and necessary appliances to eliminate hazards to people and properties.

2.6.3.4 Work in Roadways

The Pebble Beach Company owns and maintains roadways in Pebble Beach. All Work in roadways shall be coordinated with the Pebble Beach Company. The Contractor shall so conduct all operations as to offer the least possible obstruction and inconvenience to traffic and shall have under construction no greater amount of work than the Contractor can handle properly with due regard for the rights of the public. All traffic shall be permitted to pass through the Work site with as little delays and inconvenience as possible.

Convenience of adjacent property owners shall be provided for as far as practicable. Convenient access to mailboxes, driveways, houses and buildings adjoining the Work, as well as fire hydrants, shall be maintained, and temporary approaches to intersections shall be provided and kept in good condition. If necessary, the Contractor shall provide competent flagmen to direct traffic either through or around the work to avoid unnecessary delay to the traveling public. When a section of surfacing, pavement or a structure has been completed, it shall be opened for use by traffic.

The Contractor shall minimize the duration that steel plates are used in the roadways. Steel plates left in place for more than 8 hours shall be framed and tapered with cold mix asphalt. There shall be no gaps between steel plates. Generally, steel plates shall not be left in roadways during weekends.

2.6.3.5 Contractor's License

All Contractors performing Work within PBCSD must be licensed in accordance with the laws of State of California. A non-licensed Contractor is subject to the penalties imposed by such laws.

2.6.3.6 Public Liability and Property Damage Insurance

The Contractor, and all of his or her Subcontractors, shall carry comprehensive general liability policy with limits approved by the Board and no less than the following:

- General Liability: one million dollars ($1,000,000) per occurrence and three million dollars ($2,000,000) aggregate limit
- Property Damage Insurance: one million dollars ($1,000,000) per occurrence and one million dollars ($1,000,000) aggregate limit.

The insurance policy shall name the Pebble Beach Community Service District, as well as its directors, officers, employees, agents as additional insured. Proof of acceptable insurance shall be submitted to PBCSD prior to commencing Work.

2.6.3.7 Worker's Compensation and Employer's Liability Insurance

The Contractor shall maintain or cause to be maintained adequate worker's compensation insurance, including occupational disease provisions, under the laws of the State of California and employer's general liability insurance for the benefit of his or her employees and the employees of any Subcontractor under him or her not protected by such compensation laws. The worker's compensation insurance shall include an all states endorsement, a voluntary compensation endorsement, and an endorsement waiving subrogation against the Contractor, PBCSD, and the District Engineer.

2.6.3.8 Indemnification

The Contractor shall indemnify, defend and hold harmless PBCSD, its directors, officers, employees and agents from and against all losses and all claims, demands payment, suits, actions, recoveries, and judgments of every nature and description brought or recovered against him or her by reason of any act or omission of the Contractor, the Contractor's agents or employees, or of any subcontractor in execution of the Work. The Contractor shall maintain and pay for such insurance as will protect PBCSD and the District Engineer from any and all contingent liability, and a copy of such insurance policy shall be filled with PBCSD prior to commencing Work.

2.7 GUARANTEE

2.7.1 General

All materials supplied and all Work done shall be guaranteed by the Contractor or Applicant for a period of one year from the date of Final Acceptance of the Work by PBCSD. When defective material or workmanship is discovered in the Work, requiring repairs to be made under this guarantee, all such repair work shall be done by the Contractor or

Applicant at his or her own expense within 10 days after written notice has been given by PBCSD. Should the Contractor or Applicant fail to repair the Work as directed within 10 days thereafter, PBCSD may make the necessary repairs and charge the Contractor or Applicant with the actual cost of all labor and material required. In case of emergencies demanding immediate attention, PBCSD shall have the right to repair the defect or damage and charge the Contractor or Applicant with the actual cost of all labor and material required.

2.7.2 Performance Bond

The Applicant or Contractor shall furnish PBCSD, at no expense to PBCSD, a performance bond in the amount of twenty-five percent (25%) of the final contract price of the accepted Work for the performance of the foregoing guarantee. The performance bond shall be maintained in full force and effect during the guarantee period for the purpose of ensuring that said repairs or replacements will be made.

2.8 FINAL ACCEPTANCE

The District Engineer will accept the completed Work, including easements, following fulfillment of the following requirements, which are described in detail elsewhere in these Standard Specifications:

- All cleaning, flushing, testing and inspection have been completed to the satisfaction of the District Engineer in accordance with the provisions specified in these Standard Specifications;
- The Project Engineer has submitted written certification that the Work was constructed in accordance with these Standard Specifications and the approved Contract Documents, as specified in these Standard Specifications ;
- The Project Engineer has submitted approved As-Built Record Drawings as required per paragraph 2.4 of this Section;
- The Applicant or Contractor has provided a one-year guarantee performance bond as required per paragraph 2.6 of this Section;
- The Applicant has submitted an approved title report for sewer easements and all easement documents have been executed and delivered to PBCSD, including all necessary partial conveyances or subordination agreements; and
- All plan check, inspection and easement processing costs incurred by PBCSD have been reimbursed in full amount in accordance with paragraph 2.3.4 of this Section.

Prior to Acceptance of the completed Work, wastewater shall not be discharged from the completed Work to wastewater collection system.

2.9 SEWER SERVICE CONNECTION

Application for a permit to connect a sewer service to the existing wastewater collection system shall be made in accordance with the PBCSD Plumbing Code and shall be made by PBCSD Maintenance Staff or under the PBCSD Maintenance Supervisor's supervision.

3 DESIGN CRITERIA AND REQUIREMENTS FOR PREPARATION OF CONTRACT DOCUMENTS

3.1 GENERAL

Design of wastewater collection lines and appurtenant facilities shall be in accordance with the *Gravity Sanitary Sewer Design and Construction* in Water Environment Federation Manual of Practice No. FD-5, American Society of Civil Engineers Manuals and Reports on Engineering Practice No. 60, and as required herein. Any questions on matters of design not covered herein or interpretations of any part of these Standard Specifications shall be brought to the attention of the District Engineer for clarification.

3.2 WASTEWATER FLOW PROJECTION

3.2.1 Design Flow

Sewer lines 12-inch diameter and smaller shall be designed to discharge the projected ultimate peak wet weather flow when the pipe is flowing half full. Sewer lines larger than 12-inch diameter shall be designed to discharge the projected UPWWF when the pipe is flowing full without surcharge.

3.2.2 Flow Projections

Projections of ultimate flows shall be based on the approved Del Monte Forest Land Use Plan and on other development plans that require connection to the wastewater collection system. Figure 6 of the ASCE Manual of Engineering Practice No. 37 shall be used to estimate peak discharges for residential service. Average unit flow for residential dwellings shall be 250 gallons per day. Peak and average flows for other types of development shall be estimated on a case-by-case basis.

3.3 GRAVITY SEWER MAIN DESIGN CRITERIA

3.3.1 Pipe Size

Following are minimum pipe sizes required:

Classification	Minimum Nominal Diameter
Sewer Main	8-inch
Sewer Service	4-inch

3.3.2 Slope and Velocity

All gravity sewer lines shall be designed to provide mean velocities of 2 feet per second when flowing one-quarter full, based on Manning's equation using an "n" value of 0.01 for PVC pipe.

Following are minimum required slopes. Greater slopes are desirable:

Pipe Diameter	Minimum Slope (ft/ft)
4-inch	0.020
6-inch	0.010
8-inch and larger	0.006

3.3.3 Horizontal Alignment

Gravity sewer mains shall be located in road ROW under paved streets except where topography dictates otherwise. Gravity sewer mains shall be located near the centerline of the street to the greatest extent possible. Gravity sewer mains shall be laid in straight lines between manholes. Where curved sewers are necessary, with the approval of the District Engineer, the horizontal deflection at each joint shall be according to manufacturer's recommendations and shall not exceed 3 degrees.

Minimum centerline distance between a sewer main and water main shall be as shown on PBCSD Standard Drawing No. 16. Minimum centerline distance between a sewer main and other utilities shall be 5 feet. PBCSD will not accept any sewer main or sewer service that lies within a common trench with other utilities.

3.3.4 Vertical Alignment

The minimum depth of gravity sewer mains and sewer services shall be 3 feet. Except as approved by the District Engineer, sewer main and sewer service depth shall be adequate to provide gravity flow service and minimum slopes for all service connections, including future development of existing lots.

Gravity sewer mains shall cross water mains and be constructed in parallel with water mains at the minimum depths shown on PBCSD Standard Drawing No. 16. Gravity sewer mains shall be installed with a uniform slope between manholes. Vertical curves or bends shall not be used in construction of gravity sewers.

3.3.5 Manhole Spacing

The maximum spacing between manholes for 8-inch diameter through 18-inch diameter pipelines shall not exceed 350 feet. A maximum spacing of 500 feet is allowable for pipelines greater than 18-inch diameter subject approval by the District Engineer. Manholes shall be installed at all changes of: grade, size of pipe, horizontal alignment, and at all intersections with connecting sewer mains.

3.3.6 Manhole Drops

For pipeline sizes 15-inch diameter and smaller, the drop across a manhole shall be calculated by the following formula:

Drop in feet = $[2(S_1 + S_2)] + [(D_2 - D_1)/2]$

S_1 = the invert slope leaving the manhole.
S_2 = the invert slope entering the manhole.
D_1= diameter of the inlet pipe.
D_2 =diameter of the outlet pipe.

For pipeline sizes greater than 15-inch diameter, approval of drop across the manhole shall be obtained from the District Engineer. A minimum drop of 0.10 foot and a maximum of 0.50 foot shall be used on straight-run manholes. For a 90-degree bend through the structure, a minimum drop of 0.20 foot and a maximum of 0.75 foot shall be used.

3.3.7 Flushing Inlets

The use of flushing inlets shall be limited to:

- Sections of pipeline less than 200 feet where the sewer main is planned to be extended in the future.
- The end of sewer mains where the distance from the downstream manhole does not exceed 150 feet.

3.4 GRAVITY SEWER SERVICE DESIGN CRITERIA

3.4.1 General

Building sewers shall be constructed as required by the Plumbing Code and as shown on PBCSD Standard Drawings. There shall be a minimum of one sewer service provided for each individual user, including multiple dwelling units and senior citizen housing units. Common service connections for more than one dwelling unit per lot will not be allowed. Sewer services shall be a minimum of 4-inches in diameter. Sewer service shall be installed at a minimum slope of $^1/_4$-inch per foot (0.02 ft/ft), which must result in a minimum cover of 3 feet at the property line. Sewer services shall not be connected to manholes nor to sewer interceptors. No connection for a sewer service shall be placed closer than 5 feet from the outside wall of any manhole. No two (2) wyes shall be installed back-to-back. There shall be a minimum of 4 feet between each wye fitting.

3.4.2 Appurtenances

3.4.2.1 Sewer Relief Valve

Each sewer service shall have a sewer relief valve as shown in the PBCSD Standard Drawings. The overflow point of the sewer relief valve shall extend a minimum of 4 inches

above grade but at least 6 inches below the building's lowest plumbing fixture connected to the sewer service.

3.4.2.2 Cleanout

Cleanouts shall be installed in accordance with PBCSD Standard Drawing No. 10 at intervals not to exceed 100 feet of straight runs and at all changes in alignment exceeding 22.5 degrees.

3.5 FORCE MAIN DESIGN CRITERIA

3.5.1 Pipe Size

Following are minimum pipe sizes required:

Classification	Minimum Nominal Diameter
Force Main	4-inch
Pressure Sewer Service	2-inch

3.5.2 Design Velocity

Following are velocity ranges required:

Classification	Minimum Velocity	Maximum Velocity
Force Main	2 fps	4 fps
Pressure Sewer Service	2 fps	4 fps

A design velocity of 3 feet per second is ideal.

3.6 WASTEWATER PUMP STATIONS

The use of wastewater pump stations to connect to the existing wastewater collection system is discouraged by PBCSD. In cases where no alternative exists for installing a wastewater pump station, the District Engineer will establish design criteria for type, performance and reliability on a case-by-case basis.

3.7 SHEETING AND SHORING

The design of sheeting and shoring for trenches shall be prepared in conformance with applicable requirements of Article 6, "Excavations, Trenches, Earthwork" of Construction Safety Orders of Cal/OSHA. Sloping of trenches shall not be employed below the groundwater elevation.

3.8 FOG INTERCEPTORS

3.8.1 General

In any establishment where fat, oil, grease or sand may be introduced into the wastewater collection system, which could cause line blockage, hinder wastewater flow or treatment, a FOG interceptor shall be installed when, in the judgment of the PBCSD, such waste pretreatment is required as provided by the PBCSD Plumbing Code. The FOG interceptor shall conform to the provisions established in the PBCSD Plumbing Code and shall be installed as shown on PBCSD Standard Drawing No. 18.

3.8.2 Capacity

Under all situations, interceptor capacity shall not be less than 750 gallons.

For restaurants, interceptor size shall be calculated as follows:

Size in Gallons = Number of Seats x Number of Hours Open x 5

For other commercial kitchens, interceptor size shall be calculated as follows:

Size in Gallons = Number of Meals Served per Day x 28

3.9 UTILITY EASEMENTS

All sewer mains and force mains not located in a road ROW shall be provided with a minimum 10-foot wide utility easement centered on the alignment of the sewer main.

3.10 PREPARATION OF CONSTRUCTION DRAWINGS

3.10.1 General

For replacement or rehabilitation of existing pipeline using pipe bursting, slip-lining, or cured-in-place-piping, pipelines shall be shown on plan sheets. For new pipelines, or replacement or rehabilitation of existing pipelines using horizontal directional drilling or traditional open-trench methods, pipelines shall be shown on plan and profile sheets.

If deviations from PBCSD Standard Drawings are requested, a detailed drawing shall be submitted for approval to the District Engineer.

3.10.1.1 Plan View

The plan view shall show at a minimum:

- existing and finished grade contour lines
- roadway, property and easement lines
- horizontal alignment of the pipeline relative to the centerline of the street or to adjacent property line
- horizontal alignment of manholes, flushing inlets, and sewer services
- bearing of each pipe segment
- north arrow
- pipeline stationing

- station and coordinates of manholes, flushing inlets, cleanouts, sewer services and other appurtenances
- location of existing and new utilities, and their appurtenances
- trees, structures, and other existing or proposed features which might influence the design of the wastewater collection system
- labels including dimensions, street names; house numbers; commercial property names; manholes, flushing inlets, and cleanouts numbered sequentially beginning from downstream and continuing upstream to the highest point; etc.
- sewer service connection schedule
- horizontal drawing scale

3.10.1.2 Profile View

The profile of the pipeline shall be drawn directly below the plan view unless proven to be impractical. The profile shall show at a minimum:

- existing and finished grade profile at the centerline of the pipeline
- vertical alignment of the pipeline
- location of manholes, flushing inlets, cleanouts, sewer services, and other appurtenances
- rim elevations of each manhole
- inlet and outlet invert elevation of each manhole
- slope, direction of flow, length, pipe size and pipe material for each pipe segment
- location, elevation, size, type of all existing and new utilities
- vertical drawing scale

3.10.1.3 Standard Notes

The following notes shall be shown on all wastewater collection system construction plans:

- All Work shall conform to the Pebble Beach Community Services District's Standard Specifications.
- Approval of these Plans by the District Engineer of the Pebble Beach Community Services District certifies only that the design conforms to the requirements of Pebble Beach Community Services District's Standard Specifications.

4 MATERIALS

4.1 GENERAL

Materials to be used in all Work shall be as specified in this Section or on PBCSD Standard Drawings. All materials shall be new, free from defects and contamination, and shall be the standard product of the manufacturer unless otherwise specified. Materials not conforming to the requirements of these Standard Specifications shall be considered defective, and all such materials, whether in place or not, shall be rejected and shall be removed immediately from the site of the Work unless otherwise permitted by the District Engineer. Rejected materials, the defects of which have been subsequently corrected, shall not be used until approved in writing by the District Engineer.

4.2 ALTERNATIVE MATERIALS

For convenience in designation on the Contract Documents, certain articles or materials to be incorporated in the Work may be designated under a trade name or the name of a manufacturer and the manufacturer's catalog information. The use of an alternative article or material, which is of equal quality and of the required characteristics for the purpose intended, shall be permitted. The burden of proof as to the quality and suitability of alternatives shall be upon the Contractor, and the Contractor shall furnish all information necessary as required by the District Engineer. The District Engineer shall be the sole judge as to the quality and suitability of alternative articles or materials and the decision shall be final.

4.3 GRAVITY SEWER MAINS AND SEWER INTERCEPTORS

4.3.1 General

All pipe and fittings for construction of sewer mains and sewer interceptors shall be of PVC gravity sewer pipe or HDPE gravity sewer pipe, unless otherwise specified herein or approved by the District Engineer. Other pipe materials may be allowed on a case-by-case basis, or the District Engineer may require other pipe materials in specific situations.

4.3.2 PVC Gravity Pipe

4.3.2.1 Pipe and Fittings

PVC gravity sewer pipe and fittings to be used in all Work shall be designed and manufactured in accordance with ASTM D3034, Type PSM PVC Sewer Pipe and Fittings, for pipe sizes 15-inches and smaller in diameter. Pipe and fittings shall be fabricated of PVC plastic having a cell classification as defined in ASTM D1784. Pipe and fittings shall be homogeneous throughout and free from cracks, holes, foreign inclusions, or other defects. The pipe shall be uniform in density, color, opacity, and other physical properties. PVC gravity pipe shall have a maximum SDR of outside diameter to wall thickness of 35, per ASTM D3034. Standard section lengths shall be 20 feet. Use of random pipe lengths is subject to approval by the District Engineer. The maximum offset measured from the concave side of the pipe shall not exceed $^{1}/_{16}$ inch per foot of pipe length.

4.3.2.2 Joints

PVC gravity sewer pipe joints shall be elastomeric-gasketed, integral bell and spigot type. Joint assembly shall meet the requirements of ASTM D3212, Joints for Drain and Sewer Pipes using Flexible Elastomeric Seals. Pipe shall be provided with a reference mark on the spigot end to ensure proper position of the adjoining bell end. Pipe shall be manufactured with a socket configuration which will forestall improper installation of the gasket and will ensure the gasket remains in place during the joining operation. Elastomeric compounds used in manufacture of joint gaskets shall comply with the requirements specified in ASTM F477, Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe. Repair Couplings shall be molded of same material as pipe specified herein. Furnish with gaskets

at both ends and without a stop. Flexible Couplings shall conform to ASSTM C564. Fabricate body of synthetic SDR rubber conforming to ASTM C564. Connection with pipe shall use a mechanical compression joint requiring no sealant. Furnish with at least two (2) Type 302 stainless steel bands and clams for each coupling.

4.3.3 HDPE Gravity Pipe

4.3.3.1 Pipe and Fittings

HDPE gravity sewer pipe and fittings to be used in all Work shall be designed and manufactured in accordance with ASTM F714 PE plastic pipe (SDR-PR) based on outside diameter, ASTM D4976 and ASTM D3350. Provide only pipe and fittings made of virgin material. No rework, except that obtained from the manufacturer's own production of the same formulation, shall be permitted. Furnish pipe and fittings that are homogenous throughout and free of visible cracks, holes, foreign material, blisters, or other deleterious faults. The minimum wall thickness of the HDPE pipe and fittings shall meet the requirements for SDR 17. Material color may be black, white, or light grey, with the interior of the pipe having a light reflective color to allow for the best viewing for television inspection. Fittings shall be fabricated in the pipe manufacturer's factory or other approved manufacturer of HDPE fittings. Remove the interior joint beads in the finished fittings prior to shipment by grinding or cutting to produce a smoother interior surface (maximum $^{1}/_{16}$-inch protrusion, with no rough or jagged edges or undercuts). Elbows shall be of the long radius design. Lateral fittings may use fiberglass wrap to provide the necessary reinforcement.

4.3.3.2 Joints

HDPE gravity sewer pipe joints shall be butt-fused to provide a leak-proof joint. Threaded or solvent-cement joints and connections are not permitted. Joints shall be in true alignment and have uniform interior and exterior rollback beads. Remove the interior joint beads prior to making the subsequent joint or insertion of the new pipe into the host pipe by grinding or cutting to produce a smoother interior surface (maximum $^{1}/_{16}$-inch protrusion, with no rough or jagged edges or undercuts).

4.4 GRAVITY SEWER SERVICES

4.4.1 General

Pipe materials to be used in construction of sewer services shall be PVC or HDPE. One type of material shall be used throughout each service, unless otherwise specified herein or approved by the District Engineer. Other pipe materials may be allowed on a case-by-case basis, or the District Engineer may require other pipe materials in specific situations.

4.4.2 PVC Pipe, Fittings and Joints

PVC pipe for sewer services shall be as specified in paragraph 4.3.2 of this Section, except that solvent weld joints are allowable for laterals up to 4-inches in diameter. Solvent cement used for solvent weld joints shall conform to the requirements of ASTM D2564.

4.4.3 HDPE Pipe, Fittings and Joints

HDPE pipe for sewer services shall be as specified in paragraph 4.3.3 of this Section.

4.5 FORCE MAINS

4.5.1 General

Pipe material for force mains shall be PVC pressure pipe unless otherwise specified herein or approved by the District Engineer. Other pipe materials may be allowed on a case-by-case basis, or the District Engineer may require other pipe materials in specific situations.

4.5.2 PVC Pressure Pipe

4.5.2.1 Pipe

PVC pressure pipe shall conform to the requirements of AWWA C900. Pipe pressure class and DR shall be determined by the Project Engineer as a function of the application, and subject to the approval of the District Engineer. All pipe and couplings shall conform to the outside diameter dimensions of cast iron or ductile iron pipe. Pipe shall be homogeneous throughout and free from cracks, holes, foreign inclusions, or other defects. The pipe shall be uniform in density color, opacity, and other physical properties.

4.5.2.2 Fittings

Fittings for AWWA C900 PVC pressure pipe shall be ductile iron or gray iron, in conformance with the requirements of ANSI/AWWA C110. The minimum pressure rating for gray iron fittings shall be 150 psi and for ductile iron fittings shall be 250 psi. The pressure rating of the fittings shall be sufficient for the pipeline leakage test pressure specified in Section 6. Fittings shall be bell and spigot push-on type or mechanical joint type for use with AWWA C900 pipe. Fittings shall be furnished with a factory applied bituminous coating and cement mortar lining. Cement mortar lining shall be in accordance with ANSI/AWWA A21.4 and cement shall be Type V conforming to ASTM C150. The lining shall be given a factory applied bituminous coating. PVC fittings may be used in lieu of iron fittings subject to the approval of the District Engineer.

4.5.2.3 Joints

Joints shall be elastomeric-gasket, integral bell and spigot type conforming to the requirements of AWWA C900.

4.6 PRESSURE SEWER SERVICES

4.6.1 General

Pipe material for pressure sewer services shall be PVC Schedule 80 unless otherwise specified herein or approved by the District Engineer. Other pipe materials may be allowed on a case-by-case basis, or the District Engineer may require other pipe materials in specific situations.

4.6.2 Pipe and Fittings

PVC Schedule 80 pipe shall conform to the requirements of ASTM D1785, Schedule 80, Type I, Grade I. Joints shall be threaded or solvent weld. Fittings shall conform to the requirements of ASTM D2467, Type I, Grade I for socket type and ASTM D2464 for threaded type. Compounds for pipe and fittings shall conform to the requirements of ASTM D1784, Type I, Grade I.

4.7 WARNING TAPE

All pipelines shall be marked continuous with detectable warning tape. Furnish tape of minimum 5 mils total thickness, minimum 3-inches wide, and containing a solid aluminum foil core of no less than 50-gauge (0.005 inch) thickness. Design tape specifically for direct burial, with foil visible from both sides of the tape and a protective plastic jacket bonded to both sides of the foil. Apply the bonding adhesive directly to the film and foil layers with no inks or printing extending to the edges of the tape. Encase printing to prevent the ink from rubbing off while handling. Furnish tape in colors conforming to the AWPA code for the respective intended service. Imprint on the tape the following message appropriate for the respective services:

CAUTION: SEWER LINE BURIED BELOW

When required, furnish tape conforming to the above requirements for placement above existing utilities encountered and uncovered during construction. Imprint tape with a message similar to above appropriate for the respective service. Reapeat message at 30-inch intervals, minimum. Furnish product of T. Christy Enterprises, Inc., Terra Tape by Griffolyn Company, Inc., or equal.

4.8 MANHOLES

4.8.1 General

All manholes shall conform to requirements of ASTM C478. Manhole vertical sections, rings, cones, grade rings and caps shall be designed for AASHTO H20 highway loading. Use Class A Portland Cement Concrete conforming to Section 90 of Caltrans SS throughout the Work, except as otherwise specified. Reinforcing steel of single circular cage shall be designed with a minimum cross-sectional area of 0.2 square inch of steel per foot. Elliptical single line reinforcing is not permitted.

Manhole sections shall be precast reinforced concrete, and include precast manhole risers, concentric cone tops and grade rings, conforming to the requirements of PBCSD Standard Drawing Nos. 05, 06 and 07. Manhole sections shall be no more than 48-inches inside diameter, unless otherwise indicated on PBCSD Standard Drawings. Manhole sections shall be provided with joints conforming to ASTM C76 and shall be furnished without steps.

Manhole cone (taper section) shall be maximum 3-feet in height and shall be concentrically tapered from diameter of vertical section to 24-inches inside diameter at the opposite end. Provide grade rings in sections not greater than 6-inches in height and with an inside diameter of 24-inches, unless otherwise approved by the District Engineer.

4.8.2 Frames and Covers

Manhole frames and covers shall be gray cast iron in superior quality, free from cracks, holes, and cold shuts, conforming to requirements of ASTM A48, or shall be ductile iron conforming to requirements of ASTM A536 and designed for H20 loading. Manhole frame and cover sets shall weigh a minimum of 320 pounds each. Casting shall be 24-inch inside diameter in accordance with PBCSD Standard Drawing No. 08. Bearing surfaces shall be machined to provide even surfaces. Covers shall be solid lip type. Covers shall have the letter "S" or the word "Sanitary Sewer" cast in them. Contractor shall include the lettering details with the submittal. Manhole frames and covers shall be Phoenix Iron Works P-1001, Alhambra Foundry Company A-1176, or equal.

4.8.3 Precast Concrete Manhole Bases

With approval from the District Engineer, the Contractor may provide precast concrete manhole bases by the same manufacturer as for the precast manholes furnished per paragraph 4.8.1 of this Section. Precast concrete manhole bases shall be made of Class 2, 3,000 psi Portland Cement Concrete. Reinforcing steel in each precast manhole bases shall be the same as required for cast-in-place manhole base.

4.8.4 Gasket seal for Precast Concrete Manhole Sections

The Contractor shall provide gasket seals at the joint of precast concrete sections. Size the gaskets to suit joint dimensions, surface conditions and to assure a watertight seal. Seal shall consist of either: compressible closed-cell neoprene rods with compatible bonding agent recommended by material manufacturer; or G.S. No. 5 extruded non-hardening rubber-based Precast Concrete Sealant produced by General Sealants, Inc., City of Industry, California; or equal non-bituminous joint sealing compressible gaskets.

4.9 FLUSHING INLETS

Flushing inlets shall be constructed as shown on PBCSD Standard Drawing 09, with the cover, frame, and concrete pad independent of the riser pipe. Flushing inlet riser pipe shall be constructed of the same size and material as the sewer main it serves and shall be laid at a 45-degree angle. Flushing inlet frames and covers shall be made of gray cast iron and

conform to Federal Specification QQ-1-652 Gray Iron Castings, or shall be ductile iron conforming to ASTM A536. Frames and covers shall be free from cracks, holes, and cold shuts. Frames and covers shall be Phoenix Iron Works P-7004 or equal.

4.10 CONCRETE

All concrete shall be Portland Cement Concrete, unless otherwise specified herein or indicated on PBCSD Standard Drawings conforming to the provisions of Section 90 of the Caltrans SS for Class A concrete.

4.11 CONCRETE REINFORCING

Steel reinforcing shall conform to the requirements of ASTM A615, Grade 60. Wire fabric mesh for reinforcing shall conform to the requirements of ASTM A185.

4.12 PAVEMENT

4.12.1 Asphalt

4.12.1.1 Asphalt Binder

All asphalt to be mixed with aggregate shall be steam refined paving asphalt, Grade AR4000 conforming to the provisions of Section 92 of Caltrans SS.

4.12.1.2 Asphalt Concrete

All asphalt concrete shall conform to Type B asphalt concrete in accordance with Section 39 of Caltrans SS.

4.12.1.3 Liquid Asphalt

All liquid asphalt where approved, shall conform to Section 93 of Caltrans SS.

4.12.2 Portland Cement Concrete Pavement

All Portland Cement Concrete Pavement shall conform to the provisions of Section 40 of Caltrans SS.

4.12.3 Aggregate Subbases

Aggregate subbases shall conform to the provisions of Section 25 of Caltrans SS.

4.12.4 Cement Treated Bases

Cement treated bases shall conform to the provisions of Section 27 of Caltrans SS.

4.12.5 Bituminous Seals and Screenings

All bituminous seals and screenings shall conform to the provisions of Section 37 of Caltrans SS.

4.13 EARTHWORK MATERIAL

4.13.1 Sand

Minimum sand equivalent shall be 50 for native material and 70 for imported material, as determined by ASTM D2419 or California Test No. 217. Native sand shall be classified in accordance with the requirements of ASTM D2387. Imported Granular Material, sand equivalent shall conform to the requirements of ASTM D2419.

4.13.2 Drain Rock

One-half inch ($^1/_2$-inch) drain rock shall conform to the following grading when determined by California Test Method No. 202:

Sieve Size	Percent Passing	
	Minimum	Maximum
$^3/_4$-inch	100	-
$^1/_2$-inch	95	98
$^3/_8$-inch	54	64
No. 4	0	3

The $^1/_2$-inch drain rock shall conform to the following quality requirements:

Cleanness Value	Minimum 75
Durability Index	Minimum 50
Specific Gravity	Minimum 2.7
L.A. Rattler Percent Loss (500 REV)	Maximum 40
Specific Weight, Rodded	Minimum 98 pcf

One and one-half inch (1 1/2-inch) drain rock shall conform to the following grading when determined by California Test Method No. 202:

Sieve Size	Percent Passing	
	Minimum	Maximum
2-inch	100	-
1 1/2-inch	94	96
1-inch	20	40
3/4-inch	4	8

The 1½-inch drain rock shall conform to the following quality requirements:

Cleanness Value	Minimum 75
Durability Index	Minimum 75
Specific Gravity	Minimum 2.91
L.A. Rattler Percent Loss (500 REV)	Maximum 30
Specific Weight, Rodded	Minimum 98 pcf

4.14 FOG INTERCEPTORS

Fat, oil, grease, and sand interceptors shall be provided in accordance with the requirements of the PBCSD Plumbing Code and as specified herein. Interceptors shall be constructed of reinforced Class A Portland Cement Concrete conforming to Section 90 of Caltrans SS with cast iron fittings in accordance with PBCSD Standard Drawing No. 18. Interceptors shall be M.C. Nottingham of California Hygi Sept Model, or equal. The FOG interceptor shall have two or more compartments, with manholes brought to grade. Frames and covers shall be made of cast iron, free from defects and shall provide a minimum access of 24-inches in diameter for cleaning of interceptor. Frame and cover shall be machined to fit with positive pressure on all sides and shall be gas tight. Grease traps will be considered on a case-by-case basis by the District Engineer.

5 INSTALLATION AND CONSTRUCTION

5.1 GENERAL

The construction of wastewater collection systems shall include clearing, excavation, pipe bursting, tunneling, boring, jacking, preparation of pipeline subgrade, pipeline installation, construction of manholes and other structures, backfilling, compaction, disposal of excess excavated material, testing of pipe and manholes, restoration of existing surfaces and all incidentals to wastewater collection system construction, as required by the approved Contract Documents and in accordance with the PBCSD Standard Specifications. All workmanship shall be performed in accordance with the best trade practices. Particular attention shall be given to the appearance of exposed Work. Any Work or workmanship not conforming to the best practices shall be subject to rejection at the discretion of the District Engineer.

5.2 SITE INVESTIGATIONS

The Contractor shall carefully examine the site and make all inspections necessary to determine the full extent of the Work required making the completed Work in conformance with the approved Contract Documents and PBCSD Standard Specifications. The Contractor shall satisfy himself or herself as to the nature and location of the Work, the conformation and conditions of the existing site conditions and ground surface, and the equipment and facilities needed prior to and during prosecution of the Work. The Contractor shall also satisfy himself or herself as to the character, quality and quantity of subsurface material or obstacles to be encountered in performance of the Work. Any inaccuracies or discrepancies discovered between actual site conditions and the approved Contract Documents or PBCSD Standard Specifications shall be brought to the attention of the Project Engineer for clarification upon discovery.

5.3 CLEARING AND GRUBBING

5.3.1 General

Clearing the site shall be performed to such depths below the existing ground surface or subgrade as required for the removal of all vegetation, including, but not limited to, weed growth, brush, shrubs, stumps, logs, roots, and all other objectional materials such as boulders and concrete or masonry within the limits specified on the approved Contract Documents, as well as those foundations, walks, slabs, pavements, walkways, buried drain lines, utilities and pipes indicated on the approved Contract Documents to be removed. Holes resulting from the removal of underground structures and roots that extend below the finished grade shall be cleaned and backfilled with suitable material and compacted. Objectionable material shall be removed from the Work site and disposed of at a suitable location and shall not be used for compacted fill as part of the Work.

5.3.2 Trees and Vegetation

Damage to trees and shrubs not within the limits of the Work shall be avoided. Removal of trees, shrubs, and vegetation not indicated for removal in the Contract Documents shall

occur only with prior approval of the District Engineer. Violation of this provision shall require the Contractor to bear all damages and consequences.

5.3.3 Topsoil

The Contractor shall remove topsoil from the area to be excavated to a designated, approved stockpile area. Topsoil shall be protected from contamination and erosion. Topsoil shall be kept separate from other fill and backfill material. Following completion of the pipe installation, backfill and testing operations, the topsoil shall be spread to the original depth over the stripped construction area.

5.4 TRENCHING, BACKFILLING AND COMPACTING

5.4.1 General

The Work shall include all labor, machinery, construction equipment, and appliances to satisfactorily perform all trenching, excavating, and backfilling Work shown on the approved Contract Documents and specified for the installation of buried pipe, including sewer interceptors, sewer mains, force mains and sewer services. The Work performed shall be constructed to the lines, grades, elevations, slopes and cross-sections indicated on the approved Contract Documents and as specified herein, and/or directed by the Project Engineer. Slopes, grades, surfaces and drainage features shall present a neat, uniform appearance upon completion of the Work.

5.4.2 Trench Excavation

5.4.2.1 General

Excavation for trenches shall include the removal of all material of any nature for the installation of sewer interceptors, sewer mains, force mains, sewer services, and appurtenant facilities. All trench excavation shall be made by open-cut unless otherwise specified or shown on the approved Contract Documents. All excavated and imported material suitable for use as backfill shall be stockpiled in an orderly manner a sufficient distance from excavated trench banks to avoid overloading and to prevent sliding or cave-ins of trench banks. Excavated material deemed unsuitable for backfill, as specified herein or determined by the Project Engineer from tests or visual inspection, shall be removed from the work site in an expeditious manner and shall be wasted in an area provided by the Contractor, that is acceptable to the Project Engineer.

5.4.2.2 Safety

All measures shall be taken by the Contractor during the performance of the Work necessary to protect the entire work area and adjacent properties from storm damage, flooding, caving-in of trenches and embankments, and sloughing of material resulting from performance of the Work.

5.4.2.3 Trench Width

The minimum width of trenches for pipelines as measured at the bottom of the trench shall be the pipe outer-diameter plus 2 feet. The maximum width of trenches for pipelines as measured at the bottom of the trench shall be the pipe outer-diameter plus 4 feet.

5.4.2.4 Open-Trench Length

Except by special permission from the District Engineer, only that amount of pipeline construction will be permitted, including excavation, placement of the pipe, backfill and temporary replacement of road surfaces where required, in any one location, which can be completed in one day. Maximum length of open trench permitted is 200 feet.

5.4.3 Dewatering

The Contractor shall provide and maintain at all times during construction, ample means and devices with which to promptly remove and dispose of all water, from any source, entering the excavation or other parts of the Work. Water shall be disposed in accordance with State and Federal Regulations. Water may be disposed into the wastewater collection system with prior approval from the District Engineer. Dewatering for the structures and pipelines shall commence when groundwater is first encountered and shall be continuous until completion of backfill operations. No concrete shall be poured in water nor shall water be allowed to rise over newly poured concrete or mortar until the concrete or mortar has set at least 8 hours.

Dewatering shall be done by methods that will ensure a dry excavation and preservation of the final line and grade of the trench bottom. Dewatering methods may include well points, sump pumps, suitable rock or gravel placed below the required bedding for drainage and pumping, temporary pipelines, and other means, all subject to approval of the Project Engineer. Such grading shall be performed as may be necessary to prevent surface water from flowing into trenches. Any water accumulated therein shall be removed by pumping or other approved means.

5.4.4 Trench Support and Bracing

The Contractor shall take the necessary precautions to be consistent with the rules, orders, and regulations of Cal/OSHA. The Contractor shall designate a competent person whose duty shall be the prevention of hazards and accidents. Excavations greater than 5 feet in depth shall be so braced, sheeted, shored, timbered and supported that they will be safe and the ground alongside the excavation will not slide or settle and all existing improvements of any kind, either public or private property, will be fully protected from damage. The bracing, sheeting, shoring, and timbering shall be arranged so as to not place any stress on portions of the Work until the general construction thereof has proceeded far enough to provide ample strength.

Care shall be exercised in installation or removal of bracing, sheeting, shoring and timbering to prevent the caving or collapse of the excavation faces being supported. No

bracing, sheeting, shoring or timbering shall be left in the trench. Space left by withdrawal of bracing, sheeting, shoring, and timbering shall be backfilled completely as specified in this Section.

5.4.5 Pipe Foundation

At subgrade, if foundation soil in the trench is soft, wet, spongy, unstable or does not afford solid foundation as determined by the Project Engineer, the Contractor shall excavate such material to 12 inches below the pipe depth for the full width of the trench. The trench shall be backfilled with 8 inches of 1 $^1/_2$-inch drain rock to provide a stable base for placement of bedding. Bedding shall be placed over the 1 $^1/_2$-inch drain, rock as specified hereinbelow.

If any trench, through the neglect of the Contractor, is excavated below the bottom grade required, it shall be backfilled to the bottom grade, at the Contractor's expense for all labor and materials, with 1 $^1/_2$-inch drain rock.

5.4.6 Pipe Bedding

The Contractor shall excavate 6 inches below the pipe invert for the full width of the trench and shall place 6 inches of sand or rock bedding upon which the pipe will be laid. In cases, as determined by the Project Engineer, where trench material is suitable for use as bedding, the trench may be excavated to a point immediately above the pipe invert grade, and the trench bottom hand-shaped so that the bottom segment of the pipe is firmly supported on undisturbed material.

Before any pipe is placed in the trench, prepare the trench bottom so that each pipe will have a firm uniform bearing over the entire length of the pipe to a width equal to one-half the outside diameter of the pipe. Make adjustments in line and grade by scraping away of filling and tamping in under the pipe. Wedging or blocking is not permitted. At each joint, the pipe bedding shall be recessed so as to relieve the bell of the pipe of all load and to ensure continuous bearing along the length of the pipe.

Should large gravel and cobbles be encountered at the trench bottom, they shall be removed and replaced with sand or $^1/_2$-inch drain rock, compacted to provide uniform support and a firm foundation.

Where rock is encountered, it shall be removed to a minimum of 12-inch depth below pipe invert and the trench shall be backfilled with sand or $^1/_2$-inch drain rock to provide bedding.

5.4.7 Pipe Zone Backfill

Selected backfill material to 12 inches above the top of the pipe shall consist of imported sand or suitable native material approved by the Project Engineer in advance of placement. Placement of backfill material shall be simultaneous on each side of the pipe for the full width of the trench in layers not to exceed 6 inches uncompacted depth. Each layer shall be thoroughly compacted by tamping. Water settling is not permitted. Care shall be taken to

ensure that no voids remain under, around or near the pipe. Care shall be taken not to damage pipe during backfilling operations. Perform backfilling of the pipe zone by hand tools, except when backfilling the pipe zone above the pipe spring-line with suitable equipment may be done in a manner that does not disturb or damage the pipe. Pay particular attention to the underside of the pipe and fittings to provide a firm support along the entire length of the pipe.

5.4.8 Trench Backfill

After pipe has been placed in the trench and has been inspected and approved, and backfilling in the pipe zone is complete and compacted, the remainder of the trench may be backfilled. Exercise care to ensure that no voids remain under, around, or near the pipes. The backfill material shall be imported sand or suitable native material.

5.4.9 Compaction Requirements

Field density tests shall be determined in accordance with California Tests 216/231. Minimum relative compaction densities shall be in accordance with the following:

Trench Zone	Compaction
Pipe Zone from bedding to 12 inches above top of pipe	95%
Pipe Trench under pavement, including driveways, and within 3 feet of edge of pavement	95%
Pipe Trench under areas 3 feet or more outside of edge of pavement	90%

Where the soil has a clay-like behavior and has a sand equivalent of less than 10, as determined by California Test 217, only the upper 3 feet of backfill material shall require the specified minimum compaction.

5.4.10 Compaction Methods

5.4.10.1 General

The placement and compaction of all trench backfill shall conform to one of the following methods and shall be subject to the qualifications specified herein.

5.4.10.2 Mechanically Compacted Backfill

Backfill shall be mechanically compacted by means of tamping rollers, sheepsfoot rollers, pneumatic tire rollers, vibrating rollers, or other mechanical tampers. All such equipment shall be of size and type necessary to achieve the compaction results specified in the

Contract Documents and approved by the Project Engineer. Impact-type pavement breakers (stompers) will not be permitted over any pipe. Vibratory and/or impact type compaction equipment shall not be permitted in the pipe zone or within 4 feet over installed pipe of any kind.

Permission to use specific compaction equipment shall not be construed as guaranteeing or implying that use of such equipment will not result in damage to adjacent ground, existing improvements or improvements installed under the Contract. The Contractor shall make his or her own determination in this regard. Mechanically compacted backfill shall be placed in horizontal lifts not exceeding the maximum lift thickness specified below. Each lift shall be evenly spaced, the moisture content shall be brought to near optimum condition and then tamped or rolled until the specific relative compaction has been attained.

Compaction Equipment	Minimum Lift Thickness
Vibratory	16 inches
Rolling	8 inches
Hand-Directed Mechanical Tampers	4 inches

5.4.11 Spoils

Excavated materials which are determined by the Project Engineer to be unsuitable for the use in backfill or compacted fills, or excavated material that is in excess of that required to be used for backfill or to construct fills, shall be disposed of away from the site at the expense of the Contractor.

5.4.12 Dust Control

The Contractor shall perform all work required for the alleviation or prevention of any dust nuisance on the site or access roads caused by the Contractor's operations, either during the performance of the earthwork or resulting from the condition in which the Contractor leaves the site.

5.4.13 Clean-up

Immediately upon completion of earthwork specified above, all rubbish and debris shall be removed from the work site. All construction equipment and implements of service shall be removed and the entire area involved shall be left in a neat, clean and acceptable condition.

5.5 INSTALLATION OF PVC GRAVITY SEWER PIPE

5.5.1 General

PVC gravity sewer pipe and fittings shall be installed in accordance with the procedures and methods recommended by the pipe manufacturer, the requirements of ASTM D2321 and as supplemented by the provisions specified in these Standard Specifications. Install piping and accessories in accordance with the requirements contained herein, and the

respective pipe material sections, instructions, and recommendations of the manufacturer. Lay pipe in accordance with the manufacturer's approved layout drawings. Reference layout and trenching to the stationing in the Construction Documents. Except as otherwise shown in the Construction Documents, install buried piping with minimum cover over the pipe to finish grade as specified in PBCSD Standard Specifications.

Bury warning tape in trench directly above the gravity sewer mains and sewer interceptors. Provide warning tape above the following existing utility pipelines uncovered during performance of this Work before backfilling: potable Water pipelines, recycled water pipelines, gas pipelines, telephone or television cable.

If at any time before the completion of the Contract or guarantee period, in the judgment of the District Engineer, any pipe is irreparably damaged or any defects are found in the lines and/or their appurtenances, remove and replace same by proper material and workmanship at the expense of the Contractor. Carefully examine all materials for defects just before placing in the trench and do not place in the trench any pipe found defective, but replace with satisfactory material. Reject and remove from the site pipe having cracks, splits, pipe curvature exceeding the offset specified herein above or scratches which, in the judgment of the District Engineer, affect the pipe strength. Repair of damaged PVC pipe will not be permitted.

5.5.2 Storage and Handling of Materials

Store pipe sections on suitable supports to prevent damage from any kind of rolling. Store fittings on a clean surface such as pavement or gravel. Protect gaskets and machined surfaces from weather and dirt by membrane covers. Only that material which can be used that same day may be stockpiled in public ROW, subject to conditions specified for traffic control and in applicable permits. Leave no material overnight in a public ROW. Maintain sufficient materials on the jobsite to prevent the Project schedule from being negatively impacted. Damaged and unprotected or improperly stored materials shall be rejected.

5.5.3 Pipe Laying

5.5.3.1 Equipment for Handling Material

Use proper and suitable tools and appliances for the safe and convenient handling/laying of pipe.

5.5.3.2 Handling and Alignment of Pipe

Carefully handle and lower pipe into the trench. Install pipe in accordance with the Contract Documents. The end of the joint bell shall define the station of the joint. In laying pipe, take special care to ensure that each length abuts against the next in such a manner that the manufacturer's recommended joint spacing and the amount of deflection for the type of joint or pipe material being used is not exceeded.

Deliver PVC pipe to the job site from the factory and store at the job site in palletized units or bundles to prevent unnecessary deflection prior to installation. Size each palletized unit to limit the stacking of pipe to not exceed 30 inches high or as approved by the Project Engineer. Transport pipe with care to ensure that the binding and tie-down methods do not damage or deflect the pipe in any manner. Pipe bent, deflected, or otherwise damaged during shipping shall be rejected. Ensure that pipe storage at the job site conforms to manufacturer's recommendations regarding protection from long-term exposure to sunlight. Do not uncover or remove PVC pipe from the pallet or stage along the trench until the bedding material is in place and ready to receive pipe.

5.5.3.3 Positioning of Pipe

Carefully inspect all pipes for defects before placing in the trench. Avoid abrasion or scratching of the pipe exterior surface during installation. Unless otherwise required, lay all pipes straight between changes in grade. Make changes in a grade only at manholes, unless otherwise indicated in the Construction Documents.

In general, lay pipe up-station, from point-to-point or structure-to-structure. Lay pipe spools other than straight pipe with the field identifications mark on top. For bell and spigot pipe, normally face the position or direction of bells at the upstream end in case of gravity sewer mains, unless otherwise directed or permitted by the District Engineer.

5.5.3.4 Bedding of Pipe

Before joints are made, bed each pipe well on a solid foundation. Do not bring the next pipe section into position until the preceding length has been checked for proper line and grade. Correct defects due to settlement. Dig bell holes sufficiently large to ensure the making of proper joints. Compact and grade fill material or trench subgrade to provide a uniform and continuous support beneath the pipe at all points between the pipe joints.

5.5.3.5 Cleaning Pipes

Thoroughly clean pipe sections and fittings before laying and keep them clean at all times. Provide a watertight plug or cap on the open ends of al pipelines, carefully fitted so as to keep water, dirt and other substances from entering. Keep the plug or cap in place on the open end of the pipeline at all times when laying is not in actual progress and when working in the vicinity of other utility piping which, if damaged, could spill their contents into the pipe trench. Conduct Work to prevent pipe flotation should the trench fill with water.

5.5.3.6 Cutting Pipe

Whenever a standard pipe length requires cutting to fit into the line, provide for a sewer service connection, or to bring it to the required location, perform work in accordance with the manufacturer's instructions so as to leave a smooth, square end with a beveled lip. Provide a new homing mark on all cut pipes equal to that shown on a standard pipe length. Field welds will not be permitted for gasketed joint pipe. Where a plain end to plain end

joint occurs as a result of cutting into the pipe, install a solid wall repair coupling. Flexible couplings are only permitted when necessary to join pipe of different materials having different outside diameters.

5.5.3.7 Trench Water

Maintain the excavation in which pipe is being laid free from water and do not assemble pipe joints under water. Do not allow water to rise in the excavation until the joint material has received its set. Perform the Work in a manner to secure watertightness and to prevent damage to, or disturbance of, the joints during the refilling process, or at any other time.

5.5.4 Manhole Connections

On connections to existing manholes, chip an opening in the base of the existing manhole of sufficient size to install the required diameter pipe and gaskets. On all pipe entering a manhole, install a gasket joint within 1 foot maximum of the manhole base and install a standard manhole gasket (water stop) as supplied by the manufacturer firmly clamped around the pipe's exterior and near the structure wall center. Dry pack the annular space at the manhole connection and coat the exterior surfaces of the completed manhole connection (interior and exterior) with an approved crystalline waterproofing material.

5.5.5 Joint Construction

Wipe all pipe joints clean of dirt, oil, grease, and other foreign materials before inserting the spigot end of a pipe section into the bell end of the adjoining piece. Bring the spigot end of the pipe true to line and grade and insert to the required depth of the bell according to the pipe manufacturer's instruction and recommendations before the joints are made. Ensure that the inner surface of adjoining pipe conforms at the joints, except where deflected joints are used. Where joint deflection is permitted and used, verify that the annular space for the gasket element is of uniform width and depth before deflecting the joint. If any pipe does not allow sufficient space for the gasket element, replace with one of proper dimensions.

Perform solvent welded jointing of sewer service pipe in strict accordance with the manufacturer's instructions. Insert the pipe spigot end to the proper depth of the bell as indicated by the home mark.

5.5.6 Sewer Service Connections

5.5.6.1 General

There shall be a minimum of one sewer service connection for each individual user, including undeveloped lots.

Install sewer services, where applicable, in conformance with the requirements specified herein for gravity sewer main, Construction Documents, the applicable building and plumbing codes, and to the following requirements:

The sewer service connection to the sewer main shall be made by PBCSD staff, or under the direct supervision thereof.

Where sewer services, new or reconnections, are required, install a wye fitting of the same diameter, quality and type of material as the sewer pipe, in-line and grade with the sewer main. The use of tees or saddles for this connection to the main in not allowed.

Unless otherwise specified or permitted, incline the branch of the wye fitting upward at an angle not greater than 45 degrees from the horizontal plane. Sewer services shall not be connected to manholes, interceptor sewers, nor pump station wet wells. Do not install service connections closer than 5 feet from the outside wall of any manhole. Do not install adjacent wyes for service connections back to back; provide a minimum of 4 feet between adjacent wye fittings. Sewer services shall be laid at a minimum grade of 2 percent (equivalent to $^1/_4$ inch per foot) and shall have a minimum cover of 3 feet at the property line.

Install sewer service piping to the property or easement line or as otherwise shown in the Construction Documents. If there is no existing sewer service to connect to, terminate the upstream end of the sewer service with a spigot plug with a rubber-sealing ring. Mark the end of sewer service as shown in PBCSD Standard Drawing No. 4. Where there is an existing sewer service, connect the new or replacement sewer service to the existing with a banded rubber coupling.

5.5.7 Locating Wire

Install locating wire on new PVC sewer mains and interceptors. Locating wire shall be #10 gauge insulated wire. Attach wire to pipe and terminate wires in valve box.

5.5.8 Piping Appurtenances

Provide all accessories and appurtenances required for the proper installation and operation of the piping and accessories including, but not limited to: guides, inserts, anchor and assembly bolts, washers, nuts, gaskets, and where permitted or specifically required, thrust blocks. For installations in damp or submerged locations, embedded in concrete, or in buried locations, use Type 316 stainless steel bolts and nuts. For damp enclosures, use either Type 316 stainless steel or cadmium-plated steel bolts and nuts. In dry locations, use bolts and nuts of black steel or other materials listed herein.

5.5.9 Protecting and Backfilling Pipes

5.5.9.1 Protecting Laid Pipe

After pipes have been laid and the joints have been made, carefully remove sheeting and shoring or any other work around the pipe to avoid hitting or dropping heavy, hard objects which may damage the pipe.

5.5.9.2 Backfilling Around Pipes

After the joints have been made and checked for gasket position or completion of restraints, backfill the trench in accordance with PBCSD Standard Specifications and Construction Documents.

5.5.10 Clean-up

Remove tools, equipment, rocks larger than 1-inch diameter, and other foreign matter from the pipe trench before beginning backfilling operations.

5.6 REHABILITATION OF GRAVITY SEWER PIPE BY PIPE BURSTING

5.6.1 General

Pipe bursting is a patented threnchless method by which a burster unit splits the existing pipe while simultaneously installing a new HDPE pipe of the same or larger diameter in place of the existing pipe. Only pneumatically operated equipment with either front or rear expanders for the proper connection to the HDPE pipe will be allowed for use. The pneumatic tool used in conjunction with a constant tension hydraulic twin captain winch shall be 5, 10, or 20-ton size, as recommended by the equipment manufacturer for the applicable project conditions. The equipment to be used shall conform to the requirements described herein.

5.6.2 Delivery, Storage and Handling

Transport, handle, and store HDPE pipe and fittings as recommended by the manufacturer. If new pipe and fittings become damaged before or during installation, make repairs as recommended by the manufacturer, or, where directed by the District Engineer, replace the damaged materials before proceeding with the Work. Deliver, store and handle other materials as required to prevent damage.

5.6.3 Preparation

5.6.3.1 Pre-Construction Investigation

Examine the location of the sewer pipelines designated for replacement and verify accessibility to the pipeline for the equipment required to conduct the Work. Use video televising, electronic ferrets, or other means to ensure all service connections on the pipelines designated for replacement have been identified, located and marked.

5.6.3.2 By-Pass Pumping

Provide facilities for wastewater flow diversion during replacement process when and where necessary to provide continuity of sewer service, to prevent the back-up of wastewater into connected dwellings, and to prevent potential health and safety hazards resulting from a SSO. Provide pumps, where necessary, and by-pass pipelines for this purpose that are of adequate capacity and size to handle all wastewater flows and of sufficient redundancy to ensure uninterrupted operation until completion of the Work.

5.6.3.3 Cleaning

Cleaning of the host pipeline is not required for this Work. Pushing of the pipe sediments contained in the host pipeline into the surrounding soils during the pipe bursting operations is acceptable providing there is no surfacing of the contaminant materials or any exposure of the public to a potential health and safety hazard.

5.6.4 Equipment

5.6.4.1 Pipe Bursting Tool

Use a pipe bursting tool designed and manufactured to force its way through existing pipe materials by fragmenting the pipe and compressing the old pipe sections into the surrounding soil as it progresses. The bursting unit shall be pneumatic and shall generate sufficient force to burst and compact the existing pipeline. Comply with manufacturer's specifications in selecting the size tool to be used for the diameter of the host pipe and new pipe. Static bursters may be used for replacement of sewer services only, subject to the Project Engineers approval. The pipe bursting tool shall be pulled through the pipeline by a winch located at the upstream manhole or access pit. The bursting until shall pull the HDPE pipe with it as it moves forward. Use a bursting head that incorporates a shield/expander to prevent collapse of the hole ahead of the HDPE pipe insertion. The pipe bursting unit shall be remotely controlled. The bursting action of the pneumatic tool shall increase the external dimensions sufficiently, causing breakage of the existing pipe, at the same time expanding the surrounding ground. This action shall not only break the pipe, but also create the void into which the burster can be winched, and enables forward progress to be made. At the same time, the HDPE pipe directly attached to the sleeve on the rear of the burster shall move forward. The burster shall have its own forward momentum while being assisted by winching. A hydraulic winch shall give the burster friction by which it can move forward. To form a complete operating system, the burster must be matched to a constant tension hydraulic winching system.

5.6.4.2 Winch Unit

Provide a winch of the constant tension type, fitted with a direct reading load gauge to measure the winching load and controls to automatically maintain a constant tension at a set tonnage reading. Attach the winch to the front of the bursting unit. Operation of the winch shall provide a constant tension to the burster throughout the operation in order that it may operate in an efficient manner and also ensure directional stability in keeping

the unit on-line. Set-up and operate the winch to supply sufficient cable in one continuous length so that the pull may be continuous between winching points. Provide the winch, cable and cable drum with safety cage and supports to ensure safe operation and prevent injury to persons or property. Provide a system of guide pulleys and bracing at each manhole or access pit to minimize cable contact with the existing pipeline between the access points. Do not allow the supports for the trench shoring in the access pit to come in contact with the winch boom support system. Design and construct the trench shoring and its supports, such that neither the pipe nor the winch cable shall be in contact with it.

5.6.5 Pipe Bursting Operations

Pipe Bursting shall proceed continuously and without interruption from one manhole to another, from access pit to manhole, or access pit to access pit, as applicable, unless otherwise approved by Project Engineer.

5.6.5.1 Access Pit Locations

Excavate the machine pits at the ends of the pipelines designated for replacement unless otherwise necessary and authorized by the Project Engineer. Center the pit over the existing pipeline. Verify pit location, including use of existing manholes, and size in the field prior to construction and obtain Project Engineer approval. Minimize the number of pits required, except provide sufficient number of pits that are necessary to properly complete the Work.

Where manholes are used as machine or new pipe insertion pits, modify, repair or replace such manholes in accordance with the Contract Documents and to conditions equal to or better than existing conditions. Where the pipe bursting tool and new pipe are planned or required to traverse a manhole without interruption during pipe bursting operations, modify the pipe inlets and outlets in the manhole to dimensions appropriate for the indicated size of the new pipe.

5.6.5.2 Access Pit Location Conflicts

Where damage to surrounding infrastructure may occur due to standard procedures for construction of a pit, a patented “windowing” method, performed in strict accordance with the manufacturer’s instructions, may be used on HDPE pipe 12-inch diameter or smaller and with Project Engineer approval. Thoroughly locate underground utilities in the vicinity of the proposed pit location prior to determining the necessity and feasibility of the “windowing” method.

Where construction of an exit pit is difficult due to underground utility placement or surrounding infrastructure, use of a remote controlled reversal procedure whereby the head expander is removed back through the newly installed HDPE pipe may be permitted with Project Engineer approval. The reversal procedure shall not cause any damage to the HDPE pipe during removal of the expander head.

5.6.5.3 Control Devices

Install all pulleys, rollers, bumpers, alignment control devices and other equipment required to protect existing manholes, and protect the new pipe from damage during installation. Lubrication may be used as recommended by the manufacturer. Under no circumstances during the installation should the pipe be allowed to stress beyond its elastic limit. Center the winch line in pipe using an adjustable boom or other acceptable means.

5.6.5.4 Pipe Relaxation Period

Following installation of new HDPE pipe, allow a time period as recommended by the pipe manufacturer, but not less than 4 hours, for cooling and relaxation of tensile stressing caused by the installation process before performing any reconnection of sewer services, sealing of the annular space at manhole terminations, or backfilling of the access pit. Provide sufficient excess length of new pipe, not less than 4 inches, to protrude into the manhole or beyond indicated termination points, to compensate for any reduction in length due to cooling or stress relaxation.

Restrain pipe ends using electrofusion couplings as manufactured by Central Plastics, or equal. Slip the electrofusion couplings over pipe ends against the manhole wall and fuse in place. Install electrofusion couplings in accordance with the manufacturer's recommended procedures.

5.6.5.5 Annular Spaces

Following the relaxation period, seal the annular space between the outside barrel of new pipe and the opening in the manhole base provided for the pipeline using a material approved by the Project Engineer. Pack a solid mass of the sealing material a minimum of 8 inches into the manhole wall in such a manner as to form a smooth, uniform, watertight joint.

5.6.6 Pipe Joining

Assemble and join the HDPE pipe at the site using the butt-fusion method to provide a leak-proof joint. Threaded or solvent-cement joints and connections are not permitted. Use and operate equipment and follow procedures for joining pipe in strict accordance with the manufacturer's recommendations. Use only personnel certified as fusion technicians by a manufacturer of HDPE pipe and/or fusing equipment to make the joints.

Make butt-fused joints that are in true alignment and have uniform interior and exterior rollback beads resulting from the use of proper temperature and pressure. Allow the joint adequate cooling time before removal of pressure from the fusion machine. The completed fused joint shall be watertight and shall have tensile strength equal to that of the pipe. All joints shall be subject to acceptance by the District Engineer prior to insertion.

Cut out defective joints and replace. Do not use any section of HDPE pipe with a gash, blister, abrasion, nick, scar, or other deleterious fault greater in depth than 10 percent of

the wall thickness. Remove defective pipe from the site. However, a defective area of the pipe may be cut out and the resulting section ends fusion jointed in accordance with the procedures stated above. Furthermore, discard and remove from the site any section of the pipe having other defects, such as concentrated ridges, discoloration, excessive spot roughness, pitting, variable wall thickness, or any other defect of manufacturing or handling as determined by the District Engineer.

Where terminal sections of pipe are joined within the insertion pit, make the connection using electrofusion couplings or connectors as manufactured by Central Plastics, or equal. Provide couplings or connectors having tensile strength equivalent to or greater than that of the pipe being joined.

Where the new HDPE pipe is to be joined to existing buried pipe, make the connection using a transition coupling manufactured by Fernco, or equal. Verify the outside diameter of the existing pipe prior to commencing work on the respective section.

Where fittings, including service connections, are required, field-join the fittings to the already installed adjoining sections of HDPE pipe using an appropriate fusion machine designed for in-trench joining, or by means of electrofusion couplings as specified above. Prior to closing a field-made joint on a fitting installation, grind or cut the interior beads resulting from preceding field-made joints on the fitting to the standards specified above.

5.6.7 Sewer Service Connections

Perform the Work in a manner that ensures all service connections are reconnected to the new HDPE pipeline prior to finishing work for the day.

After a section of existing pipeline has been satisfactorily pipe burst, and prior to reconnection of the sewer services, perform a low-pressure air test on the new pipe section in accordance with the procedures outlined in Section 6.

After the pipeline has passed the low-pressure air test, the specified cooling and stress relaxation period has expired, and any required couplings have been installed, proceed in an expeditious manner to reconnect all the services so as to minimize any inconvenience to the customers. Connect sewer services to the new pipe by fusing a saddle connection to the pipeline. Provide saddles made of a material compatible with that of the pipe. Either electrofusion or conventional fusion saddles may be used. Provide electrofusion saddles as manufactured by Central Plastics, or approved equal. Provide conventional fusion saddles as manufactured by Central Plastics, Phillips Driscopipe, Plexco, or approved equal. Install saddles in accordance with the manufacturer's recommended procedures. Existing sewer services may be PVC, clay, ABS or other materials. Replace service pipe that is broken, damaged, or removed as a result of the activities for this Work with PVC SDR35 pipe conforming to the requirements of Section 5.5. Provide couplings of the type as required to

complete the reconnection of the existing sewer service material to the fusion saddle on the pipeline.

5.7 INSTALLATION OF PVC PRESSURE SEWER PIPE

5.7.1 General

PVC pressure pipe and fittings shall be installed in accordance with the manufacturer's requirements and recommendations, the requirements specified hereinbefore for PVC gravity sewer installation and ASTM D2321.

5.7.2 Pipe Laying

All pipe shall be carefully inspected for defects before being placed in the trench. Care shall be taken to avoid abrasion or scratching of the pipe exterior surface during installation. Small diameter solvent weld joint pipe shall be snaked in the trench to accommodate thermal expansion and contraction.

Bury warning tape in trench directly above the pressure sewer pipe. Provide warning tape above the following existing utility pipelines uncovered during performance of this Work before backfilling: potable Water pipelines, recycled water pipelines, gas pipelines, telephone or television cable.

5.7.3 Cutting Pipe

Whenever a standard pipe length requires cutting to fit into the line, Work shall be done in accordance with the manufacturer's instructions and so as to leave a smooth, square end with a beveled lip. Contractor shall indicate a new homing mark on all cut pipe equal to that shown on a standard pipe length. Field solvent welds will not be permitted for gasketed-joint pipe.

5.7.4 Joint Construction

All pipe joints shall be wiped clean of dirt, soil, grease, and other foreign material before inserting the spigot end of one pipe section into the bell end of the adjoining piece. The pipe spigot end shall be inserted to the proper depth of the socket as indicated by the home mark.

5.7.5 Thrust Restraint

All buried pressure piping shall be adequately braced against thrust using restrained joints according to ASTM Standard F1674, “Standard Test Method for Joint Restraint Products for Use with PVC Pipe”.

5.7.6 Locating Wire

Install locating wire on new PVC force mains. Locating wire shall be #10 gauge insulated wire. Attach wire to pipe and terminate wires in valve box as shown.

5.8 MANHOLE CONSTRUCTION

5.8.1 General

Sewer manholes shall be constructed of pre-cast concrete manhole sections in accordance with these Specifications at the locations and depths shown on the approved Contract Documents. New manholes shall be generally water-tight against infiltration of groundwater and inward flow of run-off waters. Any proposed work inside an existing manhole that is part of a wastewater collection system in service shall not be undertaken until all the tests and safety provisions of Cal/OSHA have been made.

5.8.2 Manhole Base

Manhole bases shall be constructed of cast-in-place concrete in accordance with PBCSD Standard Drawings. Sewer mains shall be set before the concrete for the base is poured and shall be rechecked for correct alignment and grade before the concrete has set. The various sized inlets and outlets in the manhole shall be located as indicated on the approved Contract Documents and as detailed on the Standard Drawings. The base shall be extended 9 inches below the bottom of the lowest pipe and 3 inches above the top of the highest pipe. The concrete base shall be shaped with a wood float and shall receive a hard steel troweled finish before the concrete sets.

In the event additional mortar is required after initial set has taken place, the surface to receive the mortar shall be primed, and the mortar mixed with a concrete adhesive in the amounts and proportions recommended by the manufacturer and as directed by the Project Engineer. The base shall set a minimum of 24 hours before manhole construction is continued. In certain critical situations, the time of setting may be reduced upon approval of the Project Engineer.

The invert of the manhole base shall be hand-worked so as to provide channels conforming in size and shape to the lower portions of the inlet and outlet pipes. The channel shall vary uniformly in size and shape from inlet to outlet and shall be smooth and accurately shaped.

5.8.3 Pre-Cast Manhole Sections

Each manhole section, including the section set on the base, shall be sealed with a pre-formed plastic joint sealant material to make a watertight joint, shall be neatly grouted on the inside and out, and shall be set perfectly plumb. Sections of various height grade rings shall be used in order to bring the top of the manhole ring and cover to the required elevation, but shall be limited to a maximum of 12 inches of grade rings.

5.8.4 Manhole Frames and Covers

The finished elevation at which manhole frames and covers are to be set shall conform to the requirements set forth on the approved Contract Documents and the Standard Drawings. Manhole frames shall be set at the required grade and shall be securely attached to the top precast manhole riser with a cement-mortar bed and fillet. After the frames are securely set

in place, covers shall be installed and all necessary cleaning and scraping of foreign materials from the frames and covers shall be accomplished to ensure a satisfactory fit.

5.8.5 Manhole Connections

Pipe may be laid through a manhole when possible to form a channel. In this case, the Contractor shall return after construction of the manhole and cut out the top of the pipe. All pipe entering a manhole shall have a gasketed joint installed within 1 foot maximum of the manhole base and shall have a standard manhole gasket (waterstop) firmly clamped around the exterior of the pipe and near the center of the manhole wall.

5.8.6 Manhole Stubs and Stoppers

Sewer pipe stubs shall be furnished and installed in manholes at the location shown on the approved Contract Documents. All stubs shall be plugged with stoppers at locations as shown on the approved Contract Documents for various sizes of pipe.

5.9 CONNECTION TO EXISTING FACILITIES

During the course of the Work, the point of connection of the new sewer pipe to the existing wastewater collection system shall be plugged to ensure that no materials from the construction activities involved in the installation of new sewer pipe enters the existing system. Connections or modifications to the existing system shall only be made in the presence of the District Engineer. PBCSD reserves the right to require the Contractor to present the proposed connection procedure in writing for PBCSD approval prior to commencing the connection or modification.

Where new construction is started at a stub of an existing manhole, the Contractor shall plug the opening into the manhole before removing the plug or stopper from the stub. Said plug shall remain in place until the District Engineer approves its removal. New connections to existing manholes wherein stubs have not been provided shall be made by core drilling or breaking through the walls and base of the manhole and grouting the pipe in place with cement mortar. Channels for new connections shall be provided in the manhole base as specified above.

5.10 FLUSHING

All piping shall be flushed clean of all dirt and foreign material prior to testing. A heavy rubber ball, such as the "Wayne Ball" manufactured by Sider Company, Los Alamitos, California, or approved equal, shall be inflated with air so that it will fit snugly into the sewer pipe to be cleaned. The ball shall be placed in the upstream structure in the line, and water shall be introduced into the structure in back of the ball. The ball shall be passed through the sewer pipe with only the pressure of the water behind it. Care must be taken not to feed the ball too rapidly. Debris flushed out ahead of the ball shall be removed at each downstream manhole. Screens may be installed to aide in the collection of debris at each downstream structure.

The Contractor shall provide all water, equipment, and supplies for performing the flushing, and shall waste the flushing water at locations or by procedures approved by the Project Engineer.

5.11 PRESSURE PIPELINE PIGGING

Following completion of backfill, all force mains shall be thoroughly cleaned by pigging. Water pressure shall be used to force the pig through the pipeline. All debris discharged at the force main termination point shall be removed by the Contractor.

5.12 ASPHALT PAVING

5.12.1 General

Unless specifically shown to be removed on the approved Contract Documents, all asphalt paved areas damaged or removed as part of the Work shall be repaved with asphalt concrete as specified herein. Paving includes all work and materials for the replacement and restoration of pavement that has been removed or damaged by construction operations. All paved areas shall be restored to the elevations and character of the pavement existing prior to the beginning of the Work. Paving shall include all paved surfaces, including curbs and gutters of any road, street or lane used as a public or private thoroughfare or driveway.

5.12.2 Temporary Patch

Trenches in paved areas shall be completely backfilled at the end of each working day. Aggregate base shall be placed to grade to provide a preliminary patch over the trench in paved areas at the end of each working day. The Contractor shall proceed immediately to resurface with temporary pavement any excavation in paved areas subject to heavy traffic as shown on the approved Contract Documents or upon notice from the Project Engineer.

5.12.3 Pavement Subgrade

All base course and asphalt concrete pavement shall be underlaid by a minimum 12-inch thickness of compacted fill. In areas where less than 12 inches of fill or no filling is proposed, the existing grade shall be cleared, grubbed, stripped and scarified, the moisture content adjusted to optimum and then re-compacted to a depth of at least 12 inches. Compaction shall be a minimum of 95 percent relative compaction per California Test Methods 216/231.

5.12.4 Aggregate Base

Spread and compact the base in accordance with Caltrans SS Sections 26-1.03 through 26-1.05. The thickness of the compacted aggregate base course shall be the same thickness as the base course removed in excavation of the trench, except that the compacted thickness of aggregate base shall not be less than 6 inches.

5.12.5 Asphalt Concrete

Prior to placement of the surface course of asphalt concrete, the Contractor shall saw-cut the existing pavement to a minimum depth of 2 $^1/_2$ inches within an undamaged existing paved area or as indicated on the approved Contract Drawings. The damaged pavement

shall be removed to a depth equal to the thickness of the surface course of existing asphalt concrete. A prime coat shall be applied to exposed surfaces in accordance with Section 39 of the Caltrans SS. Asphalt concrete shall be spread in accordance with the requirements of Section 39 of the Caltrans SS, and as specified herein. The thickness of the asphalt concrete pavement shall be the same thickness as the asphalt removed, except that the completed thickness of the asphalt concrete shall not be less than 2 inches.

Asphalt concrete shall be placed and compacted in maximum 2-inch layers. The Contractor shall match the existing pavement elevation and grade at the saw-cuts and the finished surface shall be free from undulations or abrupt changes in elevation or grade.

5.12.6 Chip Seal Coat

A bituminous seal coat with screenings shall be applied to all areas of pavement replacement to at least 6 inches beyond the newly paved area. Chip seal prime coat, bituminous binder, and screenings shall be applied at the rates specified in Section 37.3 of the Caltrans SS.

5.12.7 Pavement Marking and Striping

All existing pavement markings damaged or obliterated by the Contractor's operations shall be repainted in kind and size as existing, subject to approval of the Project Engineer and governing local street or road department. Pavement markings shall be applied at a wet film thickness of 15 mils (0.015 inch).

5.13 FOG INTERCEPTORS

Grease interceptors shall be installed in accordance with the manufacturer's recommendations, PBCSD Plumbing Code and the following requirements:

- The interceptor shall be installed as close to the grease source as possible. Proper setbacks shall be maintained from structures, property lines, etc. to comply with local codes.
- Location of the interceptor should be dependent upon easy pump-truck access.
- Unit shall be backfilled with clean sand and compacted as specified hereinbefore for trench excavation.
- Access manholes shall be finished to grade.

5.14 SEWER SERVICE CONNECTIONS

Sewer service connections to existing sewer mains shall be constructed in accordance with PBCSD Plumbing Code, the Standard Drawings and the requirements specified in this Section. Final connection to sewer main shall be performed by PBCSD staff.

5.15 CLEAN-UP

During the progress of the Work, the Contractor shall at all times maintain an orderly job, keep the Work area in a neat and clean condition, and dispose of rubbish in a satisfactory manner. Tools, rubbish, and materials shall be picked-up and stored in an orderly manner at

all times. At no time shall there be any accumulation of rubbish, excavated material or equipment that will interfere with the convenience or operation of others or result in unsightly appearance of the Work.

The Contractor shall remove from the vicinity of the completed work all material and equipment during construction. Surfaces shall be returned to a condition acceptable to the District Engineer. All excess material shall be disposed of as directed by the Project Engineer or removed from the job site.

Prior to final acceptance of the Work, the Contractor shall thoroughly clean the Work area, remove all temporary structures, and have all equipment and surplus construction material and debris from the area. The entire project, before acceptance by PBCSD, shall be left in a neat and clean condition.

6 TESTS AND INSPECTIONS

6.1 GENERAL

All materials and work shall be made available for inspection by the District Engineer. All materials not conforming to these Specifications shall be considered defective and shall be rejected and removed from the site. The Contractor shall perform all excavation and other work required to locate and correct defects which may be disclosed or developed under tests or inspections. The Contractor shall replace any backfill or other permanent work removed in locating and correcting defective work.

6.2 MANDREL TEST

Following the placement and compaction of backfill and flushing of sewer mains and prior to leakage testing and video inspection of the pipe and final surface restoration, all main line pipe shall be mandrelled by the Contractor to test for obstructions, deflections, joint offsets, and pipe intrusions. A rigid mandrel shall be pulled through the pipe by hand, or by mechanical means approved by the District Engineer. The mandrel shall have cross section equivalent to a circle having a diameter of at least 96 percent of the specified average inside diameter of the pipe. The mandrel shall be composed of two (2) steel circular plates set parallel and joined by half inch steel flats set on edge around the plate to form points of contact with the pipe being tested. The contact points shall be odd numbered, not less than nine in number.

At the beginning of test, the pipe manufacturer shall inspect the Contractor's mandrel and certify that the mandrel precision conforms to the permitted deflection specified herein. If during the course of the test the Contractor changes mandrels, each new mandrel shall be inspected and certified by the pipe manufacturer. Pipe exceeding the permitted deflection shall be removed and replaced in conformance with these Specifications and at the Contractor's expense.

6.3 LEAKAGE TEST

6.3.1 General

All gravity sewer pipelines, including sewer mains and sewer services, shall be tested for leakage prior to Final Acceptance. Leakage testing of pipelines shall occur following mandrel testing. Leakage testing shall be by either air pressure testing or exfiltration testing. When pipelines do not meet the minimum test standards, the Contractor shall locate the source(s) of leakage and perform all work necessary to correct the leakage and shall repeat the test until the minimum standards are met.

6.3.2 Air Test

For sewer mains, all service connections and stubs shall be sealed with plugs capable of withstanding the internal test pressure. For sewer services, a plug shall be provided at the connection point to the building plumbing and at the connection to the wastewater

collection system, and at all cleanouts and backflow devices. The plugs shall be removable, and their removal shall provide a suitable connection for sewer main extension, service connection, or installation of cleanouts and backflow devices.

All sections of the pipeline shall be tested with air at not less than 3.5 psig above the average groundwater pressure above the top of the pipe. The requirements of this Specification shall be considered satisfied if the duration required in seconds for the pressure to decrease 0.5 psig from the initial 3.5 psig above groundwater pressure is not less than that exhibited below:

Pipe Diameter (inches)	Minimum Time (h:mm:ss)
4	0:01:53
6	0:02:50
8	0:03:47
10	0:04:53
12	0:05:40
15	0:07:05
18	0:08:30
21	0:09:55
24	0:11:20
27	0:12:45

6.4 EXFILTRATION TEST

Gravity pipelines shall be tested between manholes by plugging the manhole at the lowest end and filling the pipeline with water. The pipeline shall be filled so that the maximum internal pipe pressure at the lowest end shall not exceed 10.8 psig and the water level inside the manhole shall not be in excess of 2 feet above the top of pipe or 2 feet higher than the groundwater (whichever is greater). The allowable exfiltration for any length of pipe shall not exceed 50 gallons per inch of internal pipe diameter per mile of pipe length per day. The Contractor shall be responsible for furnishing and disposing of all water used for testing.

6.5 PVC PRESSURE PIPE TESTING

Upon completion of the laying, jointing, and backfilling, pressure pipelines shall be hydrostatically tested. A minimum of 24 hours shall elapse between completion of backfilling and before applying the pressure test. For convenience of testing, the pipeline may be divided into sections and each section tested separately. All PVC pressure pipelines shall be tested in accordance with the provisions for pipeline testing contained in AWWA C600 and as described below.

After the section of pipeline has been bulkheaded and completely filled with water, it shall be allowed to stand under pressure a sufficient time to allow the pipe to obtain a maximum absorption of water and to allow the escape of air from any air pockets. The pressure shall then be increased to the specified test pressure as hereinafter described, and shall be maintained at this pressure for not less than 2 hours.

All force main pipe shall be hydrostatically tested at the pipe pressure rating at the respective lift or pump station. The maximum leakage allowed will be 2 gallons per day per inch of inside diameter at one thousand feet of length. If the leakage exceeds this amount, the section being tested will be considered defective. The Contractor shall determine the source(s) of leakage, make the necessary repairs, and make another test. This procedure shall be continued until the leakage falls below the allowable maximum. Leakage shall be determined by metering the water injected into the pipeline while under the required pressure.

After the pipe has successfully met all test requirements specified herein, including pigging the pipeline, the entire pipeline shall be filled with water and so maintained until the completion of the Contract unless otherwise ordered by the Project Engineer.

6.6 MANHOLE TESTING

6.6.1 General

All manholes shall be tested for leakage prior to Final Acceptance by one of the following methods: 1) exfiltration; 2) infiltration; or 3) vacuum. When tested manholes do not meet the minimum test standards, the Contractor shall locate the sources(s) of leakage, shall perform all corrective work necessary and shall repeat the test until the minimum standards are met.

6.6.2 Exfiltration Test

Where manholes are located above the groundwater level, the Contractor shall test manhole leakage by exfiltration. The inlets and outlets in each manhole shall be sealed with a plug and securely fastened. Once the pipe stubs are plugged, the manhole shall be filled with water and leakage measured over a period of not less than 1 hour. Allowable leakage shall not exceed a rate of one 1 gallon per hour per ten 10-feet depth of manhole. The Contractor shall be responsible for furnishing and disposing of the water used for testing.

6.6.3 Infiltration Test

Where manholes are located in high groundwater conditions, the Contractor may elect to test leakage by measurement of infiltration. No visible leakage will be allowed over a period of 24 hours.

6.6.4 Vacuum Test

With the approval of the District Engineer, the Contractor may elect to test manhole leakage by vacuum testing. The inlets and outlets in each manhole shall be sealed with a plug and securely fastened. Vacuum testing shall be performed with the P.A. Glazier Manhole Vacuum Tester or an equivalent system approved by the District Engineer. The manhole cover seal shall be inflated to 40 psi to create a seal between the vacuum base and the structure. A vacuum of 10 inches Hg shall be drawn and vacuum valves on the test mechanism closed. The requirements of this Specification shall be considered satisfied if the manhole does not exhibit a decrease of more than 1 inch Hg vacuum in 1 minute.

6.7 COMPACTION TEST

The maximum dry density and optimum moisture content of each soil type used in the controlled compacted backfill shall be determined in accordance with California Test 216. Field density tests shall be required at intervals of no less than one (1) every 300 feet of pipeline length and shall be in accordance with California Test 216 or 231. Soil density tests shall be performed by the Project Engineer. Results of field density tests shall be submitted to the District Engineer prior to Final Acceptance.

6.8 SEWER SERVICES AND FOG INTERCEPTOR TEST

Sewer services and FOG interceptors shall be tested in accordance with the requirements of PBCSD Plumbing Code.

6.9 NOTIFICATION OF TESTS

The Project Engineer or Contractor shall notify the District Engineer of all tests specified herein at least two (2) working days prior to performance of the test(s) to allow the District Engineer or a representative to witness testing. The District Engineer will not be available to witness tests on weekends or holidays. Any tests performed without such notification shall be repeated at the expense of the Contractor.

6.10 VIDEO INSPECTION

The Contractor shall provide video inspection and taping of all gravity sewer mains for review by the District Engineer prior to Final Acceptance. Video inspection shall be performed upon completion of the mandrel test and the leakage test. All pipe intrusions, deflected or offset joints, sags and other defects not conforming to the requirements of these Specifications found as a result of the video inspection shall be corrected by the Contractor as directed by the District Engineer. All required corrective work shall be at the expense of the Contractor.

6.11 SEWER SERVICE INSPECTION

6.11.1 General

Backfilling of sewer services and appurtenances shall not occur prior to inspection and approval by the District Engineer. The Contractor shall correct at his expense all defective work discovered by the District Engineer prior to approval to backfill by the District

Engineer. Corrective work must be inspected and approved by the District Engineer as described above prior to backfilling the trench.

6.11.2 Notification

The Contractor shall notify the District Engineer at least two (2) working days in advance of required sewer service inspection. Sewer services and FOG interceptors backfilled without the inspection and approval of the District Engineer shall be considered defective and shall be removed and replaced in the presence of the District Engineer by and at the expense of the Contractor.

6.12 SEWER MAIN INSPECTION

6.12.1 General

The inspection requirements presented below apply to Work involving the construction of sewer mains and appurtenances and other facilities under Contract with others (Applicant) for Final Acceptance by PBCSD.

6.12.2 Inspections by the District Engineer

The District Engineer will visit the site at intervals appropriate to the stage of construction to become generally familiar with the progress and quality of the completed Work and to determine in general if the Work is being performed in a manner that, when completed, will be in accordance with these Specifications and the approved Contract Documents. However, the District Engineer will not make exhaustive or continuous on-site inspections to check quality of the Work. Observation of the Work by the District Engineer shall not relieve the Contractor from obligations to perform and construct the Work in accordance with the requirements of these Specifications and the approved Contract Documents.

Any defective or deficient work or materials discovered by the District Engineer during such observations shall be corrected by and at the expense of the Contractor, notwithstanding that such work and materials may have been previously overlooked by the District Engineer.

The Project Engineer shall keep the District Engineer advised of the progress and schedule of the Work to allow the District Engineer to schedule appropriate site visits.

6.12.3 Inspections by Project Engineer

The Project Engineer shall provide inspection and observation of the Work at regular intervals to verify that the completed Work is in accordance with these Specifications and the approved Contract Documents. Prior to Final Acceptance, the Project Engineer shall submit written certification to PBCSD that the Work was constructed in accordance with these Specifications and the approved Contract Documents.

7 STANDARD DRAWINGS

Drawing No.	Drawing Title
1	Lateral Sewer Standard Connection
2	Lateral Sewer Deep-Cut Connection I
3	Not Used
4	Lateral Sewer Connection with Grade Change
5	Standard Sewer Manhole
6	Sewer Drop Manhole
7	Shallow Sewer Manholes
8	Manhole Frame and Cover
9	Sewer Flushing Inlet
10	Building Sewer Cleanout
11	Building Sewer Backwater Protection
12	Sewer Relief Valve and Backwater Valve Details
13	Typical Pipe Trench Section
14	Pipe Encasement Cradle and Backfill
15	Trench Erosion Stop Detail
16	Sewer and Water Main Separation Requirements
17	Sewer and Water Main Separation Requirement Exceptions
18	Grease Interceptor 750 Gallon to 1,500 Gallon Capacity

APPENDIX 06-1

Pebble Beach Community Services District

Emergency Operating Procedures

- *PBCSD Emergency Chain of Command*
- *Spill Notification and Reporting (See Element 6: Section 6.3 of SSMP)*
- *Pump Station Emergency Response Plans*

START HERE

SPILL RESPONSE FLOW CHART

OBSERVER

PEBBLE BEACH CO. SECURITY
(831) 624-6669

PBCSD (24 HRS)
(831) 373-1274

MAINTENANCE SUPERVISOR:
(831) 760-0224

OTHER MAINTENANCE STAFF:
(831) 760-0225
(831) 760-0226

FIELD RESPONSE PROCESS

MAINTENANCE STAFF RESPONDS

STOP & CLEAN UP SPILL

DISTRICT ENGINEER
(530) 680-1618

ASSOCIATE ENGINEER
(831) 917-0482

ENVIRONMENTAL COMPLIANCE COORDINATOR
(831) 647-5603

DOCUMENT SPILL

ESTIMATE SPILL VOLUME AND CATEGORIZE SPILL

FIELD FORM

REGULATORY REPORTING ACTIONS (FIGURE 6-2)

Regulatory Reporting Actions

Category 1

- Any volume of the spill has reached a surface water or drainage channel
- Any volume of the spill has reached a storm drain system and was not fully captured and returned to the sewer system or disposed of properly

REPORTING ACTIONS:

- If the spill is greater than or equal to 1,000 gallons, Cal OES must be called at (800) 852-7550 as soon as possible, but no later than 2 hours after PBCSD is notified of the spill
- If the spill is greater than or equal to 50,000 gallons and has discharged to a surface water, PBCSD must conduct water quality sampling no later than 18 hours after initial knowledge of potential discharge to a surface water
- Draft reports must be submitted to CIWQS within 3 business days after becoming aware of the spill
- Final reports must be certified through CIWQS within 15 calendar days of the end date of the spill
- For spills 50,000 gallons or greater, a technical report must be submitted within 45 calendar days after the spill end date
- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 2

- The spill is greater than or equal to 1,000 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- If the spill is greater than or equal to 1,000 gallons, Cal OES must be called at (800) 852-7550 as soon as possible, but no later than 2 hours after PBCSD is notified of the spill
- Draft reports must be submitted to CIWQS within 3 business days after becoming aware of the spill
- Final reports must be certified through CIWQS within 15 calendar days of the end date of the spill
- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 3

- The spill is greater than or equal to 50 gallons and less than 1,000 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- Must be reported in CIWQS and certified within 30 days after the end of the calendar month in which the spill occurred
- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 4

- The spill is less than 50 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- Must certify monthly the estimated total spill volume exiting the sewer system and the number of Category 4 spills into CIWQS within 30 days after the end of the month in which the spill occurred.
- Upload and certify a report of all Category 4 spills to CIWQS by February 1st after the end of the calendar year in which the spills occurred

No Spill

REPORTING ACTIONS:

- Within 30 calendar days after the end of the calendar month, a "no-spill" certification statement must be submitted to CIWQS

Other Actions

Confirm that Peter Von Langen at the RWQCB received the spill notification by emailing him at peter.vonlangen@waterboards.ca.gov or calling him at (805) 549-3688 within 3 business days of becoming aware of the spill.

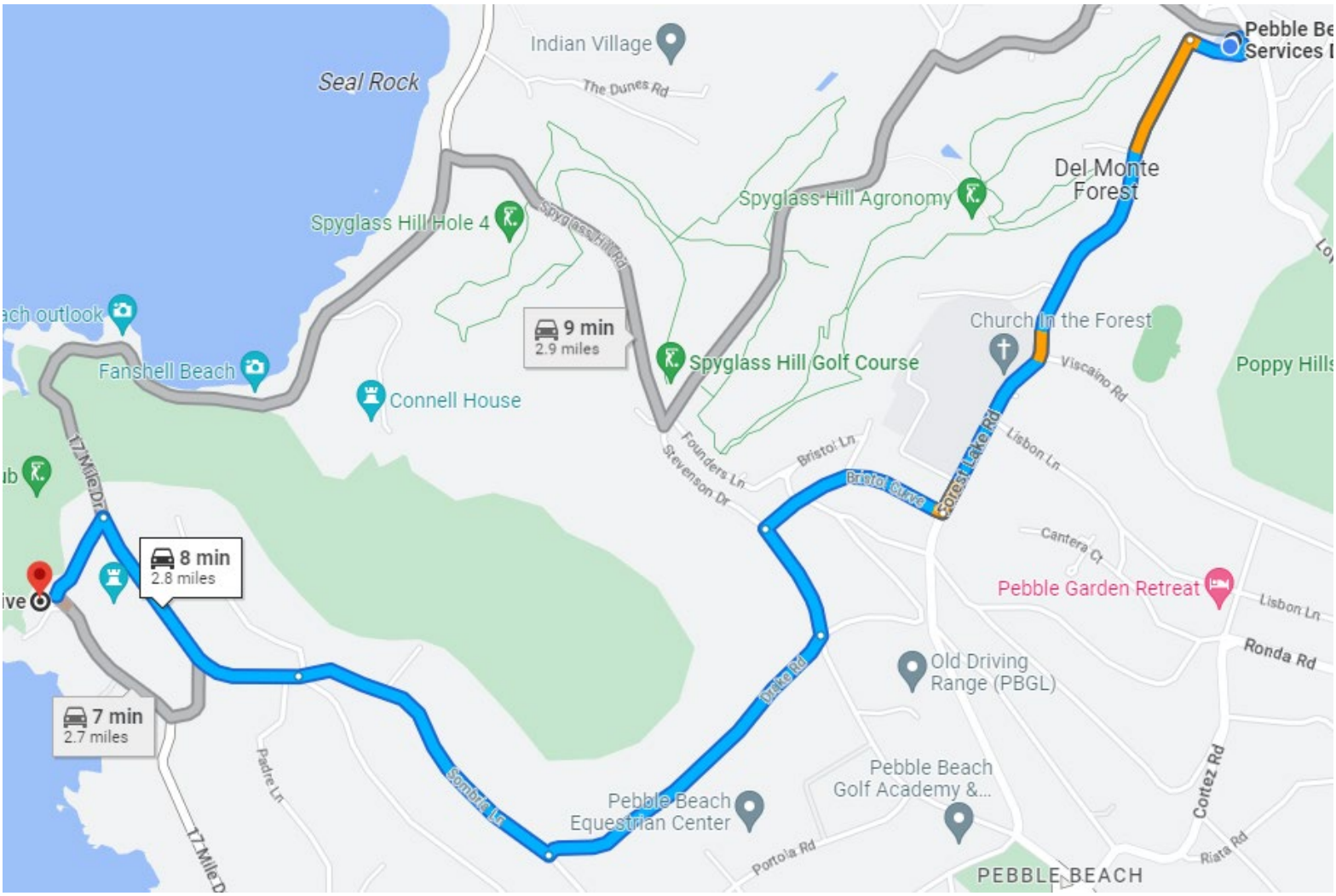
Pebble Beach Community Services District

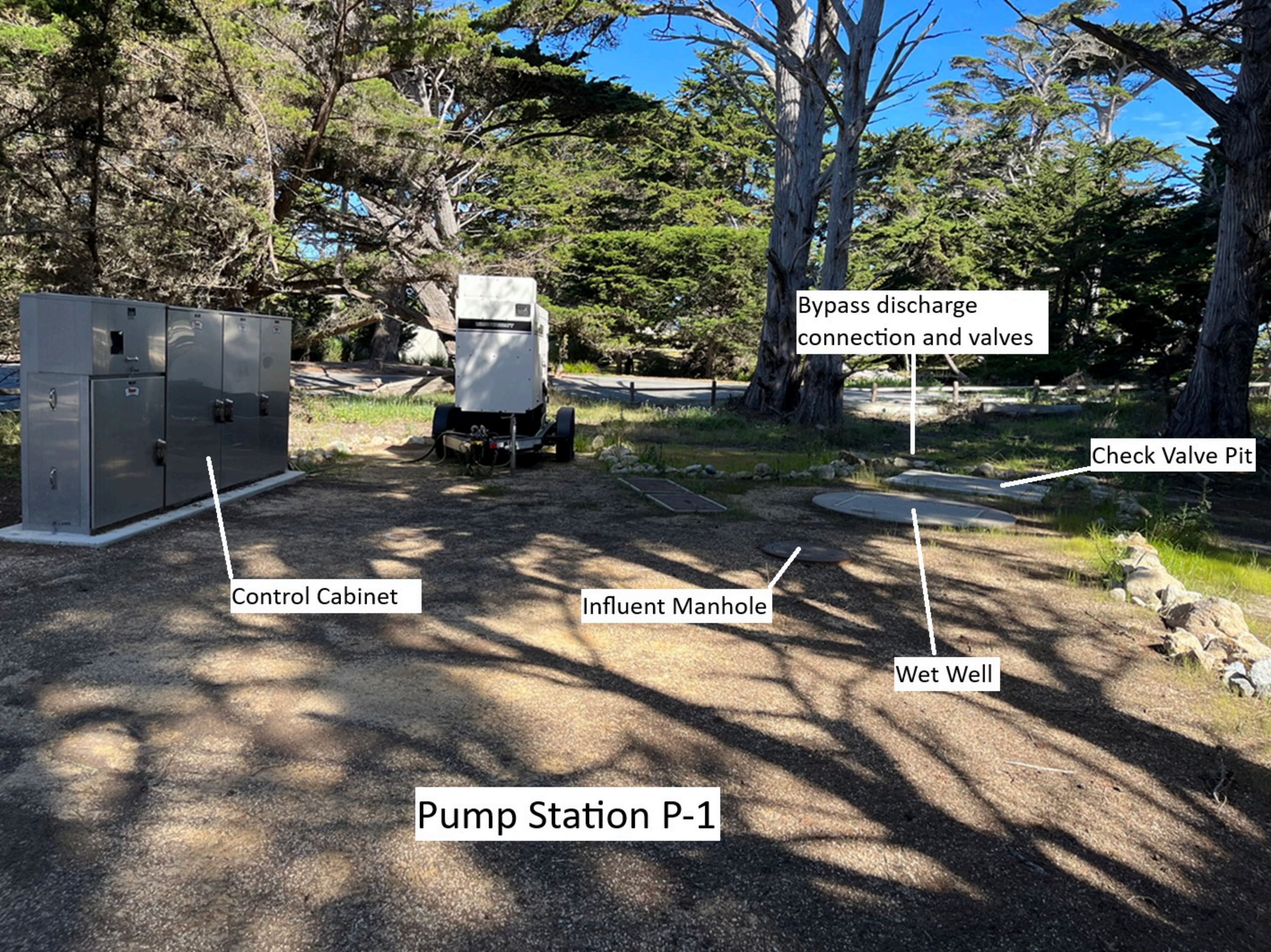
Pump Station Emergency Response Plan

Pump Station P-1

Pump Station Location & Utility Information

Name	PBCSD P-1
Lat/Long	36.578149,-121.973432
Utility Meter #	1008831114
Directions	**Travel Time: 8 Mins** From the PBCSD Office Building at 3101 Forest Lake Road, Pebble Beach, CA 93953 • Turn left onto Forest Lake Road and travel for 0.8 miles • Turn right onto Bristol Curve • Turn left onto Stevenson Drive • Bear right onto Drake Road • Turn right onto Sombria Lane • Bear right onto Portola Road • Turn left onto 17 Mile Drive • The Station will be on the left after approximately 0.1 miles




Bypass discharge connection and valves
Check Valve Pit
Control Cabinet
Influent Manhole
Wet Well
Pump Station P-1

KEY NOTES:

1. FOR NEW PUMP STATION, VALVE VAULT AND BYPASS VAULT, SEE DETAILS 1 AND SECT. A, DWG. SM-1.1
2. LOCATION OF PUMP BYPASS VAULT, FIELD VERIFY WITH OWNER, SEE DET. 2, DWG. SM-1.1
3. CONCRETE EQUIPMENT PAD, SEE DET. 3, DWG. SM-0.1. INSTALL OWNER FURNISHED (OFCI) CONTROL PANELS ON CONCRETE PAD, TOC EL. 38.75
4. CONCRETE PAD FOR GENERATOR CONNECTION PANEL. SEE DET. GCP, DWG. E-1.11. PROVIDE 316 SS UNISTRUT MOUNTING STAND PER DET. GCF, DWG. E-1.11
5. PROVIDE NEW ROCK EDGING AS REQUIRED TO MATCH EXISTING ROCK EDGING, SEE NOTE 6. DWG. C-1.1
6. PROVIDE NEW DG SURFACE FOR ALL DISTURBED AREAS TO MATCH EXISTING DRIVEWAY
7. EXISTING METAL GATE TO REMAIN. CARE SHALL BE TAKEN SO AS NOT TO DAMAGE EXISTING GATE, IF REMOVED DURING CONSTRUCTION RESTORE TO ORIGINAL LOCATION AFTER SECURITY FENCE IS REMOVED
8. PROVIDE NEW 8"Ø PIPE D.I. CULVERT. LOCATION AND LENGTH TO BE FIELD DETERMINED AND COORDINATED WITH OWNER
9. PROTECT EXISTING TREES DURING CONSTRUCTION ACTIVITIES
10. PROVIDE (4) GUARD POSTS AT 4'-0" C/C TO PROTECT CONTROL PANELS, SEE DET. 5, DWG. C-0.1
11. RE-ROUTE EXISTING SWALE AWAY FROM NEW VALVE VAULT, AND PUMP STATION AS SHOWN AND AS DIRECTED BY THE OWNER
12. POTHOLE EXISTING 4" FORCE MAIN TO CONFIRM LOCATION, ALIGNMENT AND DEPTH FOR NEW PIPE PLACEMENT. FIELD VERIFY WITH OWNER LOCATION OF PUMP BYPASS VAULT
13. USE DISCOVERED DEPTH OF FM TO SET PIPE ELEVATION AT VALVE VAULT. PROVIDE POSITIVE SLOPE FROM VALVE VAULT TO CONNECTION TO EXISTING FM TO PREVENT AIR ACCUMULATION IN PIPELINE
14. POTHOLE EXISTING RESIDENTIAL SEWER LINE BEFORE CONSTRUCTING ELECTRICAL CONCRETE PAD. NOTIFY OWNER OF ANY CONFLICT AND SHIFT LOCATION OF NEW PAD TO AVOID
15. CONFINE WORK ACTIVITY, INCLUDING STORAGE OF MATERIALS AND EQUIPMENT, TO AREA INSIDE LIMITS OF CONSTRUCTION FENCING SHOWN. REMOVE CONSTRUCTION FENCING FOLLOWING OWNER ACCEPTANCE OF WORK
16. ELECTRICAL PULL BOX, SEE DWG. E-1.12

NOTE:
ALL NEW PIPE TO HAVE RESTRAINED JOINTS.

GRAPHIC SCALE: 1"=10'

Rev	Date	Description	By
.	1/6/23	ISSUED FOR CONSTRUCTION	VMB

Job No. WW-FEB-1182
Designed by LLW
Drawn by WTH
Checked by VMB
Approved VMB

REGISTERED PROFESSIONAL ENGINEER VINOD M. BADANI C-041281 EXP. DATE 3/31/24 CIVIL STATE OF CALIFORNIA

E|2

E2 Consulting Engineers, Inc.
2100 Powell Street, Ste. 850 444 Airport Blvd., Suite 201
Emeryville, CA 94608 Watsonville, CA 95076
(510) 652-1164 (831) 722-3232

PEBBLE BEACH COMMUNITY SERVICES DISTRICT PBCSD

PUMP STATIONS P-1 AND P-2 REHABILITATION PROJECT
CONTRACT 2

PUMP STATION P-1
NEW SITE PLAN

DRAWING NO.
C-1.2

C:\CAD\dwg\PBCSDIP-1 and P-2 PS\dwgs\C1-2.dwg, 1/10/2023 11:20:40 AM

Pump Station Technical Information

Operating Orientation	Submersible wet well	**Pump Model No.**	3127.070-HT489
Static Head	26 ft	**Pump Capacity**	180 gpm
Suction Elevation	23.9 ft	**Pump TDH**	52 ft
Discharge Elevation	52.2 ft	**Pump Full Load Speed**	1745 rpm
Force Main Size	4 in ACP	**Motor Manufacturer**	
Force Main Length	647 ft	**Motor Size**	10 hp
No. of Pumps	2	**Motor (volts/phase/cycle)**	240 volt/3 phase/60 hz
Pump Manufacturer	Flygt	**Discharge Location**	FM P-1638 to MH F2-21
Low Point (Likely Overflow Point)	Wet Well/MH 62-6		

Traffic Controls and Public Notification

Public Notification:

- Place barricades as needed to keep pedestrians and vehicles away from sewage. Keep barricades in place until cleanup is complete.
- Signs should be posted at any streams or beaches that sewage has contaminated during a spill event. Signs should be placed at access points to these locations until the risk of contamination has subsided. Signs must be monitored daily to ensure that they are in place.
- Large spills may require broader public notification. In this case, PBCSD's General Manager may authorize contact with local media when large or significant areas have been contaminated.
- In the event of an overnight overflow, the area must be inspected the following day for any signs of spill materials that may require additional cleanup.

Regulatory Reporting Actions

Category 1

- Any volume of the spill has reached a surface water or drainage channel
- Any volume of the spill has reached a storm drain system and was not fully captured and returned to the sewer system or disposed of properly

REPORTING ACTIONS:

- If the spill is greater than or equal to 1,000 gallons, Cal OES must be called at (800) 852-7550 as soon as possible, but no later than 2 hours after PBCSD is notified of the spill
- If the spill is greater than or equal to 50,000 gallons and has discharged to a surface water, PBCSD must conduct water quality sampling no later than 18 hours after initial knowledge of potential discharge to a surface water
- Draft reports must be submitted to CIWQS within 3 business days after becoming aware of the spill
- Final reports must be certified through CIWQS within 15 calendar days of the end date of the spill
- For spills 50,000 gallons or greater, a technical report must be submitted within 45 calendar days after the spill end date
- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 2

- The spill is greater than or equal to 1,000 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- If the spill is greater than or equal to 1,000 gallons, Cal OES must be called at (800) 852-7550 as soon as possible, but no later than 2 hours after PBCSD is notified of the spill
- Draft reports must be submitted to CIWQS within 3 business days after becoming aware of the spill
- Final reports must be certified through CIWQS within 15 calendar days of the end date of the spill
- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 3

- The spill is greater than or equal to 50 gallons and less than 1,000 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- Must be reported in CIWQS and certified within 30 days after the end of the calendar month in which the spill occurred
- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 4

- The spill is less than 50 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- Must be reported in CIWQS and certified within 30 days after the end of the calendar month in which the spill occurred
- Upload and certify a report of all Category 4 spills to CIWQS by February 1st after the end of the calendar year in which the spills occurred

No Spill

REPORTING ACTIONS:

- Within 30 calendar days after the end of the calendar month, a "no-spill" certification statement must be submitted to CIWQS

Other Actions

Confirm that Peter Von Langen at the RWQCB received the spill notification by emailing him at peter.vonlangen@waterbords.ca.gov or calling him at (805) 549-3688 within 3 business days of becoming aware of the spill.

Station Safety Evaluation

In the event of a natural disaster or some other significant event, it is essential to evaluate the scene for safety before any actions are taken:

Survey the Scene:

Is the structure intact? YES/NO

What hazards are present? _____

Is there flooding in or around the pump station? _____

If Flooding is Present:

Do **NOT** enter a flooded station unless:

☐You have contacted your supervisor for instructions

☐You have posted signage to warn others about hazards on site

☐You have checked for unsafe electrical conditions **from a safe distance**

If the Scene Appears to be Safe to Enter:

- Look for exposed electrical cables, damaged pressurized lines or any other hazards
- Check for any damages and make sure all pumps and other parts of the system are functional

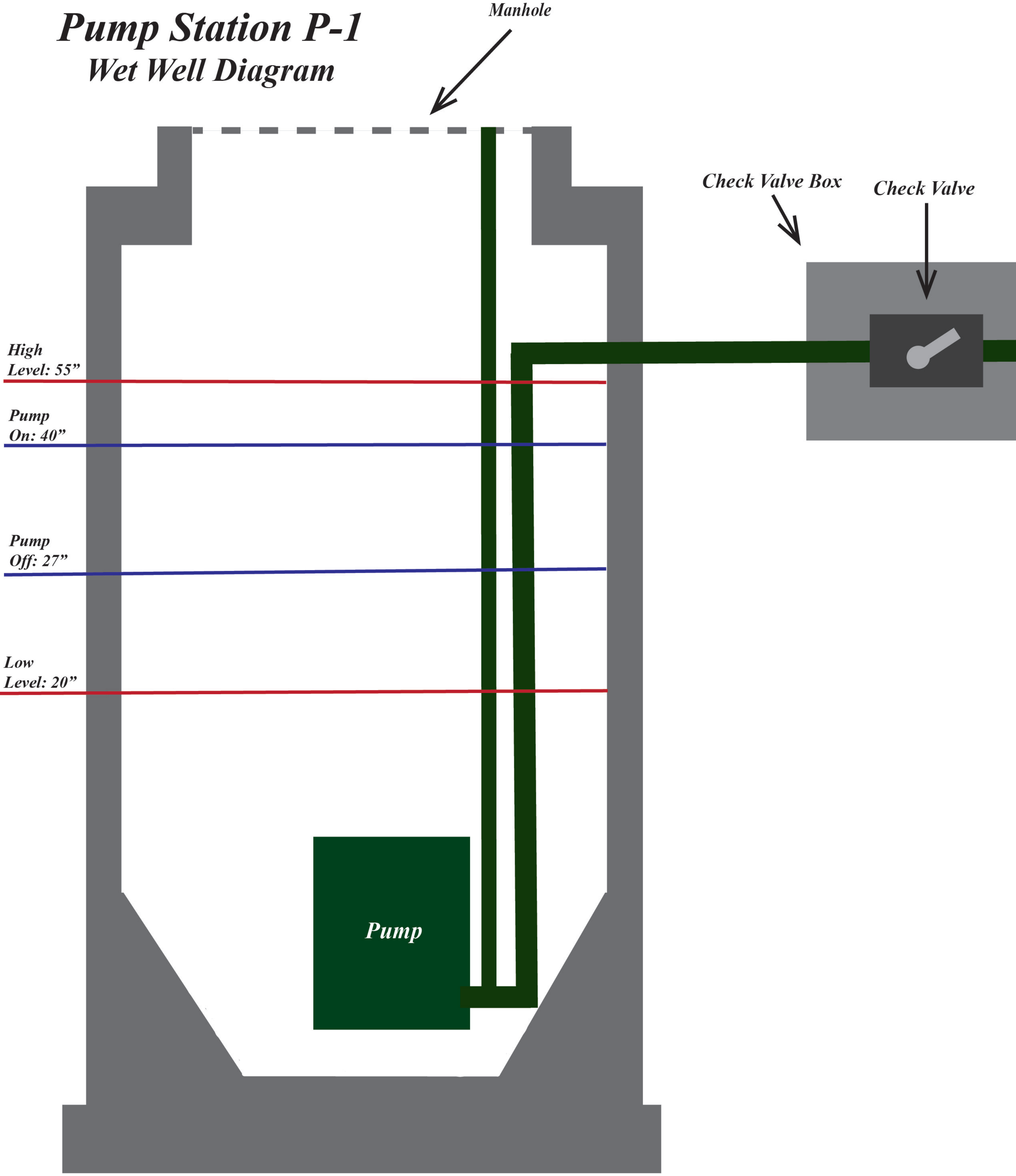
If the Scene DOES NOT Appear Safe to Enter:

- Contact your supervisor
- Follow any instructions provided by local emergency services
- Post necessary signage to warn others of hazards and untreated sewage that may have spilled
- At a safe distance, take inventory of:

  ☐ Visible Damage ☐ Flooding Conditions

  ☐ Power ☐ Functioning/Non Functioning Equipment

Pump Station P-1
Wet Well Diagram



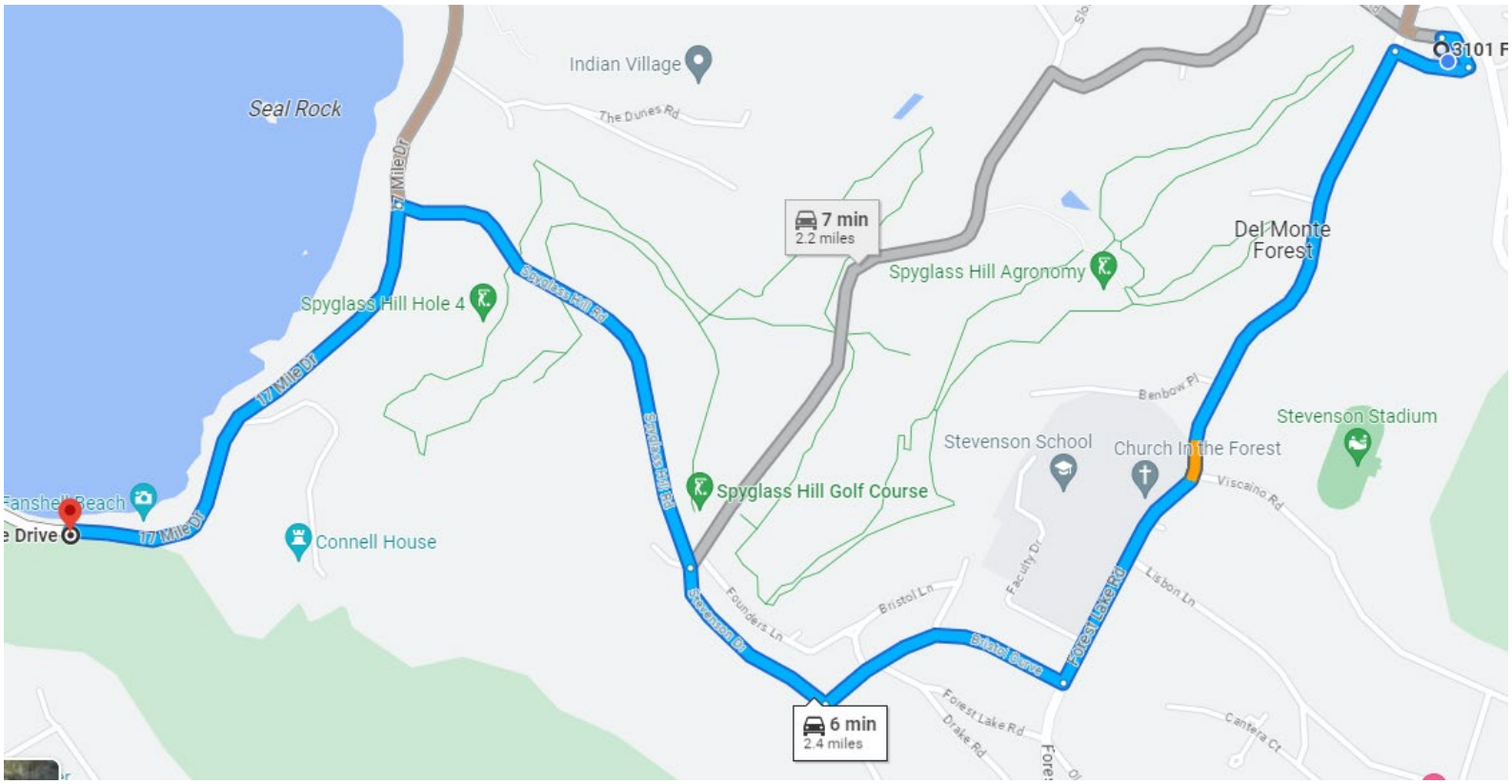
Pebble Beach Community Services District

Pump Station Emergency Response Plan

Pump Station P-2

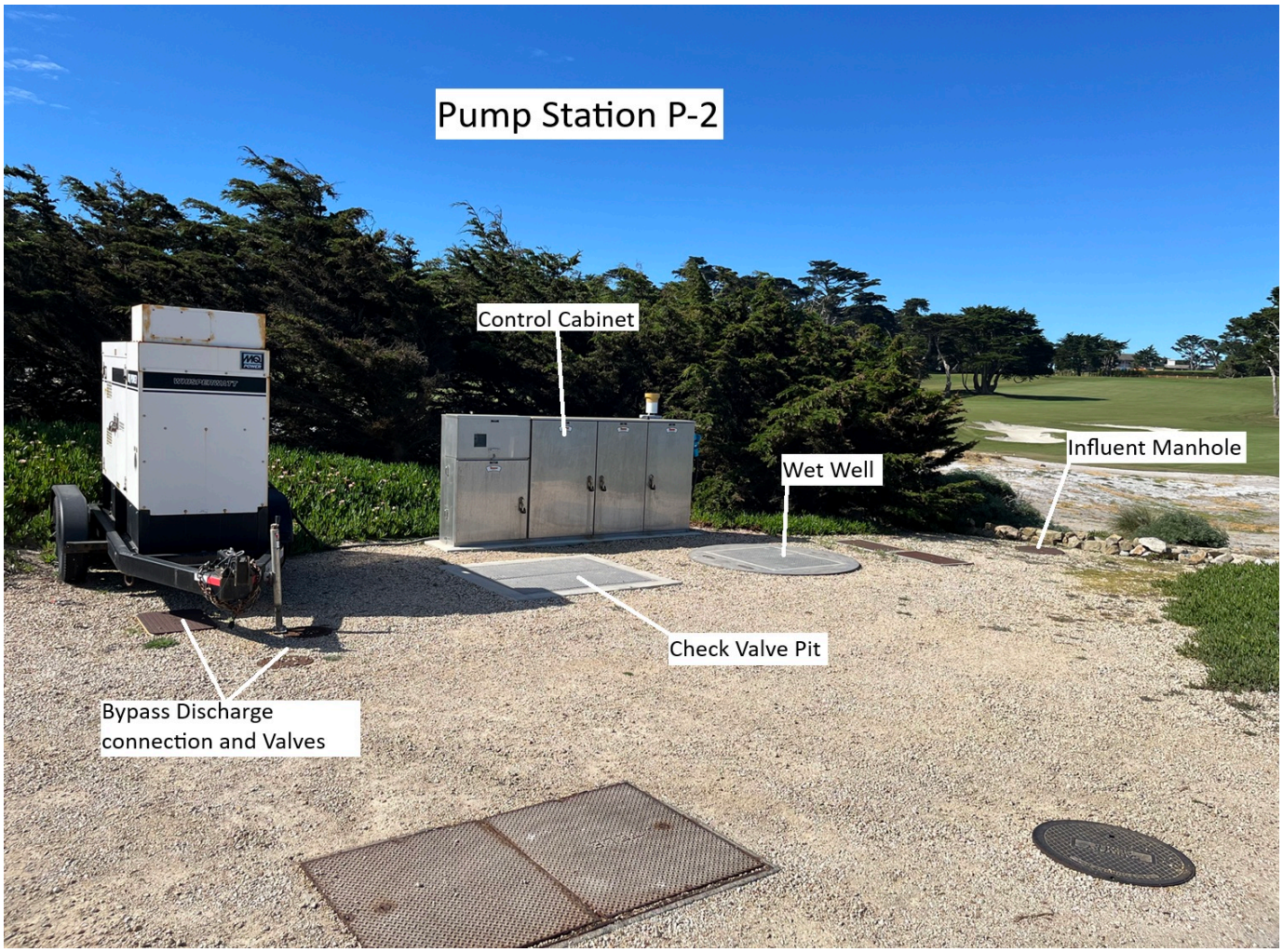
Pump Station Location & Utility Information

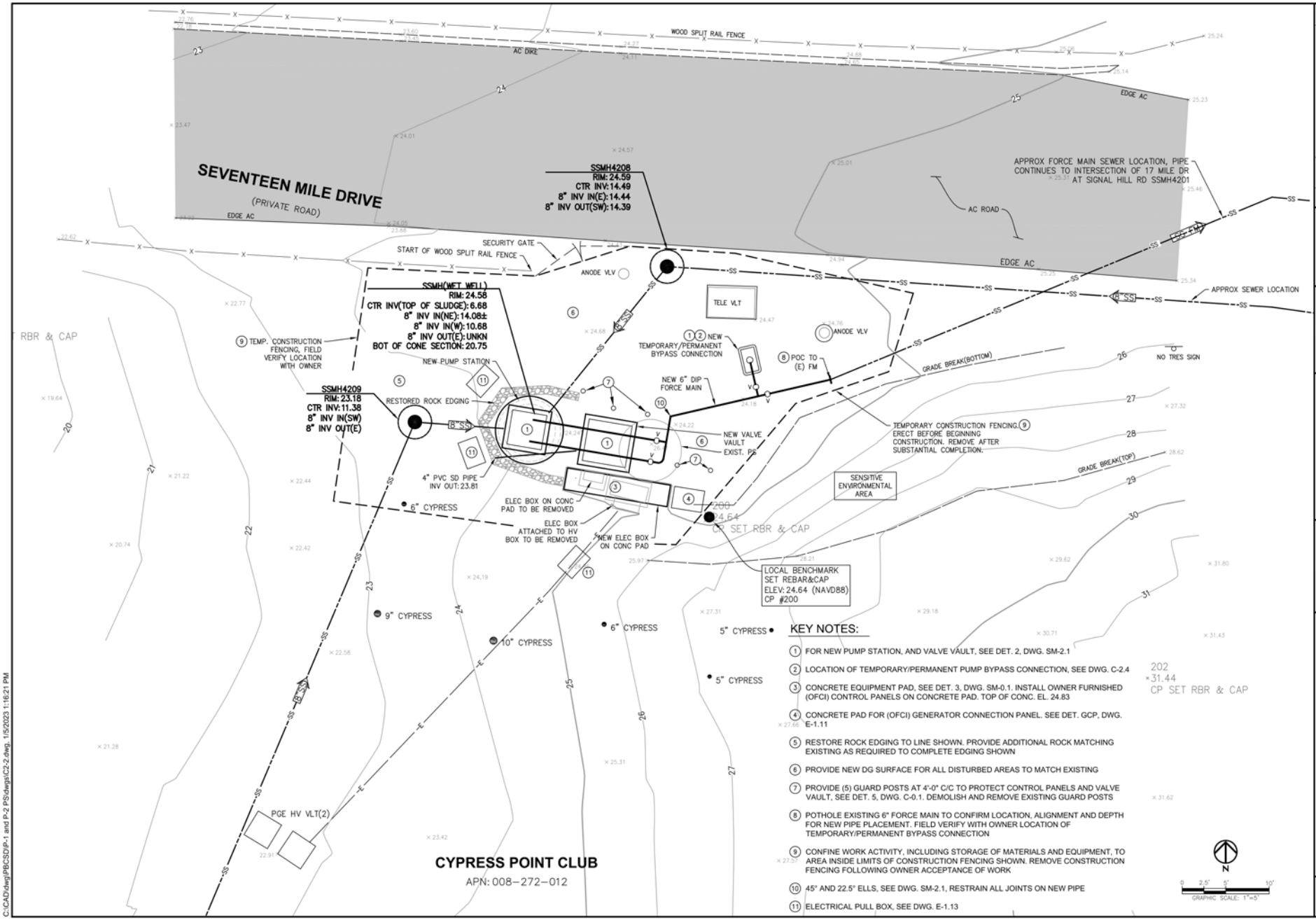
Name	PBCSD P-2
Lat/Long	36.581978, -121.970116
Utility Meter #	1009920084
Directions	**Travel Time: 6 Mins** From the PBCSD Office Building at 3101 Forest Lake Road, Pebble Beach, CA 93953 • Travel along Forest Lake Road for 0.8 miles • Turn right onto Bristol Curve and travel 0.3 miles • Turn right onto Stevenson Drive and travel 0.2 miles • Take a slight left onto Spyglass Hill Road and travel 0.5 miles • Turn left onto 17 Mile Drive and continue for approximately 0.4 miles. The Station will be on the left



Aerial Overview

Plumbing and Electrical Overview





KEY NOTES:

1. FOR NEW PUMP STATION, AND VALVE VAULT, SEE DET. 2, DWG. SM-2.1
2. LOCATION OF TEMPORARY/PERMANENT PUMP BYPASS CONNECTION, SEE DWG. C-2.4
3. CONCRETE EQUIPMENT PAD, SEE DET. 3, DWG. SM-0.1. INSTALL OWNER FURNISHED (OFCI) CONTROL PANELS ON CONCRETE PAD. TOP OF CONC. EL. 24.83
4. CONCRETE PAD FOR (OFCI) GENERATOR CONNECTION PANEL. SEE DET. GCP, DWG. E-1.11
5. RESTORE ROCK EDGING TO LINE SHOWN. PROVIDE ADDITIONAL ROCK MATCHING EXISTING AS REQUIRED TO COMPLETE EDGING SHOWN
6. PROVIDE NEW DG SURFACE FOR ALL DISTURBED AREAS TO MATCH EXISTING
7. PROVIDE (5) GUARD POSTS AT 4'-0" C/C TO PROTECT CONTROL PANELS AND VALVE VAULT, SEE DET. 5, DWG. C-0.1. DEMOLISH AND REMOVE EXISTING GUARD POSTS
8. POTHOLE EXISTING 6" FORCE MAIN TO CONFIRM LOCATION, ALIGNMENT AND DEPTH FOR NEW PIPE PLACEMENT. FIELD VERIFY WITH OWNER LOCATION OF TEMPORARY/PERMANENT BYPASS CONNECTION
9. CONFINE WORK ACTIVITY, INCLUDING STORAGE OF MATERIALS AND EQUIPMENT, TO AREA INSIDE LIMITS OF CONSTRUCTION FENCING SHOWN. REMOVE CONSTRUCTION FENCING FOLLOWING OWNER ACCEPTANCE OF WORK
10. 45° AND 22.5° ELLS, SEE DWG. SM-2.1, RESTRAIN ALL JOINTS ON NEW PIPE
11. ELECTRICAL PULL BOX, SEE DWG. E-1.13

By	Description	Date	Rev
VMB	ISSUED FOR CONSTRUCTION	1/6/23	-

Job No. WW-PEB-1162
Designed by LLW
Drawn by WTH
Checked by VMB
Approved VMB

REGISTERED PROFESSIONAL ENGINEER VINOD M. BADANI C-041281 Exp. 3/31/23 STATE OF CALIFORNIA

E|2 E2 Consulting Engineers, Inc.
2100 Powell Street, Ste. 850, Emeryville, CA 94608, (510) 652-1164
444 Airport Blvd., Suite 201, Watsonville, CA 95076, (831) 728-3332

PEBBLE BEACH COMMUNITY SERVICES DISTRICT PBCSD

PUMP STATIONS P-1 AND P-2 REHABILITATION PROJECT
CONTRACT 2

PUMP STATION P-2
NEW SITE PLAN

DRAWING NO.
C-2.2

C:\CAD\dwg\PBCSD\P-1 and P-2 PS\dwgs\C2-2.dwg, 1/5/2023 1:16:21 PM

Pump Station Technical Information

Operating Orientation	Submersible Wet Well	**Pump Model No.**	NP3127.070-HT488
Static Head	26 ft	**Pump Capacity**	360 gpm
Suction Elevation	3.8 ft	**Pump TDH**	54 ft
Discharge Elevation	31.3 ft	**Pump Full Load Speed**	1745 rpm
Force Main Size	6 in ACP	**Motor Manufacturer**	
Force Main Length	1282 ft	**Motor Size**	10 hp
No. of Pumps	2	**Motor (volts/phase/cycle)**	240 volt/3 phase/60 hz
Pump Manufacturer	Flygt	**Discharge Location**	FM P-1637 to MH F2-5
Low Point (Likely Overflow Point)	MH F2-10		

Traffic Controls and Public Notification

Public Notification:

- Place barricades as needed to keep pedestrians and vehicles away from sewage. Keep barricades in place until cleanup is complete.
- Signs should be posted at any streams or beaches that sewage has contaminated during a spill event. Signs should be placed at access points to these locations until the risk of contamination has subsided. Signs must be monitored daily to ensure that they are in place.
- Large spills may require broader public notification. In this case, PBCSD's General Manager may authorize contact with local media when large or significant areas have been contaminated.
- In the event of an overnight overflow, the area must be inspected the following day for any signs of spill materials that may require additional cleanup.

Regulatory Reporting Actions

Category 1

- Any volume of the spill has reached a surface water or drainage channel
- Any volume of the spill has reached a storm drain system and was not fully captured and returned to the sewer system or disposed of properly

REPORTING ACTIONS:

- If the spill is greater than or equal to 1,000 gallons, Cal OES must be called at (800) 852-7550 as soon as possible, but no later than 2 hours after PBCSD is notified of the spill
- If the spill is greater than or equal to 50,000 gallons and has discharged to a surface water, PBCSD must conduct water quality sampling no later than 18 hours after initial knowledge of potential discharge to a surface water
- Draft reports must be submitted to CIWQS within 3 business days after becoming aware of the spill
- Final reports must be certified through CIWQS within 15 calendar days of the end date of the spill
- For spills 50,000 gallons or greater, a technical report must be submitted within 45 calendar days after the spill end date
- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 2

- The spill is greater than or equal to 1,000 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- If the spill is greater than or equal to 1,000 gallons, Cal OES must be called at (800) 852-7550 as soon as possible, but no later than 2 hours after PBCSD is notified of the spill
- Draft reports must be submitted to CIWQS within 3 business days after becoming aware of the spill
- Final reports must be certified through CIWQS within 15 calendar days of the end date of the spill
- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 3

- The spill is greater than or equal to 50 gallons and less than 1,000 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- Must be reported in CIWQS and certified within 30 days after the end of the calendar month in which the spill occurred
- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 4

- The spill is less than 50 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- Must be reported in CIWQS and certified within 30 days after the end of the calendar month in which the spill occurred
- Upload and certify a report of all Category 4 spills to CIWQS by February 1st after the end of the calendar year in which the spills occurred

No Spill

REPORTING ACTIONS:

- Within 30 calendar days after the end of the calendar month, a "no-spill" certification statement must be submitted to CIWQS

Other Actions

Confirm that Peter Von Langen at the RWQCB received the spill notification by emailing him at peter.vonlangen@waterbords.ca.gov or calling him at (805) 549-3688 within 3 business days of becoming aware of the spill.

Station Safety Evaluation

In the event of a natural disaster or some other significant event, it is essential to evaluate the scene for safety before any actions are taken:

Survey the Scene:

Is the structure intact? YES/NO

What hazards are present? _____

Is there flooding in or around the pump station? _____

If Flooding is Present:

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☐You have posted signage to warn others about hazards on site

☐You have checked for unsafe electrical conditions **from a safe distance**

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- Check for any damages and make sure all pumps and other parts of the system are functional

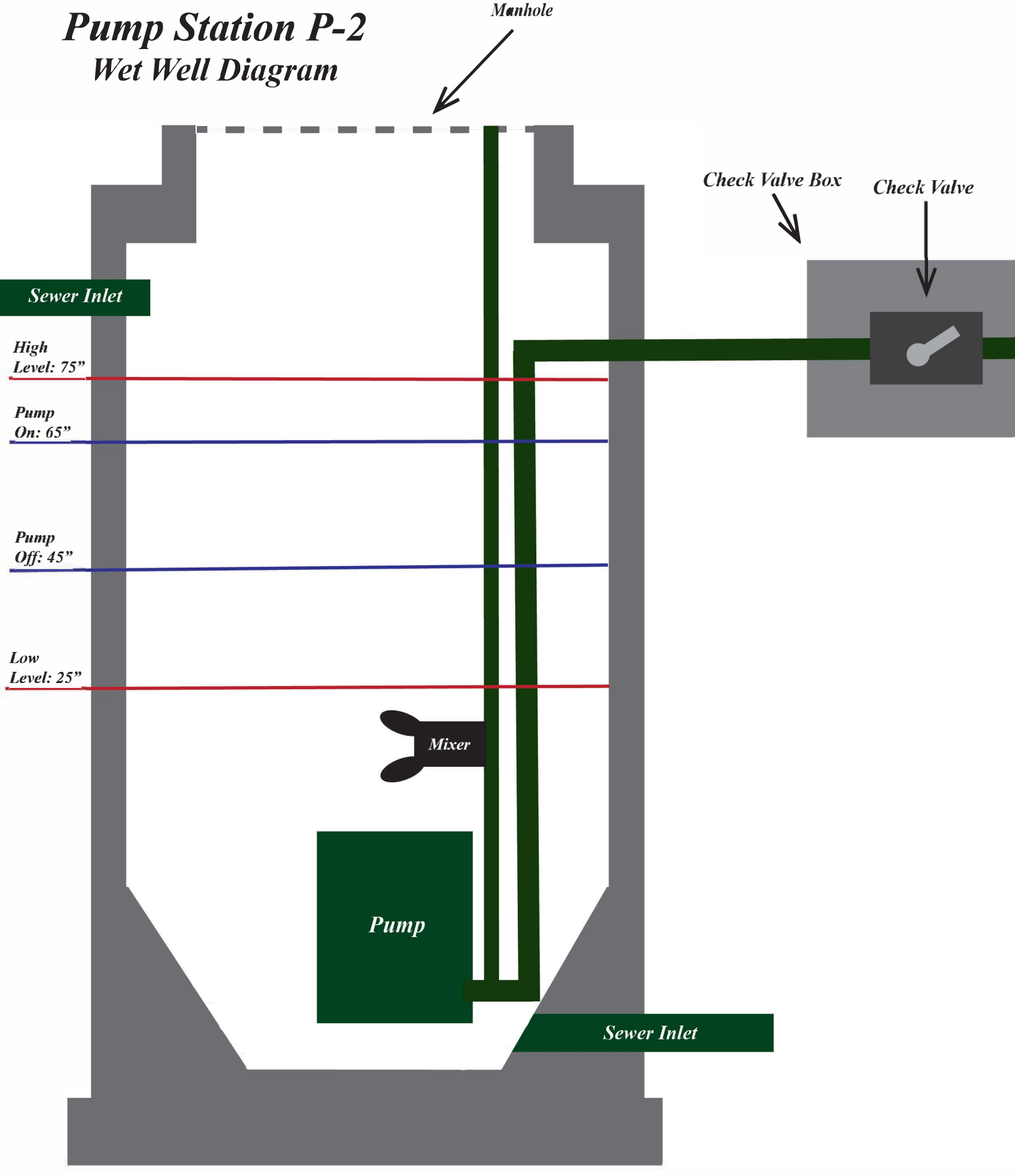
If the Scene DOES NOT Appear Safe to Enter:

- Contact your supervisor
- Follow any instructions provided by local emergency services
- Post necessary signage to warn others of hazards and untreated sewage that may have spilled
- At a safe distance, take inventory of:

  ☐ Visible Damage ☐ Flooding Conditions

  ☐ Power ☐ Functioning/Non Functioning Equipment

Pump Station P-2
Wet Well Diagram



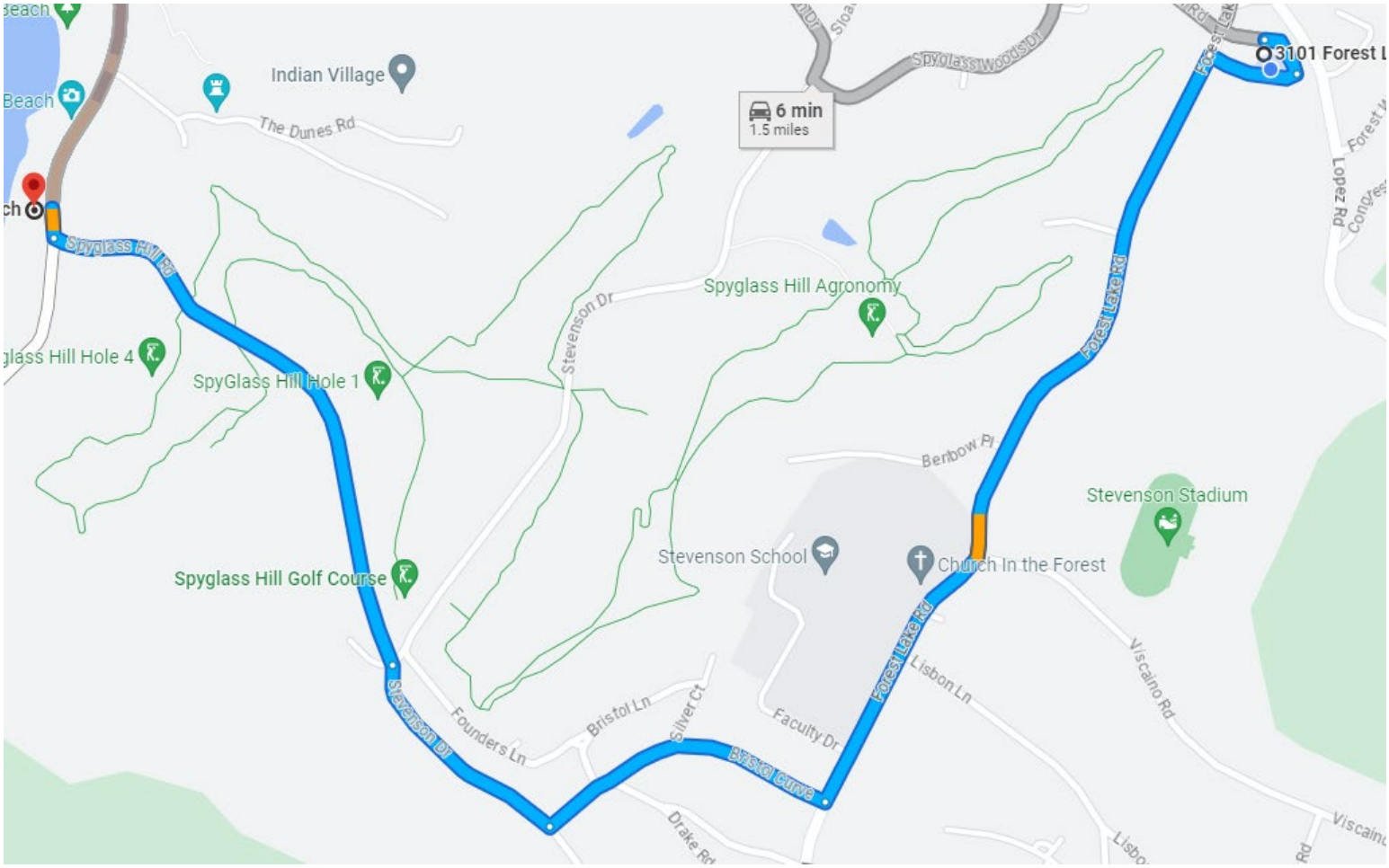
Pebble Beach Community Services District

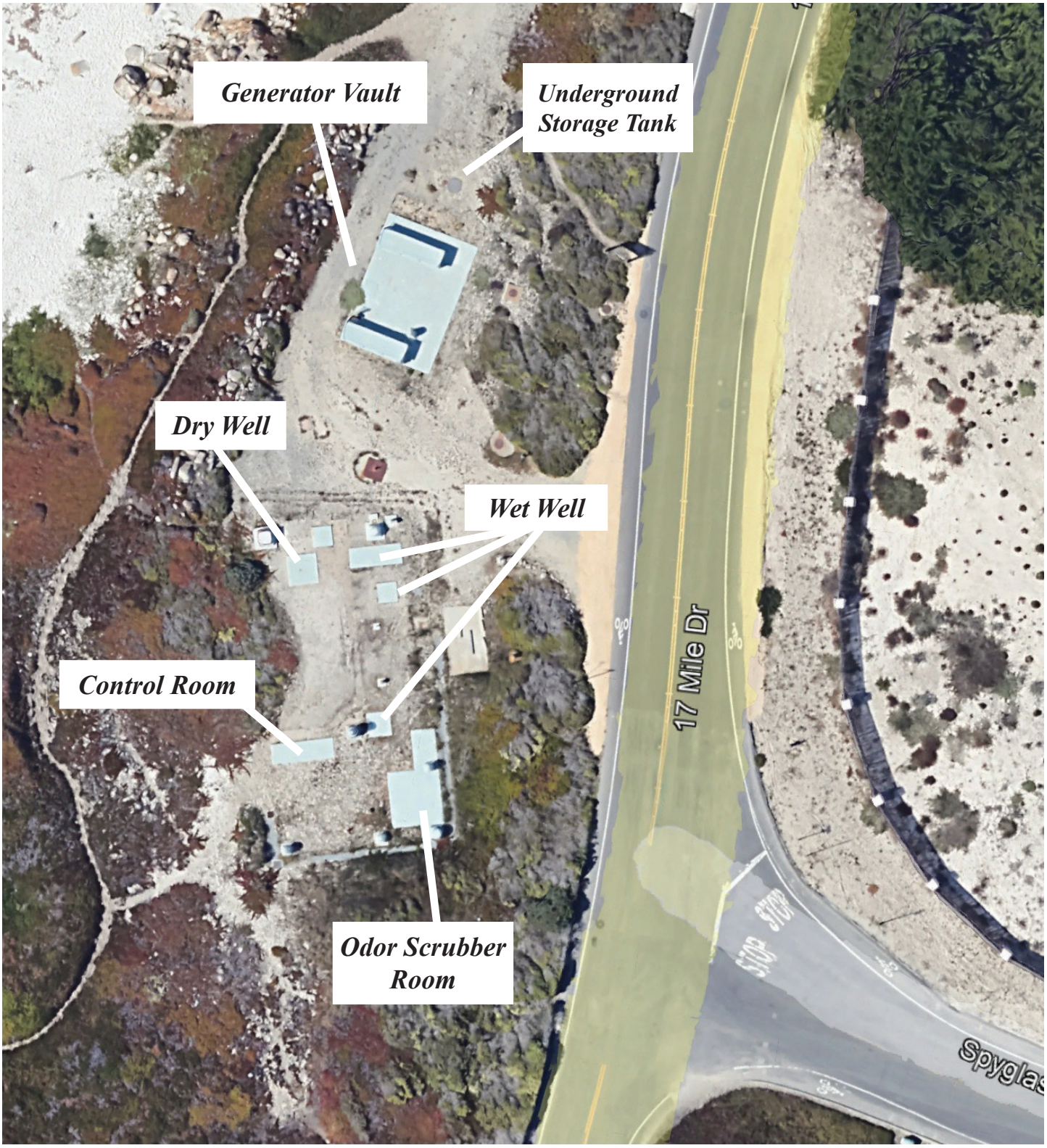
Pump Station Emergency Response Plan

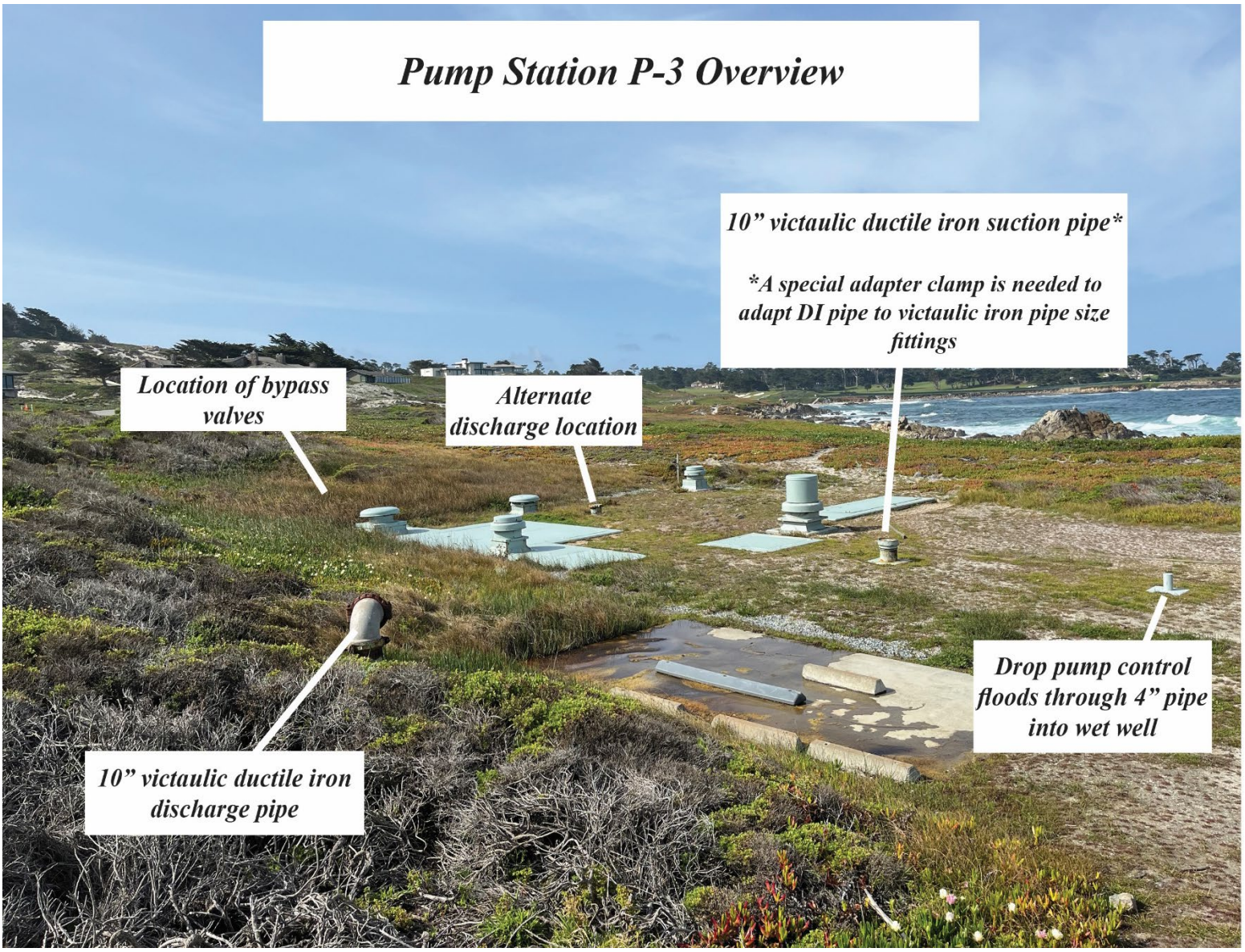
Pump Station P-3

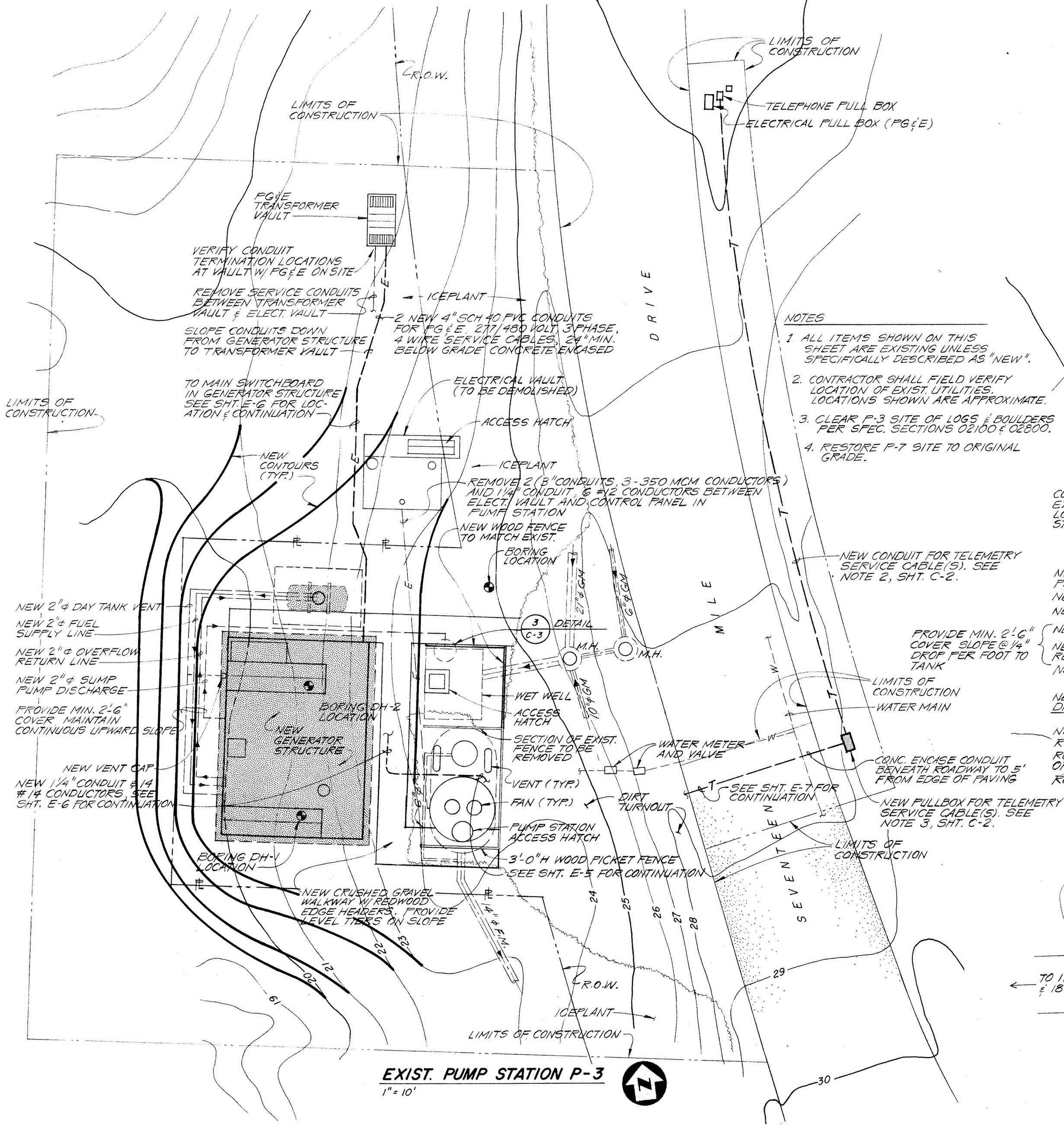
Pump Station Location & Utility Information

Name	PBCSD P-3
Lat/Long	36.587318, -121.963894
Utility Meter #	1010611388
Directions	**Travel Time: 5 Mins** From the PBCSD Office Building at 3101 Forest Lake Road, Pebble Beach, CA 93953 • Turn onto Forest Lake Road and travel 0.8 miles • Turn right onto Bristol Curve and travel 0.3 miles • Turn right onto Stevenson Drive and travel 0.2 miles • Bear left onto Spyglass Hill Road and travel 0.5 miles • Turn right onto 17 Mile Drive, the station will be on the left




Generator Vault
Underground Storage Tank
Dry Well
Wet Well
Control Room
Odor Scrubber Room
17 Mile Dr
STOP


Pump Station P-3 Overview
10” victaulic ductile iron suction pipe*
*A special adapter clamp is needed to adapt DI pipe to victaulic iron pipe size fittings
Location of bypass valves
Alternate discharge location
Drop pump control floods through 4” pipe into wet well
10” victaulic ductile iron discharge pipe



NOTES

1. ALL ITEMS SHOWN ON THIS SHEET ARE EXISTING UNLESS SPECIFICALLY DESCRIBED AS "NEW".
2. CONTRACTOR SHALL FIELD VERIFY LOCATION OF EXIST. UTILITIES. LOCATIONS SHOWN ARE APPROXIMATE.
3. CLEAR P-3 SITE OF LOGS & BOULDERS PER SPEC. SECTIONS 02100 & 02800.
4. RESTORE P-7 SITE TO ORIGINAL GRADE.

EXIST. PUMP STATION P-3

1" = 10'

NO	DATE	REVISIONS	BY

		DATE
PROJECT NO	56306	
DESIGNED BY	D. DUPREY	7-86
DRAWN BY	B HARRIS	7-86
CHECKED BY	D. R. Duprey	2-87
ENGINEER	D. R. Duprey	
REGISTRATION NO	C038079	DATE 2/27/87

ENGINEERING-SCIENCE
DESIGN • RESEARCH • PLANNING
666 CAMINO AGUAJITO, SUITE 202, MONTEREY, CALIFORNIA 93940 • 408/373-2933
OFFICES IN PRINCIPAL CITIES
ES

97590

Pump Station Technical Information

Operating Orientation	Wet Well/Dry Pit	**Pump Model No.**	Morris: NC 6x6 -15 2V1 Goulds: NCD 10x10 - 21
Static Head	216 ft	**Pump Capacity**	1450 gpm (4 pumps) 29000 gpm (2 pumps)
Suction Elevation	3.2 ft	**Pump TDH**	260' 270'
Discharge Elevation	225.1 ft	**Pump Full Load Speed**	1750 RPM
Force Main Size	14 in	**Motor Manufacturer**	US
Force Main Length	3050 ft	**Motor Size**	75 hp (4 pumps) 150 hp (2 pumps)
No. of Pumps	4 (2 sets in series) 2 (in series)	**Motor (volts/phase/cycle)**	480 volt/3 phase/60 hz
Pump Manufacturer	GRUNFOS (4 pumps) GOULDS (2 pumps)	**Discharge Location**	FM P-1775 to MH F3-33
Low Point (Likely Overflow Point)	Overflow pipe in MH E2-15		

Traffic Controls and Public Notification

Public Notification:

- Place barricades as needed to keep pedestrians and vehicles away from sewage. Keep barricades in place until cleanup is complete.
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Category 2

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- At a safe distance, take inventory of:

  ☐ Visible Damage ☐ Flooding Conditions

  ☐ Power ☐ Functioning/Non Functioning Equipment

Wet Well Side View

High Level: 82”

Pump On: 80”

Pump Off: 60”

Low Level: 55”

Wet Well Top View

Grinders

Mixers

Dry Well Top View

Suction Valves

1st Stage Pump

1st Stage Pump

1st Stage Pump

2nd Stage Pump

2nd Stage Pump

2nd Stage Pump

Pump Station 3 Big Blue Bypass Emergency Response Plan

Equipment Inventory:

- Big-Blue Pump
- Boom Truck
- Confined Space Equipment (A) Tripod B) Cable C) Harness D) Ventilation Blower E) Air Monitor)

Material Inventory:

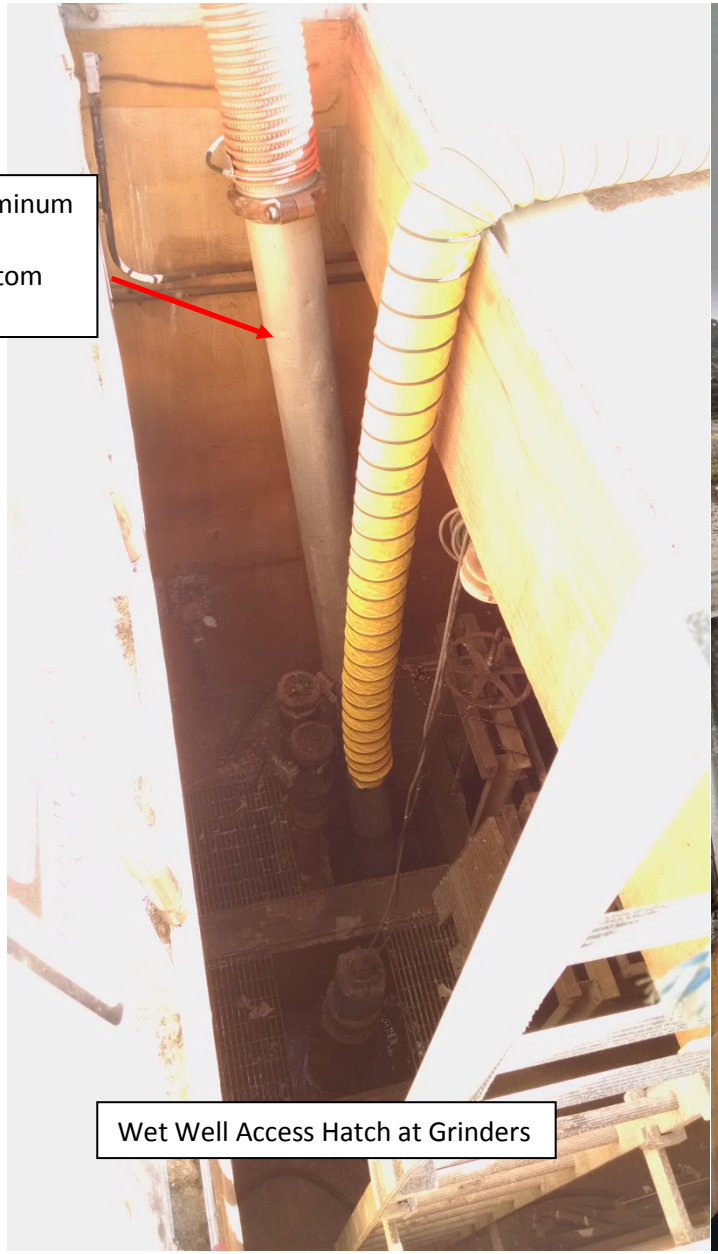
Suction (From Bottom of Channel to Pump)

- 14 ft of 10” Aluminum Pipe with Cut out on Bottom of Pipe
- 4 ft of 10” Suction Flex Pipe
- 10” 45 Deg. Fitting
- 18” Length of 10” DI Pipe
- 12” to 10” Reducer Fitting to Pump
- (4) Victaulic Coupling

Discharge (From Pump Check Valve to Bypass Line)

- 10” Rubber Expansion Joint
- 12 Bolt Flange to 10” Victaulic Fitting
- 18” Length of 10” Aluminum Pipe
- 6 ft of 10” Aluminum Pipe
- (2) 12 ft of 10” Aluminum Pipe
- (2) 10” 22.5 Deg. Fitting
- 12 Bolt Flange to 10” Victaulic Fitting
- 10” Rubber Expansion Joint
- (7) Victaulic Coupling
- (2) Wooden Pipe Support Brace

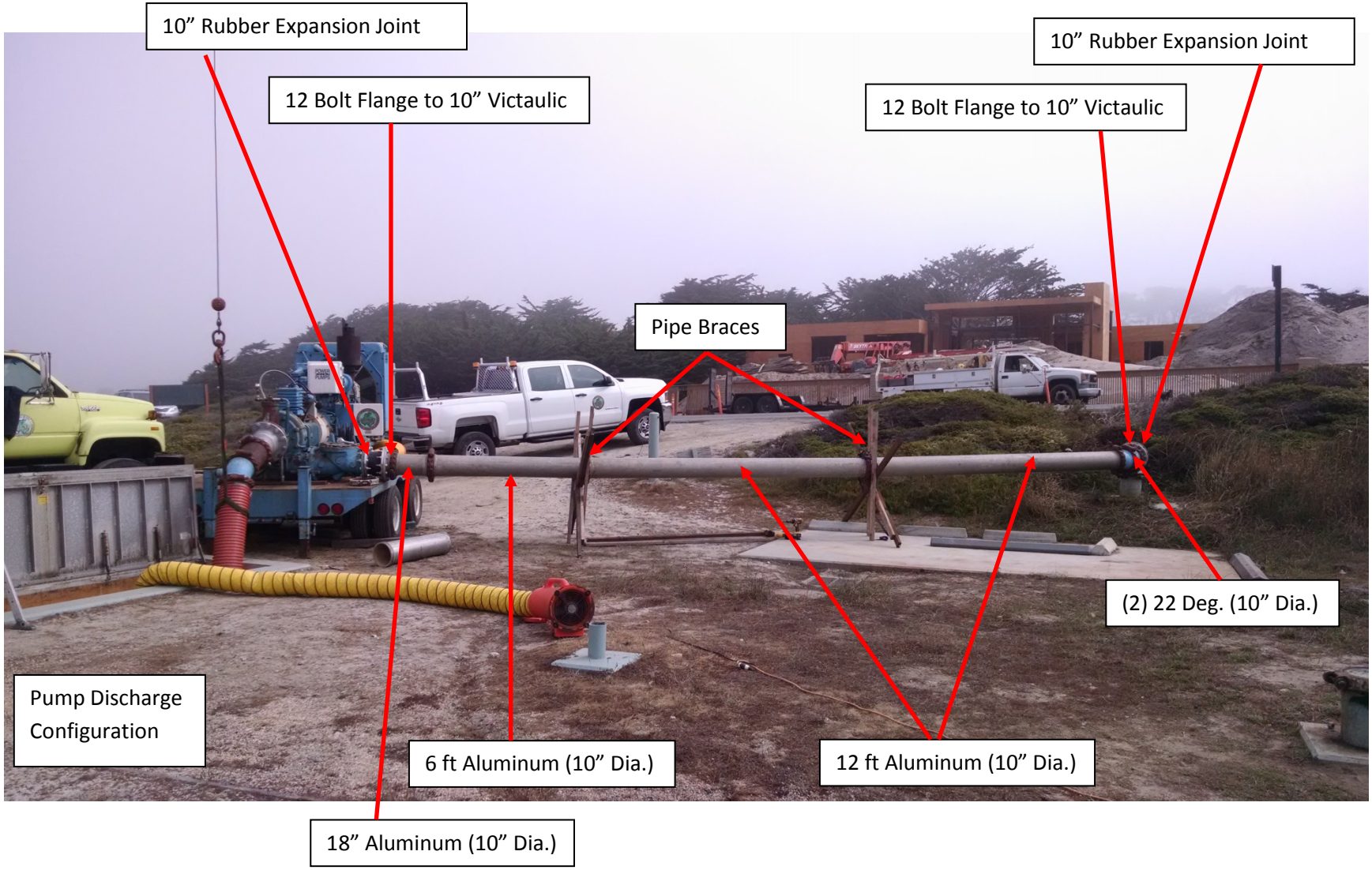
Pump Station 3 Big Blue Bypass Emergency Response Plan



Wet Well Access Hatch at Grinders

Pump Suction Configuration

Pump Station 3 Big Blue Bypass Emergency Response Plan

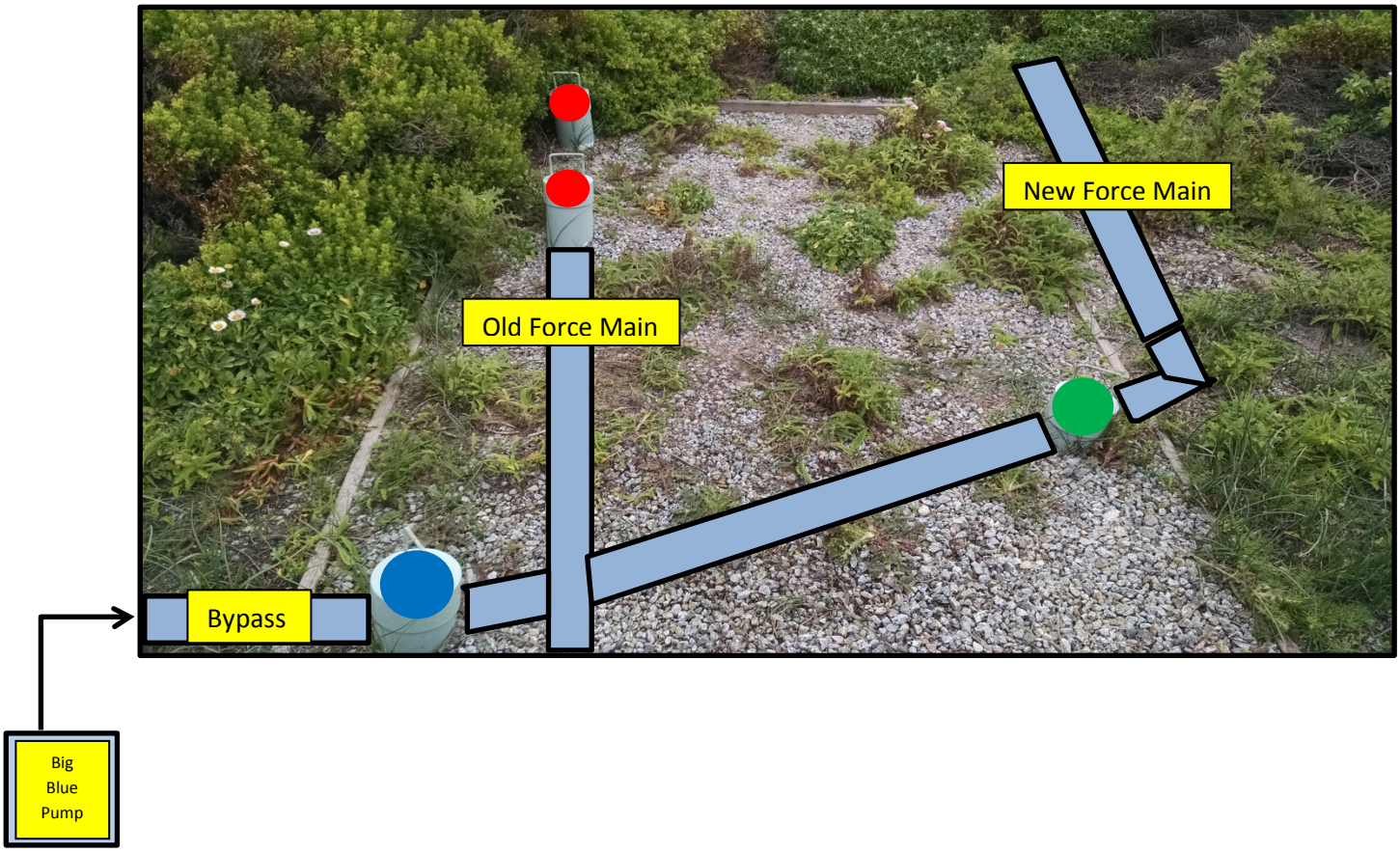


Pump Station 3 Big Blue Bypass Emergency Response Plan

- Bypass Pump Procedure –

1. Position Pump Trailer as Indicated in the Above Image.
2. Open Access Hatch at Grinders and Start Portable Ventilation Blower to Vent the Confined Space. Follow Proper Confined Space Procedures Before Entering.
3. Assemble and Attach Suction and Discharge Piping as Indicated in the Above Images. Build the Discharge Piping Starting at the Bypass Elbow.
4. Open Blue Valve and Check for Any Leaks on the Discharge Piping and Fittings Between the Check Valve on the Pump and the Bypass Elbow Connection. Ensure that the Green Valve is in the Open Position. (See the Pump 3 Valve Configuration Sheet for Additional Information)
5. Start Pump and Let Idle. Slowly Raise the Engine Speed to Operating RPM (Between 1500-1800 RPM) Until Pump Primes.

Pump Station 3 Valve Configurations



Configuration 1 (Normal Operation):	1. Green Valve Open 2. Blue Valve Closed 3. Red Valves Closed
Configuration 2 (Big Blue Bypass):	1. Green Valve Open 2. Blue Valve Open 3. Red Valves Closed
Configuration 3 (To use Old Force Main):	1. Green Valve Closed 2. Blue Valve Closed 3. Red Valves Open
Configuration 4 (To use Old Force Main with Big Blue):	1. Green Valve Closed 2. Blue Valve Open 3. Red Valves Open

Note: Valves Open Counter-Clockwise and Close Clockwise

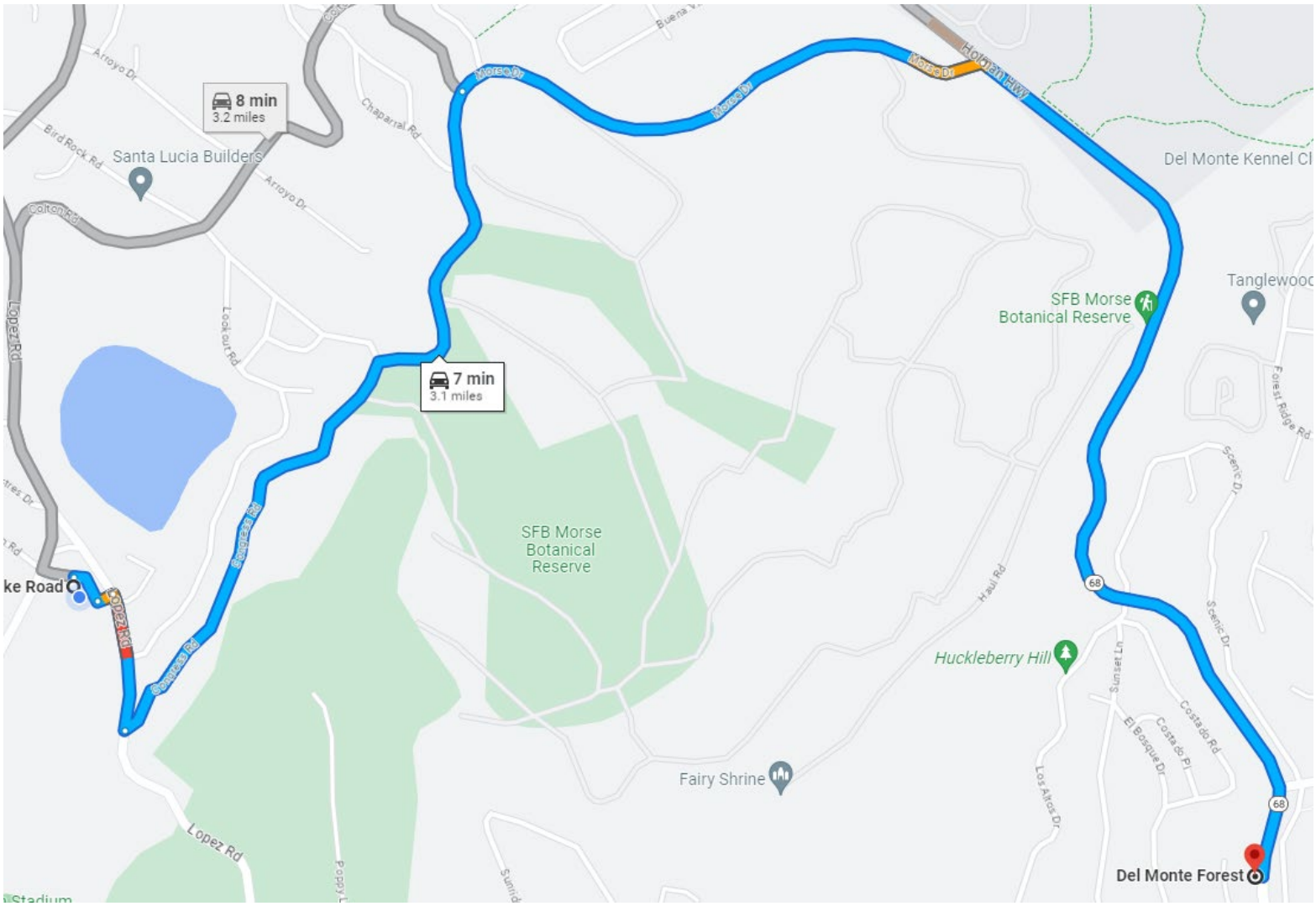
Pebble Beach Community Services District

Pump Station Emergency Response Plan

Pump Station P-4

Pump Station Location & Utility Information

Name	PBCSD P-4
Lat/Long	36.584182, -121.919115
Utility Meter #	1009546165
Directions	**Travel Time: 7 Mins** From the PBCSD Office Building at 3101 Forest Lake Road, Pebble Beach, CA 93953 • Turn right onto Lopez Road and travel 0.2 miles • Turn left onto Congress Road and travel 1 mile • Continue straight onto Morse Drive and travel 0.7 miles • Turn right onto Hwy 68. Travel 1.2 miles; the pump station will be on the right.



Pump Station Technical Information

Operating Orientation	Wet Well/Dry Pit	**Pump Model No.**	53-401222-350100-1872
Static Head	80 ft	**Pump Capacity**	200 gpm
Suction Elevation	660.7 ft	**Pump TDH**	150 ft
Discharge Elevation	740.2 ft	**Pump Full Load Speed**	1750 rpm
Force Main Size	4 in ACP	**Motor Manufacturer**	Baldor
Force Main Length	1365 ft	**Motor Size**	25 hp
No. of Pumps	2	**Motor (volts/phase/cycle)**	240 volt/3 phase/60 hz
Pump Manufacturer	PACO	**Wet Well Dimensions**	
Low Point (Likely Overflow Point)	MH F6-21	**Discharge Location**	FM P-1641 to MH F6-33

Traffic Controls and Public Notification

Public Notification:

- Place barricades as needed to keep pedestrians and vehicles away from sewage. Keep barricades in place until cleanup is complete.
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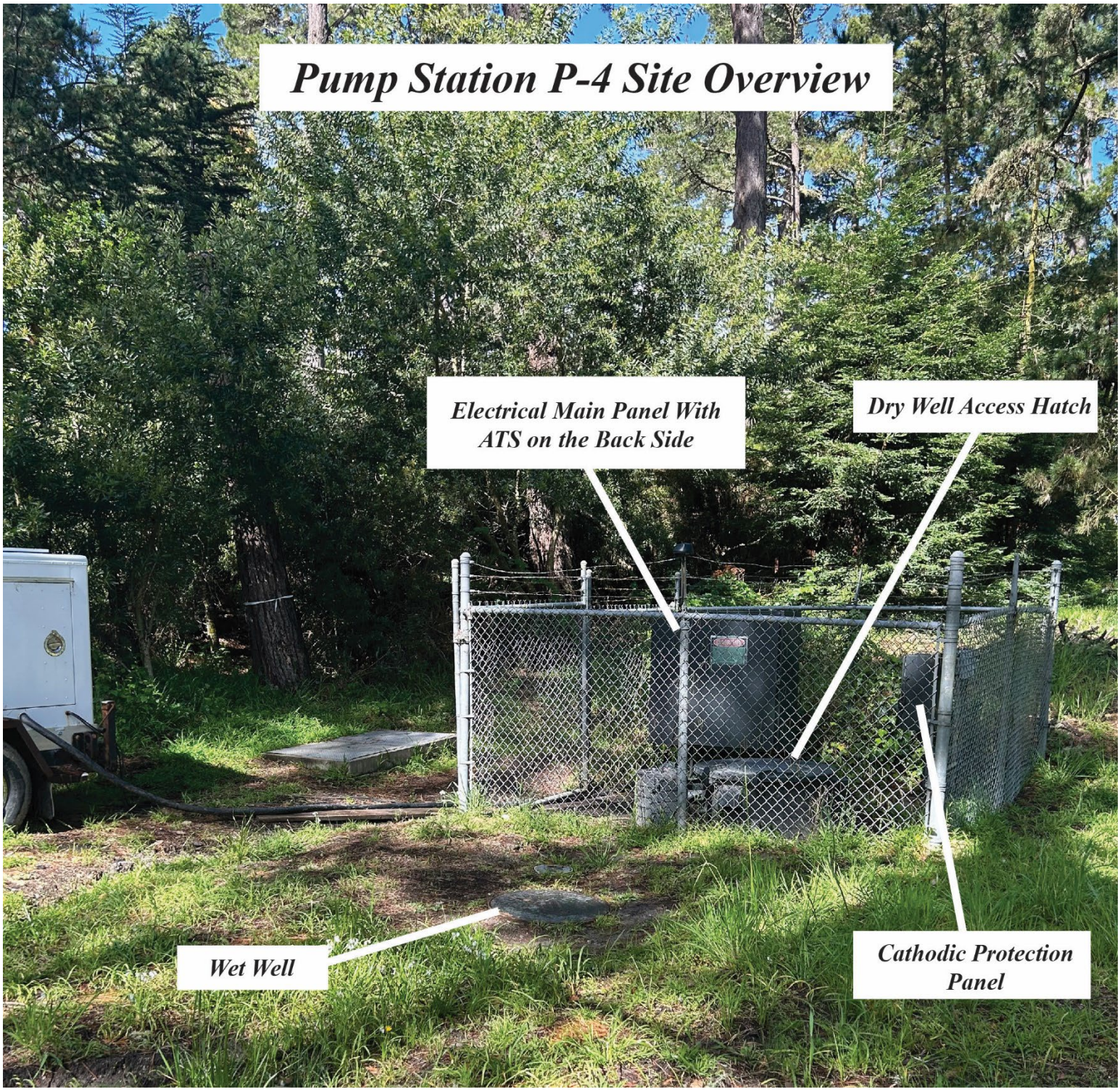
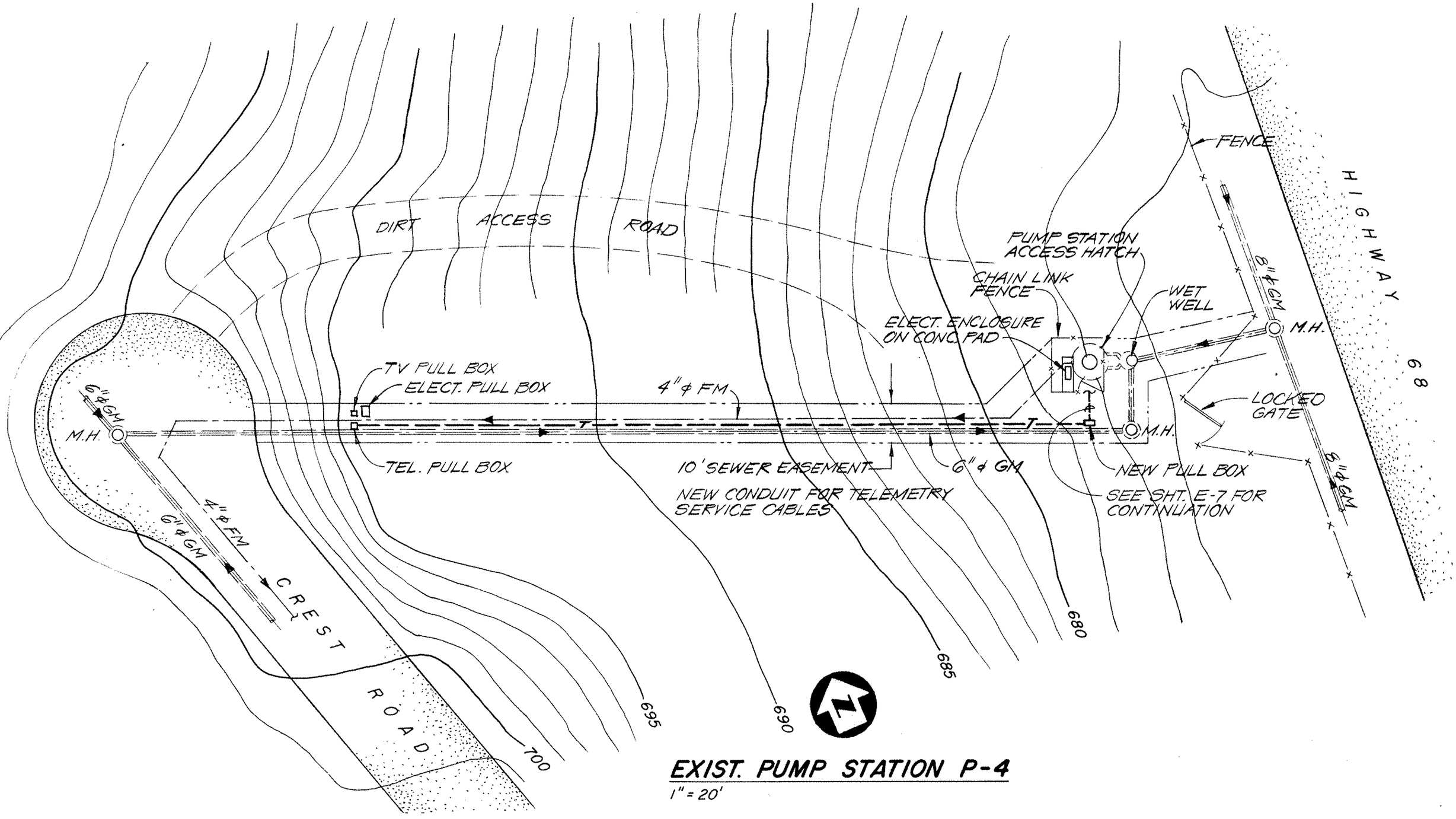

Pump Station P-4 Site Overview
Electrical Main Panel With ATS on the Back Side
Dry Well Access Hatch
Wet Well
Cathodic Protection Panel

1" = 20'



EXIST. PUMP STATION P-4

1" = 20'

Regulatory Reporting Actions

Category 1

- Any volume of the spill has reached a surface water or drainage channel
- Any volume of the spill has reached a storm drain system and was not fully captured and returned to the sewer system or disposed of properly

REPORTING ACTIONS:

- If the spill is greater than or equal to 1,000 gallons, Cal OES must be called at (800) 852-7550 as soon as possible, but no later than 2 hours after PBCSD is notified of the spill
- If the spill is greater than or equal to 50,000 gallons and has discharged to a surface water, PBCSD must conduct water quality sampling no later than 18 hours after initial knowledge of potential discharge to a surface water
- Draft reports must be submitted to CIWQS within 3 business days after becoming aware of the spill
- Final reports must be certified through CIWQS within 15 calendar days of the end date of the spill
- For spills 50,000 gallons or greater, a technical report must be submitted within 45 calendar days after the spill end date
- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 2

- The spill is greater than or equal to 1,000 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- If the spill is greater than or equal to 1,000 gallons, Cal OES must be called at (800) 852-7550 as soon as possible, but no later than 2 hours after PBCSD is notified of the spill
- Draft reports must be submitted to CIWQS within 3 business days after becoming aware of the spill
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Category 3

- The spill is greater than or equal to 50 gallons and less than 1,000 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- Must be reported in CIWQS and certified within 30 days after the end of the calendar month in which the spill occurred
- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 4

- The spill is less than 50 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- Must be reported in CIWQS and certified within 30 days after the end of the calendar month in which the spill occurred
- Upload and certify a report of all Category 4 spills to CIWQS by February 1st after the end of the calendar year in which the spills occurred

No Spill

REPORTING ACTIONS:

- Within 30 calendar days after the end of the calendar month, a "no-spill" certification statement must be submitted to CIWQS

Other Actions

Confirm that Peter Von Langen at the RWQCB received the spill notification by emailing him at peter.vonlangen@waterbords.ca.gov or calling him at (805) 549-3688 within 3 business days of becoming aware of the spill.

Station Safety Evaluation

In the event of a natural disaster or some other significant event, it is essential to evaluate the scene for safety before any actions are taken:

Survey the Scene:

Is the structure intact? YES/NO

What hazards are present? _____

Is there flooding in or around the pump station? _____

If Flooding is Present:

Do **NOT** enter a flooded station unless:

☐You have contacted your supervisor for instructions

☐You have posted signage to warn others about hazards on site

☐You have checked for unsafe electrical conditions **from a safe distance**

If the Scene Appears to be Safe to Enter:

- Look for exposed electrical cables, damaged pressurized lines or any other hazards
- Check for any damages and make sure all pumps and other parts of the system are functional

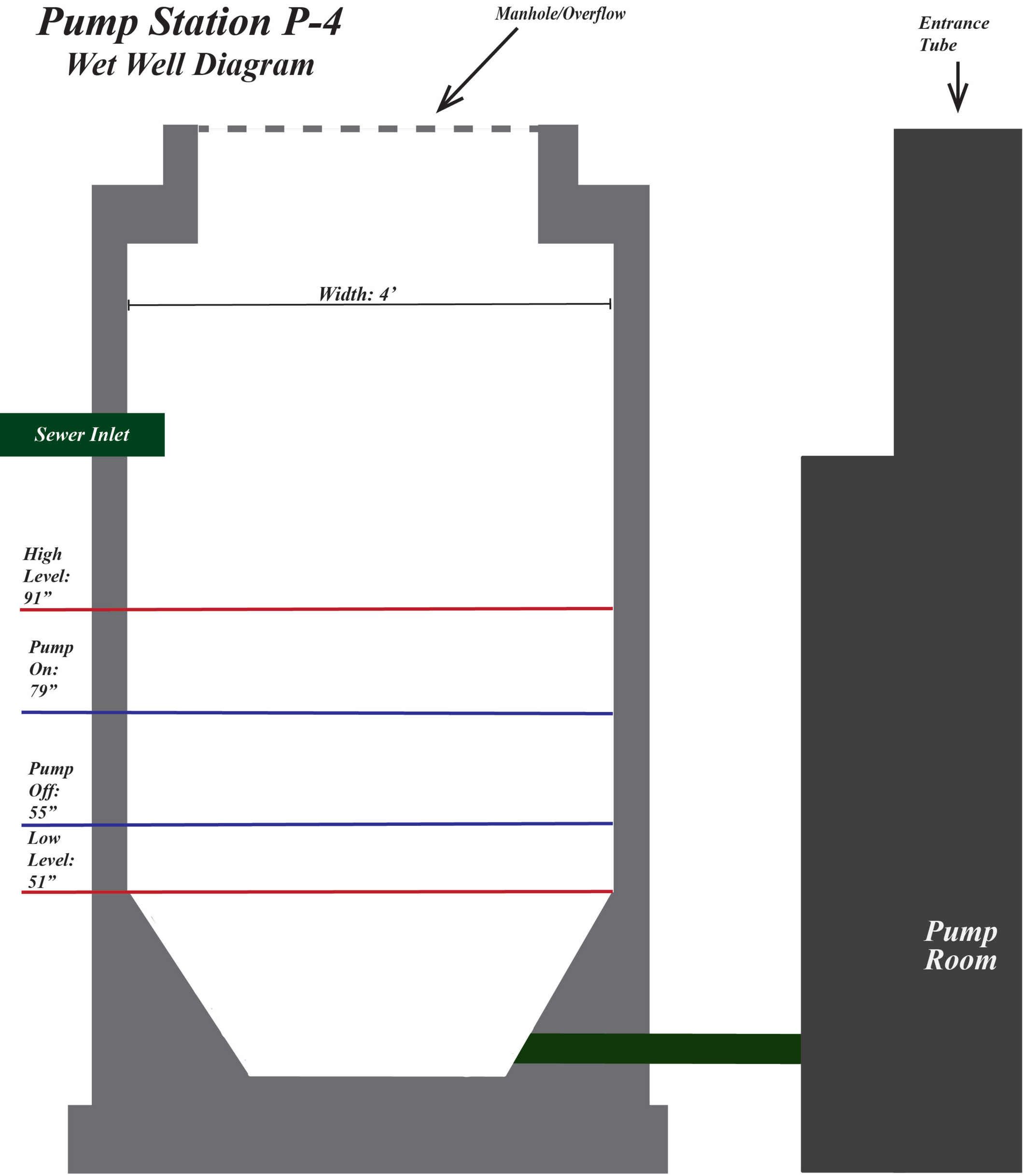
If the Scene DOES NOT Appear Safe to Enter:

- Contact your supervisor
- Follow any instructions provided by local emergency services
- Post necessary signage to warn others of hazards and untreated sewage that may have spilled
- At a safe distance, take inventory of:

  ☐ Visible Damage ☐ Flooding Conditions

  ☐ Power ☐ Functioning/Non Functioning Equipment

Pump Station P-4
Wet Well Diagram



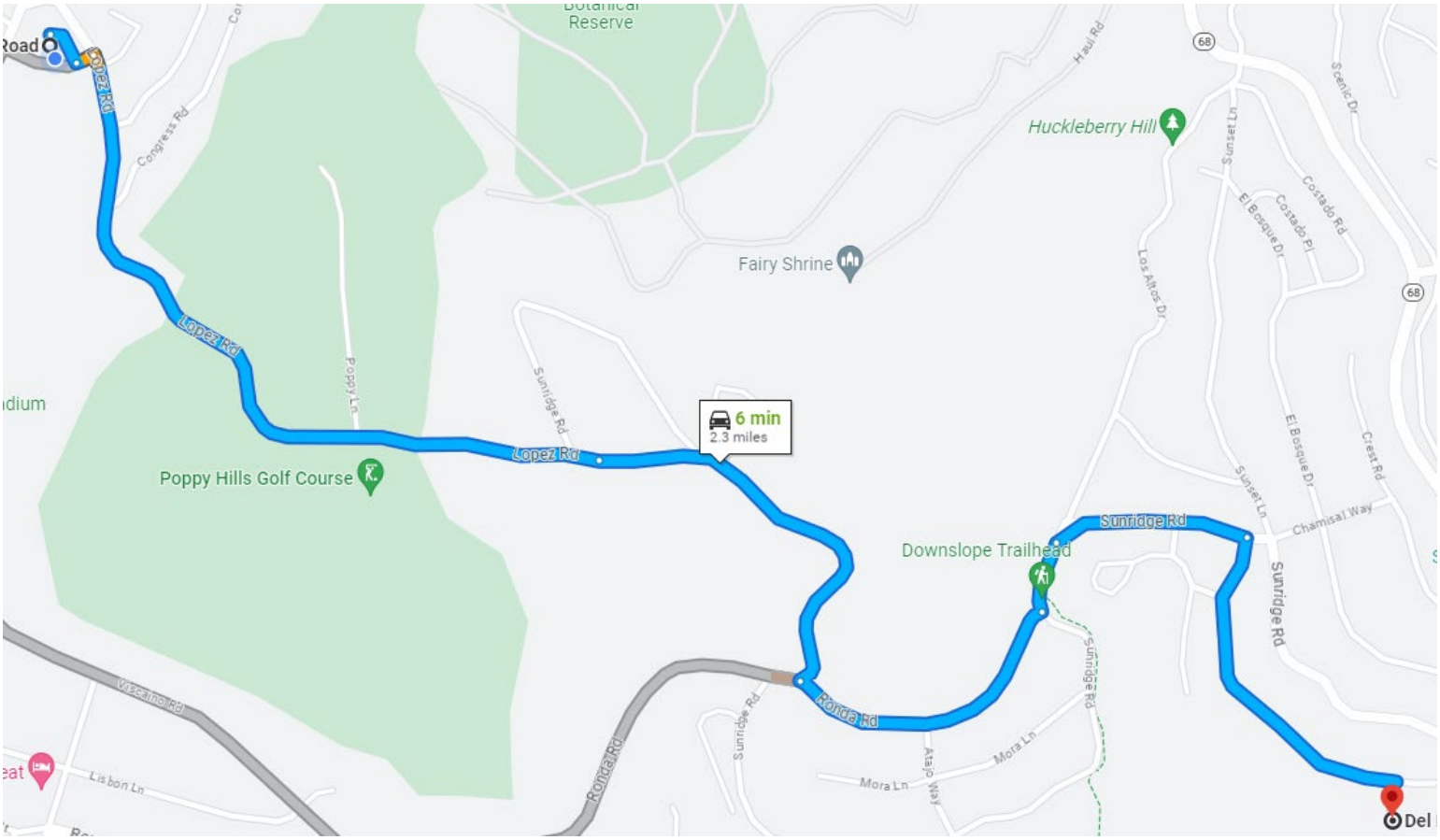
Pebble Beach Community Services District

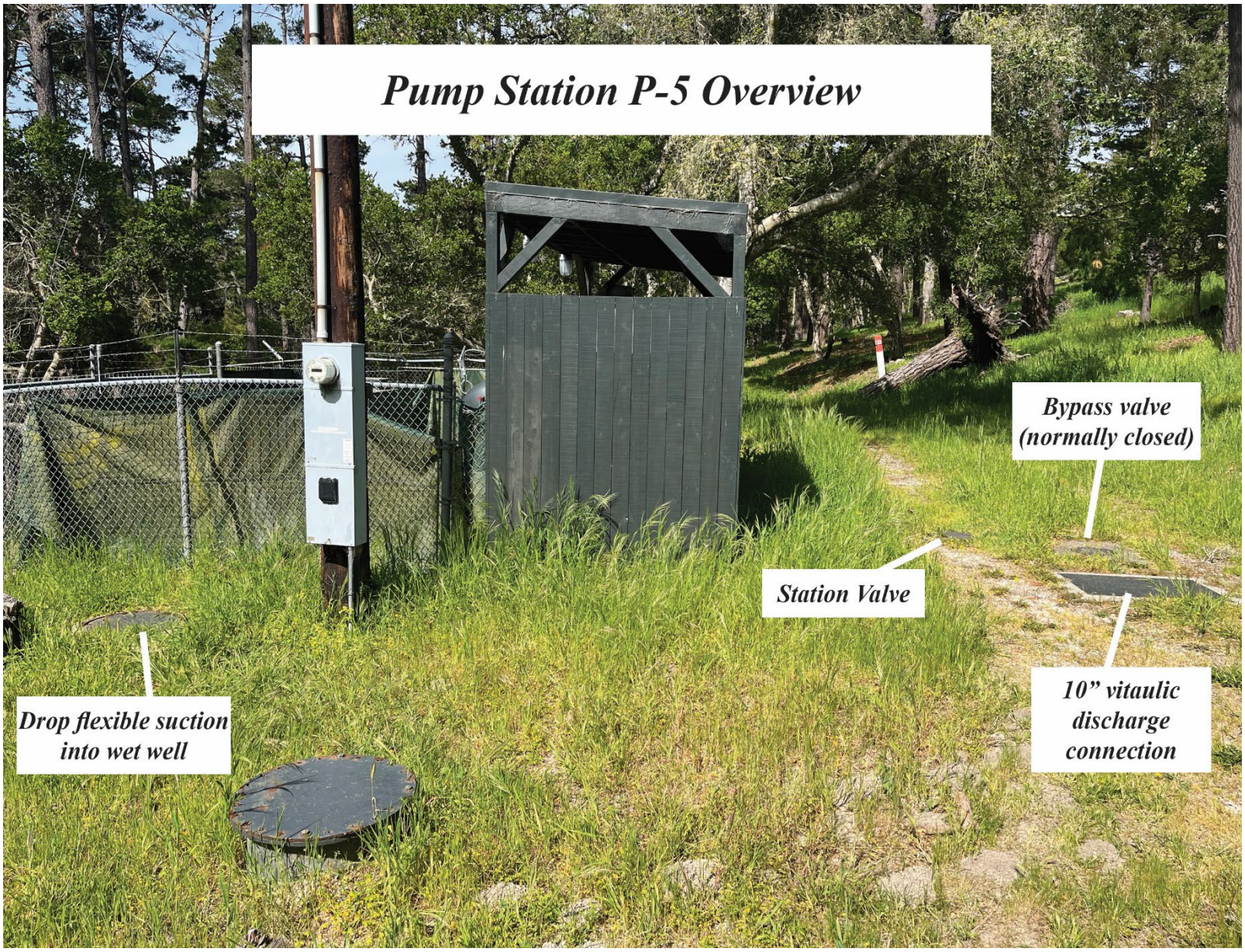
Pump Station Emergency Response Plan

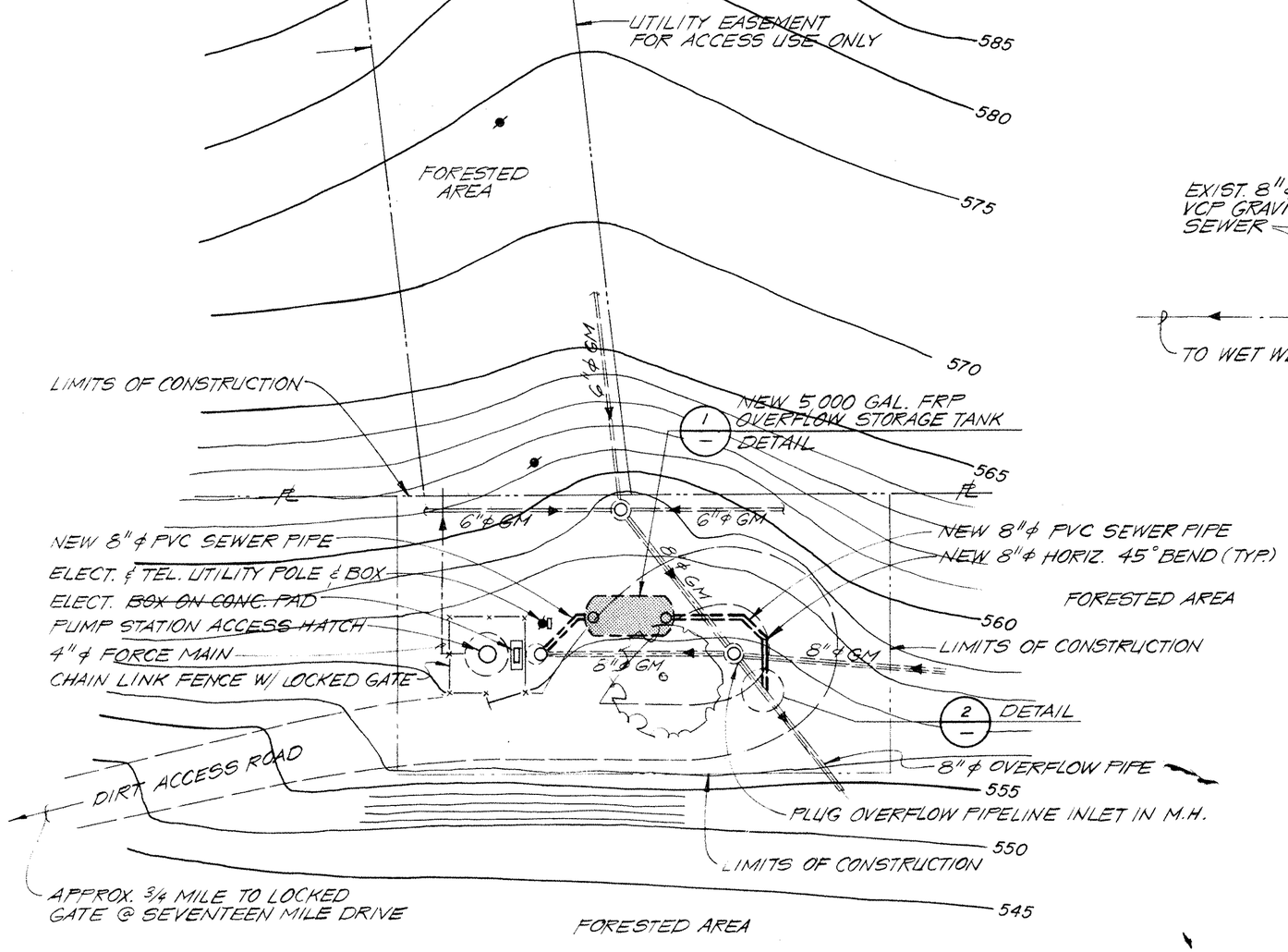
Pump Station P-5

Pump Station Location & Utility Information

Name	PBCSD P-5
Lat/Long	36.577405, -121.919080
Utility Meter #	1005514875
Directions	**Travel Time: 6 Mins** From the PBCSD Office Building at 3101 Forest Lake Road, Pebble Beach, CA 93953 • Turn right onto Lopez Road and take a slight right onto Sunridge Road • Bear right onto Ronda Road • Bear left onto Sunridge Road • Turn right onto Sunset Lane and travel for 0.4 miles • The pump station will be on the right side




Pump Station P-5 Overview
Bypass valve (normally closed)
Station Valve
10” vitaulic discharge connection
Drop flexible suction into wet well



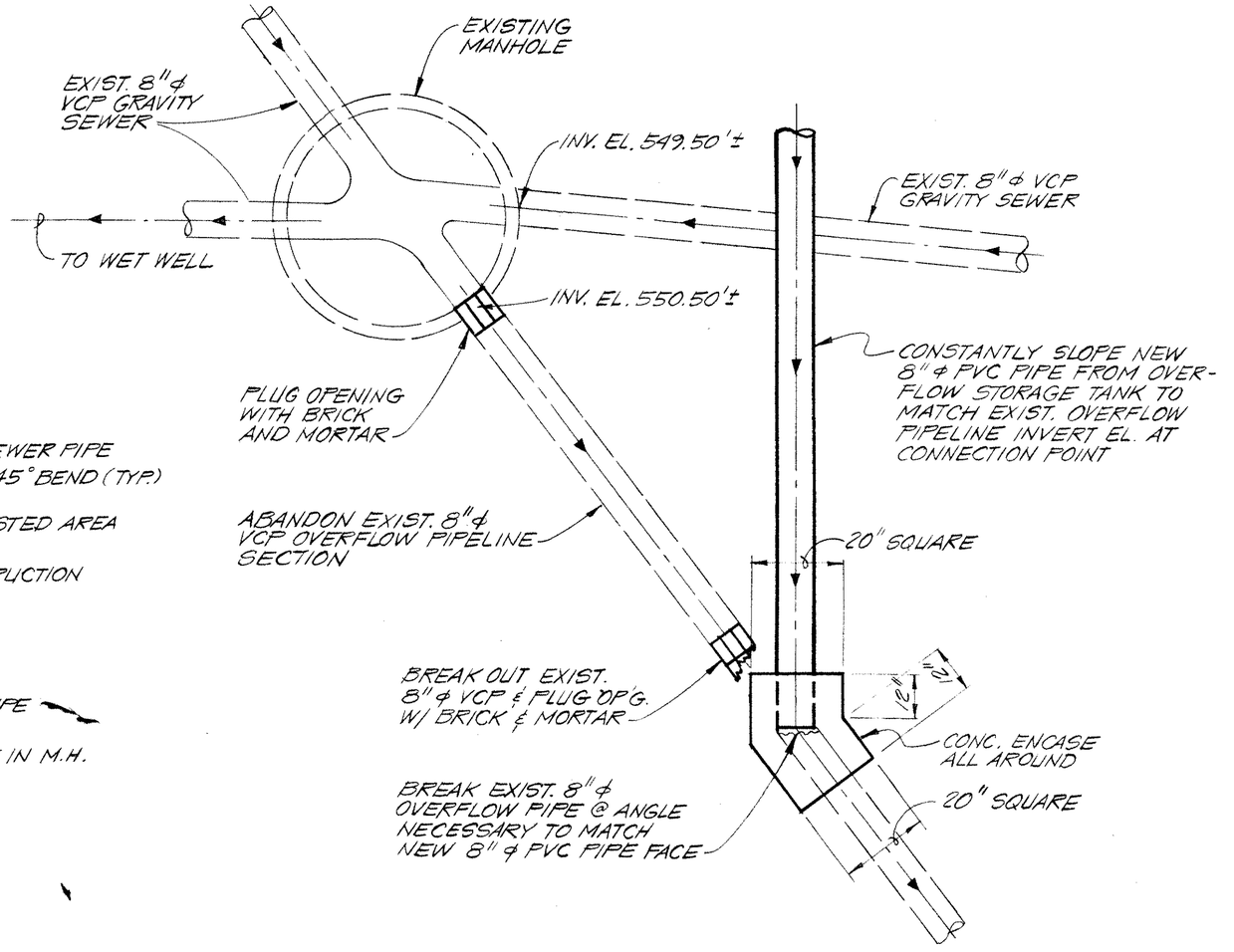
EXIST. PUMP STATION P-5

1" = 20'

NOTES :

1. ALL ITEMS SHOWN ON SITE PLAN ARE EXISTING UNLESS SPECIFICALLY DESCRIBED AS "NEW".
2. RESTORE SITE TO ORIGINAL GRADE EXCEPT TO PROVIDE MIN. COVER OVER TANK.

1/4" = 1'-0"



2 DETAIL

N.T.S.

Pump Station Technical Information

Operating Orientation	Wet Well/Dry Pit	**Pump Model No.**	
Static Head	178 ft	**Pump Capacity**	180 gpm
Suction Elevation	544.7 ft	**Pump TDH**	260 ft (130 ft each in series)
Discharge Elevation	724.2 ft	**Pump Full Load Speed**	1770 rpm
Force Main Size	6” C900, 4” old ACP	**Motor Manufacturer**	
Force Main Length	2149 ft	**Motor Size**	25 hp
No. of Pumps	4	**Motor (volts/phase/cycle)**	480 volt/3 phase/60hz
Pump Manufacturer	PACO	**Wet Well Dimensions**	FM P-1643 to MH F6-38
Low Point (Likely Overflow Point)	MH 66-41		

Traffic Controls and Public Notification

Public Notification:

- Place barricades as needed to keep pedestrians and vehicles away from sewage. Keep barricades in place until cleanup is complete.
- Signs should be posted at any steams or beaches that sewage has contaminated during a spill event. Signs should be placed at access points to these locations until the risk of contamination has subsided. Signs must be monitored daily to ensure that they are in place.
- Large spills may require broader public notification. In this case, PBCSD’s General Manager may authorize contact with local media when large or significant areas have been contaminated.
- In the event of an overnight overflow, the area must be inspected the following day for any signs of spill materials that may require additional cleanup.

Regulatory Reporting Actions

Category 1

- Any volume of the spill has reached a surface water or drainage channel
- Any volume of the spill has reached a storm drain system and was not fully captured and returned to the sewer system or disposed of properly

REPORTING ACTIONS:

- If the spill is greater than or equal to 1,000 gallons, Cal OES must be called at (800) 852-7550 as soon as possible, but no later than 2 hours after PBCSD is notified of the spill
- If the spill is greater than or equal to 50,000 gallons and has discharged to a surface water, PBCSD must conduct water quality sampling no later than 18 hours after initial knowledge of potential discharge to a surface water
- Draft reports must be submitted to CIWQS within 3 business days after becoming aware of the spill
- Final reports must be certified through CIWQS within 15 calendar days of the end date of the spill
- For spills 50,000 gallons or greater, a technical report must be submitted within 45 calendar days after the spill end date
- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 2

- The spill is greater than or equal to 1,000 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- If the spill is greater than or equal to 1,000 gallons, Cal OES must be called at (800) 852-7550 as soon as possible, but no later than 2 hours after PBCSD is notified of the spill
- Draft reports must be submitted to CIWQS within 3 business days after becoming aware of the spill
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- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 3

- The spill is greater than or equal to 50 gallons and less than 1,000 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- Must be reported in CIWQS and certified within 30 days after the end of the calendar month in which the spill occurred
- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 4

- The spill is less than 50 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- Must be reported in CIWQS and certified within 30 days after the end of the calendar month in which the spill occurred
- Upload and certify a report of all Category 4 spills to CIWQS by February 1st after the end of the calendar year in which the spills occurred

No Spill

REPORTING ACTIONS:

- Within 30 calendar days after the end of the calendar month, a "no-spill" certification statement must be submitted to CIWQS

Other Actions

Confirm that Peter Von Langen at the RWQCB received the spill notification by emailing him at peter.vonlangen@waterbords.ca.gov or calling him at (805) 549-3688 within 3 business days of becoming aware of the spill.

Station Safety Evaluation

In the event of a natural disaster or some other significant event, it is essential to evaluate the scene for safety before any actions are taken:

Survey the Scene:

Is the structure intact? YES/NO

What hazards are present? _____

Is there flooding in or around the pump station? _____

If Flooding is Present:

Do **NOT** enter a flooded station unless:

☐You have contacted your supervisor for instructions

☐You have posted signage to warn others about hazards on site

☐You have checked for unsafe electrical conditions **from a safe distance**

If the Scene Appears to be Safe to Enter:

- Look for exposed electrical cables, damaged pressurized lines or any other hazards
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If the Scene DOES NOT Appear Safe to Enter:

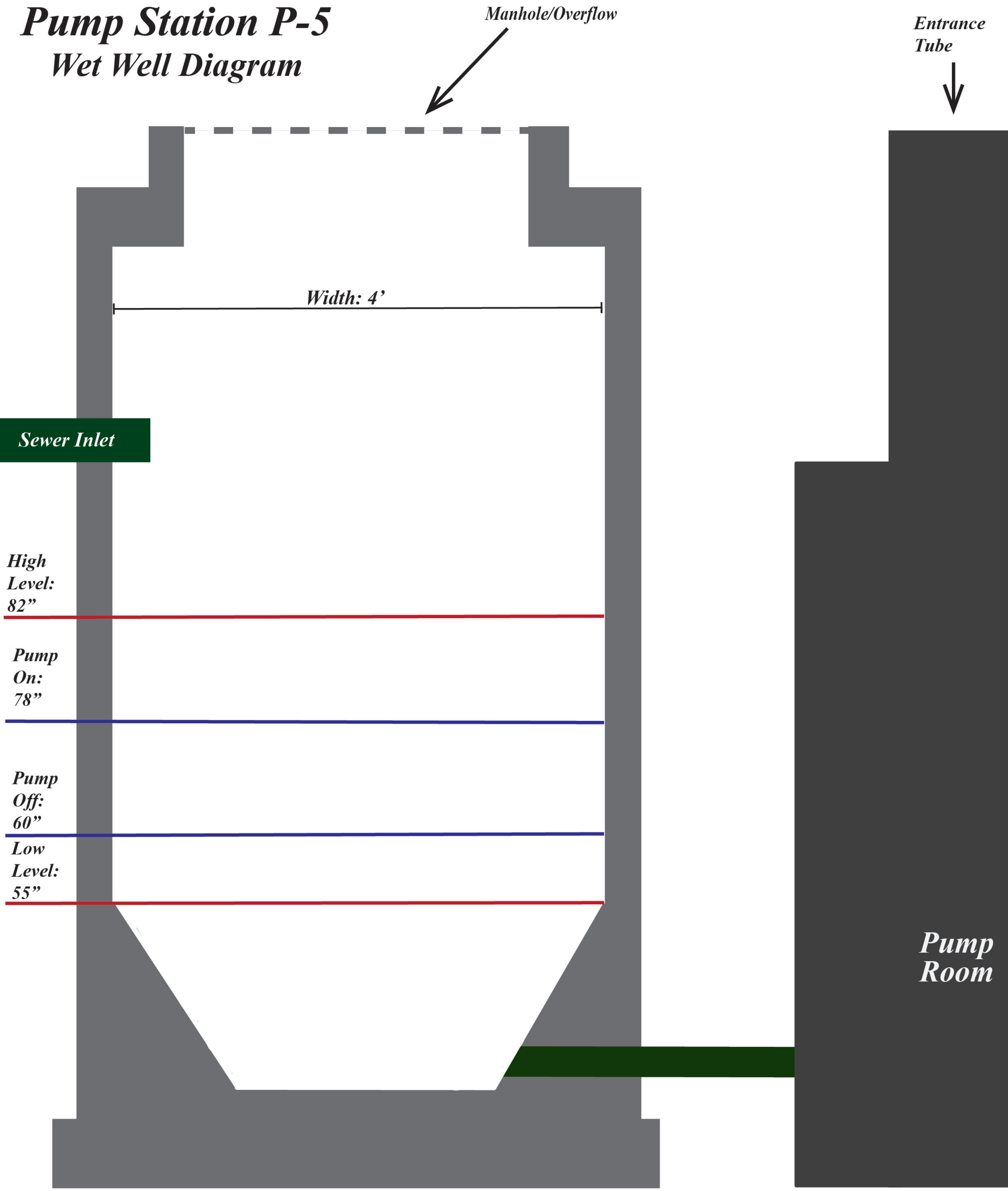
- Contact your supervisor
- Follow any instructions provided by local emergency services
- Post necessary signage to warn others of hazards and untreated sewage that may have spilled
- At a safe distance, take inventory of:

  ☐ Visible Damage ☐ Flooding Conditions

  ☐ Power ☐ Functioning/Non Functioning Equipment

Pump Station P-5

Wet Well Diagram



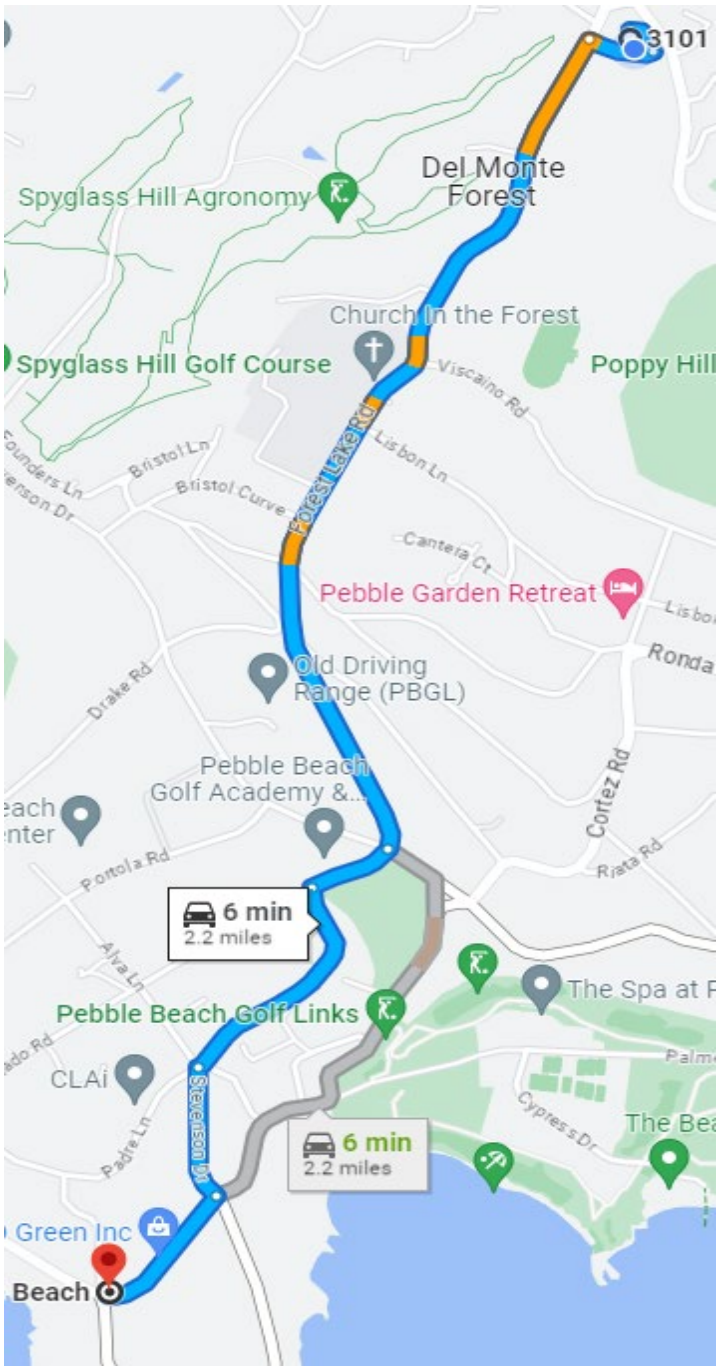
Pebble Beach Community Services District

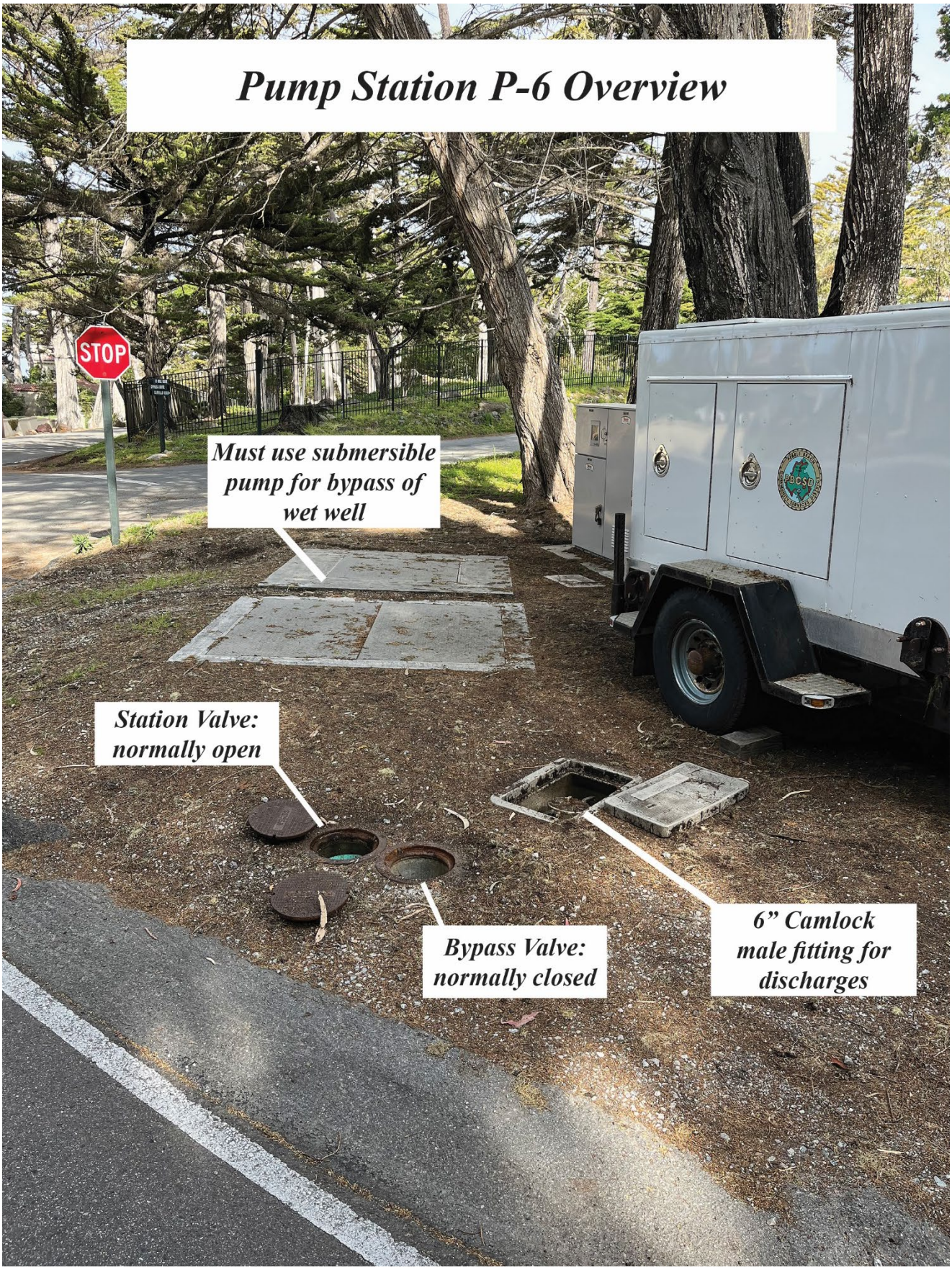
Pump Station Emergency Response Plan

Pump Station P-6

Pump Station Location & Utility Information

Name	PBCSD P-6
Lat/Long	36.56454, -121.955754
Utility Meter #	1008831116
Directions	**Travel Time: 6 Mins** From the PBCSD Office Building at 3101 Forest Lake Road, Pebble Beach, CA 93953 • Turn left onto Forest Lake Road and travel 1.2 miles • Continue straight onto Ondulado Road and travel 0.1 miles • Turn left onto Stevenson Drive and travel 0.3 miles • Turn left to stay on Stevenson Drive and travel 0.2 miles • Turn right at the first cross street onto Cypress drive • The pump station will be on the left




Pump Station P-6 Overview
STOP
Must use submersible pump for bypass of wet well
Station Valve: normally open
Bypass Valve: normally closed
6” Camlock male fitting for discharges

NOTES:

1. FOR NEW PUMP STATION PLAN, BYPASS VAULT, AND PUMP VALVE VAULT, SEE DWG. SM-1.1.
2. ALL UTILITIES AND FEATURES SHOWN ARE EXISTING UNLESS SPECIFICALLY CALLED OUR AS "NEW".
3. PROTECT EXISTING 36" AND 31" CYPRESS TREES AT ALL TIMES DURING CONTRUCTION.
4. PROVIDE "GREEN SCREEN" CONSTRUCTION FENCING AROUND SITE DURING WORK WITH GATE AS REQUIRED. LIMITS OF FENCE AS REQUIRED TO PERFORM WORK.

Rev	Date	Description	By
0	6/16/14	ISSUED FOR BIDS	VMB
1	7/3/14	ADDENDUM NO. 1	VMB
	8/1/14	ISSUED FOR CONSTRUCTION	VMB

Job No. WW-PEB-1182
Designed by WTH/LLW
Drawn by WTH
Checked by VMB
Approved VMB

REGISTERED PROFESSIONAL ENGINEER — VINOD M. BADANI — C-041281 — EXP. 6/30/15 — CIVIL — STATE OF CALIFORNIA

E2 Consulting Engineers, Inc.
1900 Powell Street, Suite 250, Emeryville, CA 94608 (510) 652-1164
444 Airport Blvd., Suite 201, Watsonville, CA 95076 (831) 728-3232

PEBBLE BEACH COMMUNITY SERVICES DISTRICT — PBCSD

PUMP STATION P-6 REHABILITATION

PUMP STATION P-6
NEW SITE PLAN

DRAWING NO.
C-1.4

AS-BUILT DRAWINGS

N

GRAPHIC SCALE: 1"=5'

C:\CAD\dwg\PBCSDIP-6 Pump Station\Issued for construction\C1-4.dwg, 7/28/2014 2:15:31 PM

Pump Station Technical Information

Operating Orientation	Submersible	**Pump Model No.**	3127.095
Static Head	28 ft	**Pump Capacity**	265 gpm
Suction Elevation	44.7 ft	**Pump TDH**	45 ft
Discharge Elevation	72.7 ft	**Pump Full Load Speed**	1720 rpm
Force Main Size	4 in ACP	**Motor Manufacturer**	FLYGT
Force Main Length	400 ft	**Motor Size**	10 hp
No. of Pumps	2	**Motor (volts/phase/cycle)**	230 volt/3 phase/60 hz
Pump Manufacturer	FLYGT	**Discharge Location**	FM P-1635 to MH I3-1
Low Point (Likely Overflow Point)	MH H3-96		

Traffic Controls and Public Notification

Public Notification:

- Place barricades as needed to keep pedestrians and vehicles away from sewage. Keep barricades in place until cleanup is complete.
- Signs should be posted at any streams or beaches that sewage has contaminated during a spill event. Signs should be placed at access points to these locations until the risk of contamination has subsided. Signs must be monitored daily to ensure that they are in place.
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REPORTING ACTIONS:

- Must be reported in CIWQS and certified within 30 days after the end of the calendar month in which the spill occurred
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Category 4

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REPORTING ACTIONS:

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- Upload and certify a report of all Category 4 spills to CIWQS by February 1st after the end of the calendar year in which the spills occurred

No Spill

REPORTING ACTIONS:

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Other Actions

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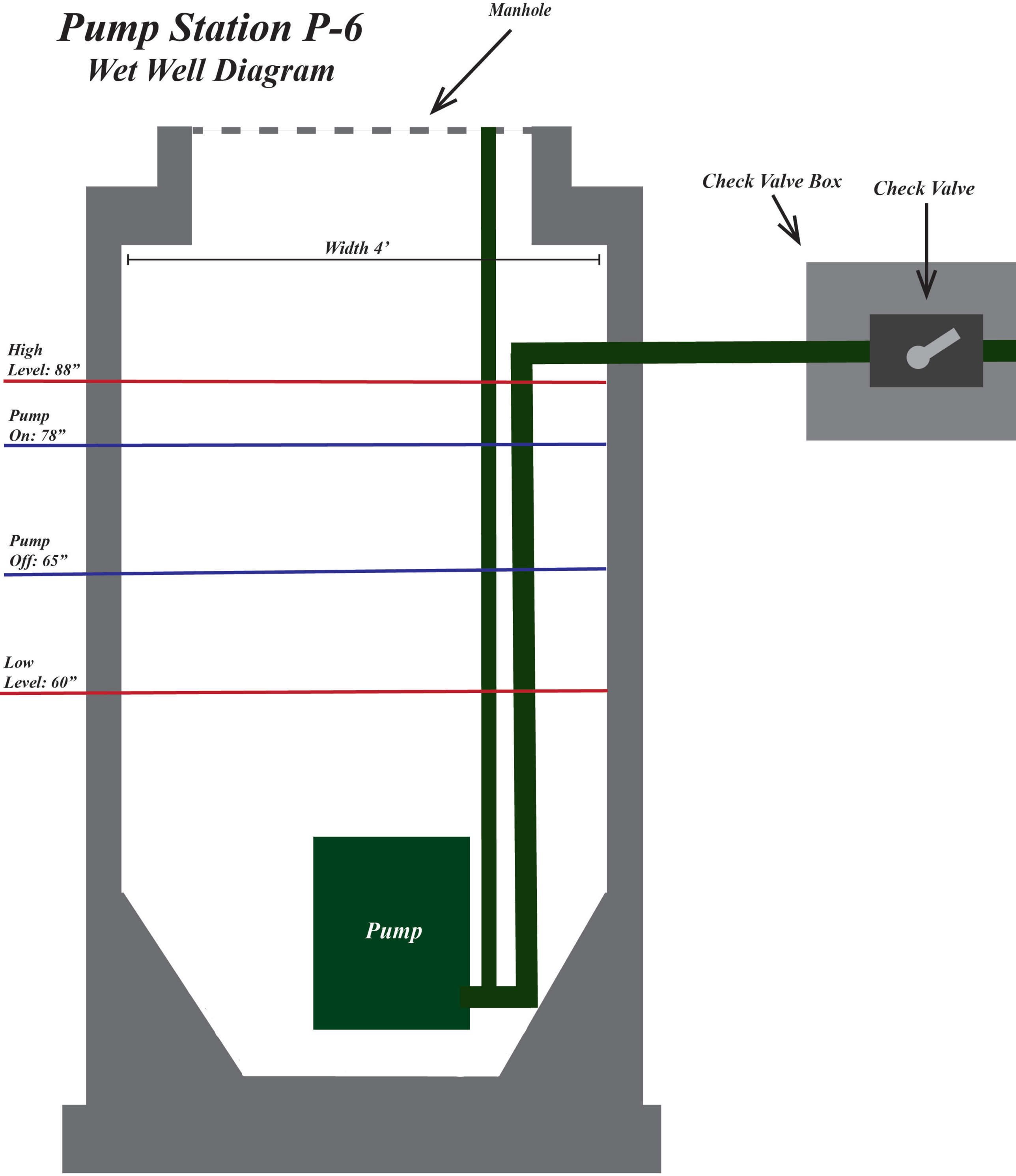
  ☐ Power ☐ Functioning/Non Functioning Equipment

Pump Station P-6
Wet Well Diagram

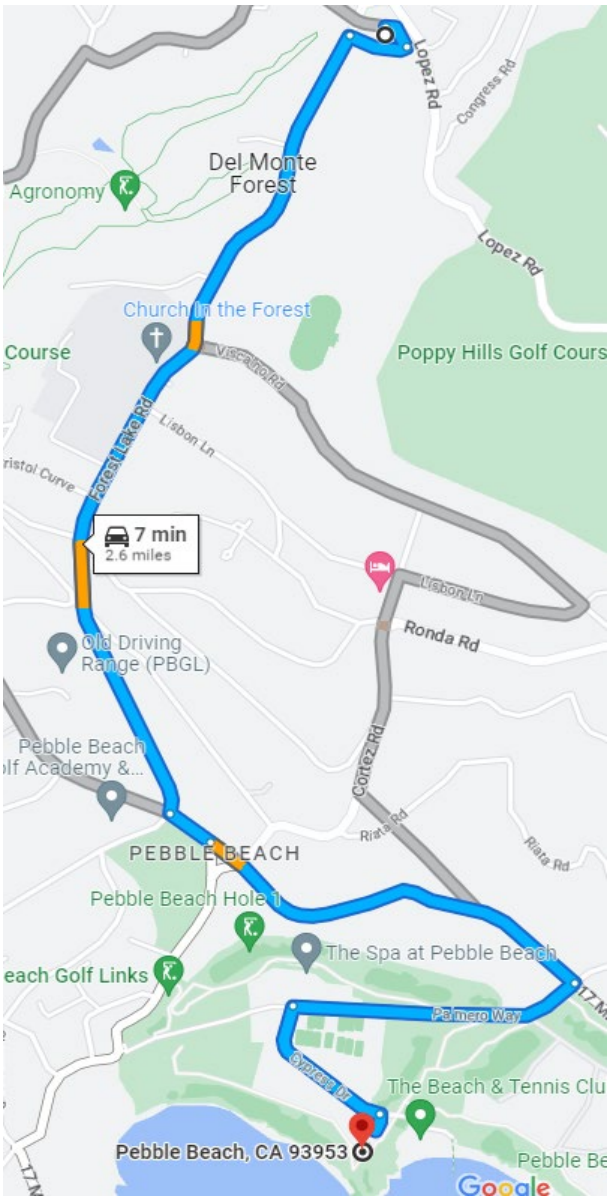


Pebble Beach Community Services District

Pump Station Emergency Response Plan

Pump Station P-7

Pump Station Location & Utility Information

Name	PBCSD P-7
Lat/Long	36.566437, -121.945031
Utility Meter #	1010114196
Directions	**Travel Time: 7 mins** From the PBCSD Office Building at 3101 Forest Lake Road, Pebble Beach, CA 93953 • Head East from office onto Forest Lake Road and stay on Forest Lake Road for 1.9 miles • Turn right onto Palmero Way • Turn Left onto Cypress Drive • Turn right into coastal access parking
Map	

Cypress Dr
Pebble beach coastal access parking
Pump Station

P-7 Station Overview

SHEET NOTES:

(2) NEW PUMP STATION P-7.

(3) EXISTING 550 GALLON UNDERGROUND DIESEL FUEL TANK.

(4) EXISTING FORCE MAIN FLOW METER VAULT.

(5) 10"Ø PVC WET WELL OVERFLOW PIPE.

(6) EXISTING 10"Ø PVC STORAGE TANK OVERFLOW PIPE.

(7) SOIL BORING LOCATION, SEE SPECIFICATIONS FOR BORING LOGS.

(8) EXISTING A.C. DIKE. RECONSTRUCT DAMAGED A.C. DIKE TO MATCH EXISTING.

(9) (E) 6" SD CONNECTION TO (E) 10" OVERFLOW LINE.

(10) NEW 12"Ø PVC SEWER TO STORAGE TANK WITH ISOLATION PLUG VALVE.

(11) NEW 12"Ø PVC SEWER TO NEW PUMP STATION WET WELL.

(13) NEW 10"Ø PVC WET WELL OVERFLOW PIPING AND RE-ROUTED SUMP PIPING FROM EMERGENCY GENERATOR VAULT.

(14) NEW VALVE VAULT, SEE DWG. C-4.

(15) NEW 12"Ø PVC FORCE MAIN.

(17) CONNECTION TO EXIST. FORCE MAIN, SEE DWG. C-6.

(18) DEMOLISH AND REMOVE EXIST. FLOW METER MANHOLE AND BYPASS CONNECTION VAULT.

(19) RE-ROUTE EXIST. TEL. AND ELEC. LINES AS REQUIRED.

(20) NEW 8" PVC BYPASS PIPING, SEE DETAIL 1, DWG. C-6.

(21) NEW BYPASS PUMP CONNECTIONS IN VALVE BOX, SEE DWG. C-6.

(22) NOT USED

(23) DIMENSIONS MARKED WITH AN ASTERISK SHALL BE FIELD VERIFIED.

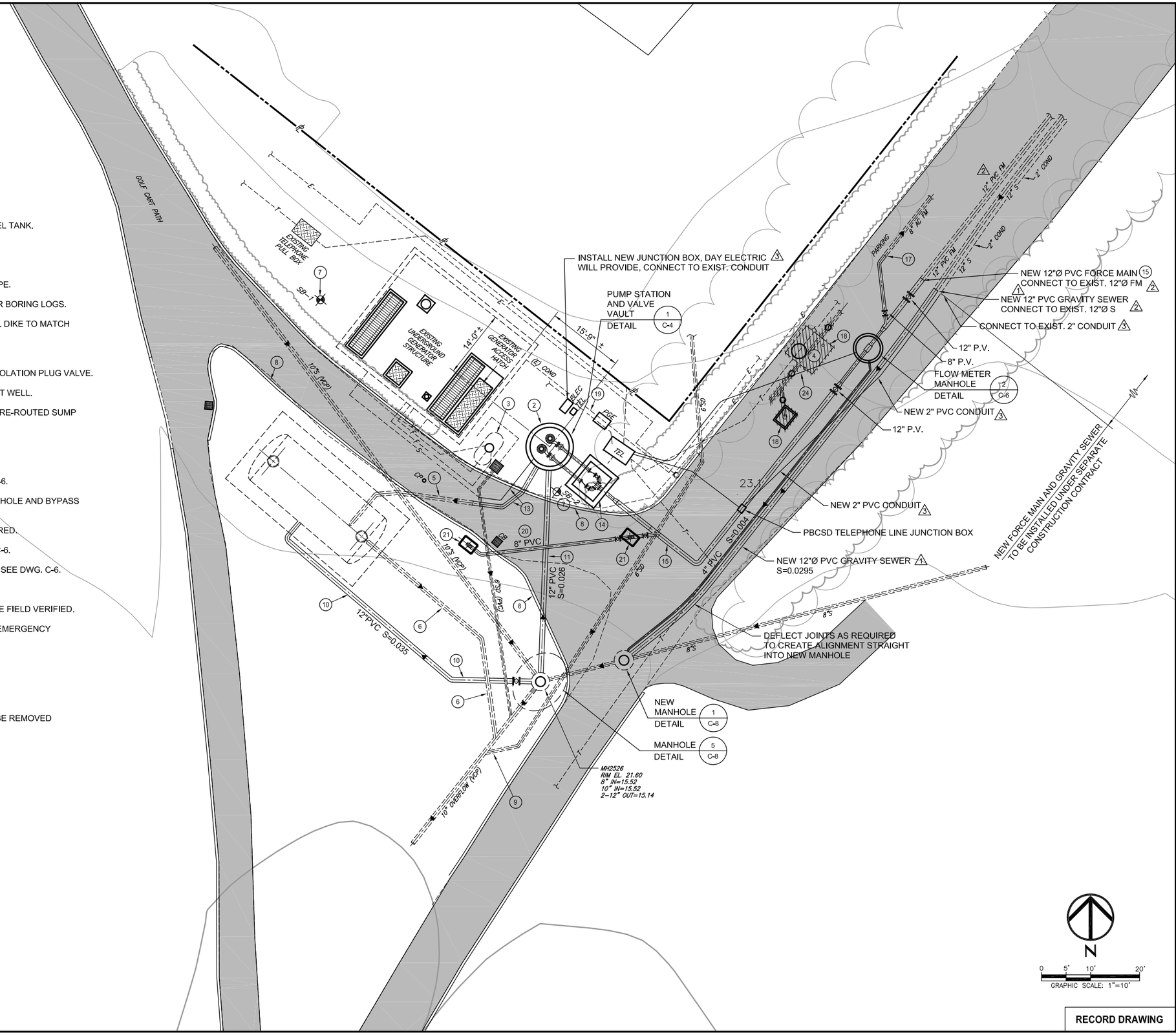
(24) FLOW METER SIGNAL LINE IN 2" PVC CONDUIT TO EMERGENCY GENERATOR STRUCTURE.

LEGEND

EXIST. PIPE

EXIST. PIPE OR STRUCTURE TO BE REMOVED

NEW PIPE



RECORD DRAWING

Rev	Date	Description	By
	10/31/12	AS-BUILT DRAWINGS	VMB
3	3/16/12	DCR NO. 3	VMB
2	8/23/11	DCR NO. 2	VMB
A	5/13/11	ISSUED FOR CONSTRUCTION	VMB
1	4/1/11	DCR NO. 1	VMB

Oct 31 2012 – 14:30:00 cad\dwg\PBCSD\P-7 Pump Station\AS-BUILT

Job No. WW-PEB-1182
Designed by WTH
Drawn by WTH
Checked by VMB
Approved VMB

REGISTERED PROFESSIONAL ENGINEER VINOD M. BADANI CIVIL C-041281 EXP. DATE 3/31/13 STATE OF CALIFORNIA

E2 Consulting Engineers, Inc.
1900 Powell Street, Ste. 250
Emeryville, CA 94608
(510) 428-4721
444 Airport Blvd., Suite 201
Watsonville, CA 95076
(831) 728-3232

PEBBLE BEACH SANITARY DISTRICT — PBCSD — COMMUNITY SERVICES

PUMP STATION P-7 REPLACEMENT PROJECT

SITE PLAN – NEW PUMP STATION AND SECOND PHASE DEMOLITION

DRAWING NO.
C-3

Pump Station Technical Information

Operating Orientation	Submersible	**Pump Model No.**	3202.090
Static Head	92 ft	**Pump Capacity**	1,000 gpm
Suction Elevation	6.25 ft	**Pump TDH**	125 ft
Discharge Elevation	100.3 ft	**Pump Full Load Speed**	1770 rpm
Force Main Size	8 in	**Motor Manufacturer**	FLYGT Model/
Force Main Length	2900 ft	**Motor Size**	60 hp
No. of Pumps	2	**Motor (volts/phase/cycle)**	460 volt/3 phase/60hz
Pump Manufacturer	FLYGT	**Wet Well Dimensions**	El at hatch: 23.10 ft El at bottom: 4.60
Low Point (Likely Overflow Point)	Wet well/overflow table	**Discharge Location**	FM P-1642 to MH H4-59

Traffic Controls and Public Notification

Public Notification:

- Place barricades as needed to keep pedestrians and vehicles away from sewage. Keep barricades in place until cleanup is complete.
- Signs should be posted at any streams or beaches that sewage has contaminated during a spill event. Signs should be placed at access points to these locations until the risk of contamination has subsided. Signs must be monitored daily to ensure that they are in place.
- Large spills may require broader public notification. In this case, PBCSD's General Manager may authorize contact with local media when large or significant areas have been contaminated.
- In the event of an overnight overflow, the area must be inspected the following day for any signs of spill materials that may require additional cleanup.

Regulatory Reporting Actions

Category 1

- Any volume of the spill has reached a surface water or drainage channel
- Any volume of the spill has reached a storm drain system and was not fully captured and returned to the sewer system or disposed of properly

REPORTING ACTIONS:

- If the spill is greater than or equal to 1,000 gallons, Cal OES must be called at (800) 852-7550 as soon as possible, but no later than 2 hours after PBCSD is notified of the spill
- If the spill is greater than or equal to 50,000 gallons and has discharged to a surface water, PBCSD must conduct water quality sampling no later than 18 hours after initial knowledge of potential discharge to a surface water
- Draft reports must be submitted to CIWQS within 3 business days after becoming aware of the spill
- Final reports must be certified through CIWQS within 15 calendar days of the end date of the spill
- For spills 50,000 gallons or greater, a technical report must be submitted within 45 calendar days after the spill end date
- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 2

- The spill is greater than or equal to 1,000 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- If the spill is greater than or equal to 1,000 gallons, Cal OES must be called at (800) 852-7550 as soon as possible, but no later than 2 hours after PBCSD is notified of the spill
- Draft reports must be submitted to CIWQS within 3 business days after becoming aware of the spill
- Final reports must be certified through CIWQS within 15 calendar days of the end date of the spill
- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 3

- The spill is greater than or equal to 50 gallons and less than 1,000 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- Must be reported in CIWQS and certified within 30 days after the end of the calendar month in which the spill occurred
- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 4

- The spill is less than 50 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- Must be reported in CIWQS and certified within 30 days after the end of the calendar month in which the spill occurred
- Upload and certify a report of all Category 4 spills to CIWQS by February 1st after the end of the calendar year in which the spills occurred

No Spill

REPORTING ACTIONS:

- Within 30 calendar days after the end of the calendar month, a "no-spill" certification statement must be submitted to CIWQS

Other Actions

Confirm that Peter Von Langen at the RWQCB received the spill notification by emailing him at peter.vonlangen@waterbords.ca.gov or calling him at (805) 549-3688 within 3 business days of becoming aware of the spill.

Station Safety Evaluation

In the event of a natural disaster or some other significant event, it is essential to evaluate the scene for safety before any actions are taken:

Survey the Scene:

Is the structure intact? YES/NO

What hazards are present? _____

Is there flooding in or around the pump station? _____

If Flooding is Present:

Do **NOT** enter a flooded station unless:

☐You have contacted your supervisor for instructions

☐You have posted signage to warn others about hazards on site

☐You have checked for unsafe electrical conditions **from a safe distance**

If the Scene Appears to be Safe to Enter:

- Look for exposed electrical cables, damaged pressurized lines or any other hazards
- Check for any damages and make sure all pumps and other parts of the system are functional

If the Scene DOES NOT Appear Safe to Enter:

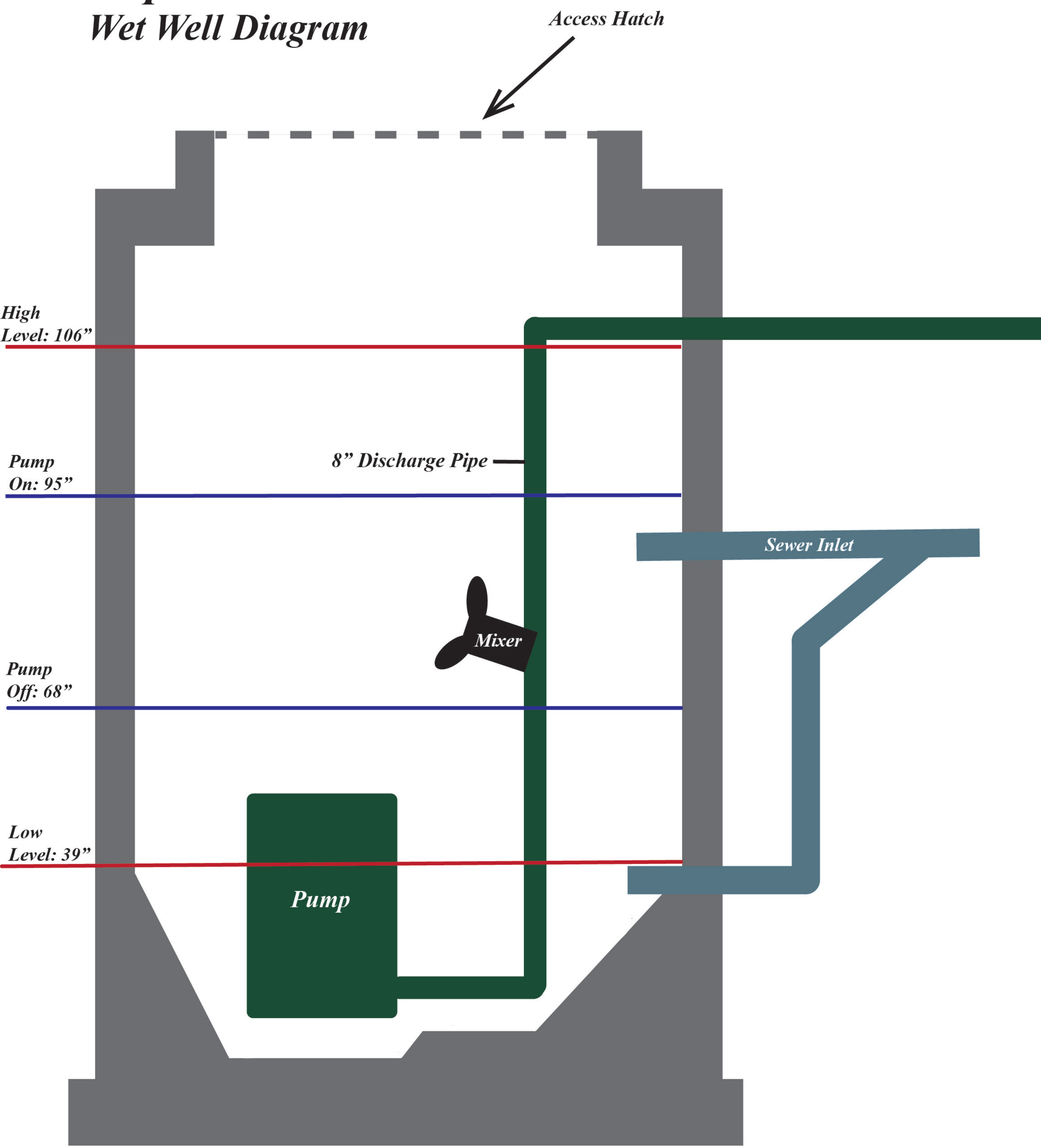
- Contact your supervisor
- Follow any instructions provided by local emergency services
- Post necessary signage to warn others of hazards and untreated sewage that may have spilled
- At a safe distance, take inventory of:

  ☐ Visible Damage ☐ Flooding Conditions

  ☐ Power ☐ Functioning/Non Functioning Equipment

Pump Station P-7

Wet Well Diagram



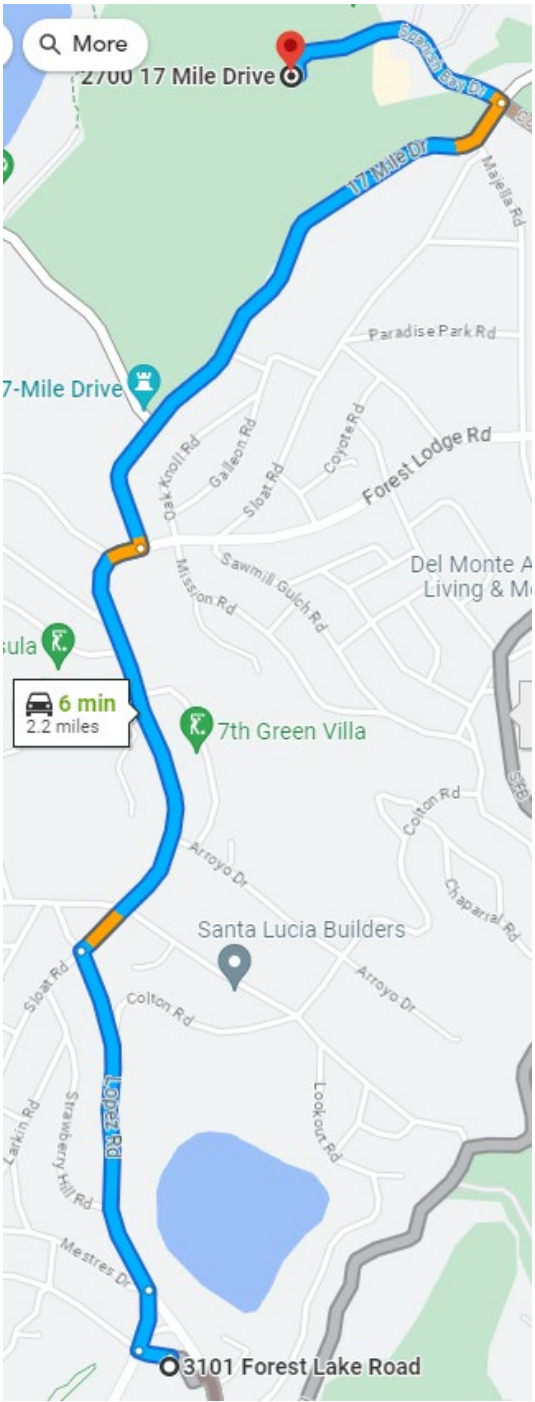
Pebble Beach Community Services District

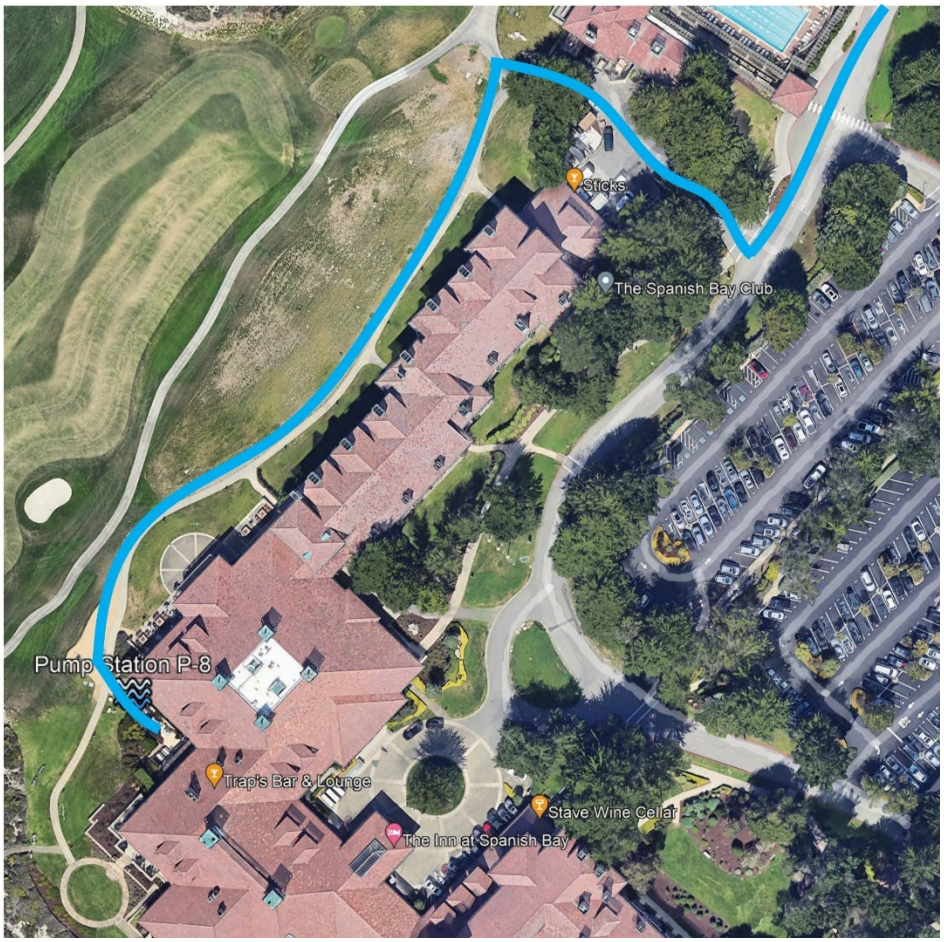
Pump Station Emergency Response Plan

Pump Station P-8

Pump Station Location & Utility Information

Name	PBCSD P-8
Lat/Long	36.612761, -121.942780
Directions	**Travel Time: 6 mins** From the PBCSD Office Building at 3101 Forest Lake Road, Pebble Beach, CA 93953 • Start on Lopez Road and travel 0.4 miles • Turn right on to Sloat Road and travel 0.6 miles • Turn left onto 17 Mile Drive and travel 0.8 miles • Turn left onto Spanish Bay Drive • Turn right into the loading dock area • Turn left and drive past golf cart washing station • Stay on cart path until you reach cul-de-sec near Trap's Bar and Lounge





Pump Station Technical Information

Operating Orientation	Submersible- 8' diameter precast wet well	**Pump Model No.**	NP3102-463-4
Static Head	25 ft	**Pump Capacity**	
Suction Elevation		**Pump TDH**	
Discharge Elevation		**Pump Full Load Speed**	1745
Force Main Size	8 in	**Motor Manufacturer**	
Force Main Length	663 ft	**Motor Size**	5 hp
No. of Pumps	2	**Motor (volts/phase/cycle)**	460 volt/3 phase/60 hz
Pump Manufacturer	FLYGT	**Discharge Location**	FM P-1640 to MH B4-18
Low Point (Likely Overflow Point)	Wet Well Access Hatch	**Emergency Overflow Tank**	Old Wet Well

-

Traffic Controls and Public Notification

Public Notification:

- Place barricades as needed to keep pedestrians and vehicles away from sewage. Keep barricades in place until cleanup is complete.
- Signs should be posted at any streams or beaches that sewage has contaminated during a spill event. Signs should be placed at access points to these locations until the risk of contamination has subsided. Signs must be monitored daily to ensure that they are in place.
- Large spills may require broader public notification. In this case, PBCSD's General Manager may authorize contact with local media when large or significant areas have been contaminated.
- In the event of an overnight overflow, the area must be inspected the following day for any signs of spill materials that may require additional cleanup.

Pump Station P-8 Station Overview

Wet Well

Check Valve Vault

Regulatory Reporting Actions

Category 1

- Any volume of the spill has reached a surface water or drainage channel
- Any volume of the spill has reached a storm drain system and was not fully captured and returned to the sewer system or disposed of properly

REPORTING ACTIONS:

- If the spill is greater than or equal to 1,000 gallons, Cal OES must be called at (800) 852-7550 as soon as possible, but no later than 2 hours after PBCSD is notified of the spill
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- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 2

- The spill is greater than or equal to 1,000 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

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Category 3

- The spill is greater than or equal to 50 gallons and less than 1,000 gallons, is caused by a failure or blockage in the sanitary sewer system and does not discharge to a surface water

REPORTING ACTIONS:

- Must be reported in CIWQS and certified within 30 days after the end of the calendar month in which the spill occurred
- If an amended report is required, it must be submitted within 90 calendar days after the spill end date.

Category 4

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REPORTING ACTIONS:

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- Upload and certify a report of all Category 4 spills to CIWQS by February 1st after the end of the calendar year in which the spills occurred

No Spill

REPORTING ACTIONS:

- Within 30 calendar days after the end of the calendar month, a "no-spill" certification statement must be submitted to CIWQS

Other Actions

Confirm that Peter Von Langen at the RWQCB received the spill notification by emailing him at peter.vonlangen@waterbords.ca.gov or calling him at (805) 549-3688 within 3 business days of becoming aware of the spill.

Station Safety Evaluation

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Survey the Scene:

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What hazards are present? _____

Is there flooding in or around the pump station? _____

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☐You have posted signage to warn others about hazards on site

☐You have checked for unsafe electrical conditions **from a safe distance**

If the Scene Appears to be Safe to Enter:

- Look for exposed electrical cables, damaged pressurized lines or any other hazards
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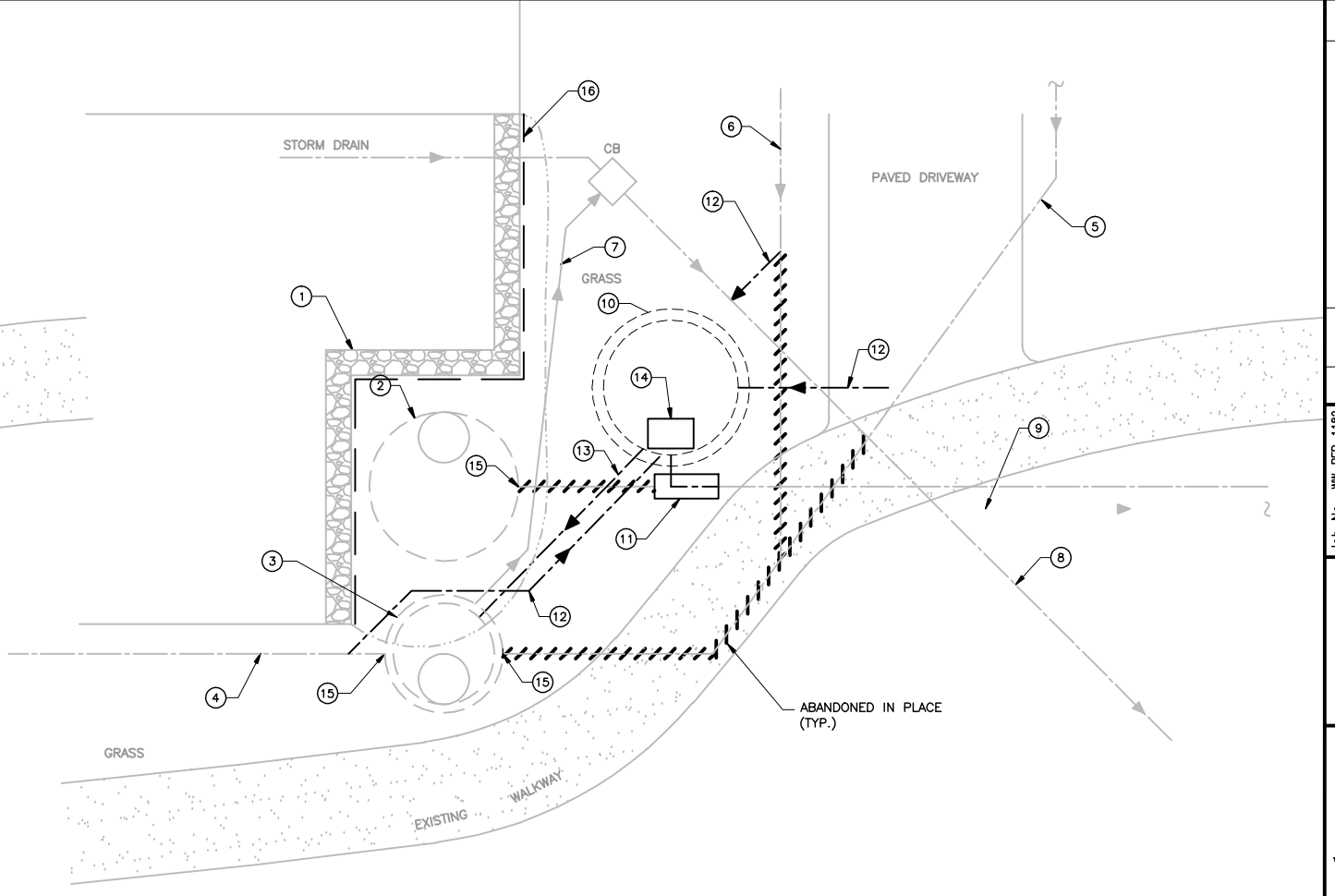
If the Scene DOES NOT Appear Safe to Enter:

- Contact your supervisor
- Follow any instructions provided by local emergency services
- Post necessary signage to warn others of hazards and untreated sewage that may have spilled
- At a safe distance, take inventory of:

  ☐ Visible Damage ☐ Flooding Conditions

  ☐ Power ☐ Functioning/Non Functioning Equipment



MODIFIED PLAN
1"=5"

NOTES:

1. EXISTING STONEWALL TO REMAIN
2. EXISTING DRYWELL – 7'–6" Ø
3. EXISTING WETWELL – 6'–0" Ø I.D.
4. INFLUENT SEWER LINE – 6" Ø
5. EXISTING SEWER LINE FROM GREASE INTERCEPTOR
6. EXISTING SEWER LINE FROM KITCHEN (TIES INTO SEWER LINE FROM GREASE INTERCEPTOR)
7. WET WELL OVERFLOW LINE TO C.B.
8. EXISTING STORMDRAIN
9. EXISTING 6" Ø FORCE MAIN
10. NEW 8'–0" DIAMETER WET WELL (BELOW GRADE)
11. NEW VALVE VAULT TO CONNECT TO EXISTING FM
12. RELOCATE EXISTING SEWER MAIN TO NEW WET WELL
13. NEW OVERFLOW TO EXISTING WET WELL (INV. EL. @ 48.00)
14. ACCESSS HATCH
15. PLUG PIPE OPENING
16. NEW 12'–0" CONSTRUCTION FENCE (TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED

5' 0 5' 10'
SCALE: 1"=5'

Rev	Date	Description	By
0		ISSUED FOR BIDS	VMB

Job No. WW-PEB-1182
Designed DM
Drawn MD
Checked VMB
Reviewed VMB
Approved VMB
Reg. No. C-41281
Date 5/30/07

E2 Consulting Engineers, Inc.
Emeryville, California
(510) 428-4721

PEBBLE BEACH COMMUNITY SERVICES DISTRICT
PBCSD
SEWER AUTHORITY MID-COASTSIDE

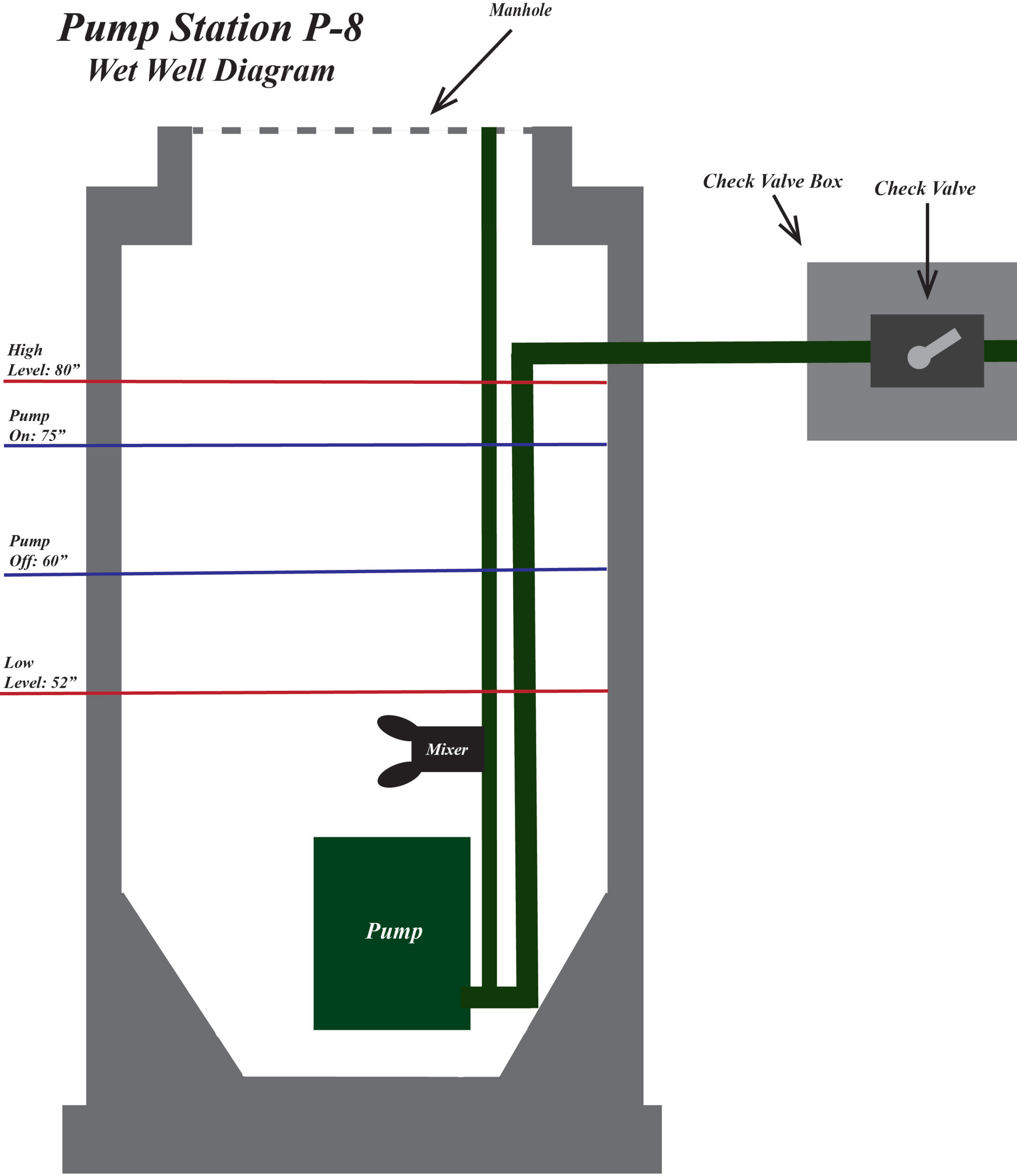
CAPITAL IMPROVEMENT PROGRAM
PUMP STATION P-8

SITE PLAN

DRAWING NO. C-1
REV. 0

Dec 27 1996 – 11:37:09 P:\PBCSD\CIP96\RECORD\C-1.dwg

Pump Station P-8
Wet Well Diagram



APPENDIX 06-2

Pebble Beach Community Services District

Spill Field Reports

Pebble Beach Community Services District

SPILL RESPONSE FIELD FORM

Observer Information:

Date: _____ Call Received: _____ AM/PM

Received By: _____ Caller's Name: _____

Caller's Phone Number: _____

Location of Spill: _____ Cross Streets: _____

Description of Event:

_____

_____

REMINDERS:

Ask caller what day and time the spill was first observed or noticed: odor, visuals or other signs.

Please take photos upon arrival and once the area is cleared.

Timeline

Estimated Spill Start Time: _____ AM/PM

PBCSD Crew Dispatch Time: _____ AM/PM

Estimated Crew Arrival Time: _____ AM/PM

Estimated Spill End Date/Time: _____ AM/PM

Total Spill Duration: _____

Other Spill Details (Please write or circle answer):

Describe Cause of Spill: _____

_____

Describe Cleanup Method: _____

_____

Where did the failure occur? (Pipe ID): _____

Number of Appearance Points: _____

Spill Appearance Point(s): _____
(Cleanout ID, Manhole ID, etc.)

Final Spill Destination: _____
(e.g. grass, paved surface, etc.)

Was the spill associated with a storm event: Y/N

Diameter of sewer pipe at point of blockage or failure:_____ ft/in

Material of sewer pipe at point of blockage or failure: _____

Field Questions

☐What is the area of the spill? Please photo document with clear visual measurements.

☐What is the approximate spill rate upon arrival? _____ gpm

☐Has spill gone to dirt or grass? YES/NO

☐If so, what is the approximate saturation depth? _____ FT/IN

☐Did the spill reach a storm drain or drainage channel? YES/NO

☐Did you recover any of the spill?

☐If yes, how much? _____ gallons

☐Was site sanitized? YES/NO

☐Estimated Flow: _____ gpm

REPORTED BY: _____ DATE: _____
(Print Name)

NOTES:_____

_____

_____

_____

_____

SKETCH OF AREA (Include Manhole and Pipe ID, Edge of Roadway, Name of Road, and Nearest Address and Storm Drain Facilities):

APPENDIX 06-3

Pebble Beach Community Services District

Spill Technical Report (CIWQS)

Pebble Beach Community Services District

Technical Report Form

This form is for spills 50,000 gallons or greater discharged into a surface water

1) Spill Causes and circumstances:
   a. Please provide a complete and detailed explanation of how and when the spill was discovered

      _____
      _____
      _____

   b. Please attach photographs illustrating:
      ☐ The spill origin ☐The extent and reach of the spill
      ☐Drainage conveyance system entrance **and** exit ☐Receiving water
      ☐Post-cleanup site conditions

   c. Please complete and attach a diagram showing:
      i. The spill failure point
      ii. Appearance point(s)
      iii. The spill flow path
      iv. Final destination(s)

   d. Please provide:
      i. A detailed description of methodology employed
      ii. Available data used to calculate the discharge volume
      iii. Total recovered spill volume, if any

   e. Please provide a detailed description of[of the spill cause(s):

      _____
      _____
      _____

   f. What is the material and age of the pipe at the failure location?

      _____

   g. What was the impact of the spill? (who, what, when, where, how)

      _____
      _____
      _____

   h. Please attach a copy of this form and a field form to the final draft of this report

   i. Please attach a copy of historical maintenance records for the failure location

APPENDIX 06-4

Pebble Beach Community Services District

Other (CIWQS Submittals, Records, Info)

Pebble Beach Community Services District

WATER SAMPLING PROCEDURE

CATEGORY I

In the event of a Category 1 Spill in which 50,000 gallons or greater are discharged into a surface water, water quality sampling must be conducted NO LATER THAN 18 HOURS after the PBCSD's initial knowledge of the spill ALL SURFACE WATER SAMPLES MUST BE PLACED IN A COOLER AND DELIVERED TO THE LABORATORY WITHIN SIX (6) HOURS OF COLLECTION.

TESTING INSTRUCTIONS:

- Collect one water sample, **each day** of the duration of the spill*, at
    - A point in the drainage conveyance system before the drainage conveyance system flow discharges into a receiving water
    - A point in the receiving water where sewage initially enters the receiving water
    - A point in the receiving water upstream of the point of sewage discharge, to capture ambient conditions absent of sewage charge impacts
    - A point in the receiving water, downstream of the point of sewage discharge, where the spill material is fully mixed with the receiving water

*If the receiving water has no flow during the duration of the spill, PBCSD must report "No Sampling Due to No Flow" for its receiving water sampling locations.

WATER QUALITY ANALYSIS:

- **PBCSD will send the samples to Monterey Bay Analytical Services at (831) 375-6227** to test for:
    - Ammonia
    - Appropriate bacterial indicator(s) per the applicable Basin Plan water quality objectives, including one or more of the following, unless directed otherwise to the Regional Water Board*:
        - Total Coliform Bacteria
        - Fecal Coliform Bacteria
        - E-coli
        - Enterococcus

*PBCSD shall collect and analyze additional samples as required by the applicable Regional Water Board Executive Officer or designee.

SAFETY AND ACCESS EXCEPTIONS:

- If PBCSD encounters access restrictions or unsafe conditions that prevents its compliance with spill response requirements or monitoring requirements, PBCSD shall provide documentation of access restrictions and/or safety hazards in the corresponding required report.

Pebble Beach Community Services District

WATER SAMPLING CHAIN OF CUSTODY

Sample Site/Description	Sample Date	Sample Time	Sampler Initial	Notes	**Were Bottles Labeled?**	Time Delivered to Lab
Point before the spill water reaches a receiving water					YES/NO	
Point in the receiving water where spill initially enters					YES/NO	
Point upstream from sewage receiving point					YES/NO	
Point where the spill material is fully mixed with the receiving water					YES/NO	

Sample By: _____ Relinquished By: _____

Received By: _____

Please Draw the Spill and Sampling Locations:

Deliver Samples To: Monterey Bay Analytical Services: 4 Justin Ct, Monterey, CA 93940

Pebble Beach Community Services District

SPILL VOLUME ESTIMATION FORM

Spill Duration: _____

Calculating Flow Rate

Pick Holes in Manhole Covers

1) Measure the height of the plume exiting the hole
2) Measure the diameter of the pick hole and find number of pick holes
3) Use attached Flow Rate Estimation Chart and multiply it by number of pick holes to find total gallons per minute

Gutter Flow

1) Determine the width and depth of flow
2) Determine velocity of flow (use a leaf or small piece of wood and time how long it takes to travel to a measured distance)
3) To calculate flow rate, use equation:
   Flow (GPM) = Velocity (ft/sec) x Area (ft^2) x 7.48 gal/cu ft x 60 sec/min

Bucket Method

Can be used for small spills where the whole flow stream can be collected in a bucket

1) Estimate how many minutes it takes to fill the bucket
2) Divide bucket volume in gallons by minutes
3) To calculate total spill volume, multiply gpm by overall spill time

Flow With Manhole Cover Removed

1) Measure the height of the plume at several locations around the frame of the manhole and average the results
2) Determine the size of the manhole cover
3) Use attached chart to figure the flow in gallons per minute

Partially Covered Manhole

A spill lifts one side of the manhole cover

1) Calculate the area from where the wastewater is escaping (see chart ____)
2) Calculate the velocity that the wastewater is normally traveling at in the sewer at half pipe depth
3) To calculate flow, use formula:
   Flow (GPM) = Velocity (ft/sec) x Area (ft^2) x 7.48 gal/cu ft x 60 sec/min

Manhole Ring

Spill lifts both sides of the manhole cover, allowing sewage to escape from the perimeter of the manhole cover

1) Measure the height of the plume
2) Measure the diameter of the manhole cover
3) Follow chart for flow rate calculations

Pebble Beach Community Services District

SPILL VOLUME ESTIMATION FORM

Spill Duration: _____

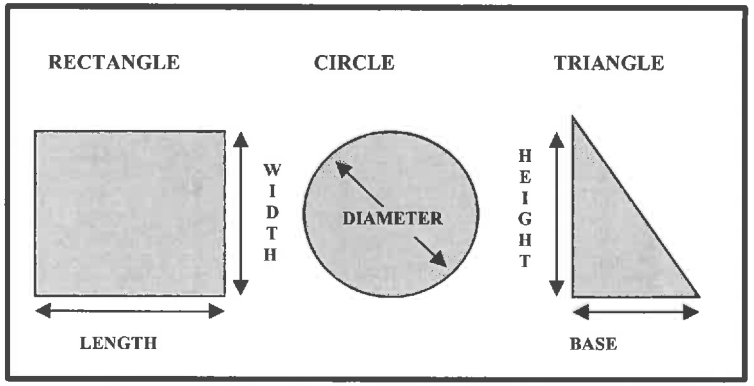
Measured Volume

1) Sketch the shapes of the contained wastewater
2) Measure or pace off the dimensions
3) Measure the depth at multiple locations and calculate an average
4) Convert the dimensions (including depth) to feet
5) Calculate the area, multiply it by the depth (in feet) to find cubic feet and multiply the volume in cubic feet by 7.48 to convert it to gallons

NOTE: Spill volume estimation charts and diagrams are from Orange Count Area Waste Discharge Requirements steering Committee's "Sewer Spill Estimation Guide"

Measured Volume

Common Shapes and Dimensions



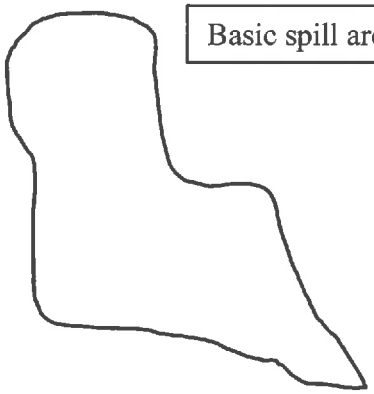
1. Sketch the shape of the contained wastewater.
2. Measure or pace off the dimensions.
3. Measure the depth at several locations and select an average.
4. Convert the dimensions, including depth, to feet.
5. Calculate the area:

   Rectangle: Area = length (feet) x width (feet)

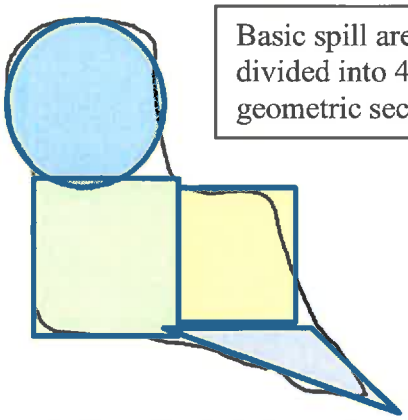
   Circle: Area = diameter (feet) x diameter (feet) x 3.14 divided by 4

   Triangle: Area = base (feet) x height (feet) x 0.5
6. Multiply the area (square feet) times the depth (in feet) to obtain the volume in cubic feet.
7. Multiply the volume in cubic feet by 7.48 to convert to gallons

Example:

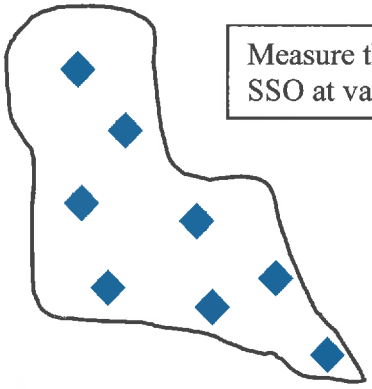


Basic spill area



Basic spill area divided into 4 geometric sections.

Determine the area of each of the geometric sections adding them all together to determine the total area of the spill.



Measure the depth of the SSO at various locations.

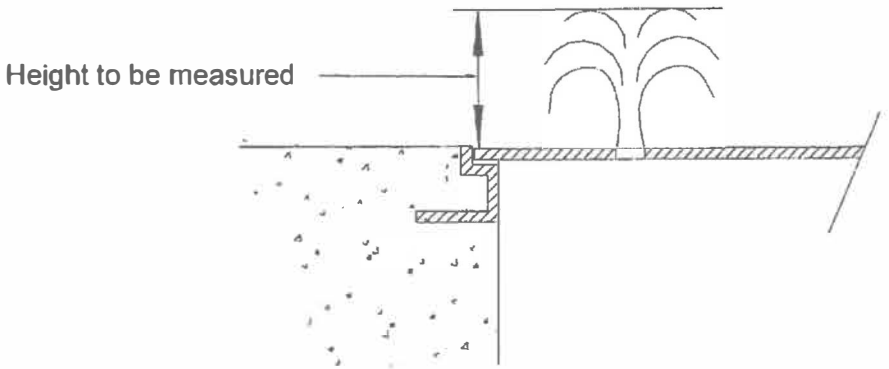
Where it is difficult to measure wet spots on asphalt, use a depth of 0.0026'or 1/32". For wet spots on concrete use depths of 0.0013'or 1/64" for reasonable estimates.

Inch to Feet Conversion:

Inches	to	Feet
1/8"	=	0.01'
1/4"	=	0.02'
3/8"	=	0.03'
1/2"	=	0.04'
5/8"	=	0.05'
3/4"	=	0.06'
7/8"	=	0.07'
1"	=	0.08'
2"	=	0.17'
3"	=	0.25'
4"	=	0.33'
5"	=	0.42'
6"	=	0.50'
7"	=	0.58'
8"	=	0.67'
9"	=	0.75'
10"	=	0.83'
11"	=	0.92'
12"	=	1.00'

Sample Calculation:
A 20 ft x 20 ft square wet spot on concrete equals 3.9 gal and for asphalt is 7.8 gal.

Pick Holes in Manhole Covers



Pick and Vent Hole Estimation Chart

Estimated Flows thru Manhole Cover Vent Holes and Pick Holes for SSO estimating

Hole Dia inches	Area sq. ft.	Coeff.of Vel. Cv	Coeff. Of Cont. Cc	C Cv x Cc	Water Ht Inches	Water Ht Inches	Water Ht feet	Q cfs	Q gpm	Q gph
	Formula: =0.785*Ax* Ax/144			Formula: =Ix*449			Formula: =Gx/12	Formula: =Ex*Bx*(SQRT(2*32.2*Hx))	Formula: =Ix*449	Formula: =Jx*60
Vent Hole										
0.50	0.00136	0.945	0.70	0.662	1/16 th	0.063	0.005	0.0005	0.23	14
0.50	0.00136	0.945	0.70	0.662	1/8 th	0.125	0.010	0.0007	0.33	20
0.50	0.00136	0.945	0.70	0.662	1/4 th	0.250	0.021	0.0010	0.47	28
0.50	0.00136	0.945	0.70	0.662	one half	0.500	0.042	0.0015	0.66	40
0.50	0.00136	0.945	0.70	0.662	3/4 ths	0.750	0.063	0.0018	0.81	49
0.50	0.00136	0.945	0.70	0.662	1 inch	1.000	0.083	0.0021	0.94	56
0.50	0.00136	0.945	0.70	0.662	1 1/4 "	1.250	0.104	0.0023	1.05	63
0.50	0.00136	0.945	0.70	0.662	1 3/8"	1.375	0.115	0.0024	1.10	66
0.50	0.00136	0.945	0.70	0.662	1 1/2"	1.500	0.125	0.0026	1.15	69
0.50	0.00136	0.945	0.70	0.662	1 5/8"	1.625	0.135	0.0027	1.20	72
0.50	0.00136	0.945	0.70	0.662	1 3/4"	1.750	0.146	0.0028	1.24	74
0.50	0.00136	0.945	0.70	0.662	2 inches	2.000	0.167	0.0030	1.33	80
0.50	0.00136	0.945	0.70	0.662	2 1/4"	2.250	0.188	0.0031	1.41	84
0.50	0.00136	0.945	0.70	0.662	2 1/2"	2.500	0.208	0.0033	1.48	89
0.50	0.00136	0.945	0.70	0.662	2 3/4"	2.750	0.229	0.0035	1.56	93
0.50	0.00136	0.945	0.70	0.662	3 inches	3.000	0.250	0.0036	1.62	97
0.50	0.00136	0.945	0.70	0.662	3 1/4"	3.250	0.271	0.0038	1.69	101
0.50	0.00136	0.945	0.70	0.662	3 1/2"	3.500	0.292	0.0039	1.75	105
0.50	0.00136	0.945	0.70	0.662	3 3/4"	3.750	0.313	0.0040	1.82	109
0.50	0.00136	0.945	0.70	0.662	4.000	4.000	0.333	0.0042	1.88	113
Vent Hole										
0.75	0.00307	0.955	0.67	0.640	1/16 th	0.063	0.005	0.0011	0.51	31
0.75	0.00307	0.955	0.67	0.640	1/8 th	0.125	0.010	0.0016	0.72	43
0.75	0.00307	0.955	0.67	0.640	1/4 th	0.250	0.021	0.0023	1.02	61
0.75	0.00307	0.955	0.67	0.640	one half	0.500	0.042	0.0032	1.44	87
0.75	0.00307	0.955	0.67	0.640	3/4 ths	0.750	0.063	0.0039	1.77	106
0.75	0.00307	0.955	0.67	0.640	1 inch	1.000	0.083	0.0045	2.04	122
0.75	0.00307	0.955	0.67	0.640	1 1/4 "	1.250	0.104	0.0051	2.28	137
0.75	0.00307	0.955	0.67	0.640	1 3/8"	1.375	0.115	0.0053	2.39	144
0.75	0.00307	0.955	0.67	0.640	1 1/2"	1.500	0.125	0.0056	2.50	150
0.75	0.00307	0.955	0.67	0.640	1 5/8"	1.625	0.135	0.0058	2.60	156
0.75	0.00307	0.955	0.67	0.640	1 3/4"	1.750	0.146	0.0060	2.70	162
0.75	0.00307	0.955	0.67	0.640	2 inches	2.000	0.167	0.0064	2.89	173
0.75	0.00307	0.955	0.67	0.640	2 1/4"	2.250	0.188	0.0068	3.06	184
0.75	0.00307	0.955	0.67	0.640	2 1/2"	2.500	0.208	0.0072	3.23	194
0.75	0.00307	0.955	0.67	0.640	2 3/4"	2.750	0.229	0.0075	3.38	203
0.75	0.00307	0.955	0.67	0.640	3 inches	3.000	0.250	0.0079	3.53	212
0.75	0.00307	0.955	0.67	0.640	3 1/4"	3.250	0.271	0.0082	3.68	221
0.75	0.00307	0.955	0.67	0.640	3 1/2"	3.500	0.292	0.0085	3.82	229
0.75	0.00307	0.955	0.67	0.640	3 3/4"	3.750	0.313	0.0088	3.95	237
0.75	0.00307	0.955	0.67	0.640	4.000	4.000	0.333	0.0091	4.08	245
Vent Hole										
1.00	0.00545	0.960	0.65	0.624	1/16 th	0.063	0.005	0.0020	0.88	53
1.00	0.00545	0.960	0.65	0.624	1/8 th	0.125	0.010	0.0028	1.25	75
1.00	0.00545	0.960	0.65	0.624	1/4 th	0.250	0.021	0.0039	1.77	106
1.00	0.00545	0.960	0.65	0.624	one half	0.500	0.042	0.0056	2.50	150
1.00	0.00545	0.960	0.65	0.624	3/4 ths	0.750	0.063	0.0068	3.06	184
1.00	0.00545	0.960	0.65	0.624	1 inch	1.000	0.083	0.0079	3.54	212
1.00	0.00545	0.960	0.65	0.624	1 1/4 "	1.250	0.104	0.0088	3.96	237
1.00	0.00545	0.960	0.65	0.624	1 3/8"	1.375	0.115	0.0092	4.15	249
1.00	0.00545	0.960	0.65	0.624	1 1/2"	1.500	0.125	0.0097	4.33	260
1.00	0.00545	0.960	0.65	0.624	1 5/8"	1.625	0.135	0.0100	4.51	271
1.00	0.00545	0.960	0.65	0.624	1 3/4"	1.750	0.146	0.0104	4.68	281
1.00	0.00545	0.960	0.65	0.624	2 inches	2.000	0.167	0.0111	5.00	300
1.00	0.00545	0.960	0.65	0.624	2 1/4"	2.250	0.188	0.0118	5.31	318
1.00	0.00545	0.960	0.65	0.624	2 1/2"	2.500	0.208	0.0125	5.59	336
1.00	0.00545	0.960	0.65	0.624	2 3/4"	2.750	0.229	0.0131	5.87	352
1.00	0.00545	0.960	0.65	0.624	3 inches	3.000	0.250	0.0136	6.13	368

Pick and Vent Hole Estimation Chart - continued

Estimated Flows thru Manhole Cover Vent Holes and Pick Holes for SSO estimating

Hole Dia. Inches	Area sq. ft.	Coeff.of Vel. Cv	Coeff. Of Cont. Cc	C Cv x Cc	Water Ht Inches	Water Ht inches	Water Ht feet	Q cfs	Q gpm	Q gph
	Formula: =0.785*Ax*Ax/144			Formula: =Ix*449			Formula: =Gx/12	Formula: =Ex*Bx*(SQRT(2*32.2*Hx))	Formula: =Ix*449	Formula: =Jx*60
Vent Hole										
1.00	0.00545	0.960	0.65	0.624	3 1/4"	3.250	0.271	0.0142	6.38	383
1.00	0.00545	0.960	0.65	0.624	3 1/2"	3.500	0.292	0.0147	6.62	397
1.00	0.00545	0.960	0.65	0.624	3 3/4"	3.750	0.313	0.0153	6.85	411
1.00	0.00545	0.960	0.65	0.624	4.000	4.000	0.333	0.0158	7.08	425
Pick Hole semicircular area										
1.00	0.00273	0.960	0.65	0.624	1/16 th	0.063	0.005	0.0010	0.44	27
1.00	0.00273	0.960	0.65	0.624	1/8 th	0.125	0.010	0.0014	0.63	38
1.00	0.00273	0.960	0.65	0.624	1/4 th	0.250	0.021	0.0020	0.89	53
1.00	0.00273	0.960	0.65	0.624	one half	0.500	0.042	0.0028	1.25	75
1.00	0.00273	0.960	0.65	0.624	3/4 ths	0.750	0.063	0.0034	1.53	92
1.00	0.00273	0.960	0.65	0.624	1 inch	1.000	0.083	0.0039	1.77	106
1.00	0.00273	0.960	0.65	0.624	1-1/2 inch	1.500	0.125	0.0048	2.17	130
1.00	0.00273	0.960	0.65	0.624	2 inches	2.000	0.167	0.0056	2.51	150
1.00	0.00273	0.960	0.65	0.624	2 1/4"	2.250	0.188	0.0059	2.66	159
1.00	0.00273	0.960	0.65	0.624	2 1/2"	2.500	0.208	0.0062	2.80	168
1.00	0.00273	0.960	0.65	0.624	2 3/4"	2.750	0.229	0.0065	2.94	176
1.00	0.00273	0.960	0.65	0.624	3 inches	3.000	0.250	0.0068	3.07	184
1.00	0.00273	0.960	0.65	0.624	3 1/4"	3.250	0.271	0.0071	3.19	192
1.00	0.00273	0.960	0.65	0.624	3 1/2"	3.500	0.292	0.0074	3.31	199
1.00	0.00273	0.960	0.65	0.624	3 3/4"	3.750	0.313	0.0076	3.43	206
1.00	0.00273	0.960	0.65	0.624	4.000	4.000	0.333	0.0079	3.54	213

ESTIMATED SSO FLOW OUT OF MH WITH COVER IN PLACE

24" COVER

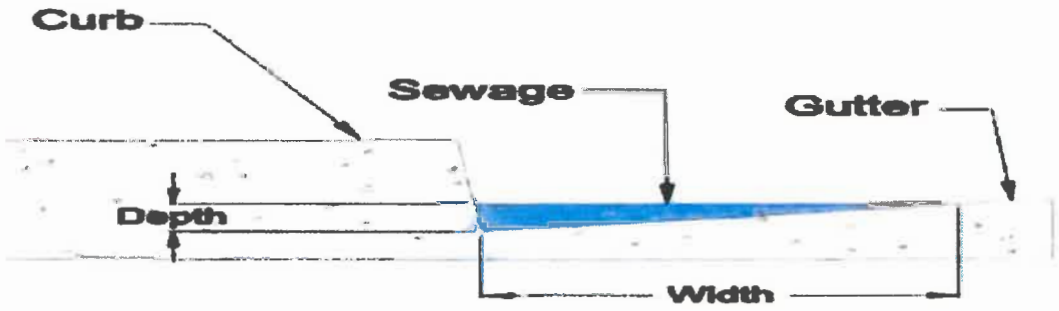
Height of spout above M/H rim H in inches	S S O FLOW Q in gpm	in MGD	Min. Sewer size in which these flows are possible
1/4	1	0.001	
1/2	3	0.004	
3/4	6	0.008	
1	9	0.013	
1 1/4	12	0.018	
1 1/2	16	0.024	
1 3/4	21	0.030	
2	25	0.037	
2 1/4	31	0.045	
2 1/2	38	0.054	
2 3/4	45	0.065	
3	54	0.077	
3 1/4	64	0.092	
3 1/2	75	0.107	
3 3/4	87	0.125	
4	100	0.145	
4 1/4	115	0.166	
4 1/2	131	0.189	
4 3/4	148	0.214	
5	166	0.240	
5 1/4	185	0.266	
5 1/2	204	0.294	
5 3/4	224	0.322	6"
6	244	0.352	
6 1/4	265	0.382	
6 1/2	286	0.412	
6 3/4	308	0.444	
7	331	0.476	
7 1/4	354	0.509	
7 1/2	377	0.543	
7 3/4	401	0.578	8"
8	426	0.613	
8 1/4	451	0.649	
8 1/2	476	0.686	
8 3/4	502	0.723	
9	529	0.761	

36" COVER

Height of spout above M/H rim H in inches	S S O FLOW Q in gpm	in MGD	Min. Sewer size in which these flows are possible
1/4	1	0.002	
1/2	4	0.006	
3/4	8	0.012	
1	13	0.019	
1 1/4	18	0.026	
1 1/2	24	0.035	
1 3/4	31	0.044	
2	37	0.054	
2 1/4	45	0.065	
2 1/2	55	0.079	
2 3/4	66	0.095	
3	78	0.113	
3 1/4	93	0.134	
3 1/2	109	0.157	
3 3/4	127	0.183	
4	147	0.211	
4 1/4	169	0.243	
4 1/2	192	0.276	
4 3/4	217	0.312	6"
5	243	0.350	
5 1/4	270	0.389	
5 1/2	299	0.430	
5 3/4	327	0.471	
6	357	0.514	
6 1/4	387	0.558	8"
6 1/2	419	0.603	
6 3/4	451	0.649	
7	483	0.696	
7 1/4	517	0.744	
7 1/2	551	0.794	
7 3/4	587	0.845	10"
8	622	0.896	
8 1/4	659	0.949	
8 1/2	697	1.003	
8 3/4	734	1.057	
9	773	1.113	

The formula used to develop Table 1 measures the maximum height of the water coming out of the maintenance manhole above the rim. The formula was taken from Hydraulics and Its Application by A.H. Gibson (Constable & Co. Limited).

Gutter Flow



$Q = V \times A$

Flow (gal/min) = Velocity (ft/sec) x Area (ft^2) x 7.48 gal/cu ft x 60 sec/min

ESTIMATED SSO FLOW OUT OF M/H WITH COVER REMOVED

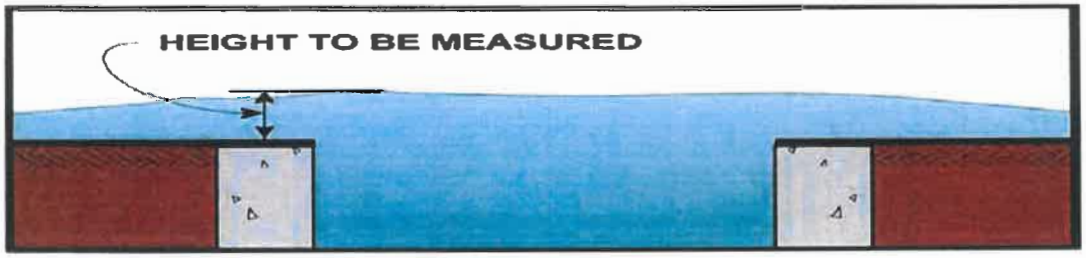
24" FRAME

Water Height above M/H frame H in inches	S S O Q FLOW in gpm	in MGD	Min. Sewer size in which these flows are possible
1/8	28	0.04	
1/4	62	0.09	
3/8	111	0.16	
1/2	160	0.23	
5/8	215	0.31	6"
3/4	354	0.51	8"
7/8	569	0.82	10"
1	799	1.15	12"
1 1/8	1,035	1.49	
1 1/4	1,340	1.93	15"
1 3/8	1,660	2.39	
1 1/2	1,986	2.86	
1 5/8	2,396	3.45	18"
1 3/4	2,799	4.03	
1 7/8	3,132	4.51	
2	3,444	4.96	21"
2 1/8	3,750	5.4	
2 1/4	3,986	5.74	
2 3/8	4,215	6.07	
2 1/2	4,437	6.39	
2 5/8	4,569	6.58	24"
2 3/4	4,687	6.75	
2 7/8	4,799	6.91	
3	4,910	7.07	

36" FRAME

Water Height above M/H frame H in inches	S S O Q FLOW in gpm	in MGD	Min. Sewer size in which these flows are possible
1/8	49	0.07	
1/4	111	0.16	
3/8	187	0.27	6"
1/2	271	0.39	
5/8	361	0.52	8"
3/4	458	0.66	
7/8	558	0.8	10"
1	660	0.95	12"
1 1/8	1,035	1.49	
1 1/4	1,486	2.14	15"
1 3/8	1,951	2.81	
1 1/2	2,424	3.49	18"
1 5/8	2,903	4.18	
1 3/4	3,382	4.87	
1 7/8	3,917	5.64	21"
2	4,458	6.42	
2 1/8	5,000	7.2	24"
2 1/4	5,556	8	
2 3/8	6,118	8.81	
2 1/2	6,764	9.74	
2 5/8	7,403	10.66	
2 3/4	7,972	11.48	30"
2 7/8	8,521	12.27	
3	9,062	13.05	
3 1/8	9,604	13.83	
3 1/4	10,139	14.6	
3 3/8	10,625	15.3	36"
3 1/2	11,097	15.98	
3 5/8	11,569	16.66	
3 3/4	12,035	17.33	
3 7/8	12,486	17.98	
4	12,861	18.52	
4 1/8	13,076	18.83	
4 1/4	13,285	19.13	
4 3/8	13,486	19.42	

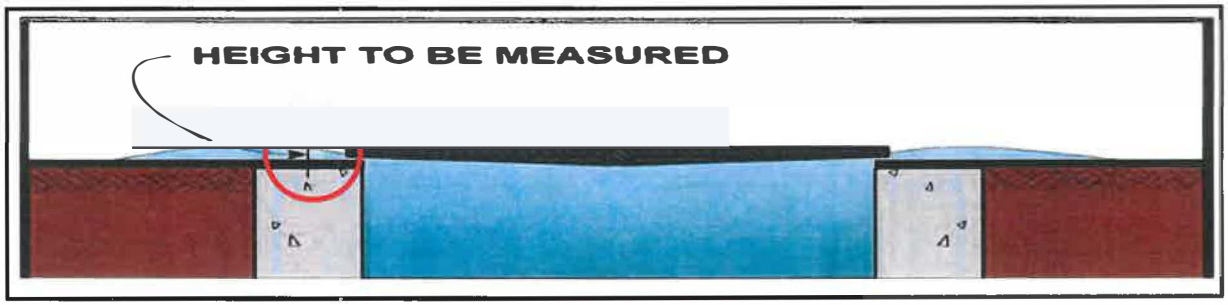
Estimating Flow With Manhole Cover Removed



Manhole Ring Calculation

Area Calculation Chart		
Height of Flow	24 Inch Manhole	36 Inch Manhole
.5 inches	0.131 sq. ft.	0.195 sq. ft.
1 inches	0.262 sq. ft.	0.391 sq. ft.
1.5 inches	0.393 sq. ft.	0.586 sq. ft.
2 inches	0.524 sq. ft.	0.782 sq. ft.
2.5 inches	0.655 sq. ft.	0.977 sq. ft.
3 inches	0.786 sq. ft.	1.173 sq. ft.
3.5 inches	0.917 sq. ft.	1.368 sq. ft.
4 inches	1.048 sq. ft.	1.564 sq. ft.

Manhole Ring



APPENDIX 07-1

Pebble Beach Community Services District

List of Food Service Establishments (FSEs)

Pebble Beach Community Services District

Pipe Blocking Substance Control Program
List of Food Service Establishments (FSEs)

The following FSEs are required to maintain a Grease Trap or Interceptor as part of the District Pipe Blocking Substance Control Program. FSEs are inspected on a monthly basis.

1. Lodge at Pebble Beach
2. Cypress Point Club House
3. Pebble Beach Tennis Club / Beach
4. Inn at Spanish Bay
5. Spanish Bay Club House
6. Monterey Peninsula Country Club (MPCC) Club House
7. Poppy Hills
8. Hay's Place
9. Stevenson School

APPENDIX 07-2

Pebble Beach Community Services District

District Ordinance No.15 & 19

ORDINANCE NO. 19

AN ORDINANCE ESTABLISHING PROCEDURES AND CONTROLS FOR PRETREATMENT OF WASTEWATER PRIOR TO ITS ENTRY INTO THE DISTRICT WASTEWATER SYSTEM

-oOo-

THE BOARD OF DIRECTORS OF THE PEBBLE BEACH COMMUNITY SERVICES DISTRICT DOES ORDAIN AS FOLLOWS:

1. Procedures and Controls Established. The attached PBCSD Pretreatment Ordinance, establishing procedures and controls for pretreatment of wastewater prior to its entry into the District wastewater system, is hereby adopted, to read in its entirety as set forth on the attached twenty-nine (29) pages, marked "Exhibit A" and incorporated herein by this reference thereto.

2. Summary of Ordinance. This ordinance sets forth requirements for direct and indirect discharge into the wastewater system of the District. The ordinance is designed to protect the District's wastewater system and operating personnel, and to prevent introduction of pollutants into the wastewater system which will pass through the system, inadequately treated, or otherwise be incompatible with the system. The ordinance provides for the regulation of direct and indirect discharges to the wastewater system through the issuance of permits to certain non-domestic users and through enforcement of general requirements for the other users, authorizes monitoring and enforcement activities, requires user reporting, assumes that existing customer's capacity will not be preempted, and provides for the setting of fees for the equitable distribution of costs resulting from the program

LAW OFFICES OF
ROBERT R. WELLINGTON
557 CASS STREET
SUITE D
MONTEREY,
CALIFORNIA 93940
TELEPHONE
(408) 373-8733

established herein. A true and certified copy of the full text of this ordinance is available for inspection at the District offices.

3. Publication. Following adoption, this ordinance shall be published once in The Herald, a newspaper published in the County of Monterey and circulated in the District.

4. Effective Date. This ordinance shall take effect and be in force one (1) week after the date it is published in the newspaper.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of the Pebble Beach Community Services District duly held on March 29, 1991, by the following vote:

AYES: BOARD MEMBERS: Hendrick, Murphy, O'Brien, Sprenger, Strong

NOES: BOARD MEMBERS: None

ABSENT: BOARD MEMBERS: None

President of the Board
George W. Murphy

ATTEST:

Secretary of the Board
Richard Andrews

//

LAW OFFICES OF
ROBERT R. WELLINGTON
557 CASS STREET
SUITE D
MONTEREY,
CALIFORNIA 93940
TELEPHONE
(408) 373-8733

3/28/91

NC014

PEBBLE BEACH COMMUNITY SERVICES DISTRICT PRETREATMENT ORDINANCE

Prepared for

PEBBLE BEACH COMMUNITY SERVICES DISTRICT

MARCH 1991

Prepared by

ENGINEERING-SCIENCE, INC.

DESIGN · RESEARCH · PLANNING

666 CAMINO AGUAJITO, SUITE 202, MONTEREY, CALIFORNIA 93940 ·(408) 373-2933

OFFICES IN PRINCIPAL CITIES

ES ENGINEERING-SCIENCE

Pebble Beach Community Services District

Pretreatment Ordinance

MARCH 1991

Members of the Board of Directors

George W. Murphy, President

Janice M. O'Brien

David R. Hendrick

David F. Sprenger

John L. Strong

General Manager

Richard Andrews

District Engineer

Vinod M. Badani, Engineering-Science, Inc.

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Section 1 - General Provisions

1.1 Purpose and Policy

This ordinance sets forth uniform requirements for direct and indirect discharges into the wastewater system for Pebble Beach Community Services District and enables the District to comply with all applicable State and Federal laws required by the Clean Water Act of 1977 as amended by the Water Quality Act of 1987 and the General Pretreatment Regulations (40 CFR, Part 403).

The objectives to this ordinance are:

(a) To prevent the introduction of pollutants into the wastewater system which will interfere with the operation of the system or contaminate the resulting sludge;

(b) To protect the District's wastewater system and operating personnel, and to prevent the introduction of pollutants into the wastewater system which will pass through the system, inadequately treated, or otherwise be incompatible with the system;

(c) To improve the opportunity to recycle and reclaim wastewaters and sludges from the system; and

(d) To provide for equitable distribution of the cost of the municipal wastewater system.

This ordinance provides for the regulation of direct and indirect discharges to the wastewater system through the issuance of permits to certain non-domestic users and through enforcement of general requirements for the other users, authorizes monitoring and enforcement activities, requires user reporting, assumes that existing customer's capacity will not be preempted, and provides for the setting of fees for the equitable distribution of costs resulting from the program established herein.

This ordinance shall apply to the Pebble Beach Community Services District and the persons outside the District who are, by contract or agreement with the District, Users of the Wastewater System. Except as otherwise provided herein, the General Manager shall administer, implement, and enforce the provisions of this ordinance.

1.2 Definitions

Unless the context specifically indicates otherwise, the following terms and phrases, as used in this ordinance, shall have the meanings hereinafter designated:

(1) Act or "the Act". The Federal Water Pollution Control Act, also known as the Clean Water Act (CWA), as amended, 33 U.S.C. 1251, et.seq.

(2) Authorized Representative of the Industrial User. An authorized representative of an Industrial User may be: (1) A principal executive officer of at least the level of vice-president, if the Industrial User is a corporation; (2) A general partner or proprietor, if the industrial User is a

partnership or proprietorship, respectively; (3) A duly authorized representative of the individual designated above if such representative is responsible for the overall operation of the facilities from which the indirect discharge originates.

(3) Biochemical Oxygen Demand (BOD). The quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure, five (5) days at 20° centigrade (c) expressed in terms of weight and concentration (milligrams per liter (mg/l)).

(4) Building Sewer. A sewer conveying wastewater from the premises of a User to the POTW.

(5) Bypass. The intentional diversion of waste streams from any portion of a treatment facility.

(6) Categorical Standards. National Categorical Pretreatment Standards or Pretreatment Standard.

(7) Chemical Oxygen Demand (COD). The measure of chemically decomposable material in domestic or industrial wastewaters as represented by the oxygen utilized as determined by the appropriate procedure described in Standard Methods.

(8) Composite Sample. A combination of no fewer than 8 individual samples obtained at equal time intervals for 24 hours or for the duration of the discharge, whichever is shorter.

(9) Discharge. The intentional or unintentional release of a substance into this District's portion of the POTW.

(10) Discharge Limit. A limit on the amount and/or concentration of a pollutant which is discharged to the POTW. This limit is specific for a controlled pollutant. The limit may be expressed as milligrams per liter (mg/l) or similar appropriate units, or as a mass or specific amount per unit of time, or as mass per unit volume or mass of material processed.

(11) District. Pebble Beach Community Services District.

(12) Environmental Protection Agency, or EPA. The U.S. Environmental Protection Agency, or where appropriate the term may also be used as a designation for the Administrator or other duly authorized official of said agency.

(13) Existing Source. Any source which is not a new source or a new indirect discharger.

(14) Food Service Facility. Any facility involved with the preparation and/or sale of food. This includes but is not limited to: restaurants, bakeries, grocery stores and cafeterias.

(15) Grease. All fat, grease, oil, wax or other material determined as such by EPA Method 413.1 of animal, vegetable, petroleum or mineral origin.

(16) Grab Sample. Any individual sample collected in less than 15 minutes on a one-time basis.

(17) Hauler. A person who transports wastewater off-site by other than POTW conveyance system, to the POTW for treatment and disposal.

(18) Hazardous Substance. As listed in 40 CFR Part 300.6 (1988):

Hazardous Substance, as defined by section 101(14) of CERCLA, means:

Any substance designated pursuant to section 311(b) (2) (A) of the CWA; any element, compound, mixture, solution, or substance designated pursuant to section 102 of CERCLA; any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (but not including any waste the regulation of which under the Solid Waste Disposal Act has been suspended by an Act of Congress); any toxic pollutant listed under section 307(a) of the Clean Water Act (CWA); any hazardous air pollutant listed under section 112 of the Clean Air Act; and any imminently hazardous chemical substance or mixture with respect to which the Administrator has taken action pursuant to section 7 of the Toxic Substances Control Act. The term does not include petroleum, including designated as a hazardous substance in the first sentence of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).

(19) Hazardous Waste. A hazardous waste as defined in 40 CFR Part 261.3.

(20) Holding Tank Waste. Any waste from holding tanks such as vessels, chemical toilets, campers, trailers, septic tanks, and vacuum-pump tank trucks.

(21) Indirect Discharge. The discharge or the introduction of regulated pollutants from any wastewater source into the POTW (including holding tank waste discharged into the POTW).

(22) Industrial User. A source of Indirect Discharge of regulated wastes which does not necessarily constitute a "discharge of pollutants" under regulations issued pursuant to section 402, of the Act. (33 U.S.C. 1342).

(23) Industrial Wastewater. Any indirect discharge to the POTW of regulated wastes.

(24) Industrial Wastewater Discharge Permit (PERMIT). A written authorization or contract issued by the District which allows the discharge to the POTW of industrial wastewater containing regulated wastes controlled by this Ordinance.

(25) Interference. The inhibition or disruption of the POTW treatment processes or operations which contributes to a violation of any requirements of the District's. The term includes prevention of sewage sludge use or disposal by the POTW in accordance with 405 of the Act, (33 U.S.C. 1345) or any criteria, guidelines, or regulations developed pursuant to the Solid Waste Disposal Act (SWDA), the Clean Air Act, the Toxic Substances Control Act, or more stringent state criteria (including those contained in any State sludge management plan prepared pursuant to Title IV of SWDA) applicable to the method of disposal or use employed by the POTW.

(26) National Categorical Pretreatment Standard or Pretreatment Standard. Any regulation containing pollutant discharge limits promulgated by the EPA in accordance with Section 307(b) and (c) of the Act (33 U.S.C. 1347) which applies to a specific category of Industrial Users.

(27) National Prohibitive Discharge Standard or Prohibitive Discharge Standard. Any regulation developed under the authority of 307(b) of the Act and 40 CFR, Section 403.5.

(28) National Pollution Discharge Elimination System (NPDES) Permit. A permit issued pursuant to section 402 of the Act (33 U.S.C. 1342).

(29) New Source. Any source, the construction of what is commenced after the publication of proposed regulations prescribing a section 307(c) (33 U.S.C. 1317) Categorical Pretreatment Standard which will be applicable to such source, if such standard is thereafter promulgated within 120 days of proposal in the Federal Register. Where the standard is promulgated later than 120 days after the proposal, a new source means any source, the construction of which is commenced after the date of promulgation of the standard.

(30) Operator. One who operates a business.

(31) Owner. The discharger, user, or permittee.

(32) Pass-Through. A discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit including an increase in the magnitude or duration of a violation.

(33) Permittee. A USER' who has been issued an Industrial Wastewater Discharge Permit.

(34) Person. Any individual, partnership, copartner-ship, firm, company, corporation, association, joint stock company, trust, estate, governmental entity or any other legal entity, or their legal representatives, agents or assigns. The masculine gender shall include the feminine, the singular shall include the plural where indicated by the context.

(35) pH. The negative logarithm (base 10) hydrogen ion concentration expressed in moles per liter of solution.

(36) Pollutant. Something that causes pollution, including but not limited to any dredged point, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discharged equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into the POTW.

(37) Pollution. The man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water.

(38) Pretreatment or Treatment. The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater to a less harmful state prior to, or in lieu of discharging or otherwise introducing such pollutants into a POTW. The reduction or alteration can be obtained by physical, chemical or biological processes, or process changes other means, except as prohibited by 40 CFR Section 403.6(d) by dilution as a substitute for pretreatment.

(39) Pretreatment Requirements. Any substantive or procedural requirement related to pretreatment, other than a National Pretreatment Standard imposed on an industrial User.

(40) Publicly Owned Treatment Works (POTW). A treatment works as defined by section 212 of the Act, (33 U.S.C. 1292) which is owned in this instance by the District. This definition includes any sewers that convey wastewater to the POTW Treatment Plant, but does not include pipes, sewers or other conveyances not connected to a facility providing treatment. For the purposes of this ordinance, "POTW" shall also include any sewers that convey wastewaters to the POTW from persons outside the District who are, by contract or agreement with the District, users of the District's POTW.

(41) POTW Treatment Plant. That portion of the POTW designed to provide treatment to wastewater which is owned by Carmel Area Wastewater District and which by agreement with this District has reserved one-third of the POTW capacity for the treatment of wastewater generated in this District.

(42) Representative Sample. A sample portion of material or wastestream that is as nearly identical in content and consistency as possible to that in the material or wastestream being sampled.

(43) Shall, Will and May. Shall and will are mandatory; may is permissive.

(44) Slug Load. Any pollutant released in a discharge at a flow rate and/or pollutant concentration which will cause interference or upset of the POTW; or, any discrete sample the concentration of which exceeds five times the discharge limit.

(45) Solid Waste. Any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or containing gaseous materials resulting from industrial, commercial, mining, and agricultural operations, and from community activities.

(46) State. State of California.

(47) Storm Water. Any flow occurring during or following any form of natural precipitation and resulting therefrom.

(48) Suspended Solids (TSS). The total suspended matter that floats on the surface of, or is suspended in, water, wastewater or other liquids.

(49) General Manager. The person designated by the District to manage the operation of the POTW within the District and who is charged with certain duties and responsibilities by this Article, or his duly authorized representative.

(50) Toxic Pollutant. Any pollutant or combination of pollutants listed as toxic in regulations promulgated by the Administrator of the Environmental Protection Agency under the provision of CWA 307(a) or other Acts.

(51) Upset. An exceptional incident in which there is unintentional and temporary noncompliance with discharge limits because of factors beyond the reasonable control of the User.

(52) USC. United States Code.

(53) User. Any person or Industrial User who contributes, causes or permits the discharge of wastewater into the District's POTW.

(54) Wastewater. The liquid and water-carried industrial or domestic wastes from dwellings, commercial buildings, industrial facilities, and institutions, together with any groundwater, surface water, and storm water that may be present, whether treated or untreated, which is contributed into or permitted to enter the POTW.

1.3 Superseding Previous Regulations

This Wastewater Ordinance, as adopted 29 March 1991, shall supersede all previous regulations and policies of the District governing items covered in this Ordinance.

1.4 District's Right of Revision

The District reserves the right to establish by ordinance more stringent limitations or requirements on discharges to the wastewater disposal system if deemed necessary to comply with the objectives presented in Section 1.1 of this Ordinance.

1.5 Reference to Plumbing Ordinance

All plumbing ordinances shall remain in full force and effect, and nothing contained herein shall be construed as to waive any requirements contained therein.

Section 2 - Regulations

2.1 Regulated Wastes

2.1.1 General Discharge Prohibitions

No User shall discharge or cause to be discharged to the District's sewerage systems, or to any public sewer that directly or indirectly connects to the District's sewerage system, any waste which will interfere with the operation or performance of the POTW and may have an adverse or harmful effect on sewers, maintenance personnel, personnel or equipment, treatment plant processes or the quality of treatment plan effluent or residue, public or private property, or wastes which may otherwise endanger the public, the environment, or create a public nuisance. No User shall discharge or cause to be discharged to the District's sewerage systems, or to any public sewer that directly or indirectly connects to the District's sewerage systems, any wastes which adversely affect water reclamation processes or the quality of reclaimed water, cause or contribute to a violation of any National Pollutant Discharge Elimination System (NPDES) requirements, or place the District in noncompliance with any of the statutory authorities listed in Title 40, Code of Federal Regulations (CFR), whether or not the User is subject to National Categorical Pretreatment Standards or any other National, State, or local Pretreatment Standards or Requirements.

No User shall discharge or cause to be discharged to a public sewer, which directly or indirectly connects to the District's sewerage systems, the following wastes or wastes in quantities or concentrations in excess of the following restrictions:

(a) Any liquids, solids or gases which by reason of their nature or quantity are, or may be, sufficient either alone or by interaction with other substances to cause fire or explosion or be injurious in any other way to the sewerage system, the POTW, or to the operation of the POTW. This includes but is not limited to wastestreams with a closed cup flashpoint of less than 104°F or 60 °C using the test methods specified in 40 CFR 261.21. At no time, shall two successive readings on an explosion hazard meter, at the point of discharge into the system or at any point in the system be more than ten percent (10%) nor any single reading over twenty percent (20%) of the Lower Explosive Limit (LEL) of the meter. Prohibited materials include, but are not limited to, gasoline, kerosene, naphtha, benzene, toluene, xylene, ethers, alcohols, ketones, aldehydes, solvent, fuel oil, peroxides, chlorates, perchlorates, bromates, carbides, hydrides and sulfides and any other substances which the District, the State or EPA has notified the User is a fire hazard or a hazard to the system.

(b) Solid or viscous substances which may cause obstruction to the flow in a sewer or other interference with the operation of the wastewater treatment facilities such as, but not limited to: grease, any garbage or waste, other

than domestic wastewater, that is not ground sufficiently to pass through a 3/8 inch screen, dead animals, animal guts or tissues, paunch manure, bones, hair, hides or fleshing, entrails, whole blood, feathers, offal, ashes, cinders, sand, spent lime, stone or marble dust, metal, glass, straw, industrial process shavings, diatomaceous earth, grass clippings, rags, spent grains, spent hops, wood, plastics, tar, asphalt residues, mud, or glass grinding wastes or polishing wastes, paper dishes, paper cups, milk containers or other similar paper products whole or ground or materials which tend to solidify in the sewer and obstruct wastewater flow.

(c) Any wastewater having a pH less than 6.0, a pH greater than 8.5, or having any other corrosive or detrimental characteristics capable of causing damage or hazard to the sewerage system or to structures, equipment, and/or personnel of the POTW.

(d) Any wastewater containing toxic or poisonous solids, liquids or gas pollutants in sufficient quantity, either singly or by interaction with other pollutants, to injure or interfere detrimentally with any wastewater treatment process, constitute a hazard to humans, animals, or the environment, create a toxic effect in the receiving waters of the POTW, cause a public nuisance, cause any hazardous condition to occur in the sewerage system, or to exceed the limitation set forth in a Categorical Pretreatment Standard. A toxic pollutant shall include but not be limited to any pollutant identified pursuant to Section 307(a) of the Act.

(e) Any wastewater containing toxic pollutants which result in the presence of toxic gases, vapors or fumes within the POTW and/or the sewerage system in a quantity that may cause acute worker health and safety problems.

(f) Any waste containing excessive quantities or concentrations as defined by the General Manager of petroleum or mineral based cutting oils, commonly called soluble oil which form persistent water emulsions.

(g) Any waste containing excessive quantities or concentrations which result in the clogging or plugging of the collection system or as defined by the General Manager of dispersed biodegradable oils, fats, and greases, such as lard, tallow or vegetable oil.

(h) Any wastes containing excessive quantities or concentrations of the following parameters: iron, boron, cyanide, chromium, phenols, plastic resins, copper, nickel, zinc, lead, mercury, cadmium, selenium, silver, arsenic; or any other materials toxic to humans, animals, the local environment or to biological wastewater treatment processes.

(i) Any noxious or malodorous liquids, gases, or solids which either singly or by interaction with other wastes are sufficient to create a public nuisance or hazard to life or are sufficient to prevent entry into the sewers for maintenance and repair.

(j) Any substance which may cause the POTW's effluent or any other product of the POTW as residues, sludges, or scums, to be unsuitable for reclamation and reuse or to interfere with the reclamation process. In no case, shall a substance discharged to the POTW cause the POTW to be in non-compliance with sludge use or disposal criteria, guidelines or regulations developed under Section 405 of the Act; any criteria, guidelines, or regulations affecting sludge use of disposal developed pursuant to the Solid Waste Disposal Act, the Clean Air Act, the Toxic Substances Control Act, or State criteria applicable to the sludge management method being used.

(k) Any substance which will cause the POTW to violate its NPDES and/or State Disposal System Permit or the receiving water quality standards.

(l) Any wastewater with objectionable color not removed in the treatment process, producing discoloration of the POTW's effluent such as, but not limited to, dye wastes and vegetable tanning solutions.

(m) Any wastewater having a temperature of 60°C (140°F) or higher, or which may cause the temperature of the treatment plant influent to exceed 40°C (104°F).

(n) Any wastes with a concentration of chlorine in excess of 10 mg/L.

(o) Any waste containing excessive quantities or concentrates of toxic aromatic hydrocarbons, chlorinated hydrocarbon or organic phosphorous-type compounds.

(p) Any waste containing substances that may precipitate, solidify, gel, polymerize or become viscous under conditions normally found in the sewerage system.

(q) Any garbage or waste, other than domestic wastewater, that is not ground sufficiently to pass through a 3/8 inch mesh screen.

(r) Any waste containing excessive quantities or concentrations [as defined by the General Manager] of detergents, surface active agents, or other substances, which may cause foaming in the wastewater system.

(s) Any waste containing excessive quantities or concentrations of fluorides, sulfates, borates or any other materials that can pass through treatment facilities and degrade water quality or limit reuse of the wastewater.

(t) Any waste containing excessive quantities or concentrations, as defined by the General Manager, of ammonia.

(u) Any waste containing excessive quantities or concentrations, as defined by the General Manager, of cyanide.

(v) Any waste containing excessive quantities or concentrations, as defined by the General Manager, of undissolved or dissolved solids.

(w) Any waste containing excessive quantities or concentrations, as defined by the General Manager, of BOD, COD, or other oxygen demanding substances.

(x) Any waste containing excessive quantities or concentrations, as defined by the General Manager, of mercaptans, sulfides, phenols, or any strongly odorous material or material tending to create odors.

(y) Any wastes containing dissolved sulfides above a concentration of 0.1 mg/L or wastes which contribute to excessive sulfide production, as defined by the General Manager.

(z) Any amount of Hazardous Substance in excess of those defined in Section 1.2 of this Ordinance.

(aa) Any hazardous waste discharged to any portion of the POTW or treatment plant by truck, rail or dedicated pipe line.

(ab) Any pollutants, including oxygen demanding pollutants (BOD, etc.) released at a flow rate and/or pollutant concentration which a User knows or has reason to know will cause Interference to the POTW. In no case shall a slug load have a flow rate or contain concentration or qualities or pollutants that exceed for any time period longer than fifteen (15) minutes more than five (5) times the average twenty-four (24) hour concentration, quantities, or flow during normal operation.

(ac) Any wastewater containing any radioactive wastes or isotopes of such half life or concentration as may exceed limits established by the General Manager in compliance with applicable State or Federal regulations.

(ad) Any wastewater which causes a hazard to human life or creates a public nuisance.

When the General Manager determines that a User(s) is contributing to the POTW, any of the above enumerated substances in such amounts as to interfere with the operation of the POTW, the General Manager shall: (1) Advise the User(s) of the impact of the discharge on the POTW: and (2) Develop effluent limitations for such User to correct the Interference with the POTW.

The General Manager shall, from time to time, establish quantitative or other limitations applicable to industrial waste discharges when in his judgment it is necessary to protect the District's wastewater system or to be in compliance with state or local law or Federal Regulations. Such limitations shall apply at the industrial wastewater monitoring facility prior to mixing with domestic wastewaters. Wastewater discharges in excess of the limits established by the General Manager or any state law or applicable Federal Pretreatment Standards shall constitute excessive concentrations or quantities prohibited by this Section.

The General Manager shall establish quantitative limitations for users which, because of their location, quantity or quality of discharge, can degrade the quality of wastewater treatment plant effluent or residue to a level that prevents or inhibits efforts to reuse or dispose of the water or residue or causes any unusual operation or maintenance problems in the sewerage system.

2.1.2 Disposal of Vehicle-Transported Liquid Wastes to the Sewerage System

No person shall discharge or cause to be discharged any wastes from septic tanks, seepage pits, cesspools, chemical toilets or other approved wasteholding devices, any industrial liquid wastes or any other liquid wastes from a vacuum pumping truck or other liquid transport vehicles, directly or indirectly to the District's sewerage facilities. Except however, during emergency operations or maintenance of the wastewater collection system, wastewater may be transported from inoperative sections of the system to operative sections.

2.1.3 Medical and Infectious Wastes

No person shall discharge solid wastes from hospitals, clinics, offices of medical doctors, dentists, mortuaries, morgues, long term health care, medical laboratories or other medical facilities to the POTW including, but not limited to hypodermic needles, syringes, instruments, utensils or other paper and plastic items of a disposal nature, or wastes excluded by other provisions of this Ordinance.

2.1.4 Prohibition of Dilution and Excessive POTW Hydraulic Loading

No user shall dilute and/or cause excessive POTW hydraulic loading problems; including but not limited to:

(1) Any water added for the purpose of diluting wastes which would otherwise exceed maximum concentration limits.

(2) Any rain water, storm water runoff, groundwater, street drainage, roof drainage, yard drainage, water from yard fountains, ponds, swimming pools, lawn sprays or uncontaminated water except where prior approval for such discharge is given by the General Manager.

2.2 Prohibition of Bypass

Bypass of untreated industrial wastewater to the sewer is prohibited. The General Manager may take enforcement action against the User for bypass, unless:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which

occurred during normal periods of equipment downtime or preventative maintenance;

(3) The Permittee submitted notices as required under Section 5.6 of this Ordinance.

The General Manager may approve an anticipated bypass, after considering its adverse affects, if the General Manager determines that it will meet the conditions listed above.

2.3 Slug Loading

All Users shall prevent discharge of slug loads into the POTW of prohibited, hazardous or other waste material which are regulated through this Ordinance. Such protection shall be provided and maintained at the User's expense. Detailed plans shall be submitted to the General Manager for review. No User shall commence discharge to the POTW without accidental discharge protection facilities or procedures.

2.4 Accidental Discharges

Each User shall provide protection from accidental discharge of prohibited materials or other substances regulated by this Ordinance. Facilities to prevent accidental discharge of prohibited materials shall be provided and maintained at the owner or User's own cost and expense. Detailed plans showing facilities and construction of the facility. No User who commences discharge to the POTW after the effective date of this ordinance shall be permitted to introduce pollutants into the system until accidental discharge procedures have been approved by the District. Review and approval of such plans and operating procedures shall not relieve the industrial User from the responsibility to modify the User's facility as necessary to meet the requirements of this Ordinance.

In the case of an accidental discharge, bypass, upset, spill, or slug load, which may endanger people, the environment, and/or the POTW, it is the responsibility of the User to notify the District within 24 hours from the time the permittee becomes aware of the incident. The notification shall include location of discharge, type of waste, concentration and volume, and corrective actions.

2.4.1 Written Notice

Within five (5) days following an accidental discharge; the User shall submit to the General Manager a detailed written report describing the cause of the discharge and the measures to be taken by the User to prevent similar future occurrences. Such notification shall not relieve the User of any expense, loss, damage, or other liability which may be incurred as a result of damage to the POTW, or any other damage to person or property; nor shall such notification relieve the User of any fines, civil penalties, or other liability which may be imposed by this article or other applicable law.

2.4.2 Notice to Employees

A notice shall be permanently posted on the User's bulletin board or other prominent place advising employees whom to call in the event of a discharge.

Employers shall insure that all employees who may cause or suffer such a dangerous discharge to occur are advised of the emergency notification procedure.

2.5 Federal Categorical Pretreatment Standards

Upon the promulgation of the Federal Categorical Pretreatment Standards for a particular industrial categorical, the Federal Standard, if more stringent than limitations imposed under this Ordinance for sources in that subcategory, shall immediately supersede the limitations imposed under this Ordinance. The General Manager shall notify all affected Users of the applicable reporting requirements under 40 CFR, Section 403.12.

2.6 Specific Pollutant Limitations

The amount and nature of allowed discharges for each Categorical Industrial User will be specified on the Permit. Each Categorical Industrial User shall not exceed the Federal Standards established by the EPA in accordance with the Clean Water Act of 1987 as defined in Section 1.2 of this Ordinance. Categorical Users currently discharging wastewater in excess of these standards shall limit the discharges to conform to the categorical standards referenced above, within 180 days of the effective date of this Ordinance using Best Available Technology (BAT) methods as established by the EPA. A User can request an extension of up to six months by demonstrating the needs.

2.7 State Requirements and Limitations

State requirements and limitations on discharges shall apply in any case where they are more stringent than Federal requirements and limitations or those is this ordinance.

SECTION 3 - FEES

3.1 Purpose

It is the purpose of this section to provide for the recovery of costs from Users of the District's wastewater disposal system for the implementation of the program established herein. The applicable charges or fees shall be as set forth by resolution of the Board of Directors.

3.2 Charges and Fees

The following fees shall be established by the Board of Directors:

a. Fees for monitoring, inspections and surveillance procedures including consultant costs. Once per month sampling is required; if sample indicates compliance, any additional sampling in that month should not be at the cost of the User if it also indicates compliance.

b. Fees for reviewing accidental discharge procedures and construction including consultant cost.

c. Fees for permit applications.

These fees relate solely to the matters covered by this Ordinance and are separate from all other fees chargeable by the District.

SECTION 4 - DISCHARGE PERMIT APPLICATION AND REQUIREMENTS

4.1 Wastewater Dischargers

It shall be unlawful to discharge without a permit to the POTW any wastewater except as authorized by the General Manager in accordance with the provisions of this Ordinance.

4.2 Wastewater Discharge Permits

4.2.1 For Industrial Wastewater Discharge

Except as hereafter provided, no person shall discharge or cause to be discharged any industrial wastewaters directly or indirectly to sewerage facilities owned by the District without first obtaining a District Industrial Wastewater Discharge Permit (Permit). A District Permit shall be obtained prior to commencement of any construction of new or modified facilities which will discharge industrial wastewater to the sewer. A separate Permit shall be required for each industrial wastewater connection to a public sewer discharging directly or indirectly to the District's sewerage system. The use of a sewer connection which is the subject of a Permit by anyone other than the person named in the Permit is prohibited. A Permit or Permit revision shall also be obtained by dischargers who use industrial wastewater.

The General Manager may exempt certain classes of dischargers of industrial wastewaters from the requirement to obtain a Permit if the quantity and quality of the wastewater is determined to be unlikely to create significant effects on the District's sewerage system or produce violations of state law or Federal Regulations.

The Permit may require pretreatment of industrial wastewaters before discharge, consolidation of wastewater discharge connections, prohibition of discharge of certain wastewater components or characteristics, batch treatment and discharge, restriction of discharge of certain wastewater components or characteristics, and such other conditions as may be required to effectuate the purposes of the Ordinance.

A Permit shall be required for vehicle service stations or garages, laundries, dry cleaners, and all food service facilities, except those who use insignificant amounts of oil and grease as determined by the General Manager and that do not cook meats and do not serve on washable dishes. These businesses however, shall be responsible for insuring that the industrial wastewater discharges originating from their operations are in compliance with the provisions set forth in this Ordinance.

No person shall discharge industrial wastewaters in excess of the quantity or quality limits stated in the Permit. The violation of any Permit condition or requirement shall constitute a violation of this Ordinance and shall be punishable as provided by law. Any person who, as determined by the General Manager, significantly increases or

decreases flow rate or significantly alters the quality of wastewater discharge shall immediately apply for and obtain a Permit revision.

All Industrial Users proposing to connect to or to contribute to the POTW shall obtain a Wastewater Discharge Permit before connecting to or contributing to the POTW. All existing Industrial Users connected to or contributing to the POTW shall obtain a Wastewater Discharge Permit within one hundred and eighty (180) days after the effective date of this Ordinance.

4.2.2 Application

Users required to obtain a Wastewater Discharge Permit shall complete and file with the District, an application in the form prescribed by the District and accompanied by the fee as prescribed in Section 3 of this Ordinance. New users shall apply at least ninety (90) days prior to connecting to or contributing to the POTW. In support of the application, the User shall submit, in units and terms appropriate for evaluation, the following information:

a) Name, address,, and location (if different from address);

b) Wastewater constituents and characteristics including but not limited to those mandated in Section 2 of this Ordinance as determined by a certified analytical laboratory; sampling and analysis shall be performed in accordance with procedures established in Section 5.3 of this Ordinance and by the EPA pursuant to Section 304(g) of the Act and contained in the 40 CFR, Part 136, as amended;

c) Time and duration of discharge;

d) Average daily and peak wastewater flow rates, including daily, monthly and seasonal variations if any;

e) Site plans, floor plans, mechanical and plumbing plans and details to show all sewers, sewer connections, and appurtenances by the size, location and elevation;

f) Description of activities; facilities and processes on the premises including all materials which are or could be discharged;

g) Any other information as may be deemed by the District to be necessary to evaluate the permit application.

h) An authorized representative of the Industrial User will be required to sign the Permit Application as prescribed in Section 5.5 of this Ordinance.

The District will evaluate the data furnished by the User and may require additional information. After evaluation and acceptance of the data furnished, the District may issue a Wastewater Discharge Permit subject to terms and conditions provided herein.

4.2.3 Modifications

The General Manager may modify a Permit for Users to make the corrections or allowances for changes in the permitted activity listed in this section. Any Permit modification not processed as a minor modification under this section must be made for cause. Minor modifications may only:

(1) Correct typographical errors;

(2) Allow for change in ownership or operational control of a facility where the General Manager determines that no other change in the Permit is necessary, provided that a written agreement containing a specific date for transfer of Permit responsibility, coverage, and liability between the current and new Permittees has been submitted to the General Manager;

(3) Change the construction schedule for a discharger which is a new source. No such change shall affect a discharger's obligation prior to discharge;

(4) Except as provided for above, a Permit may be transferred by the Permittee to new owner or operator only if the Permit has been modified and reissued, or a minor modification make to identify the new Permittee and incorporate such other requirements as may be necessary under this Ordinance.

4.2.4 Conditions

Wastewater Discharge Permits shall be expressly subject to all provisions of this Ordinance and all other applicable regulations, User charges and fees established by the District. Permits may contain the following:

a) Limits on the average and maximum wastewater constituents and characteristics;

b) Limits on average and maximum rate of discharge;

c) Requirements for installation and maintenance of inspection and sampling facilities;

d) Specifications for monitoring programs which may include sampling locations, frequency of sampling, number, types and standards for tests and reporting schedule;

e) Compliance schedules;

f) Requirements for submission of technical reports discharge reports (see Section 5);

g) Requirements for maintaining and retaining records relating to wastewater discharge as specified by the District, and affording District access thereto;

h) Requirements for notification of the District or any new introduction of wastewater constituents or any substantial change in the volume or character of the wastewater constituents being introduced into the wastewater treatment system.

i) Requirements for notification of slug discharges as per Sections 2.3 and 2.4;

j) Other conditions as deemed appropriate by the District to ensure compliance with this Ordinance.

4.2.5 Duration

Permits shall be issued for a specified time period, not to exceed five (5) years. A permit may be issued for a period less than a year or may be stated to expire on a specific date. The User shall submit a new application with appropriate fees 90 days before the existing Permit expires. The terms and conditions of the permit may be subject to modification by the District during the term of the permit as limitations or requirements as identified in Section 2 are modified or other just cause exists. Any changes or new conditions in the permit shall include a reasonable time schedule for compliance.

4.2.6 Transfer

Wastewater Discharge Permits are issued to a specific User for a specific operation. A wastewater discharge permit shall not be reassigned or transferred or sold to a new owner, new User, different premises, or a new or changed operation without the approval of the District. The General Manager may require modification or reissuance of the Permit to change the name of the User and incorporate such other requirements as may be necessary under this Section.

4.2.7 Appeal Procedures

Any person aggrieved by any decision of the General Manager with respect to the issuance of the Wastewater Discharge Permit may appeal to the District by filing with the General Manager. The District shall thereupon fix a time and place for hearing such appeal. The General Manager shall thereupon give notice to such person of the time and place of hearing by serving it personally or by depositing it in the United States Post Office, postage prepaid, addressed to such person at his last known address.

4.2.8 Comment Period

The Permit holder may comment in writing to the General Manager within 30 days from the date of the mailing of the Permit to the holder.

4.2.9 Reopener Clause

The Permit shall be modified to incorporate an applicable standard after the Permit is issued if that standard or limitation is more stringent than the limitation in the Permit, or controls a pollutant not limited in the Permit.

4.2.10 Termination of Permits

The following are causes for terminating a Permit during its term, or for denying a Permit renewal application:

(1) Noncompliance by the Permittee with any condition of the Permit;

(2) The Permittee's failure in the application or during the Permit issuance process to disclose fully all relevant facts, or the Permittee's misrepresentation of any relevant facts at any time;

(3) A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by Permit modification or termination; or

(4) A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the Permit.

4.3 Monitoring Facilities

The District will require to be provided and operated at the User's own expense, monitoring facilities to allow inspection, sampling, and flow measurement of the Building Sewer and/or internal drainage systems. The monitoring facility should normally be situated on the User's premises.

As a condition of the Permit, all discharged industrial wastewater shall pass through a designated sampling location. There shall be ample room in or near such sampling manhole or facility to allow accurate sampling and preparation of samples for analysis. The facility, sampling, and measuring equipment shall be maintained at all times, in a safe and proper operating condition at the expense of the User.

4.4 Pretreatment

The General Manager may require an industrial discharger to provide wastewater pretreatment systems or facilities when the General Manager determines that it is necessary or advisable to treat industrial flows prior to discharge to the sewer, to restrict or prevent the discharge to the sewer of certain waste constituents, to comply with any State discharge or pretreatment requirements, to comply with Federal Pretreatment Standards, or to accomplish any pretreatment result required by the General Manager in order to effectuate the purposes of the Ordinance. Any pretreatment facilities required by the General Manager shall be provided and maintained at the expense of the industrial wastewater discharger. Pretreatment systems or facilities shall not be installed or operated without the prior written approval of the General Manager. The requirement for such approval, however, shall not absolve the industrial discharger of the responsibility for meeting any industrial wastewater discharge limitation imposed by the District or by the State or Federal Government. If inspections or other information reveal that pretreatment systems and facilities are not installed or operated in conformance with the plans and procedures submitted to and approved by the District, or are not operated in compliance with the discharge requirements and limitations

imposed by the District, the industrial discharger shall make such modifications as are necessary to meet such requirements. All pretreatment systems determined by the General Manager to require engineering design shall have plans prepared and signed by a civil, chemical, or mechanical engineer registered in the State of California.

Gravity separation interceptors, control manholes or other monitoring facilities, and spill containment systems, may be required by the General Manager as he deems necessary to remove prohibited settleable and floatable solids, to facilitate inspection, flow measurement and sampling, and to prevent discharge to the sewer of quantities of prohibited or restricted materials. Spill containment systems shall conform to guidelines established by the General Manager.

4.5 Confidential Information

Except for data determined to be confidential under 40 CFR Part 2, information and data on a User obtained from reports, questionnaires, permit applications, permits, effluent data and monitoring programs and from inspections shall be available to the public or other governmental agency without restriction unless the User specifically requests and is able to demonstrate to the satisfaction of the District that the release of such information would divulge information, processes or methods of production entitled to protection as trade secrets of the User.

When requested by the person furnishing a report, the portions of a report which might disclose trade secrets or secret processes shall not be made available upon written request to governmental agencies for uses related to this Ordinance, the National Pollutant Discharge Elimination System (NPDES) Permit, State Disposal System permit and/or the Pretreatment Programs; provided, however, that such portions of a report shall be available for use by the State or any state agency in judicial review or enforcement proceedings involving the person furnishing the report. Wastewater constituents and characteristics will not be recognized as confidential information.

Information accepted by the District as confidential, shall not be transmitted to any governmental agency or to the general public by the District until and unless a ten-day notification is given to the User and approved by the User.

4.6 Separation of Wastes

All domestic wastewaters from the rest rooms, showers, drinking fountains, and similar sources shall be kept separate from all industrial wastewaters until the industrial wastewaters have passed through any required pretreatment facility or device and the industrial wastewater monitoring facility. The General Manager may waive this condition and may use the combined wastewater formula to determine discharge Permit limits.

4.7 Grease Interceptors and Gravity Separating Devices

4.7.1 Restaurants

All restaurants or food service facilities, except those identified in Section 4.2.1 shall install an approved grease interceptor which is of sufficient size so as to prevent excessive discharges of grease into the District's sewerage system. The interceptor

size shall be based on the most recent version of the Uniform Plumbing Code (UPC). The grease interceptor shall be easily accessible for inspection by the General Manager. Exceptions to the installation of a grease interceptor shall be determined on a case-by-case basis by the General Manager. The General Manager shall take into account the following items when determining exceptions:

(1) Size of restaurant;
(2) Meals served per day;
(3) Daily water usage based upon water bills;
(4) Seating capacity;
(5) Dishwasher and garbage disposal facilities on-hand; and
(6) Other criteria the General Manager deems applicable.

4.7.2 Vehicle Service Stations and Garages

Vehicle service stations or garages shall be required to install a gravity separating device designed to prevent the discharge of sand, silt, oil and grease to the District's sewerage system.

4.7.3 Laundries and Dry Cleaners

After the effective date of this Ordinance, all new laundries and dry cleaners or similar establishments shall install a gravity separating device of a size and design approved by the General Manager. They shall also install any other pretreatment facility required by the General Manager to ensure their compliance with all requirements and specifications of this Ordinance. Establishments in existence prior to this date shall install an appropriate pretreatment system if in the opinion of the General Manager the system is warranted.

4.7.4 Existing Gravity Separating Device and Grease Interceptors

If the General Manager finds that a grease interceptor or gravity separating device installed prior to the effective date of this Ordinance is incapable or retaining adequately the grease or sand and oil in the wastewater flow from a service station, restaurant or similar establishment, the General Manager shall give the proprietor a written notice requiring that an adequate interceptor or gravity separating device be installed within a reasonable time period.

4.7.5 Maintenance of Grease Interceptors and Gravity Separating Devices

Any grease interceptor or gravity separating device required by this Ordinance shall be readily accessible for inspection and properly maintained to assure that the accumulations of grease or sand and oil do not impair its efficiency or pass out with the effluent. All Users required to use and maintain a grease interceptor or gravity separating device shall maintain a maintenance record. This record shall include the date, the name of the person who cleaned it and the disposal site of the waste. The report shall be reviewed by the General Manager at each routine inspection. Persons hauling wastes and wastewater removed from these interceptors or gravity separating devices shall be registered to do so by the proper permitting agency. An interceptor or gravity separating device shall not be considered properly maintained if material accumulations total more than 25 percent of the operating fluid capacity. The District

will endeavor to inspect all grease interceptors and gravity separating device at least yearly. If it is found that it is improperly maintained or adequate records are not being kept, a warning will be issued to the Owner and/or User of the property. If on subsequent inspections it is found that one of the above conditions continues to exist, a fine shall be levied against the owner and/or User of the property. (See Section 7).

4.7.6 Use of Chemical Additives

The use of chemical, biological, or enzymatic additives to emulsify or digest accumulated grease by-products is prohibited without the consent of the General Manager. All additives will be considered on a case-by-case basis. Approval criteria includes an approved on-site test program to be provided by and at the expense of the User.

4.8 Duty to Comply

The User must comply with all conditions of the Permit. Any Permit noncompliance constitutes a violation of the Ordinance and is grounds for enforcement action as provided in Section 6.

4.9 Duty to Mitigate

The User shall take all reasonable steps to minimize or prevent any discharge in violation of the Permit which has a reasonable likelihood of adversely affecting human health or the environment.

4.10 Proper Operation and Maintenance

The User shall at all times properly operate and maintain all facilities and systems or used by the User to achieve compliance with the conditions of the Permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a User only when the operation is necessary to achieve compliance with conditions of the Permit.

4.11 Permit Actions

The Permit may be modified, suspended, or revoked for cause. The filing of a request by the User for a Permit modification, reissuance, or a notification of planned changes or anticipated noncompliance does not prevent any Permit condition.

4.12 Duty to Provide Information

The User shall furnish to the General Manager, within a reasonable time, any information which the General Manager may request to determine whether cause exists for modifying, revoking and reissuing, or to determine compliance with the Permit. The User shall also furnish to the General Manager upon request, copies of records required to be kept by the Permit.

4.13 Civil and Criminal Liability

Except as provided in Sections 2.2 through 2.4, nothing in the Permit shall be construed to relieve the Permittee from civil or criminal penalties for noncompliance.

SECTION 5 - MONITORING, REPORTING, NOTIFICATION, AND INSPECTION REQUIREMENTS

5.1 Reporting Requirements For Permittee

5.1.1 Compliance Date Report For Categorical Users

Within 90 days following the date for final compliance with applicable pretreatment standards or, in the case of a New Source, following commencement of the introduction of wastewater into the POTW, any User subject to pretreatment standards and requirements shall submit to the General Manager a report indicating the nature and concentration of all pollutants in the discharge from the regulated process which are limited by pretreatment standards and requirements. The report shall also include all applicable reporting requirements as listed in Sections 5.2 through 5.8 of this Ordinance. The report shall state whether the applicable pretreatment standards or requirements are being met on a consistent basis and, if not, what additional Operation & Maintenance and/or pretreatment is necessary to bring the User into compliance with the applicable pretreatment standards or requirements. This statement shall be signed by an authorized representative of the Industrial User using the certification presented in Section 5.5, and certified to by a qualified professional.

5.1.2 Periodic Compliance Reports for Categorical Users

Any User subject to a pretreatment standard, after the compliance date of such pretreatment standard, or, in the case of a New Source, after commencement of the discharge into the POTW, shall submit to the General Manager during the months of June and December, a report indicating the nature and concentration, of pollutants in the effluent which are limited by such pretreatment standards. The report shall also include all applicable reporting requirements as listed in Sections 5.2 through 5.8. At the discretion of the General Manager and in consideration of such factors as local high or low flow rates, holidays, budget cycles, etc., the General Manager may agree to alter the months during which the above reports are to be submitted. This report shall be signed by an Authorized Representative of the Industrial User using the declaration indicated in Section 5.5, and certified by a qualified professional.

5.2 Inspection and Sampling

The District shall inspect the facilities of any User to ascertain whether the purpose of this Ordinance is being met and all requirements are being complied with. Persons or occupants of premises where wastewater is created or discharged shall allow the District or their representative ready access at all reasonable times to all parts of the premises for the purposes of inspection, sampling, examining or copying any records that must be kept under conditions of the Permit, and/or in the performance of any of their duties. Inspection may include any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under the Permit.

The District shall have the right to set up on the User's property such devices as are necessary to conduct sampling inspection, compliance monitoring and/or metering operations for any substances or parameters at any location for the purposes of assuring Permit compliance or as otherwise authorized by the Ordinance.

Where a User has security measures in force which would require proper identification and clearance before entry into their premises, the User shall make necessary arrangements with their security guards so that upon presentation of suitable identification, personnel from the District will be permitted to enter, without delay, for the purposes of performing their specific responsibilities.

5.3 Monitoring, Sampling and Records

(1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. Samples should be taken immediately downstream from pretreatment facilities if such exist or immediately downstream from the process if no pretreatment exists.

(2) The User shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the Permit, and records of all data used to complete the application for the Permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the General Manager at any time.

(3) Records of monitoring information shall include:

(a) The date, exact place, and time of sampling or measurements;
(b) The individual(s) who performed the sampling or measurements
(c) The date(s) analyses were performed;
(d) The individual(s) who performed the analyses;
(e) The analytical techniques or methods used; and
(f) The results of such analyses.

(4) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in the Permit.

(5) A minimum of four (4) grab samples must be used for pH, cyanide, total phenols, oil and grease, sulfide, and volatile organics. For all other pollutants, 24-hour composite samples must be obtained through flow proportional composite sampling techniques where feasible. As specified in the User's Permit, the General Manager may permit 24-hour time composite sampling where flow proportioned composite sampling for any User that demonstrates flow proportional sampling is infeasible.

(6) Complete records shall be kept by each permittee who owns and operates a grease interceptor. Records shall include, but are not limited to, interceptor pumping amounts, pumping frequency and waste grease

disposal amounts and frequency. The permittee shall maintain grease records for no less than three years and shall provide copies of any kept record for the District upon request.

5.4 Reporting Requirements

An authorized representative of the Industrial User will be required to sign all reports submitted by the User as prescribed in Section 5.5 of this Ordinance.

5.4.1 Planned Changes

The Permittee shall give notice to the General Manager as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source, the term "new source" means any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced after the publication of proposed Pretreatment Standards under Section 307(c) of the Clean Water Act which will be applicable to such source if such Standards are thereafter promulgated in accordance with that section; or,

(2) Any anticipated facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants must be reported by submission of a new Permit application or, if such changes will not violate the discharge limitations specified in the Permit, by notice to the District. Following such notice, the Permit may be modified to specify and limit any pollutants not previously limited or change existing limits or other requirements. Approval must be obtained prior to any new discharges. The User shall allow 180 days for review.

5.4.2 Anticipated Noncompliance

The User shall give advance notice to the General Manager of any planned changes in the permitted facility or activity which may result in noncompliance with Permit requirements.

5.4.3 Self Monitoring Reports

Monitoring results shall be reported at the intervals specified in the Permit.

(1) Monitoring results must be reported in a Self-Monitoring Report (SMR);

(2) If the User monitors any pollutant more frequently than required by the Permit, using test procedures approved under 40 CFR Part 136 or as specified in the Permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the SMR;

(3) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the General Manager in the Permit.

5.4.4 Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim final requirements contained in any compliance schedule of the Permit shall be submitted no later than 14 days following each schedule date.

5.5 Signatory Requirement

All applications, reports, or information submitted to the General Manager shall be signed and certified by an Authorized Representative of the Industrial User. These submittals shall be subject to the provision of 18 U.S.C. Section 1001 relating to false statements and fraud and the provisions of Section 309(c)(2) of the Clean Water Act governing false statements.

Each submittal shall contain the following completed certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Executed on the _____ day of _____ at _____

_____ [Signature]

_____ [Typed Name]

_____ [Title]

5.6 Notification of Bypass

5.6.1 Anticipated Bypass

If the Permittee knows in advance of the need for a bypass, it shall submit prior oral and written notice to the General Manager, if possible at least ten days before the date of the bypass.

5.6.2 Unanticipated Bypass

The Permittee shall submit notification of an unanticipated bypass as required in Section 2.4 of this Ordinance.

5.7 Notification of Spill or Slug Loading

The Permittee shall submit notification of a spill or slug loading to the sewerage system as required in Section 2.4 of this Ordinance.

5.8 Notification of Hazardous Waste Discharge

An Industrial User shall notify the General Manager, the EPA Regional Waste Management Division Director, and State hazardous waste authorities in writing of any discharge in the POTW of a substance, which, if otherwise disposed of, would be hazardous waste under 40 CFR Part 261. Such notification must include:

(1) The name of the hazardous waste as set forth in 40 CFR Part 261;

(2) The EPA hazardous waste number;
(3) The type of discharge (continuous, batch, or defined other); and
(4) Certification that the User has a program in place to reduce the volume and toxicity of hazardous wastes generated to the degree it has determined to be economically practical.

5.9 Other Noncompliance Notification

The User shall report all instances of noncompliance at the time monitoring reports are submitted. The reports shall contain the information listed in Section 2.4.

SECTION 6 - ENFORCEMENT

6.1 Notification of Violation

Whenever the District finds that any User has violated or is violating Wastewater Discharge Permit terms, conditions, limitations, requirements, and instructions, including any Federal Pretreatment Standards or any effluent limits adopted by the District or required by state law, or any prohibition, limitation of requirements contained within this Ordinance, the District may serve upon such person a written Notification of Violation (NOV) stating the nature of the violation. The NOV shall be served either personally or by certified mail, return receipt requested. The NOV may include but not be limited to:

(1) An order for corrective action;
(2) A schedule to attain compliance;
(3) An order to show cause either in writing or in person;
(4) An order to cease discharge;
(5) A suspension or revocation of the user's permit; and/or
(6) An order to respond in writing to the allegations.

Additional Orders and changes to a suspension or revocation may follow the initial Order at the discretion of the General Manager or as additional information becomes available. Within 30 days of the date of the notice, a plan for the satisfactory correction thereof or appropriate response shall be submitted to the District by the User.

Upon review of a response to NOV, the General Manager may accept the response as complete and satisfactory, or incomplete and unsatisfactory.

If the response to the NOV is complete and satisfactory, the General Manager shall consider the issue regarding the NOV closed. The General Manager will notify the User in writing regarding the closure of the NOV. The closure of the NOV does not preclude further enforcement action.

If the response to the NOV is incomplete and unsatisfactory, the General Manager shall report those findings to the Board of Directors who may, but are not limited to, require any nonsubmitted or additional information, suspend or revoke the User's Permit, order the User to cease discharge, and/or seek civil penalties as they apply to the violations.

6.2 Notification of Permit Suspension

The District may suspend the wastewater treatment service and/or a Wastewater Discharge Permit when such suspension is necessary, in the opinion of the District, in order to stop an actual or threatened discharge which presents or may present: an imminent or substantial endangerment to the health or welfare of persons or to the environment; causes interference to or pass through of the POTW; or causes the District to violate any condition of its NPDES Permit.

Any person notified of a suspension of the wastewater treatment service and/or the Wastewater Discharge Permit shall immediately stop or eliminate the discharge. In the event of a failure of the person to comply voluntarily with the suspension order, the District shall take such steps as deemed necessary including immediate severance of the sewer connection, to prevent or minimize damage to the POTW system or endangerment to any individuals. A detailed written statement submitted by the User describing the causes of the harmful discharge and the measures taken to prevent any future occurrence shall be submitted to the District within 15 days of the date of occurrence.

The District shall, by written statement, reinstate the Wastewater Discharge Permit and/or the wastewater treatment service upon proof to the satisfaction of the General Manager of the elimination of the non-complying discharge. Costs incurred by the District in suspending the Permit and disconnecting the industrial sewer shall be paid by the User before reinstatement of the Permit.

6.3 Revocation of Permit

The General Manager may revoke a Permit, in accordance with the procedures of Section 6 of this Ordinance, upon finding that the Permit holder has violated any provisions of this Ordinance which includes but is not limited to:

(1) Failure to factually report the wastewater constituents and characteristics of the User's discharge;
(2) Failure to report significant changes in operations, or wastewater constituents and characteristics that might impact the User's discharge;

(3) Refusal of reasonable access to the User's premises for the purpose of inspection or monitoring; or,
(4) Violation of conditions of the Permit.

Any Permit holder whose Permit has been revoked shall immediately cease all discharge of any industrial wastewater to the POTW.

In the event of a failure of the User to comply voluntarily with the Notification of Permit revocation, the General Manager shall take such steps as necessary to insure compliance.

Before any further discharge of industrial wastewater may be made by the User, he must apply for and obtain a new Permit for Industrial Wastewater Discharge, pay all charges that would be required upon initial application, and pay all delinquent fees, charges and such other sums as the Permit holder may owe to the District. Costs incurred by the District in revoking the Permit and disconnecting the industrial sewer shall be paid by the User before issuance of a new Permit.

6.4 Legal Action

If any person discharges sewage, industrial wastes or other wastes into the District's wastewater disposal system contrary to the provisions of this Ordinance, Federal or State Pretreatment Requirements, or any order of the District, such discharge is hereby declared to be a public nuisance and the District legal counsel upon order by the Board of Directors may commence an action for appropriate legal and/or equitable relief in the Superior Court of this county. In any such action the District shall be entitled to an award of court cost and attorney's fees incurred by it in connection therewith.

SECTION 7 - PENALTY: COSTS

7.1 Civil Penalties

Any User who is found to have violated an Order of the Board of Directors or who willfully or negligently failed to comply with any provision of this Ordinance and/or any requirement of a Notification of Violation written and issued in compliance with this Ordinance, and the order, rules, regulations and permits issued hereunder, shall be fined no more than Six Thousand Dollars ($6,000) per day for each offense and/or violation. Each day on which a violation shall occur or continue shall be deemed a separate and distinct offense. In addition to the penalties provided herein, the District may recover reasonable attorney's fees, court costs, court reporters' fees and other expenses of litigation by appropriate suit at law against the person found to have violated this Ordinance or the orders, rules, regulations, and permits issued hereunder. These provisions and penalties are pursuant to in accordance with the Clean Water Act of 1987 (40 CFR Part) and U.S. Government Code Sections 54739-54740.

The civil penalties for non-submittal of reports, non-compliance with the reporting and/or application requirements required in this Ordinance or Permit, or failure to complete an increment of progress of a compliance schedule, shall not exceed One Thousand Dollars ($1,000) for each day in which the requirements are not fulfilled.

7.2 Falsifying Information

Any person who knowingly makes any false statement, representation or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to this Ordinance, or Wastewater Discharge Permit, or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required under this Ordinance, shall, be fined no more than Six Thousand Dollars ($6,000). These provisions and penalties are pursuant to and in accordance with U.S. Government Code Sections 54739-54740.

7.3 Collection of Fees

The amount of any fee or charge imposed by the provisions of this Ordinance including interest and penalty assessments shall be deemed a debt owed to the District. An action in the name of the District may be commenced in any court of competent jurisdiction for the amount of any delinquent fees or charges and if legal action is brought by the District or its assignee to enforce collection of any amount charged and due under this chapter, any judgment rendered in favor of the District shall include costs of suit incurred by the District or its assignee including a reasonable attorney's fee.

7.4 Termination of Service

In order to effect its powers, the District may enter upon private property for the purpose of inspection and maintenance of sanitary and waste disposal facilities and terminate service to a property in which a violation of any rule, regulation, or of this Ordinance is found to exist.

Prior to termination of service, however, the District Board of Directors shall notify, in writing, the Owner of such property that service is intended to be so terminated and conduct a hearing thereon as herein provided. Such notice will be mailed to the Owner at the address shown on the Permit. The notice shall state the date of proposed termination of service and the reasons therefore and the date the Board of Directors will hold a hearing upon such intended termination. Such hearing will not be held less than ten (10) days subsequent to the giving of notice as herein required.

SECTION 8 - SEVERABILITY

If any provision, paragraph, word, section or article of this Ordinance is invalidated by any court of competent jurisdiction, the remaining provisions, paragraphs, words, sections, and chapters shall not be affected and shall continue in full force and effect.

SECTION 9 - CONFLICT

All other Ordinances and parts of other Ordinances inconsistent or conflicting with any part of this Ordinance are hereby repealed to the extent of such inconsistency or conflict.

APPENDIX 07-3

Pebble Beach Community Services District

Public Education and Outreach

ClogBusters.org

Southern Monterey Bay
Dischargers Group

April 2, 2015

- En Español
- Report a Spill
- Additional Resources
- About Clog Busters
- Contact Us

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Stop the Clog Like 21

STOP THE CLOG

- Do you have frequent sewer line backups?
- Do you call the plumber more than twice a month?
- Do roots grow in your sewer line?

If so, you could be a victim of "The Clog."

Cooking fat, oil and grease (FOG) is a leading cause of sewer pipe clogs. FOGs cool and congeal on the inner walls of sewer lines and on tree roots that grow in them, much like arterial sclerosis in our bodies. The resulting clog restricts sewage flow, which can back up in your home or property, or even in the street. In fact, kitchen grease is a leading cause of sewer spills into the Monterey Bay.

To ensure the success of their sewer spill prevention plans, the Southern Monterey Bay Dischargers Group developed a recipe for fat-free and clog-free sewers. This recipe is part of the public outreach program for residential dischargers to a municipal sewer collection system.

HOW DO SEWER CLOGS CAUSE SPILLS & BEACH CLOSURES?

Most storm drains flow to the Monterey Bay National Marine Sanctuary. ... read more

HOW CAN I HELP?

Six tips for clean drains ... read more

GOT A CLOG?

On plumbers, snakes, and other clog removal methods ... read more

WHAT ELSE IS BEING DONE?

Businesses play an important role, too ... read more

WATCH THE LATEST TV ANNOUNCEMENT

ClogBusters

STOP THE CLOG

WDR FOG Public Education Program
FY18/19 Campaign Creative

Website

SOUTHERN MONTEREY BAY DISCHARGERS GROUP

MEMBERS: California American Water, Carmel Area Wastewater District, Castroville Community Services District, Marina Coast Water District, City of Monterey, County of Monterey, City of Pacific Grove, Pebble Beach Community Service District, City of Salinas, and Seaside County Sanitation District

Print Promotions

Digital Promotions

SOUTHERN MONTEREY BAY DISCHARGERS GROUP

MEMBERS: California American Water, Carmel Area Wastewater District, Castroville Community Services District, Marina Coast Water District, City of Monterey, County of Monterey, City of Pacific Grove, Pebble Beach Community Service District, City of Salinas, and Seaside County Sanitation District

Social Media Promotions

Example from December 2018

Happy #NationalCookieDay! While you're enjoying your holiday baking, be sure to keep fats and oils out of the drain to protect your pipes and the city's infrastructure! Items like butter, shortening, and oil harden on pipes, creating costly clogs. Messed up the batter? Done frying your cannoli shells? Always remember to Scrape It or Can It, but either way Trash It!

Radio Advertising

English Spot

Did you know pouring cooking oils and grease down your drain cause clogs? Avoid having a plumber join your holidays by remembering to Scrape It. Can It. Trash It. Keep our pipes clean and the environment safe and have an even happier holiday! More at ClogBusters.org

Spanish Spot

¿Sabía que tirar el aceite de concinar y la grasa por su drenaje causa mucho daño? Evite la visita de un fontanero. Depositelos en un envase y luego tirelos en las basura. Mantenga nuestras alcantarillas y medio ambiente limpio. Detalles en ClogBusters.org

TV Advertising

English Spot

Did you know the leading cause of sewer back-ups is in your kitchen right now? That's right. Cooking oil and grease harden in drain pipes blocking the flow of water. These blockages can lead to back-ups in your home or cause overflow into storm drains which can lead to local creeks and the Bay. Fill your home with cheer and tasty food, not clogs! Keep grease out of drains and don't let the clog spoil your day. Scrape it, can it, trash it! Learn more at Clog Busters dot org.
Final video can be seen at:
http://clogbusters.org/resources.php

Spanish Spot

Final video can be seen at:
http://clogbusters.org/clogbusters_espanol.php

WDR FOG Public Education Program
FY18/19 Advertising and Communication Campaign

Advertising Campaign

Media Type	Budget Detail Summary	% of Total Budget by Media
TV		
KSBW 8 NBC	63 ads (combo :30s and 15s): Winter holidays and Earth Day	**36%**
Estrella TV Costa Central	200 ads (:30s): Winter holidays	
Print		
Monterey County Weekly	1 ad (1/3 pg): Eat+Drink Magazine 5 ads (1/6 pg): MC Weekly	**26%**
Pine Cone	2 ads (1/5 pg)*	
Radio		
I Heart Media	2 weeks (Total Traffic and Weather): 60 :5s spots, 60 :15s spots	**7%**
La Preciosa 100.7 & 100.9	4 weeks: 60 :30s spots	
Digital		
KSBW Website and App	1 month (165,000 Impressions)	**29%**
Monterey County Weekly Website	3 weeks (web banner rotation)	
Monterey County Weekly e-Blast	1 e-Blast (top position)	
I Heart Media Social Media Amplification	105,000 Facebook Impressions	
Facebook	6,000 Post Boost Impressions	
Website		
Clogbusters.org	Complete site redesign	**1%**
Staff/Misc.		
Advertising Creative	Stock photography	**1%**
TOTAL COSTS	**$13,311.43**	**100%**
CAWD and PBCSD paid for an additional 4 ads in the Pine Cone during the month of December 2018		

What's new in FOG outreach for FY 2018-19?

+TV Advertising

The Clog Busters commercial was reformatted for widescreen viewing (a required change for compatibility with the television company's specs) and was slightly modified to create a :30s holiday commercial and :15s abbreviated commercial for year-round use. With the addition of the year-round commercial, advertising was spread over winter and spring, specifically around the winter holidays and Earth Day.

+ Print Advertising

All print and digital ads ran in full color with updated graphics.

+ Radio Advertising

Radio spots were added back into the advertising rotation to ensure a full media experience and expand audience reach. Spots ran in both English and Spanish.

What's new in FOG outreach for FY 2018-19? cont.

+ Digital Advertising
The media breakdown in FY2018-19 saw an increase in digital advertising. This included the addition of social media marketing

+ Website Modernization
In 2018, ClogBusters.org underwent a full modernization. Utilizing best practices in web design and content management, changes were made to enhance the user experience, including: (1) a complete redesign to the visual layout, (2) navigational restructuring for ease of use, (3) refocused content for today's reader, and (4) an upgrade to a responsive system that can accommodate all device types.

New 2018 Site

Previous 2019 Site

Looking Forward

+ Budget: The Clog Busters budget will remain at $18,000 for FY 2018-19 fiscal year. While recent year's have not seen the group utilize the full amount, budgeting for this figure allows for needed advertising adaptations and future rates. Every effort will be made to reach the greatest number of people through the most efficient and economic platforms.

+ Population Numbers: Census Research will take place in 2020. Population numbers will be updated when new information is released.

+ Video: As more and more users use digital outlets as their primary media, the addition of educational videos will be explored as possible resources.

Don't flush labeling: now it's the law!

As of July 2022, all wipes manufacturers are required to print Do Not Flush labels on their products.

For decades, wipes have been marketed as flushable despite the fact that they are plastic products which do not break down in the sewer system, and cause microplastic pollution in oceans and waterways. Since the introduction of wipes, municipalities, wastewater agencies, and consumers have shouldered the burden of billions of dollars in sewer infrastructure damage, home backups, environmental fines, and labor cost to extricate wipes from clogged machinery and pipelines. Treatment plants must filter wipes from the wastewater stream and truck them to the landfill where they should have gone in the first place, creating a large carbon footprint.

Now, thanks to the passage of AB 818, California has the strongest Do Not Flush labeling and public education requirements in the country for manufacturers of baby and adult wipes, cosmetic wipes, and cleaning wipes.

Toilets aren't trash cans; please put wipes here, so they don't end up here

Help us spread the word

Please flush nothing but "The Three Ps:" pee, poop, and toilet paper! That means no wipes, tampons, facial tissue, paper towels, cat litter, fats, oils, grease–nothing but human waste and toilet paper. Consider buying an inexpensive under-seat bidet to save money on toilet paper, wipes, and plumbing repairs. Together, we can protect the environment and our wastewater system!

Statewide award *(Cont. from page 1)*

what I've learned to my fellow coworkers."

During his many years of service Kelvin has been known for his positive attitude, diligence, and enthusiastic support of his coworkers. The dedication, professionalism, and teamwork of our collections crew are key to the District's stellar record for safety, regulatory compliance, and low incidence of sewer spills. Thanks to them, the District has been a recipient of the CWEA Collection System of the Year award for the Monterey Bay section in 2013 and 2015.

"After 27 years I still love going to work each day to serve the residents of Pebble Beach," said Kelvin. "The maintenance crew here is second to none, and I wouldn't trade working with them for anything!"

Sewer rehab *(Cont. from page 1)*

needing replacement, to keep the project as cost-effective as possible.

We will be using the pipe bursting method for the majority of installation, in which the existing sewer line is broken and expanded at the same time the new pipeline is pulled into place, so there will be minimal trenching and disturbance. PBCSD will notify affected residents well before any construction begins.

The District has already replaced about 20 percent of Pebble Beach sewer main line, targeting areas with chronic problems. Once the new sewer project is complete, approximately one-third of our community's total 80 miles of sewer line will be rehabilitated or replaced.

Meet the Staff

Chris Simmons, Assistant Engineer

We welcome Chris Simmons to the PBCSD family as our new Assistant Engineer. Chris acts as liaison between our engineering and maintenance departments to keep the District's wastewater collection and water reclamation systems running efficiently.

Born and raised in Pacific Grove, Chris returned to his home town to start his new position with the District. Most recently, he served as a water resources engineer for Stantec consulting services in their Sacramento office. His experience working on reservoir projects will be invaluable to support the operation of our local Forest Lake Reservoir. Chris has already developed a map-based system to track the District's sewer line cleaning activities to better manage our 80 miles of main line infrastructure. Our maintenance crew can now input data while out in the field so that information and assessments are always accurate and up-to-date.

"Working at PBCSD is rewarding on so many levels," said Chris. "Everyone supports each other, and it's amazing how much we accomplish. The District staff is a small but mighty team! It's a great feeling to be back in my hometown serving the community. Whether I'm working outside or inside the office, it's a beautiful place to be."

If you have questions about construction projects in the forest, please feel free to call Chris at 647-5609.

MIX Paper from responsible sources FSC® C104985

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APPENDIX 08-1

Pebble Beach Community Services District

1986 Pump Station Rehabilitation Study

CHAPTER 4

WASTEWATER FLOW PROJECTIONS AND FACILITIES CAPACITY EVALUATION

GENERAL

Wastewater flow projections for the District at the time of design of the pump stations were based on typical growth patterns in the region. Growth in the Del Monte Forest has historically been carefully controlled to maintain the unique quality of the area. The Del Monte Forest Land Use Plan/Local Coastal Program (LUP/LCP) for this area is very definitive in the amount and type of growth which will ultimately be allowed in the area. Although the LUP/LCP can be changed, it is not likely that growth beyond that currently planned will be contemplated. Large areas of dedicated open space and golf courses, and generally low density development, limit the potential for additional development in the District beyond that currently allowed by the LUP/LCP.

As shown in Table 2.1 in Chapter 2, the pump stations were designed based on a present pump capacity and a future pump capacity. Pump stations P-3, P-4 and P-5 were designed to meet the future pumping capacity criteria, while the remaining stations were designed at an intermediate capacity with planned capacity increase to the future criteria when necessary at a future date. Although the capacities of the stations probably may seem unnecessarily high considering average flows, wet weather instantaneous peak flows due to infiltration and inflow in the collection system may approach or exceed the pumping capacity of some stations. However, the pumping capacity design criteria for the pump stations probably assumed greater growth than actually occurred or is expected to occur and some of the stations may therefore have excess capacity.

The objective of this chapter is to ascertai.. the ultimate pumping requirements at each station, considering future growth and I/I, to assure that the stations have adequate pumping capacity to meet ultimate demands. Some stations serving areas which have experienced greater than anticipated growth or high levels of I/I may be approaching limitations on pumping capacity. Decreasing pump capacities as replacement occurs or for energy conservation will also be considered if appropriate for stations with excess pumping capacity.

TOTAL DISTRICT FLOW PROJECTION

The total average daily flow from the District varies through the year as a function primarily of rainfall and to a lesser extent tourism. The total average daily flow by month for the past year is shown in Table 4.1. The average flow over the year is 764,000 gpd, with an average dry weather flow (ADWF) of 672,000 gpd (May through October). The average wet weather flow (AWWF) is 856,000 gpd (November through

TABLE 4.1

PBCSD AVERAGE DAILY FLOWS

Month	Average (1,000 gpd)	Peak Day (1,000 gpd)	Minimum Day (1,000 gpd)
July 1985	707	--	--
August	664	--	--
September	626	1,002	520
October	598	758	519
November	694	1,155	550
December	700	1,006	--
January 1986	728	864	652
February	1,009	1,802	688
March	1,200	1,884	748
April	802	928	736
May	754	799	691
June	680	726	617

NOTES: Average Dry Weather Flow (ADWF) is 672,000 gpd
Average Wet Weather Flow (AWWF) is 856,000 gpd
Average Annual Flow is 764,000 gpd

April), or 127 percent of average dry weather flow. Note in Table 4.1 that the average monthly flow for the wet weather month of March was more than twice the average flow for the dry weather month of October.

The ultimate wastewater flow from the District will consist of the current flow plus that generated by (1) development of existing legal lots of record, (2) development in accordance with the approved Land Use Plan/Local Coastal Program, and (3) addition of senior citizen housing units to lots with existing single family dwelling units or with new dwelling unit construction. Due to a major drive by the District over the last several years, essentially all existing residences have abandoned their septic tanks and connected to the sewer systems. Therefore, little or no additional flow is expected from existing dwelling units connecting to the collection system.

The average dry weather unit flow for a single family dwelling was determined to be 233 gpd. This value was calculated by developing estimated unit flows for non-residential development in relation to the single family dwelling unit and dividing the total flow by the current number of equivalent single family units. Table 4.2 summarizes the calculation for residential unit flow and lists by type and number the current sewage producers within the District. The average dry weather unit flow corresponds to a wet weather unit flow of 297 gpd, calculated as shown in Table 4.2.

Table 4.3 shows the wastewater flow projections for future development within the District based on the current LUP/LCP for Del Monte Forest. The dry weather unit flow is used for the flow projections in Table 4.3 assuming new development will primarily utilize existing sewers and some new, watertight collector sewers. New development is therefore not expected to increase total District I/I flow. From Table 4.3, the projected additional wastewater flow from future development within the District is 304,000 gpd.

The term "senior citizen housing," or "granny housing," is used to refer to the construction of a separate housing unit on a single family residential lot. The senior citizen housing unit typically includes features which make it independent of the main dwelling unit

TABLE 4.2
SUMMARY OF CURRENT USERS AND UNIT FLOW DETERMINATION

Source	Unit	Number of Units	ERDUs[a] Per Unit	Total No. ERDUs Per Source	ADWF Unit Flow (gpd)	ADWF Total Flow (gpd)	AWWF Unit Flow (gpd)	AWWF Total Flow (gpd)
Residential								
Dwellings	-	2,566	1	2,566.0	233.0[b]	597,900	297.0	762,100
Motel/Hotel								
Private	room	2	1/5	0.4	46.6	100	59.4	100
Commercial	room	161	1/2	80.5	116.5	18,800	148.5	23,900
School	boarding student	140[c]	1/4	35.0	58.3	8,200	74.3	10,400
	day student	250[c]	1/20	12.5	11.7	2,900	14.9	3,700
Restaurant/Bar	seat	307	1/15	20.5	15.5	4,800	19.8	6,100
Dining Rooms								
Private	seat	679	1/50	13.6	4.7	3,200	5.9	4,000
Commercial	seat	340	1/20	17.0	11.7	4,000	14.9	5,100
Gas Station	pump	3	2	6.0	466.0	1,400	594.0	1,800
Misc. Commercial								
1-10 Employees	-	9	1	9.0	233.0	2,100	297.0	2,700
11-20 Employees	-	1	2	2.0	466.0	500	594.0	600
Post Office	-	1	1	1.0	233.0	200	297.0	300
Misc. Restrooms	toilet	12	1/8	1.5	29.1	300	37.1	400
Laundry	-	1	116	116.0	27,000[c]	27,000	34,500	34,500
Subtotal				2,881.0		672,000[d]		856,000[d]
NCGA Poppy Hills[e]	seat	70	1/15	4.7	15.5	1,100	19.8	1,400

[a] Equivalent Residential Dwelling Units
[b] ERDU unit flow = total flow/total ERDU
[c] Based on historical trends
[d] From Table 4.1
[e] Not included in Table 4.1 flow data

TABLE 4.3

PEBBLE BEACH COMMUNITY SERVICES DISTRICT
PROJECTED WASTEWATER FLOWS FOR LUP/LCP FUTURE DEVELOPMENT

Planning Area[a]	Unit[a]	Number[a] of units	Unit Flow (gpd)	Projected Flow (gpd)
Spanish Bay	Spanish Bay Resort	--	--	49,400[b]
	Condominiums	80	233	18,600
	SFD[c]	144	233	33,600
Spyglass Cypress	SFD	249	233	58,000
Middle Fork	SFD	131	233	30,500
Pescadero	SFD	215	233	50,100
Huckleberry Hill	SFD	78	233	18,200
	Commercial	--	233	500
Gowen Cypress	SFD	86	233	20,000
Pebble Beach	SFD	109	233	25,400
TOTAL				304,000

a Del Monte Forest Area LUP/LCP
b Spanish Bay Sewage Disposal Analysis, prepared by Bestor Engineers 4 June 1986
c SFD = Single Family Dwelling

such as a bathroom and kitchen. These units are therefore capable of producing significant sewage flows in addition to that produced by the main unit.

State law requires cities and counties to allow the construction of senior citizen housing units in any zoning district that allows residential development. State law does allow establishment of exclusionary zones where senior citizen units are not allowed based on factors such as availability of sewerage capacity and water supply,

traffic density and environmental considerations. Several organizations are currently working to convince the County Board of Supervisors to establish the Del Monte Forest as a senior citizen housing exclusionary zone.

On 25 April 1986, the District adopted an ordinance prohibiting sewer service connections for new senior citizen housing construction on the basis of impacts to treatment and disposal capacity at the Carmel plant and potential strain on fire protection services. The prohibition apparently will remain in effect until the issue of senior citizen housing is clarified with the County and appropriate water and sewerage allocations are incorporated into the Del Monte Forest LUP/LCP.

If the ordinance prohibiting senior citizen housing is retained, and/or if Del Monte Forest is established as an exclusionary zone, additional flow from senior citizen housing will be zero. If senior citizen housing is allowed in the future, additional wastewater flow will result. Since the possibility that senior citizen housing will be allowed in the District is real, potential future sewage flow from such development should be considered in District flow projections.

It is difficult to predict how many senior citizen units would be either be added to existing residential units or built with new ones. Only three such units have been approved in the District to date. In order to account for possible future senior citizen housing construction, it was assumed that 10 percent of all residential units will ultimately include senior citizen housing and that the flow for each senior citizen unit will be half of that for a single family residential unit. Since this type of development is unprecedented in the area, it is difficult to predict how many senior citizen units would actually be constructed if allowed and the assumed 10 percent is only an approximation.

Ultimate total flow projections for the District are shown in Table 4.4 based on the discussion above and the data in Tables 4.1 through 4.3. The ultimate flow projections from Table 4.4 are 1.09 mgd ADWF and 1.27 mgd AWWF. The wet weather flow projection is based on the assumption that I/I will remain at the winter of 1986 level. Consider-

TABLE 4.4

PEBBLE BEACH COMMUNITY SERVICES DISTRICT
EXISTING AND PROJECTED WASTEWATER FLOWS

Source	ADWF (gpd)	AWWF (gpd)
Current total flow	672,000	856,000
Existing lots of record (277 SFD units @ 233 gpd/unit)	65,000	65,000
Subtotal	737,000	921,000
Senior Citizen housing units (381 units @ 116 gpd/unit)	45,000	45,000
LUP/LCP development projected flow	304,000	304,000
TOTAL	1,086,000	1,270,000

ing that 1986 was a relatively rainy winter and that the District is planning to take positive measures to correct I/I, average wet weather flows may be somewhat lower than shown in Table 4.4.

It is evident from Table 4.4 that the District will not be able to accommodate all projected ultimate growth unless a discharge capacity increase at Carmel from 3.0 mgd to 4.0 mgd (see Chapter 1) is granted by the Regional Board. Even without senior citizen housing the projected ADWF is 1.04 mgd, which is over the District's current limit of 1.0 mgd ADWF. It is expected that the Regional Board will grant an increase to the discharge limit if current discharge does not negatively impact Carmel Bay receiving water quality.

INFILTRATION AND INFLOW

Although I/I has a critical impact in determining required pumping capacity for wastewater collection system pump stations, it is very difficult to accurately quantify. A rigorous evaluation of I/I would attempt to relate inflow to rainfall amount and intensity and to separately estimate infiltration quantities. For the purposes of this

study, the concept of peak factors will be used to account for I/I. Peak factors are multipliers for average flow rates. The peak factor of interest in determining required pumping capacity relates to the maximum instantaneous wet weather flow, which incorporates diurnal sewage peak flow plus additional peak flow due primarily to inflow.

Infiltration is the result of groundwater entering the collection system. Groundwater seeps into sewers through leaky joints, manhole walls and cracked pipes. Seepage potential varies with the height of the water table above the sewer, rainfall, soil permeability and sewer condition. With the exception of oceanside areas, groundwaters affecting infiltration in the District are seasonal. The general body of groundwater under the District is below the elevation of most sewers. Groundwater occurring in temporary saturated zones during and after rainfall is a primary source of infiltration. Infiltration in the District's collection system is therefore a wet season phenomenon to a large extent.

Inflow is storm water runoff discharged directly into the sewer system from such sources as roof, foundation, cellar, yard and area drains, and from leakage through manhole covers. Storm water drainage connections are illegal by District ordinance. However, there is no storm water drainage system in much of the District and the sewer system is a convenient alternative for many homeowners with drainage problems. Saturated zones near the ground surface after wet weather can drain water to crawl spaces or cellars below houses which is then pumped or drained to the sewer. Direct drainage or pumping of saturated surface areas is another source of inflow.

In terms of pumping capacity, inflow is the determining factor. Sewage collection system pump stations must handle the maximum instantaneous flow to prevent overflow. The design capacity for pump stations therefore is usually based on the peak wet weather flow. Due to the lack of a storm drainage system and to the poor condition of some of the District's older sewers, wet weather peak flows in the District are high in proportion to amount and intensity of rainfall. Peak flows of five times average wet weather flow were experienced at the District flow meter during the winter of 1986. Maximum average daily flows for each month over the last year are shown in Table 4.1.

PUMP STATION FLOW PROJECTIONS

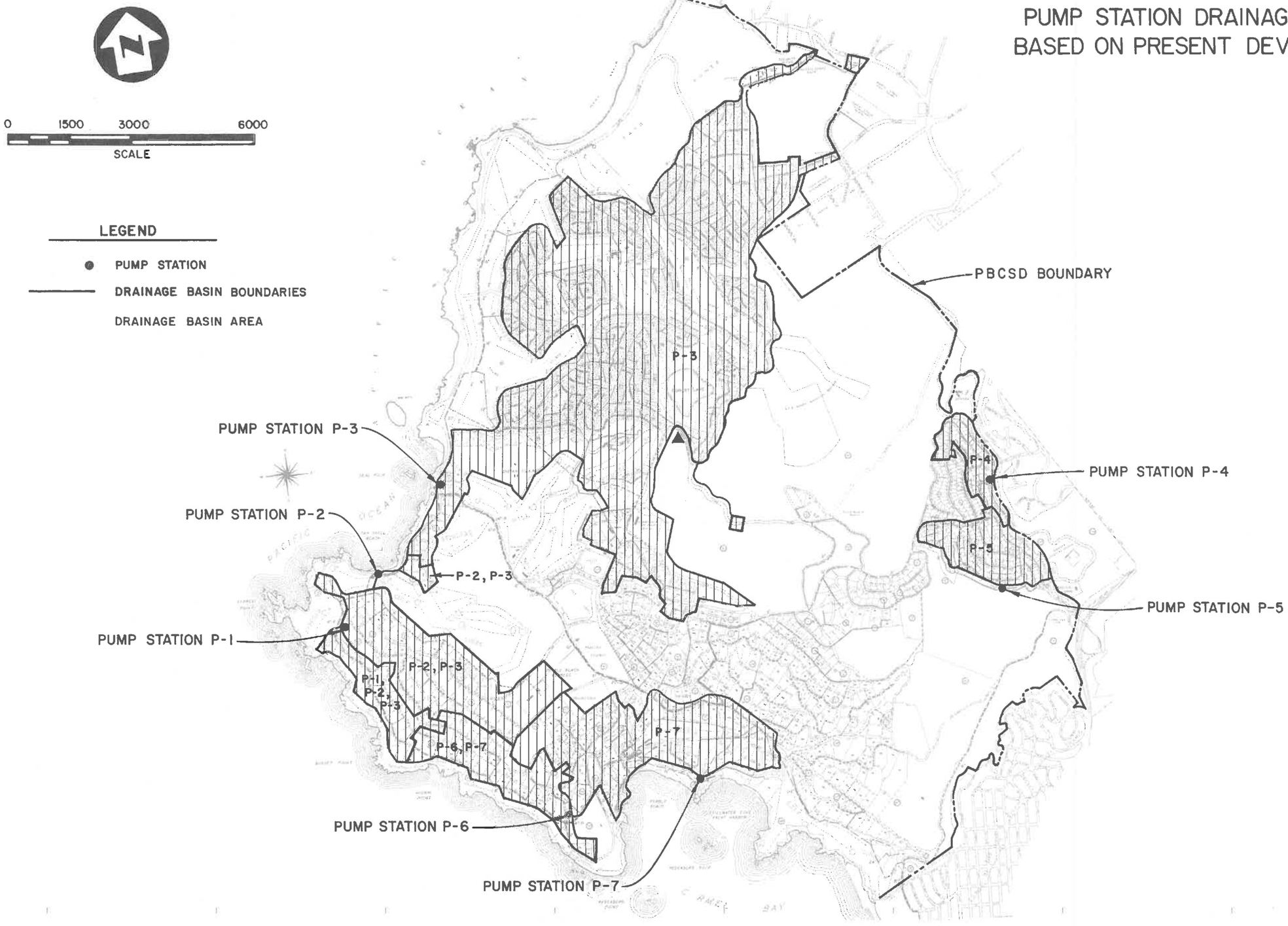
In order to evaluate the current capacities of the pump stations to meet ultimate flow demands, average wet weather flow projections have been made for each of the stations. These individual projections were made by delineating the sewer drainage basin area for each station from sewer plans. Figure 4.1 shows the pump station drainage areas based on present development. Figure 4.2 shows the drainage basins including future development and shows the locations of LUP/LCP areas of future development. The areas of the future development and their projected sewage flows are listed in Table 4.5 by expected pump station drainage basin.

The approximate number of lots in each basin were counted without trying to differentiate between developed lots and undeveloped lots. Ultimate average daily flow rates to each station were then calculated using appropriate unit flow factors as shown in Tables 4.6 through 4.12. Flow from non-residential sources as listed in Table 4.2 were divided by drainage basin and added to Tables 4.6 and 4.12 as appropriate. Flow from potential future senior citizen housing was estimated based on the previously discussed assumptions that 10 percent of all single family residential units would have a senior citizen housing unit and that the flow from a senior citizen unit is half the single family residential unit flow.

Use of the same wet weather average unit flow for all pump stations lends some inaccuracy to the individual pump station flow projections due to the fact that infiltration is probably concentrated in some pump station drainage basins having areas with older sewers. However, this assumption is just one of the many variables that determine actual flow rates, including size of house and number of residents per house and the wet weather unit flows are justifiable for use in this case.

Due to inflow during heavy rains, wet weather peak flows at the District flow meter have been observed to be as high as five times average flows. Typically, as sewer drainage basin size decreases, the typical peak factor increases due to lessening of dampening effects caused by variable travel times in the system. Required peak factors

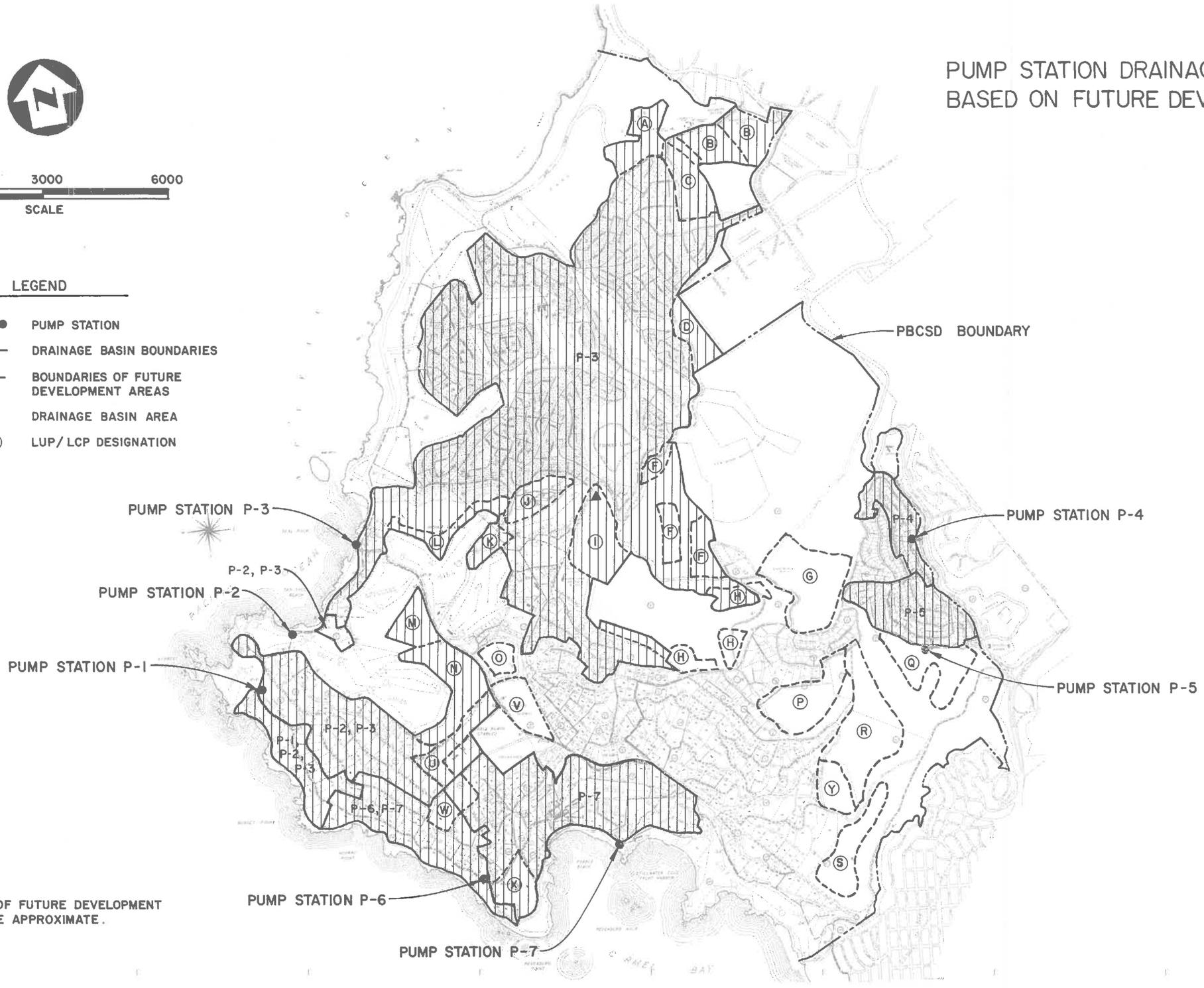
PUMP STATION DRAINAGE BASINS BASED ON PRESENT DEVELOPMENT



PUMP STATION DRAINAGE BASINS BASED ON FUTURE DEVELOPMENT

LEGEND

- PUMP STATION
- DRAINAGE BASIN BOUNDARIES
- BOUNDARIES OF FUTURE DEVELOPMENT AREAS
- DRAINAGE BASIN AREA
- Ⓐ LUP/ LCP DESIGNATION



NOTE: LOCATION OF FUTURE DEVELOPMENT AREAS ARE APPROXIMATE.

TABLE 4.5

DEL MONTE FOREST LUP/LCP PROPOSED DEVELOPMENT BY DRAINAGE BASIN

Planning Area	Planning Unit	LUP/LCP Development	Unit Flow (gpd)	Total ADWF (gpd)	Tributary to
Spanish Bay	A	Spanish Bay Resort	-	49,400	P-3
		80 condos	233	18,600	P-3
	B	88 SFD	233	20,500	P-3
	C	56 SFD	233	13,000	P-3
Spyglass Cypress	J	22 SFD	233	5,100	P-3
	K	22 SFD	233	5,100	P-3
	L	46 SFD	233	10,700	P-3
	M	68 SFD	233	15,844	P-3
	N	51 SFD	233	11,900	P-3
	O	40 SFD	233	9,300	CSD[a]
Middle Fork	H	48 SFD	233	11,200	CSD
	I	77 SFD	233	17,900	P-3
		6 SFD	233	1,400	CSD
Pescadero	P	34 SFD	233	7,900	CSD
	Q	45 SFD	233	10,500	CSD
	R	75 SFD	233	17,500	CSD
	S	41 SFD	233	9,600	CSD
	Y	20 SFD	233	4,700	CSD
Huckleberry Hill	G	78 SFD	233	18,200	CSD
		Commercial	-	500	CSD
Gowen Cypress	F	86 SFD	233	20,000	P-3
Pebble Beach	U	22 SFD	233	5,100	CSD
	V	52 SFD	233	12,100	CSD
	W	6 SFD	233	1,400	P-6 & P-7
		6 SFD	233	1,400	P-7
	X	12 SFD	233	2,800	P-6 & P-7
		11 SFD	233	2,600	P-7

[a] Carmel Sanitary District Treatment Plant via District's main gravity interceptor.

TABLE 4.6

PUMP STATION P-1 ULTIMATE FLOW PROJECTIONS

Source	Number Of Units	ADWF Unit Flow (gpd)	ADWF Total Flow (gpd)	AWWF Unit Flow (gpd)	AWWF Total Flow (gpd)
Estimated Total Lots of Record	24	233	5,600	297	7,100
Non-Residential ERDU's	0	-	0	-	0
LUP/LCP Proposed Development	0	-	0	-	0
Future Senior Citizen Housing	2	116	200	149	300
Total			5,800		7,400

TABLE 4.7

PUMP STATION P-2 ULTIMATE FLOW PROJECTIONS

Source	Number Of Units	ADWF Unit Flow (gpd)	ADWF Total Flow (gpd)	AWWF Unit Flow (gpd)	AWWF Total Flow (gpd)
Estimated Total Lots of Record	91	233	21,200	297	27,000
Non-Residential ERDU's	3.7	233	900	297	1,100
LUP/LCP Proposed Development	0	-	0	-	0
Future Senior Citizen Housing	9	116	1,000	149	1,300
Total			23,100		29,400

TABLE 4.8

PUMP STATION P-3 ULTIMATE FLOW PROJECTIONS

Source	Number Of Units	ADWF Unit Flow (gpd)	ADWF Total Flow (gpd)	AWWF Unit Flow (gpd)	AWWF Total Flow (gpd)
Estimated Total Lots of Record	1,703	233	396,800	297	505,800
Non-Residential ERDU's	192.2	223	44,800	297	57,100
LUP/LCP Proposed Development[a]	-	-	188,000	-	188,000
Future Senior Citizen Housing	222	116	25,800	149	33,100
Total			655,400		784,000

[a] From Table 4.5

TABLE 4.9

PUMP STATION P-4 ULTIMATE FLOW PROJECTIONS

Source	Number Of Units	ADWF Unit Flow (gpd)	ADWF Total Flow (gpd)	AWWF Unit Flow (gpd)	AWWF Total Flow (gpd)
Estimated Total Lots of Record	85	233	19,800	297	25,200
Non-Residential ERDU's	0	-	0	-	0
LUP/LCP Proposed Development	0	-	0	-	0
Future Senior Citizen Housing	9	116	1,000	149	1,300
Total			20,800		26,500

TABLE 4.10

PUMP STATION P-5 ULTIMATE FLOW PROJECTIONS

Source	Number Of Units	ADWF Unit Flow (gpd)	ADWF Total Flow (gpd)	AWWF Unit Flow (gpd)	AWWF Total Flow (gpd)
Estimated Total Lots of Record	251	233	58,500	297	74,600
Non-Residential ERDU's	0	-	0	-	0
LUP/LCP Proposed Development	0	-	0	-	0
Future Senior Citizen Housing	25	116	2,900	149	3,700
Total			61,700		78,300

TABLE 4.11

PUMP STATION P-6 ULTIMATE FLOW PROJECTIONS

Source	Number Of Units	ADWF Unit Flow (gpd)	ADWF Total Flow (gpd)	AWWF Unit Flow (gpd)	AWWF Total Flow (gpd)
Estimated Total Lots of Record	53	233	12,300	297	15,700
Non-Residential ERDU's	0	0	0	0	0
LUP/LCP Proposed Development[a]	-	-	4,200	-	4,200
Future Senior Citizen Housing	7	116	800	149	1,000
Total			17,300		20,900

[a] From Table 4.5

TABLE 4.12

PUMP STATION P-7 ULTIMATE FLOW PROJECTIONS

Source	Number Of Units	ADWF Unit Flow (gpd)	ADWF Total Flow (gpd)	AWWF Unit Flow (gpd)	AWWF Total Flow (gpd)
Estimated Total Lots of Record	178	233	41,500	297	52,900
Non-Residential ERDU's	136	233	31,700	297	40,400
LUP/LCP Proposed Development[a]	-	-	8,200	-	8,200
Future Senior Citizen Housing	37	116	4,300	149	5,500
Total			85,700		107,200

[a] From Table 4.5

for the drainage basins were determined considering the size of the drainage basin and the age of the sewers in the basins. Although infiltration is probably variable throughout the District as noted above with older sewers in certain areas contributing to the majority of infiltration, inflow is considered to be a constant average rate per user.

PUMP STATION CAPACITY EVALUATION

The capacity of each pump station to meet ultimate peak wet weather flows was evaluated by comparing the original pump design capacity with the ultimate flow projections developed in Tables 4.6 through 4.12. Table 4.13 presents a comparison of estimated current flows, projected ultimate flows and design capacity for each station. Present flows were estimated by assuming that the proportion of developed lots to undeveloped lots is uniform throughout the District. The number of developed lots was calculated for each basin and unit flow

TABLE 4.13

PUMP STATION CAPACITY EVALUATION

Items	Pump Station P-1	P-2	P-3	P-4	P-5	P-6	P-7
Estimated Current ADWF							
(gpd)	5,100	20,000	403,000	17,900	52,800	11,100	69,200
(gpm)	3.5	13.9	280	12.4	36.7	7.7	48.1
Estimated Current AWWF							
(gpd)	6,400	25,500	514,000	22,700	67,300	14,200	88,100
(gpm)	4.4	17.7	357	15.8	46.7	9.9	61.2
Projected Ultimate ADWF							
(gpd)	5,800	23,100	655,000	20,800	61,700	17,300	85,700
(gpm)	4.0	16.0	455	14.4	42.8	12.0	59.5
Projected Ultimate AWWF							
(gpd)	7,400	29,400	784,000	26,500	78,300	20,900	107,000
(gpm)	5.1	20.4	544	18.4	54.4	14.5	74.3
Pump Station Design Capacity							
(gpd)	259,000	518,000	4,210,000	288,000	259,000	374,000	972,000
(gpm)	180	360	2,920	200	180	260	675
Current Available Peak Factor[a]							
PDWF	51	26	10	16	4.9	34	14.0
PWWF	41	20	8	13	3.9	26	11.0
Ultimate Available Peak Factor[a]							
PDWF	45	22	6.4	14	4.2	22	11.3
PWWF	35	18	5.4	11	3.3	18	9.1
Minimum Required Peak Factor	8	7	5	7	6	7	6

[a] Peak Factor = Pumping Capacity/Average Flow

factors were applied. The calculated flow from developed lots was then added to the current non-residential flow for each basin given in Tables 4.6 through 4.12.

The flow projections presented in Tables 4.6 through 4.12 and summarized in Table 4.13 are based on a homogeneity throughout the District which in reality does not exist. However, the estimates and projections developed are relatively accurate in terms of wastewater flow projections and are useful data in evaluating the ability of the stations to meet ultimate flow requirements.

Pump station capacity was evaluated based on the ability of the station to provide a minimum peak factor at ultimate flows. Table 4.13 shows that pump stations P-1, P-2, and P-6 have much more than adequate pumping capacity to meet ultimate peak flow requirements. The low run times shown in Table 3.1 for these stations further indicate that their pumps are under-utilized. Decreasing the capacity of these stations as pump and motor replacement occurs should be considered. However, until the existing pumping equipment wears out, down-sizing is not recommended. Since the run times for these pumps are low, they probably have many years of useful life remaining.

Table 4.13 further indicates that pump stations P-4 and P-7 also appear to have excess capacity, although not to the degree of P-1, P-2 and P-6. The high run times for pump station P-7 discussed in Chapter 3 seem to contradict the finding that this station has excess capacity. An evaluation of pumping capacity of P-7 based on pump run times is presented below.

The single stage pump stations (P-1, P-2, P-4, P-6 and P-7) have an additional factor of safety in terms of capacity in that both pumps in the station can run simultaneously if necessary to meet peak flows. The pumping capacities listed in Table 4.13 are based on only one pump running. The pumping capacity of these stations with both pumps running is greater than the design capacity listed in Table 4.13, although not double. For example, the capacity of P-7 with both pumps running is 875 gpm, based on a Hazen-Williams friction coefficient of 110 for the discharge pipeline, compared to a design capacity of 675 gpm.

The design capacity of pump station P-3 closely corresponds to the ultimate peak flow projection for this station. Much of the future development in the District will occur within the drainage basin of this pump station. At this point in time, it appears that P-3 should be able to accommodate ultimate pumping requirements without a capacity increase. The drainage basin for this station is the major source of I/I in the District. The ability of this station to meet ultimate demands is contingent upon reducing I/I or preventing an increase in I/I within its tributary area.

Pump Station P-5 has the lowest available peak factor of all the stations, as shown in Table 4.13. The pumping capacity of this station does not appear to be adequate to meet ultimate peak flows and may not be adequate to meet current wet weather peaks. It is recommended that the capacity of this station be increased to provide a minimum ultimate wet weather peak factor of 6, which corresponds to a flow capacity of 325 gpm.

Pump capacity was also evaluated by reviewing total pump run times for each station. Pump run times for the previous six-month wet weather period (winter of 1986) and the previous six-month dry weather period (summer of 1985) are summarized in Table 4.14 with calculated average daily flows for each period. Flow values were calculated as run time multiplied by design capacity. Table 4.14 compares ADWF and AWWF values calculated based on run times to those developed based on number of existing units and average unit flows. Discrepancies between run time flows and calculated flows are probably due to an uneven distribution of I/I and undeveloped lots in each pump station drainage basin. Non-uniform unit flows in the various basins may also be a source of discrepancy. Also, the run time flows are calculated based on the pump station design flow. The pumps may or may not be discharging at the design rate.

The run time flows for P-3 are much higher than the projected flows and are nearly as high as the total District flow. The major discrepancy in this case is due to the operation of the P-3 pump system in which the pumps run for a significant time without actually pumping, or pumping at a reduced rate less than the design rate.

TABLE 4.14

PUMP STATION RUN TIME DATA

Item	Run Time Calculated ADWF	Run Time Calculated AWWF	AWWF/ADWF	Estimated ADWF	Estimated AWWF
P-1					
Total Run Time (hr/mo)	13.9	21.4			
Average Flow (gpd)	4,900	7,700	1.57	5,100	6,400
P-2					
Total Run Time (hr/mo)	30.7	38.5			
Average Flow (gpd)	21,800	27,400	1.26	20,000	25,500
P-3					
Total Run Time (hr/mo)	112.3	134.7			
Average Flow (gpd)	649,000	776,000	1.20	403,000	514,000
P-4					
Total Run Time (hr/mo)	22.1	28.9			
Average Flow (gpd)	8,800	11,400	1.30	17,900	22,700
P-5					
Total Run Time (hr/mo)	115.5	139.34			
Average Flow (gpd)	41,100	49,700	1.21	52,800	67,300
P-6					
Total Run Time (hr/mo)	34.7	37.5			
Average Flow (gpd)	17,900	19,300	1.08	11,100	14,200
P-7					
Total Run Time (hr/mo)	94.6	94.0			
Average Flow (gpd)	126,000	126,000	1.00	69,200	88,100

NOTES
1. ADWF is Average Dry Weather Flow.
2. AWWF is Average Wet Weather Flow.
3. Calculated average flow = run time x design pump rate.
4. Estimated flows from Table 4.13.

This phenomenon of excess pump run time was also expected from the data for P-5. However, it appears that the area served by P-4 and P-5 (Del Monte Forest No. 1 and No. 2 and Sunridge Pines) contains many undeveloped lots as the run time flows for these stations are lower than the estimated flows. The P-6 run time flows are higher than estimated which may indicate fewer undeveloped lots or higher unit flow rates in the drainage basin of this station. Higher unit flows in the P-6 drainage basin will not present a capacity problem because the pumps in this station have substantial excess capacity.

A noticeable discrepancy between the run time flows and estimated flows can be seen in Table 4.14 for pump station P-7. The run times for P-7 are higher than would be expected from the flow projections. Assuming that the pumps are operating at the approximate design flow, the higher flows at P-7 could result from high levels of I/I, higher residential unit flows, or higher flows than estimated from the Lodge, the Beach and Tennis Club, and commercial areas around the Lodge. I/I is not expected to be serious in this drainage basin since most of the sewers in this area are of modern vitrified clay pipe with preformed rubber gaskets, except for a few thousand feet of old sewers serving the Lodge and the Beach and Tennis Club.

Higher than average residential unit flows are probably a major reason that the flows at P-7 are higher than estimated. The residences in this area are very large and are on large lots. As noted above, the flows to P-6 are also higher than expected, apparently due to high unit flow rates. The P-6 drainage basin is entirely residential and is within the P-7 drainage basin. Higher flows from the visitor serving facilities associated with the Pebble Beach Golf Course may also contribute to higher flows at P-7. Estimating flows from these types of facilities is difficult due to the seasonal nature of tourism and to variations from year to year. Since no flow data is available for these facilities, and because they are not on a separate sewer system which would allow separate flow metering, obtaining more accurate flow estimates would be difficult.

Using the P-7 run time flow of 126,000 gpd and the estimate of 160 existing residential dwelling units and 136 existing non-residential equivalent dwelling units results in a residential dwelling unit flow for the P-7 drainage basin of 424 gpd. Based on this unit flow, future

development will ultimately contribute an additional flow of 15,000 gpd, for an ultimate average flow of 141,000 gpd. This results in an ultimate available peak factor of 6.9, which is adequate considering the lead/lag operation of this station.

In order to demonstrate how wet weather I/I varies among drainage basins, the ratio of AWWF/ADWF based on run time is listed for each pump station in Table 4.14. The average for the entire District over the same time period is 1.27 (856/672, see Table 4.1).

Note that for P-7, wet weather run time closely matches dry weather run time. This is probably due to increased tourism in the summer at the Pebble Beach Golf Course and Lodge and other visitor-related facilities within the P-7 drainage basin. The increase in flow in the summer due to tourism offsets the increase in flow in the winter due to I/I.

CHAPTER 5

FIVE-YEAR PLAN CONCEPTUAL DESIGN

CHAPTER 5

FIVE-YEAR PLAN CONCEPTUAL DESIGN

OBJECTIVES

The overall objective of the five-year plan is to accomplish that work required to correct current and anticipated deficiencies in the pump stations and to implement appropriate improvements such that all the stations are in prime condition at the end of the five year period. As discussed in the following chapter, work in the subsequent five years (ten-year plan) will primarily consist of ongoing replacement of equipment and structures as necessary to maintain the pump stations in adequate condition to meet long term performance requirements.

Specific objectives of the five year plan are based on an evaluation of the condition of the pump stations as presented in Chapters 3 and 4, and include the following:

- Increase the pumping capacity of P-5 to meet ultimate peak requirements;
- Modify the variable speed drive systems at P-3 and P-5 so that both pumps in series operate at variable speed to decrease energy costs, excessive pump wear and pump motor starts;
- Replace or rebuild pumps at P-3 and P-5 due to high run times and a recent history of failures;
- Replace cathodic protection systems at P-1, P-2, P-4, P-5, P-6 and P-7 to provide adequate protection of the pump station structure from galvanic corrosion;
- Add corrosion control equipment to the interior of the pump stations to prevent corrosion to equipment and structures due to humidity and moisture;

- Replace above-grade wooden electrical enclosures at P-1, P-2 and P-6;
- Replace motor starters at P-3 and P-5 due to wear and flooding damage;
- Perform miscellaneous internal structural work to repair corrosion damage primarily at P-3 and P-5;
- Perform miscellaneous electrical work to replace worn, corroded or obsolete equipment including possible replacement of control system components with solid state equipment, and to correct NEC violations; and
- Perform miscellaneous mechanical work to replace worn, corroded or obsolete equipment.

Most of the five-year plan work will be concentrated at P-3 and P-5 although some work will be required at all stations. The pumps in P-7 have the third highest run times behind P-3 and P-5 and are subjected to a high number of starts. Although this station has had few operational problems in the past (with the exception of some apparent cavitation) it could be expected that failures similar to those at P-3 and P-5 will occur in the near future. In anticipation of pump maintenance problems and considering that P-7 has the second highest flow rate of all the stations, it is recommended that major rehabilitation of the P-7 pumping system be included in the five year plan. Specific work items which will be considered include the following:

- Replace or rebuild pumps due to high run times and cavitation;
- Replace motor starters due to high number of starts;
- Provide for variable speed operation to eliminate numerous start-stop cycles;
- Provide expanded wet well storage capacity as an alternative to variable discharge operation to minimize starts; and
- Replace or rebuild pump motors due to high run times and high number of starts.

Work to identify and correct the P-7 cavitation problem will definitely be required in the five year plan although general

excessive due to the 4-inch diameter force main size. Pump and pipeline size selection are typically made in conjunction with each other based on design conditions. Pipelines are sized to avoid excessive head loss but also to maintain an adequate scouring velocity so that deposition of solids is avoided and the pipe interior is kept relatively clean.

Figure 5.1 shows the system head curve for P-5 and also shows the current and maximum performance curves for the existing pumps. The system head curve is calculated from the data in Table 2.1 using the Hazen-Williams head loss equation and C values of 110 and 140, where 140 represents the best hydraulic characteristics and 110 the worst expected hydraulic characteristics. Figure 5.1 shows that even under the best conditions, the maximum flow rate which could be achieved with the existing pumps is 265 gpm. Considering that the condition of the existing force main is probably reflective of its age of over 16 years, a maximum rate of around 240 gpm is more likely.

From Table 4.13, a discharge rate of 240 gpm will provide an ultimate wet weather peak factor of 4.4. A diurnal dry weather peak of up to three would not be unusual for a sewer drainage basin the size (both in terms of population and area) of the P-5 basin. Prior to replacement of brick manholes in this drainage basin, the pump station would bypass at rate of approximately 50 gpm during wet weather. Although replacement of the old manholes apparently corrected the overflow, I/I is still expected to be significant in this basin. An ultimate peak factor of 4.4 is therefore not considered adequate.

Figure 5.1 also shows a plot of the system head curve for the pump station if the discharge pipeline were 6-inch diameter instead of the existing 4-inch size. This plot indicates that the existing pumping system could easily meet the revised ultimate design criteria if the force main size was increased to 6-inch diameter. Although this larger pipe size may allow some solids accumulation in the pipeline, diurnal and wet weather peak flows should be adequate to flush out the pipeline. Periodic cleaning of the force main would also ensure that solids accumulation be maintained at an acceptable level. The larger pipe size would also result in energy savings due to decreased head loss and would reduce the operating pressure in the pipeline.

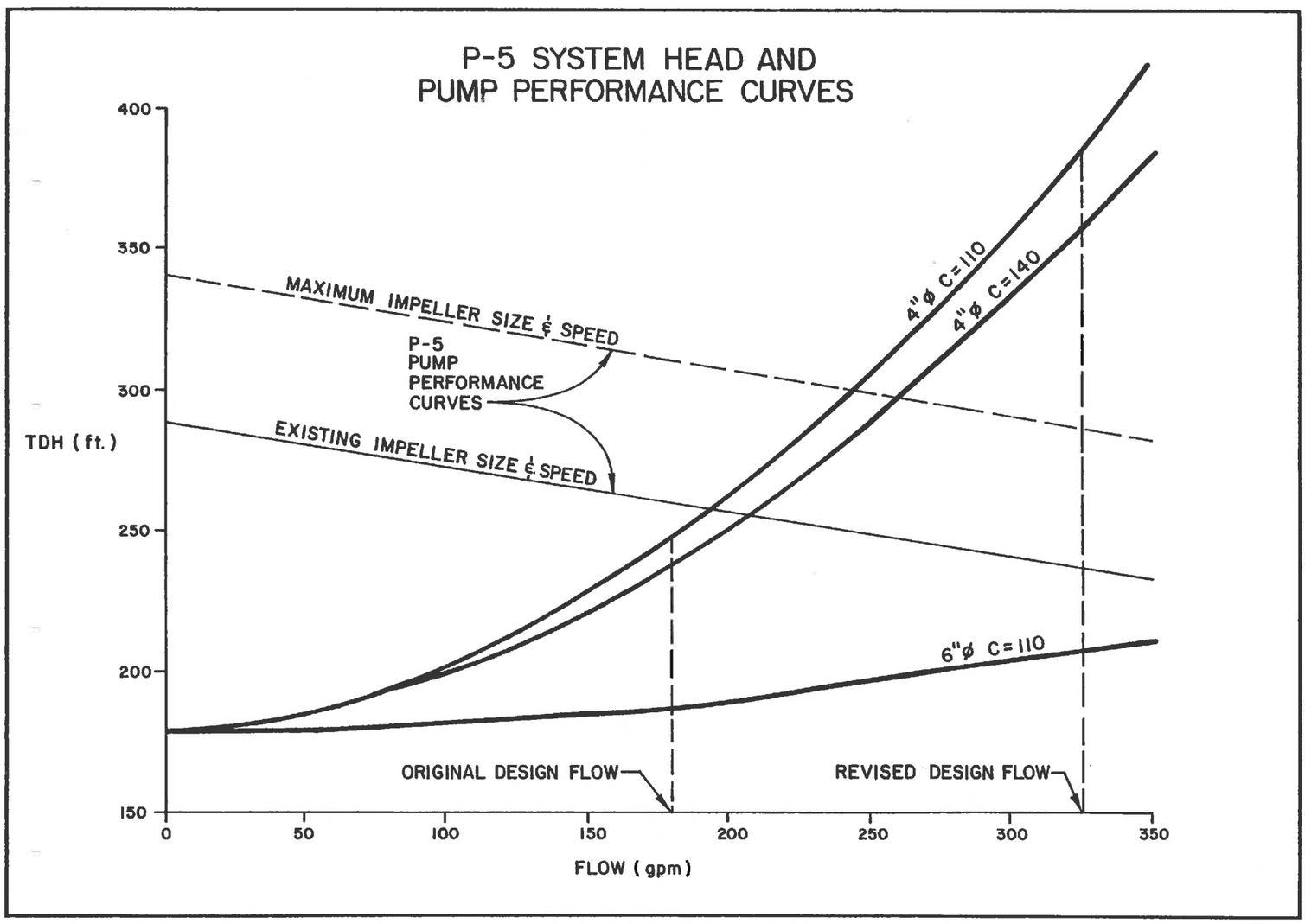


FIGURE 5.1

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It is therefore recommended that the capacity increase required at P-5 be achieved by increasing the size of the discharge pipeline from 4-inch to 6-inch. Either the entire pipeline can be upsized or only enough of the pipeline to reduce the TDH to within the range of the existing pumps. This would require upsizing at least 1,200 ft of the 2,278 ft pipeline. The existing force main has been in operation approximately 16 years. Pipe material for the force main is asbestos cement which is vulnerable to attack by hydrogen sulfide, a common gaseous by-product of sewage. Replacement of the force main may be required in the near term.

It is recommended that the replacement force main for P-5 be constructed of PVC pipe material and be designed to upsize at least 1,200 ft from 4-inch to 6-inch. Early replacement of the force main may be necessary depending on the rate of flow increase to the pump station. Prior to force main replacement, it is recommended that the size of the pump impellers be increased to achieve maximum discharge with the existing pump and motor sizes. This could increase the capacity of the station to approximately 250 gpm. The existing 25 hp motors can be used for this increased flow, but the system will not have a non-overloading horsepower characteristic above 500 gpm. This should not be a problem, however, unless a break occurs in the force main. Even then, the variable speed operation of the pumping system will slow the pump speed down to match the sewage flow rate which will always be below 500 gpm.

In summary, it is recommended that the size of the impellers in the existing pumps be increased to maximum, that existing pump and motor size be retained, and that the force main size be increased from 4-inches to 6-inches for at least 1,200 ft of the total 2,278 ft length. Force main replacement will occur when required either by the condition of the existing pipe material or by the need for pumping capacity increase. Considering the age of the force main, replacement due to pipe condition will probably be the controlling factor, as subsequently discussed in this chapter.

VARIABLE SPEED DRIVE SYSTEM

General

In order to achieve variable speed operation of both pumps in series at P-3 and P-5, a variable speed controller will be required for each of the four pumps in each station. There are presently two variable speed controllers in each station, one for each of the two second stage pumps. Although the existing controllers could be retained, their continued use is not recommended. While these controllers have demonstrated their reliability, they are much less efficient than modern controllers, generally require more space and would not be compatible with new efficient controllers. Moreover, these controllers are over 16 years old and most of their useful life is behind them.

The costs associated with converting variable speed drive systems from inefficient types such as the Flomatcher systems, to new highly efficient types are recovered in the form of reduced energy costs and reduced pump and motor maintenance costs. Since the present operation of the P-3 and P-5 pumping systems is inherently inefficient (as discussed in Chapter 3) the payback period for changeover of the variable speed drive systems at these stations could be even shorter than would typically be expected.

P-7 Variable Speed Operation

Due to the large flow volumes at pump station P-7, and because of a high number of starts resulting from relatively small wet well storage capacity, it is recommended that the P-7 pumping system be converted from constant speed operation to variable speed operation. This would require a less complicated system than that at P-3 and P-5 since the pump system is single-stage.

Increasing wet well storage capacity was considered as an alternative to variable speed operation to reduce required pump starts. Construction of a new wet well around or near the existing wet well would require difficult construction to maintain the station in an operating condition and would require excavation in an archaeologically sensitive and utility-choked area. A larger wet well would increase detention times at low flows and therefore the potential for production

of malodorous and corrosive gases such as hydrogen sulfide would be increased. Furthermore, variable speed operation will improve efficiency, decrease starts more than expanded wet well volume and minimize cavitation problems by pumping at lower speeds and flows. Variable speed operation will also be less costly than expanded wet well capacity when long term energy efficiencies are considered.

Selection of Variable Speed Drive System

There are numerous types of variable speed drives available. Previously, the most common variable speed system for wastewater and other pumping applications operated on the principle that the speed of wound-rotor motors can be varied by varying the induced current in the rotor using external resistance or inductance. The Flomatcher systems in P-3 and in P-5 are this type of variable speed drive. The primary drawbacks of most wound-rotor systems is that substantial energy is dissipated as resistance heating, or slip loss, and that costly wound-rotor motors are required.

As energy costs escalated in the 1970's, costs associated with wound-rotor slip energy loss became significant. Alternative variable speed drive systems with high energy efficiencies were developed using new solid state technology. These new systems included slip-energy recovery wound-rotor motor, direct current (dc) motor and adjustable frequency. The slip-energy recovery system is a wound-rotor motor system modified to recycle slip loss energy and thus achieve high efficiency. Although dc motors were developed prior to alternating current systems, their use for modern variable speed drive applications with motors larger than 5 hp only became popular with the advent of solid state technology which allowed controlled conversion of ac current to dc current. The adjustable frequency system operates on the principle that motor speed is directly proportional to the frequency of motor input power. Adjustable frequency systems operate with simple squirrel-cage induction motors, but can also utilize wound-rotor motors. All three of these systems have essentially identical, high energy efficiencies.

The primary disadvantage of slip-energy recovery systems is that wound-rotor motors are required. New wound-rotor motors would be required to replace existing squirrel-cage motors in the pump stations.

Wound-rotor motors cost more than simple squirrel-cage induction motors and have greater maintenance requirements. Although dc drive system costs are competitive with adjustable frequency, the seashore environment at P-3 and P-7 would severely aggravate dc motor commutators and brushes. The commutators and brushes are an inherent part of dc motors and make the motors more service-prone than squirrel-cage motors. New dc motors would be required to replace all existing motors. Furthermore, adjustable frequency drives require less space than the alternative systems which could be a critical consideration in retrofitting the pump stations.

Due to the advantages of adjustable frequency drive equipment, manufacturers have concentrated development efforts in the last five to six years on adjustable frequency designs to improve reliability (which was a problem in earlier versions), reduce size and reduce cost. Slip energy recovery systems have been neglected and many manufacturers have either dropped them from their product line or continue to market them only for larger horsepower motors (1,500 and up) where adjustable frequency has yet to catch up. For motors less than 5 hp, dc systems continue to be the most common variable speed system.

Adjustable frequency drives are recommended for use in the pump stations because of lower capital costs (primarily due to the fact that the existing motors can be retained), lower maintenance costs, minimum space requirements and high reliability. Appendix 5-A provides a detailed description and thorough evaluation of available variable speed drive systems. Many of the systems discussed therein are not applicable in this case but are included for completeness. Appendix 5-B contains a list of manufacturers of various types of variable speed drives. Note that there are many manufacturers of adjustable frequency equipment which ensures competitive pricing.

Control System

The existing Flomatcher variable speed controllers directly utilize bubbler tube pressure to control opening and closing of an electrolyte flow control valve to achieve variable resistance, and thus variable wound-rotor motor speed. The proposed adjustable frequency system requires a control system which will convert bubbler tube pressure to wet well level and a corresponding electrical signal.

A new solid state control system with built-in pressure transducer is recommended for use on the existing bubbler system. The new controller will also replace the existing pressure switches used to provide pump on-off signals. The existing differential switches are inaccurate, can be maintenance prone and are relatively difficult to set. The separate bubbler tubes for the Flomatcher units in P-3 will no longer be required as the entire control system will operate off one bubbler tube. The recommended controller includes a microprocessor which controls start and stop, variable speed operation, wet well alarm levels, automatic bubbler tube purge, wet well level indication and automatic duty/standby alternation. Control levels will be set by push-button key programming and LED display.

This type of a solid state pump controller is clearly superior to the existing system and incorporates many functions into a single unit. It utilizes most of the existing bubbler system and connects to the existing bubbler tube. These units are relatively inexpensive and will be considered for use in all seven pump stations, not just those having variable speed systems. Sample specifications for the controllers are provided in Appendix 5-C.

Motors

As discussed above, the primary advantage of adjustable frequency drives is that they require only simple squirrel-cage induction motors. Therefore, the first-stage motors in P-3 and P-5 and the motors in P-7 may continue to be used, wear considerations not-withstanding. Furthermore, the adjustable frequency system can also operate using the second stage wound-rotor motors. Use of a slip-energy, or other wound-rotor system would require replacement of the first stage motors at P-3 and P-5 and the P-7 motors. Use of a dc system would require replacement of all P-3, P-5 and P-7 motors.

Replacement of pump motors need not coincide with replacement of the variable speed drive system since adjustable frequency will be the new variable speed drive system type. Although the motors appear to have the potential for years of continued operation, replacement of the variable speed drive system is more urgent. Thus, motor replacement may occur as required after variable speed drive replacement.

P-3 System Layout

The new variable speed drive system in P-3 will consist of a new logic/sequencing control panel and four variable speed controllers, one for each pump unit. Ideally, all of this new equipment would be installed in the Motor Room of the pump station in place of the old Flomatcher controllers, which will be removed. However, since there are four new controllers, it appears there will not be adequate space within the Motor Room for all the new equipment. It is proposed that the new control panel be placed in the Motor Room. The four new controllers will be installed in the new generator structure. Proposed layouts for the new equipment are shown in Figure 5.2. It will be necessary to increase the size of the generator structure by three feet in width and one foot in length to accommodate the new controllers.

P-5 System Layout

The new variable speed drive system at P-5 will be essentially the same as that at P-3 except the components will be much smaller due to the smaller motors at this station. Pump station P-5 has little room for additional equipment. Although the four new controllers for this station will be relatively small due to the small horsepower requirements, it is recommended that they be located above-grade in weatherproof enclosures. The logic/sequencing controller will be placed in the pump station in place of the existing level control equipment.

Since the pump station is in an isolated forest area, above-grade mounting of the controllers should not be visually objectionable. The forest environment is much less corrosive than the seashore and thus corrosion is not expected to be a problem. Above-grade equipment will be mounted in corrosion resistant, weatherproof (NEMA 4) enclosures. Above-grade mounting of the variable speed drive equipment will also preclude damage to the equipment from pump station flooding, which has been experienced at this station. Figure 5.3 is a site plan of the pump station showing the proposed location of the new control equipment.

P-7 System Layout

The new variable speed drive system for P-7 will consist of a logic/sequencing control panel and two adjustable frequency controllers. It is proposed that the new logic/sequencing control panel be located in

FIGURE 5.2

P-3 VARIABLE SPEED DRIVE EQUIPMENT PRELIMINARY LAYOUT

SCALE 1/4" = 1'-0"

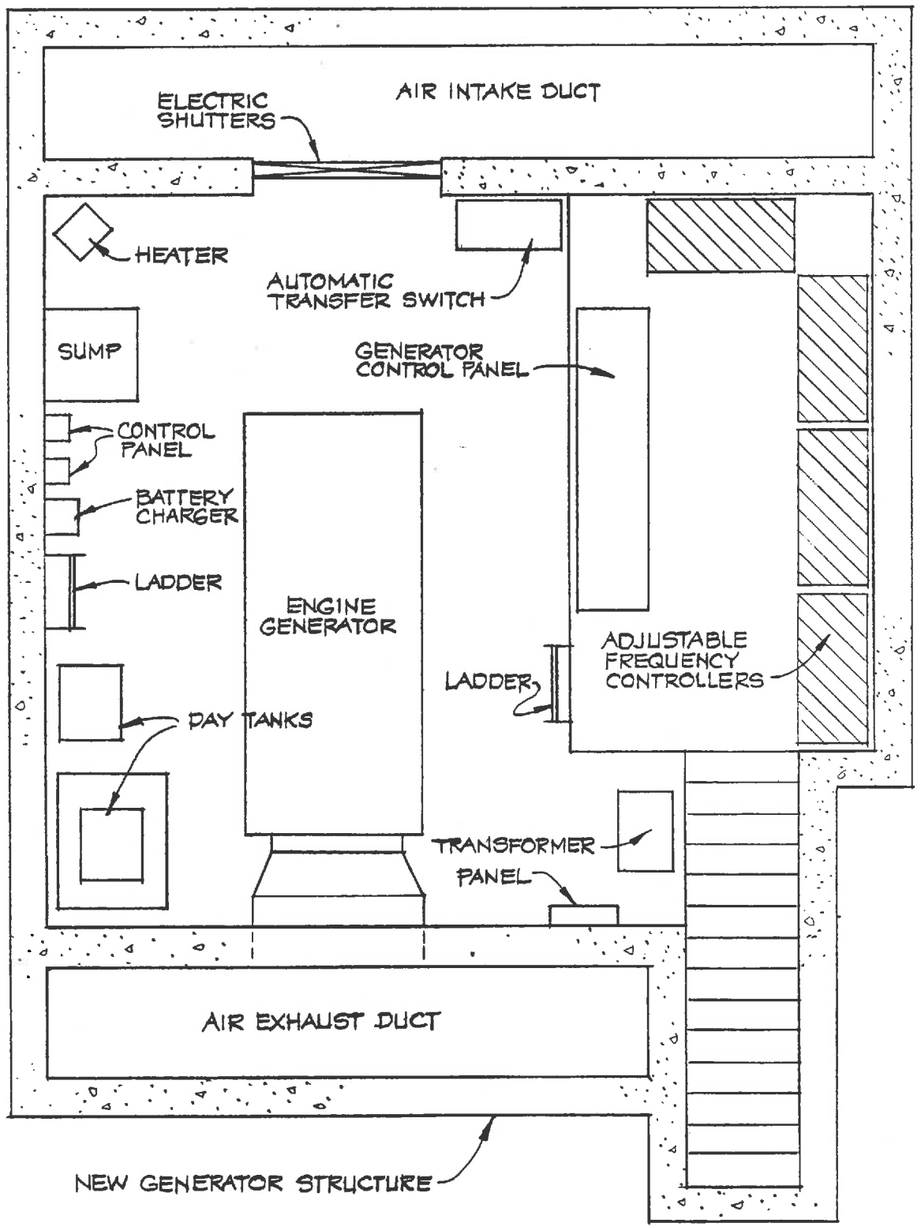

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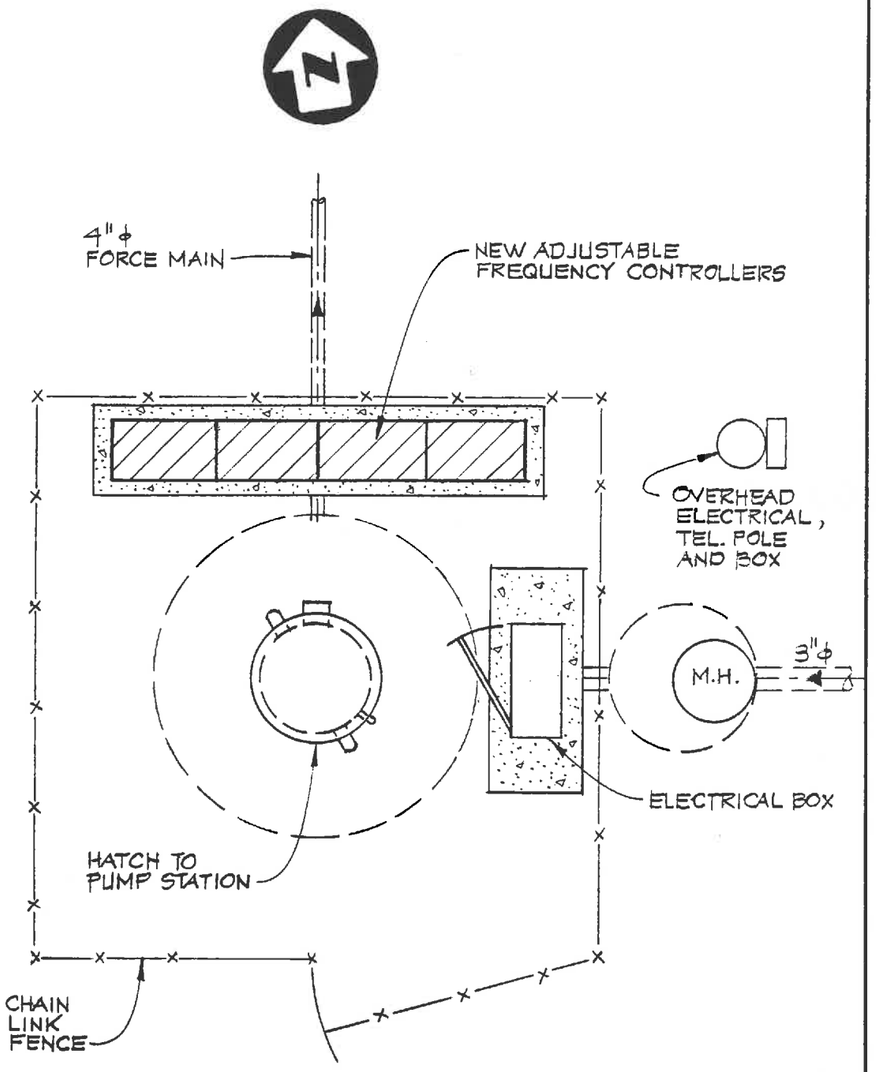
FIGURE 5.3

P-5 VARIABLE SPEED DRIVE EQUIPMENT PRELIMINARY LAYOUT

SCALE : 1/4"= 1'-0"



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the pump station. There is not enough space in the station for the two new controllers. The proposed location of the two variable speed controllers for P-7 is in the new standby generator structure. The generator structure was generally sized based on the larger P-3 generator and has some available space if the steps from the electrical equipment platform are replaced with a short ladder. Figure 5.4 shows a possible layout of the P-7 generator equipment and variable speed control equipment in the generator structure. The P-7 generator equipment layout will be modified to accommodate future installation of variable speed control equipment.

CORROSION CONTROL

General

Work associated with corrosion control will be emphasized in the five-year plan. The costs associated with recommended corrosion control work are minimal when compared to costs for replacement of equipment and structures damaged by corrosion.

Structural Cathodic Protection System

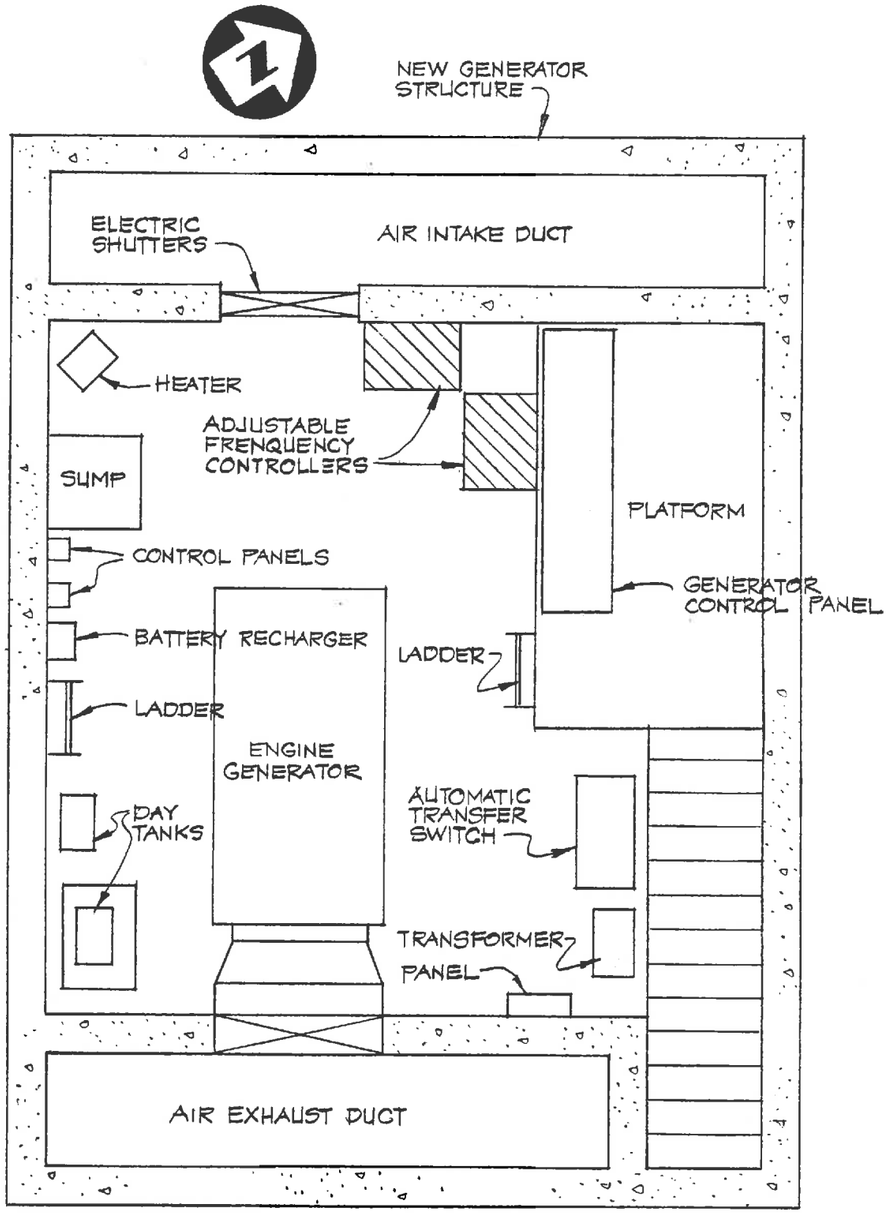
As discussed in Chapter 2, an evaluation of the cathodic protection systems at all pump stations was performed in 1983. The systems were originally provided with each pump station to protect the steel shell of the station from galvanic corrosion. The study found that the cathodic protection systems at P-1, P-3, P-4, P-6 and P-7 were no longer providing any protection from galvanic corrosion. The study recommended replacement of the deficient systems with an impressed current dc cathodic protection system, which is more effective than the passive system originally provided. The impressed current system can also be controlled by controlling the magnitude of current in the system, whereas the original systems could not.

Only P-3 has received a new impressed current system. It is recommended that the systems at P-1, P-4, P-6 and P-7 be replaced as recommended in the corrosion study. These stations have been exposed to corrosive soil conditions since at least January 1983. The fact that the original systems are burnt-out verifies the corrosive nature of the soil. This work should be given high priority in the five-year plan.

FIGURE 5.4

P-7 VARIABLE SPEED DRIVE EQUIPMENT PRELIMINARY LAYOUT

SCALE : 1/4"=1'-0"



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Although the cathodic protection systems at pump stations P-2 and P-5 were found to be providing protection in the 1983 survey, nearly four years have passed since that time. It is therefore recommended that the cathodic protection systems at these stations also be replaced with impressed current systems.

P-3 Pump Room Heater

It is recommended that a space heater be provided for the Pump Room at P-3. Corrosion in this chamber of the station is evident on all structures and equipment. Although a dehumidifier is provided, it cannot work effectively at the cool temperatures which prevail in this area. The heater will prevent excessive condensation and should prove to be effective at preventing corrosion. The positive effects of heating can be seen in the Motor Room where motor heat maintains warm temperatures and little corrosion is evident.

Electrical Panel Strip Heaters

Strip heaters with thermostats should be provided in all electrical panels. Use of strip heaters in the electrical panels in some of the stations has eliminated corrosion of electrical components in these panels.

Replacement of Wooden Electrical Enclosures

Above-grade wooden enclosures housing electrical service equipment should be replaced with fiberglass or steel enclosures. The existing enclosures are in poor repair and provide little protection from the elements for the equipment they house. New enclosures (NEMA 3 [rainproof] or NEMA 4 [weatherproof]) should be provided to replace wooden enclosures at P-1, P-2 and P-6. The wooden enclosure at P-7 will be removed and equipment housed therein will be relocated to the new generator structure as part of the standby power project. The above-grade enclosures at P-4 and P-5 are steel and remain in good condition.

ELECTRICAL

Motors

As previously mentioned, all motors continue to operate well and apparently have much of their useful lives remaining. However, the

motors at P-3, P-5 and P-7 have experienced a high number of starts and a lot of operating time. Replacement of the motors will probably not be necessary within the five-year plan. However, it is recommended that the P-3, P-5 and P-7 motors be field tested for performance. If necessary, the motors can be taken to a shop and re-wound or otherwise rehabilitated. Motor maintenance companies are available to perform such services. With the exception of the 150 hp size motors at P-3, most of the motors in the pump stations are relatively small. Table 5.1 provides an inventory of all the motors in the District's pump station system.

TABLE 5.1

INVENTORY OF OPERATIONAL MOTORS

Motor Size (hp)	Number	Location	Estimated Replacement Cost Per Motor ($)	Estimated Replacement Cost Total ($)
150	4	P-3	6,770[a]	27,100
40	2	P-7	2,380	4,800
25	6	P-4, P-5	1,790	10,700
10	2	P-2	1,180	2,400
7.5	4	P-1, P-6	1,060	4,200
				49,200

[a] Squirrel cage induction motors; $10,780 for wound rotor motors.

Unless motor failures begin to occur, and pending the outcome of field testing, motor replacement is recommended for the end of the five-year planning period, at the earliest.

Motor Starters and Circuit Breakers

As discussed in Chapter 2, the motor starters at P-3 and P-5 require replacement. However, motor starters are not required with the adjustable frequency drive system. Reduced voltage motor starters would only be necessary to allow bypassing of a failed adjustable frequency controller to allow full speed operation. Since the pumping systems have 100 percent back-up, a failure in a controller will not reduce the capacity of the station as the standby pump system will operate in place

of the failed system. Since new reduced voltage starters would be costly and would probably never be used, providing new reduced voltage starters for the P-3 and P-5 pumps is not recommended.

The motor circuit breakers at P-3 and P-5 will require replacement in the near term. Motor starters and circuit breakers at the other stations are currently in good condition but will require replacement in the future.

Pump Control System

New solid state pump controllers are recommended for replacement of pressure switches at those pump stations which will not be equipped with new variable speed drive systems. The new variable speed systems will employ the solid state controllers. New controllers at the other stations - P-1, P-2, P-4 and P-6 - are recommended to modernize the systems and to maintain conformity between all stations. Since the existing control systems are functioning properly, replacement is not considered an immediate need.

Miscellaneous Electrical Work

Recommended electrical work for the five-year plan also includes replacement of the above-grade double-throw switches at all pump stations except P-3 and P-7. Although the switches at P-1, P-2, and P-6 require replacement due to corrosion damage, replacement of the switches at P-4 and P-5 is also recommended to correct the NEC violations discussed in Chapter 2. The double-throw switches at P-3 and P-7 will be removed as part of the permanent standby generator installations at these stations. Since portable generators will be connected to the double-throw switches at the other stations, switch replacement should be accomplished as part of the standby power project.

Replacement of flood-damaged electrical wiring and terminals at P-5 is recommended for those items which will not otherwise be replaced.

MECHANICAL

Pump Rehabilitation - P-3, P-5, and P-7

The pumps at P-3, P-5 and P-7 should undergo rehabilitation or replacement as part of the five-year work due to high use and to

difficult operating conditions at P-3 and P-5, particularly for the first stage pumps. All pump components subject to wear are replaceable as separate parts. It is recommended that the pumps be rebuilt by replacing all moving parts and parts subject to wear. Rebuilding the pumps by replacement of the rotating element and impeller in lieu of total pump replacement will be one-third to one-half as expensive as total replacement and should produce essentially the same results.

P-3 Suction Isolation Valves

The gate valves on the suction line from the wet well to the Pump Room at pump station P-3 must be manually operated from the Pump Room. If the pump station flooded due to a leak in the Pump Room pumps or piping, the valve operators would be submerged under about 10 feet of sewage. Generally, the maximum flood level in the station is one to two feet above the Motor Room floor. This is the approximate elevation of the overflow pipeline from the wet well. If the overflow line clogged during an incident of pump station flooding, the entire pump station would be submerged. Operators have pointed out that since it would be necessary to close the valves to stop the leakage and dewater the station, some method is required to allow operation of the valves from the top of the pump station.

Valve operator extensions would be the most simple means of providing for valve operation from the top of the station. However, a support beam is located directly above each valve stem so that direct vertical extensions would not be possible and several universal joints would be required. Also, the Entrance Chamber does not extend over the valves and additional joints in the extensions would be required to allow operation of the valves above the Motor Room. Extension through the Motor Room ceiling and to the ground surface would be possible to allow a direct extension from the Motor Room.

In lieu of valve extensions, it is recommended that electric motor actuators be provided for each of the two suction valves. Motors would be submersible and could be controlled manually or automatically. Automatic operation of the valves would cause the valves to close when the water level in the pump station approached the floor of the Motor Room, as detected by a float level switch. This would avoid flooding of the motors and control and electrical equipment in the Motor Room. If

the valves failed to close properly, manual control of the motors from the top of the station would still be possible.

Power supply for the actuator motors would be directly from the new generator structure in case the Motor Room flooded despite the automatic closure feature on Pump Room flooding. This recommended system would prevent potentially devastating damage to the Motor Room equipment which would represent a major financial loss and extended down-time at this pump station. Motor actuators would also be able to be overridden for manual valve actuation from the Pump Room.

P-7 Pump Cavitation

For any liquid there is a minimum absolute pressure possible, beyond which the material cannot exist as a liquid and is vaporized. This minimum pressure is referred to as the vapor pressure and depends upon the liquid, its temperature and atmospheric pressure. In a pumping application, if the pressure of the liquid being pumped is reduced to its vapor pressure at any point, the liquid will vaporize or boil at that point and bubblers of vapor will form. As the fluid flows into a region of higher pressure, the vapor bubbles will suddenly condense or collapse. This collapsing action may produce very high dynamic pressure upon adjacent solid walls. Since this action is continuous and has a high frequency, solid objects in the vicinity of the collapse zone may be damaged.

In centrifugal pumps, the region of lowest pressure in the pump is behind the rotating impeller. Impellers can be severely damaged by cavitation pitting as holes are rapidly produced in the impellers and volute by repetitive high pressure impulses. In addition to structural damage, the efficiency of the pump is decreased due to the presence of vapor in the liquid being pumped. Pump installations must be such that the liquid is maintained above the vapor pressure at all points in the pump to avoid cavitation. The absolute pressure at the pump intake is atmospheric pressure plus static head minus head losses in the suction piping. For a given pump discharging at a given rate, the minimum absolute pressure above vapor pressure required at the pump intake to avoid cavitation is called net positive suction head (NPSH) required.

The distinctive pinging sound indicative of vapor bubble collapse is evident when the P-7 pumps are running. Although most pumps will

experience some minor cavitation and pitting, the audible cavitation noises at P-7 may indicate a severe situation. From the pump manufacturer's data, NPSH required at the 675 gpm design flow is 20 feet. Since the pumps are at sea level, atmospheric pressure is assumed to be 34 feet and water vapor pressure 1 foot. Minimum static head in the operating range is 1.5 ft, and calculated head losses in the suction piping total 7 ft. Therefore NPSH available is 34 + 1.5 - 7 - 1 = 27.5.

The fact that calculated NPSH available is greater than NPSH required indicates that cavitation should not be a problem at this station. Excessive head loss in the suction piping for unknown reasons such as partially closed gate valves or lower than expected discharge head may be causing cavitation. Variable speed operation of the pumps as previously recommended will reduce cavitation because the pumps will generally be operated in a much lower flow range. Since NPSH required decreases with flow and pump speed and suction head losses decrease with flow, cavitation will be minimized. The fact that reduction in flow reduces cavitation is demonstrated by the fact that the cavitation sound is significantly reduced when both pumps are running. This is because the flow through each pump with both pumps running is reduced to 440 gpm from 675 gpm with only one pump running, and discharge head is increased. Rebuilding of the pump, also as previously recommended, should correct any problems with pump or impeller construction.

Prior to any corrective action being taken, pressure readings for pump suction and pump discharge should be taken for each pump operating individually and with both pumps operating simultaneously. Lower than expected discharge pressure will indicate that the pump is operating to the right of its curve where NPSH required rises dramatically. Changing or modifying the pump impeller would correct the problems in this case. Lower than design discharge pressures could be due to erroneous static head calculations or low head loss due to high C value or larger than designed pipe size. Low pressure on the suction line with normal discharge pressure would indicate that the cause of the problem is in the suction piping.

Recommended interim measures to mitigate P-7 cavitation prior to variable speed operation and pump rebuilding include inspection and cleaning of suction lines, valves and fittings, resetting pump control

levels to maximum levels, and possible replacement of gate valves with ball valves to minimize suction head loss.

Pump Station Flow Meters

None of the pump stations have individual discharge flow meters. There is therefore no definitive data regarding total volume pumped, peak flows, average flows or actual rates as compared to design rates. The only available data on flow rates is determined from pump run times, which are based on design rates and are not valid for simultaneous lead and lag pump operation (possible at P-1, P-2, P-4, P-6 and P-7) or variable discharge (P-3 and P-5). Discharge rate data is important in evaluating pump performance and capacity, would aid in locating I/I problem areas and would provide an important tool in terms of records and maintenance.

It is therefore recommended that flow meters be provided at variable discharge pump stations P-3, P-5 and P-7 at a minimum, and preferably at all pump stations. Meters would be ultrasonic or magnetic flow meters on the discharge pipelines. The primary element would be located on the force main in a below-grade utility box, with transmitter and recorder wall-mounted in the pump station. A spool would be provided to replace the flow meter if removal for maintenance or repair became necessary.

Miscellaneous Mechanical

Pressure and Suction Gauges

Although the District has had little success in maintaining pressure and suction gauges due to clogging, it is recommended that gauges be provided on all pump suction and discharge piping. Pressure gauges are important in assessing performance of pumps and can be useful in detecting trends which could lead to anticipation of pump failures.

The new gauges should be replaced with gauges having 1/2-inch stem and pipe connection in lieu of the existing 1/4-inch stems to reduce the possibilities for clogging and breaking off. Use of a pipe sleeve type isolator should totally eliminate clogging in the gauge and stem. With this type of an isolator, pressure is sensed through an elastomer sleeve and transmitted to the pressure gauge through a sensing liquid. Pressure is read from the complete inner circumference of the pipe and

is therefore more accurate than a typical single-point reading. At P-3, a 3/4-inch tap with stainless steel isolation diaphragm is recommended for all gauges.

Discharge Air Bleed

The 1/4-inch discharge pressure gauge connection also served as an air release connection. A 1/4-inch air bleed valve was connected to the gauge tap on the pump volute. A 1/4-inch drain line from the bleed valve connected to the 3/4-inch pump base drain pipe which drains to the sump. As with the gauge connection, clogging was a constant problem. Bleeding of trapped air at pump discharge is presently accomplished by manually opening a stop-cock on the 1/4-inch tap, rodding the tap to allow air to escape and closing the tap once water is discharged.

It is recommended that a separate air release system be installed on each pump discharge. The tap and air release line will be 3/4-inch to minimize the chances of clogging. A 3/4-inch valve will be provided for manual air release. The 3/4-inch bleed line will be of PVC and will be directly connected to the sump pump discharge line for discharge to the pump station wet well. This will avoid having standing sewage in the pump station and will allow prolonged purging of the bleed line to minimize clogging.

P-5 Water Connection

The water service connection for pump station P-5 should be restored, either by locating and repairing the break in the existing line or by total service line replacement. The distance from the service connection at the water main and the pump station is approximately 220 feet. The service line is in a utility easement which is overgrown with trees and brush. It is likely that the line has been damaged by tree or brush roots. Since much of the line may be similarly damaged, and because attempts to locate the break have been unsuccessful, it is recommended that the service line be replaced.

P-7 Bubbler Tube

The bubbler tubes in all of the pump stations except P-3 are not provided with external supports. Since the tubes are PVC pipe, they may be subjected to damage. At pump station P-7, turbulent flow in the wet well often causes the bubbler tube to bend and sway.

Breaks or cracks in the tube which expose the bubbler system to atmospheric pressure will render the control system inoperable and the pumps will not start. It is therefore recommended that a means of attaining adequate bubbler tube support be provided at pump station P-7, and possibly at all of the stations. Since the supports will be in the corrosive environment of the wet well, corrosion resistant materials such as stainless steel or fiberglass reinforced plastic should be used for the supports.

STRUCTURAL

General

The steel pump station structures are generally in good condition with the exception of some apparently superficial corrosion damage. Assuming that cathodic protection systems are put into place at all the stations, it is expected that the structures will last at least ten more years. When problems such as shell leakage do begin to occur, patching with welded steel plates should prove to be a satisfactory corrective measure. Replacement of any of the existing steel structures should not be required for the foreseeable future (at least ten years).

P-3 Pump Room Repair

To correct the corrosion damage in the P-3 Pump Room, it is recommended that all structural features including walls, floor and beams be cleaned to remove existing corrosion. Inspection and patching of severely damaged areas with welded steel plate and subsequent repainting of the entire area is recommended following cleaning. Corroded mechanical equipment in the Pump Room including pumps should also be thoroughly cleaned and repainted.

P-5 Interior Repair

Cleaning with hand tools of existing corrosion from the pump station floor area and sump should be followed by patching and repainting to correct flood-caused corrosion at this pump station.

Shell Thickness Evaluation

In order to assess the remaining life at the pump station structures it is recommended that spot testing of the thickness of the

steel plate at each station be undertaken as part of the five-year plan work. Thickness testing would be performed by a testing company using ultrasonic thickness testing. Testing would occur at several points in each station to determine how much of the 1/4-inch to 3/8-inch shell has corroded.

FLOW METER

As discussed in Chapter 3, it is recommended that the flow meter transmitter and recorder be replaced with new equipment. The costs associated with replacement of these old components are negligible when compared to potential unnecessary treatment and disposal costs paid by the District to Carmel. This work should be given a relatively high priority to ensure accurate treatment and disposal cost allocation. Replacement of the Kennison Nozzle primary element is not required.

An ultrasonic level detection system is recommended to replace the existing float level detection system as discussed in Chapter 3. The ultrasonic system will consist of a level probe transponder on the primary element and a transmitter to convert the transponder signal to flow values. Unlike the existing transmitter which must be mounted on the primary element with the float system, the ultrasonic transmitter will be mounted above-grade for better access and corrosion control.

Although the recorder only serves to document data from the transmitter and therefore should not affect meter accuracy, its replacement is recommended due to age and to provide compatibility with the new transmitter. Transmitter and recorder will be housed in the existing steel enclosure which now houses the existing recorder. Transmitter and recorder will be provided with individual NEMA 4 enclosures and strip heaters for corrosion control.

A sump pump should be installed in the flow meter vault to eliminate the need to bring a pump to the vault for routine pumping of sewage overflow or drain water. The pump would be installed in the existing sump and would discharge to the nozzle discharge chamber of the vault. The pump would be controlled by float level switches and be connected to the existing flow meter power source.

FORCE MAINS

General

The force main from each station is an integral part of the pumping system and therefore should be considered in this study. All force mains are constructed of asbestos cement pipe. This type of material is susceptible to degradation caused by hydrogen sulfide gas. Hydrogen sulfide is produced by a reduction reaction in anoxic (septic) wastewater. All sewage has the potential to produce hydrogen sulfide, but detention time in the collection system must be relatively long. Also, pipes which remain full are not subjected to hydrogen sulfide exposure.

The strong, rotten-egg smell of hydrogen sulfide is not evident at any of the pump stations. Since the force mains are full most of the time, exposure to hydrogen sulfide should be limited. However, drainage of the force main due to check valve leakage or at the end of the line create the potential for exposure.

Considering the potential for pipeline degradation by hydrogen sulfide (particularly at those stations which operate only intermittently) it is recommended that some work to evaluate and upgrade the condition of the force mains be included in the five-year plan, even though no problems have yet to be experienced. This work should include pipeline pigging, pressure testing and removal of pipeline samples for inspection.

Pipeline Pigging

Pipeline pigging is a procedure where a cleaning "pig" is inserted into the pipeline at the pump end of the line. The polyurethane pig is forced through the pipeline by the hydraulic pressure of the pumps and acts to scour and clean the interior of the pipe. Several repetitions of the procedure using different types of pigs are usually required. The pigged pipeline has improved hydraulic characteristics which reduce head loss and thus pumping costs.

Pressure Testing and Sampling

Pressure testing of the pipelines is recommended to determine if leakage is occurring to a significant degree. Pressure tests could be

performed using air or water. Pipeline sampling will provide information regarding the actual condition of the pipeline. Samples would be taken by unearthing a section of pipe, cutting out a slice of pipe material, repairing the cut and backfilling.

All of the pipeline work will cause an interruption in pumping service. Unlike the pumping system which has a backup, there are no standby force mains. Interruptions of service will be an especially sensitive problem at those stations with high flow rates (P-3, P-5 and P-7) which have high run times and short detention times. Work at night when flows are low and careful planning will be required to accomplish the recommended force main work.

SUMMARY OF RECOMMENDED FIVE-YEAR WORK

Table 5.2 lists the recommended rehabilitation work for the five-year plan by type, location and priority. Priority ratings are for subsequent use in determining when the work will be accomplished over the five-year period. Highest priority items are those which are required to correct immediate problems while lower priority items are those to be performed in anticipation of future problems, those which will not have additional negative impacts if not immediately corrected or those recommended to upgrade or modernize existing systems.

COST ESTIMATE

Estimated capital costs for the five-year plan rehabilitation work have been developed and are summarized in Table 5.3. Estimated costs for each work item were obtained through discussions with contractors, quotations from equipment vendors, and from the experience of Engineering-Science with previous, similar work. These costs are current for September 1986 (ENR Construction Cost Index for San Francisco of 5309).

A 25 percent contingency is applied to the construction cost estimate due to the conceptual nature of the plan at this point. Technical services are included as 20 percent of the total construction cost to account for design phase and construction phase engineering and legal and administrative services. Engineering costs for modification

TABLE 5.2

SUMMARY OF FIVE-YEAR PLAN REHABILITATION WORK

Item	Pump Station	Priority
P-5 CAPACITY INCREASE		
Replace pump impellers to increase pumping capacity[a]	P-5	High
Replace force main with larger pipeline to increase pumping capacity[b]	P-5	Low
VARIABLE SPEED DRIVE		
Replace Flomatcher variable speed drive system with new adjustable frequency system	P-3, P-5	High
Provide new adjustable frequency drive system	P-7	Moderate
CORROSION CONTROL		
Replace cathodic protection systems for pump station structures	All except P-3	High
Provide space heater for corrosion control	P-3	High
Provide strip heaters in electrical panels for corrosion control	All except P-2	High
Replace wooden electrical enclosures with fiberglass enclosures	P-1, P-2, P-6	Moderate
ELECTRICAL		
Field test pump motors to evaluate performance	P-3, P-5, P-7	Moderate
Replace pump motor starters with solid state components	All except P-3, P-5	Low
Replace pump motor circuit breakers	P-3, P-5 Others	High Low

Replace pump control system	P-3, P-5[c] P-7[c] Others	High Moderate Low
Replace above-grade double throw switches	All except P-3, P-7	High
Repair flood damage to electrical system	P-5	High
MECHANICAL		
Rebuild pumps	P-3, P-5 P-7	High Moderate
Provide automatic motor actuator system on suction isolation valves	P-3	Moderate
Replace suction gate valves with ball valves to minimize cavitation	P-7	Low
Provide magnetic flow meters on discharge force main	P-3, P-5, P-7 Others	Moderate Low
Provide new suction vacuum gauges and discharge pressure gauges	All	Moderate
Provide new pump discharge air release assembly	All	Moderate
Replace water service connection line	P-5	High
Provide bubbler tube supports	P-7	Moderate
STRUCTURAL		
Repair corrosion damage to pump station interior structure	P-3, P-5	Moderate
Clean out paint surge tank interior	P-3	Moderate
Field evaluate thickness of pump station structure shell	All	Low
Provide safety bars for access ladders	All	High
FLOW METER		
Replace flow meter transmitter and recorder		High
Provide sump pump in vault		Moderate

FORCE MAINS		
Pipeline pigging	All	Moderate
Pressure testing and material sampling	All	Low

[a] As part of P-5 pump rebuilding.
[b] Probably not necessary until after five-year plan.
[c] As part of variable speed drive system.

work are typically higher than for non-modification work due to the physical limitations imposed by the existing facilities and the need for additional details to work around existing conditions.

The estimates of construction cost provided herein have been prepared on the basis of experience and judgment of an engineering professional. Since ES has no control over the cost of labor, materials or equipment, or the general inflation of prices, or over the contractor's methods of determining prices, ES does not and cannot guarantee that proposals for construction will not vary from opinions of probably cost prepared by ES.

A review of Table 5.3 shows that nearly 40 percent of the total estimated cost of $986,000 for the five-year plan is associated with the variable speed drive work at P-3, P-5 and P-7. The P-3 variable speed drive work alone is 25 percent of the total cost. Rebuilding the pumps at P-3, P-5 and P-7 is approximately 13 percent of total cost, replacing the P-5 force main is 12 percent, and replacing cathodic protection systems is 7 percent. As a group, these work items account for 70 percent of the total project cost. The remaining 30 percent of the cost is comprised of work items in the estimated cost range of $1,000 to $15,000, not including contingency, contractor's overhead and profit, and technical services.

RECOMMENDED FIVE-YEAR PLAN

Tables 5.4 through 5.8 present the recommended annual pump station rehabilitation work for the five-year plan. Higher priority work is scheduled for the early years, although some related low priority work may be included in the early years for logistic reasons. Selection of the work for each year was also based on evenly spreading the total cost

over the five years. However, the annual cost is higher in the early years in order to accomplish that work required to correct immediate deficiencies.

COORDINATION WITH STANDBY POWER PROJECT

Several elements of the recommended five year plan require coordination with the standby power project. These work items are as follows:

- Replace above-grade double throw disconnect switches at P-1, P-2, P-4, P-5 and P-6. These switches will be used to manually transfer the power source from PG&E to portable generator. A receptacle for portable generator connection will be connected to the now-vacant side of the double throw switch. The switches should be replaced when the receptacle is installed to insure proper operation when required during power outages.
- The P-3 and P-7 generator structures must be designed to accommodate future installation of variable speed drive equipment as shown on Figures 5.2 and 5.4. Spare conduits from the generator structure to the pump station and within the generator structure must be provided for future variable speed drive equipment.

Design of the standby power project is complete. Addition of replacement of the double-throw switches to the project can be readily accomplished. However, the impact of variable speed drive equipment to the generator structures, particularly at P-3, should be thoroughly evaluated and the structural and electrical designs should be modified accordingly.

TABLE 5.3

FIVE-YEAR PLAN PRELIMINARY CAPITAL COST ESTIMATE

No.	Item	Estimated Cost ($)
	High Priority Work	
H-1	P-3 AFD Variable Speed Drive System	142,000
H-2	P-5 AFD Variable Speed Drive System	45,000
H-3	Cathodic Protection Systems (6 each)	38,000
H-4	P-3 Pump Room Space Heater	1,000
H-5	Electrical Panel Strip Heaters	2,000
H-6	P-3 Pump Motor Circuit Breakers	5,000
H-7	P-5 Pump Motor Circuit Breakers	1,000
H-8	Double-Throw Disconnect Switches (5 each)	11,000
H-9	P-5 Electrical System Components	2,000
H-10	P-3 Rotating Element and Impeller (4 each)	40,000
H-11	P-5 Rotating Element and Impeller (4 each)	20,000
H-12	P-5 Water Service Connection	3,000
H-13	P-7 Bubbler Tube Support	1,000
H-14	Access Ladder Safety Bars	4,000
H-15	Flow Meter Transmitter and Recorder	5,000
	Subtotal - High Priority Work	320,000
	Moderate Priority Work	
M-1	P-7 AFD Variable Speed Drive System	31,000
M-2	P-1, P-2, P-6 Above-Grade Electrical Enclosures	5,000
M-3	P-3, P-5, P-7 Field Test Motors (10 each)	2,000
M-4	P-7 Pump Motor Circuit Breakers	1,000
M-5	P-7 Rotating Element and Impeller (2 each)	12,000
M-6	P-3 Suction Valve Motor Actuators (2 each)	10,000
M-7	P-3, P-5, P-7 Discharge Flow Meters	9,000
M-8	Suction and Vacuum Gauges (32 each)	16,000

M-9	Pump Discharge Air Release Assembly (18 each)	13,000
M-10	P-3 Interior Corrosion Repair	15,000
M-11	P-5 Interior Corrosion Repair	5,000
M-12	Pipeline Pigging	7,000
M-13	Flow Meter Vault Sump Pump	2,000
	Subtotal - Moderate Priority Work	128,000
	Low Priority Work	
L-1	P-5 Force Main	70,000
L-2	P-1 Pump Motor Starters and Circuit Breakers	4,000
L-3	P-2 Pump Motor Starters and Circuit Breakers	5,000
L-4	P-4 Pump Motor Starters and Circuit Breakers	7,000
L-5	P-6 Pump Motor Starters and Circuit Breakers	4,000
L-6	P-1, P-2, P-4 and P-6 Pump Control Systems	6,000
L-7	P-1, P-2, P-4 and P-6 Discharge Flow Meters	10,000
L-8	Field Test Pump Station Shell Thickness	7,000
L-9	Pressure Test and Sample Force Mains	11,000
	Subtotal - Low Priority Work	124,000
	Subtotal - All Work	572,000
	Contingency (25%)	143,000
	SUBTOTAL	715,000
	Contractor's Overhead and Profit (15%)	107,000
	Subtotal - Construction Costs	822,000
	Technical Services (20%)	164,000
	TOTAL	$986,000

TABLE 5.4

FIVE-YEAR PLAN RECOMMENDED FIRST YEAR WORK

No.	Item	Estimated Cost ($)
H-2	P-5 AFD Variable Speed Drive System	$ 45,000
H-3	Cathodic Protection Systems (6 each)	38,000
H-4	P-3 Pump Room Space Heater	1,000
H-5	Electrical Panel Strip Heaters	2,000
H-6	P-3 Pump Motor Circuit Breakers	5,000
H-7	P-5 Pump Motor Circuit Breakers	1,000
H-8	Double-Throw Disconnect Switches (5 each)	11,000
H-9	P-5 Electrical System Components	2,000
H-11	P-5 Rotating Element and Impeller (4 each)	20,000
H-12	P-5 Water Service Connection Line	3,000
H-13	P-7 Bubbler Tube Support	1,000
H-14	Access Ladder Safety Bars	4,000
H-15	Flow Meter Transmitter and Recorder	5,000
	Subtotal	$138,000
	Contingency (25%)	35,000
	Subtotal	173,000
	Contractor's Overhead and Profit (15%)	26,000
	Subtotal - Construction Costs	199,000
	Technical Services (20%)	40,000
	TOTAL - First Year	$ 239,000

TABLE 5.5

FIVE-YEAR PLAN RECOMMENDED SECOND YEAR WORK

No.	Item	Estimated Cost ($)
H-1	P-3 AFD Variable Speed Drive System	$ 142,000
	Subtotal	142,000
	Contingency (25%)	36,000
	Subtotal	178,000
	Contractor's Overhead and Profit (15%)	27,000
	Subtotal - Construction Costs	205,000
	Technical Services (20%)	41,000
	TOTAL - Second Year	$ 246,000

TABLE 5.6

FIVE-YEAR PLAN RECOMMENDED THIRD YEAR WORK

No.	Item	Estimated Cost ($)
H-10	P-3 Rotating Element and Impeller (4 each)	$ 40,000
M-2	P-1, P-2, P-6 Above-Grade Electrical Enclosures	5,000
M-7	P-3, P-5, P-7 Discharge Flow Meters	9,000
M-8	Suction and Vacuum Gauges (32 each)	16,000
M-9	Pump Discharge Air Release Assembly (18 each)	13,000
M-10	P-3 Interior Corrosion Repair	15,000
M-11	P-5 Interior Corrosion Repair	5,000
M-13	Flow Meter Vault Sump Pump	2,000
	Subtotal	105,000
	Contingency (25%)	26,000
	Subtotal	131,000
	Contractor's Overhead and Profit (15%)	20,000
	Subtotal - Construction Costs	151,000
	Technical Services (20%)	30,000
	TOTAL - Third Year	$ 181,000

TABLE 5.7

FIVE YEAR PLAN RECOMMENDED FOURTH YEAR WORK

No.	Item	Estimated Cost ($)
M-1	7 AFD Variable Speed Drive System	$ 31,000
M-3	P-3, P-5, P-7 Field Test Motors (10 each)	2,000
M-4	P-7 Pump Motor Circuit Breaker	1,000
M-5	P-7 Rotating Element and Impeller (2 each)	12,000
M-6	P-3 Suction Valve Motor Actuators (2 each)	10,000
M-12	Pipeline Pigging	7,000
L-6	P-1, P-2, P-4, P-6 Pump Control Systems	6,000
L-7	P-1, P-2, P-4, P-6 Discharge Flow Meters	10,000
L-9	Pressure Test and Sample Force Mains	11,000
	Subtotal	90,000
	Contingency (25%)	23,000
	Subtotal	113,000
	Contractor's Overhead and Profit (15%)	17,000
	Subtotal - Construction Costs	130,000
	Technical Services (20%)	26,000
	TOTAL - Fourth Year	$ 156,000

TABLE 5.8

FIVE YEAR PLAN RECOMMENDED FIFTH YEAR WORK

No.	Item	Estimated Cost ($)
L-1	P-5 Force Main	$ 70,000
L-2	P-1 Pump Motor Starters and Circuit Breakers	4,000
L-3	P-2 Pump Motor Starters and Circuit Breakers	5,000
L-4	P-4 Pump Motor Starters and Circuit Breakers	7,000
L-5	P-6 Pump Motor Starters and Circuit Breakers	4,000
L-8	Field Test Pump Station Shell Thickness	7,000
	Subtotal	97,000
	Contingency (25%)	24,000
	Subtotal	121,000
	Contractor's Overhead and Profit (15%)	18,000
	Subtotal - Construction Costs	139,000
	Technical Services (20%)	28,000
	TOTAL - Fifth Year	$ 167,000

APPENDIX 08-2

Pebble Beach Community Services District

Historic Flow Data

PEBBLE BEACH COMMUNITY SERVICES DISTRICT
Historic Wastewater Flow Data

PBCSD Wastewater Flow

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
Average Daily Flow (x1000 gal/day)	834	643	695	617	577	638	625	690	658

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Average Daily Flow (x1000 gal/day)	546	536	509	535	493	420	401	403	356

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024
Average Daily Flow (x1000 gal/day)	440	503	377	485	425	391	406	529	476

Year	2025	2026	2027	2028	2029	2030	2031	2032	2033
Average Daily Flow (x1000 gal/day)	407								

CAWD Historic Wastewater Flow Data

CAWD Wastewater Flow

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006
Average Daily Flow (x1000 gal/day)	-	-	2,085	1,926	1,885	1,896	1,893	1,948	2,036

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Average Daily Flow (x1000 gal/day)	1,767	1,679	1,490	1,611	1,534	1,408	1,304	1,317	1,224

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024
Average Daily Flow (x1000 gal/day)	1,373	1,438	1,195	1,251	1,243	1,222	1,204	1,453	1,396

Year	2025	2026	2027	2028	2029	2030	2031	2032	2033
Average Daily Flow (x1000 gal/day)	1,277								

APPENDIX 08-3

Pebble Beach Community Services District

Capital Improvement Plan

ENGINEERING REPORT

March 27, 2026

To: PBCSD Board of Directors

From: Chris Simmons, Principal Engineer

Subject: 2026 Long-Term Capital Outlay Plan

RECOMMENDATION

Approve the 2026 Long-Term Capital Outlay Plan.

SUMMARY OF ISSUES

Each spring, staff presents to the Board the Long-Term Capital Outlay Plan (LTCOP) for the following fiscal year. The plan outlines PBCSD's capital improvement goals for the subsequent 15 years. Costs presented in the plan are based on current estimated prices and have not been escalated over the life of the plan. Capital items include procurement of new equipment and/or replacement/rehabilitation of assets and facilities. The schedules of capital outlays and cost estimates have been prepared in consultation with PBCSD Staff, Fire Department Staff, and CAWD Treatment Plant Staff.

The PBCSD 2026 LTCOP 15-year total cost is as follows:

Department	2026	2025	Variance
Administration	$ 1,645,000	$ 1,545,000	**7%**
Fire	$ 9,029,000	$ 8,577,000	**5%**
Wastewater	$ 23,685,000	$ 26,556,000	**-11%**
CAWD	$ 6,904,000	$ 5,596,000	**23%**
Undergrounding	$ 25,500,000	$ 52,000,000	**-51%**
PBCSD Total:	**$ 66,773,000**	**$ 94,613,000**	**-29%**
Reclamation	$ 9,770,000	$ 9,735,000	**-2%**

PBCSD's capital responsibilities include Administration, Fire, and Wastewater Departments; a one-third (1/3) share of the Carmel Area Wastewater District (CAWD) Treatment Plant costs, and costs associated with Undergrounding Overhead Utilities program. The anticipated total cost of PBCSD's capital responsibilities amounts to $66,773,000. The 2026 LTCOP projected capital costs have decreased 29% from the previous year's total of $94,613,000.

Administrative department capital costs increased by 7% from the previous year, mainly due the addition of new records management software, allocated for upcoming 2026-27 fiscal year, and every five years after that.

Fire department capital costs increased by 5% from the previous year. Increased capital costs are largely attributed to adjusted/increased costs of equipment, and vehicle replacements

occurring at the end of fifteen years.

Wastewater Department capital costs have decreased 11% from previous year, mainly due to the start of the rehabilitation project at Seal Rock Pump Station (P-3) and purchase of CCTV Camera Van.

CAWD's projected capital costs have increased by 23% from the previous year, following increased costs attributed to the Plant Bridge Retrofit Project and Wastewater Treatment Improvement Plant Site Improvements Project, and addition of process area rehabilitation projects over the last ten years of the plan (last year's plan only presented six years of process area rehabilitation projects).

Last year's LTCOP presented $52 million allocated for Underground Overhead Utilities Program (UOU) distributed evenly across 15 years. In this year's plan undergrounding capital costs decreased by 51% due to cost allocation to complete the remaining two phases (Phase IV and V) of the UOU within the next five years, as well as an annual cost allocation of $1 million across the last ten years of the plan. With Phase IV of the project entering construction in FY2025/26, the plan now reflects costs to complete Phase IV in FY2027/28 and start construction of Phase V in FY2029/30. Undergrounding projects beyond FY 2030/31 currently have an annual allocation of $1 million, based on the 5-year allocation of $15.5 million for Phase IV and V.

The anticipated total cost of Reclamation's capital responsibilities amounts to $9,770,000; these costs will be reimbursed to the District by the Reclamation Project. Capital costs for the Reclamation department decreased 2% from the previous year mainly attributed to adjusted costs and replacement intervals.

As departmental capital improvement projects develop over the next year, anticipated costs and schedules will be updated, and priorities revisited accordingly.

EXHIBIT C
Wastewater Department Capital Outlay Plan

	ITEM NO.	CAPITAL ITEM	USEFUL LIFE	ROLL OVER	FISCAL YEAR COSTS (1,000) 26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36	36/37	37/38	38/39	39/40	40/41
FACILITIES	1	Fueling Station Rehabilitation	10 years				$50										$50		
	2	Overhead Electric Doors (8) (Replace 5 in 21/22)	10 years							$60									
	3	Paint Exterior Buildings (2)	10 years										$100						
	4	Roof Replacement (Maint. Bldg's)	30 years			$200													
SCADA	5	SCADA System Servers (3)**	5 years					$45					$45					$45	
	6	SCADA System Software**	10 years					$30										$30	
	7	Workstation Computers (4)	4 years					$15				$15				$15			
EQUIPMENT	8	Underground Pipe Locator	5 years			$10					$10					$10			
	9	Safety Equipment	5 years				$15					$15					$15		
	10	Portable CCTV Equipment (Push Camera)	10 years			$20										$20			
	11	Portable Sewer Rodder	10 years									$15							
	12	Portable Light Tower	10 years						$15										$15
	13	Sewer & Manhole Replacement Projects	Rehab.	$660	$2,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
	14	Sewer & Manhole CCTV Projects (Condition Assmnt.)	Rehab.	$500															
	15	Carmel Gate Metering Station - Instrumentation	10 years	$10										$10					
	16	Carmel Gate Metering Station - Flume	20 years						$75										
PUMP ST. No.01	17	Pump Station P-1 (CYPRESS GROVE) Est. 1969, 2024	Rehab.																
	18	Instrumentation	5 years				$10					$10					$10		
	19	Remote SCADA Hardware and Software	10 years									$75							
	20	Pump Replacement (10hp_240v)	10 years									$20							
PUMP ST. No.02	24	Pump Station P-2 (FANSHELL BEACH) Est. 1969, 2024	Rehab.																
	25	Instrumentation	5 years				$10					$10					$10		
	26	Remote SCADA Hardware and Software	10 years									$75							
	27	Pump Replacement (10hp_240v)	10 years									$20							
PUMP ST. No.03	31	Pump Station P-3 (SEAL ROCK) Est. 1990	Rehab.	$4,850															
	32	Instrumentation	5 years						$20					$20					$20
	33	Remote SCADA Hardware and Software	10 years											$100					
	34	Flow Meter	10 years										$10						
	35	Wet Well Mixer (2)	10 years									$50							
	36	Sump Pump Replacement (Replaced 2017)	10 years			$15										$15			
	37	Air Scrubber	10 years											$50					
	39	Solids Grinder (A) (Replaced in 2024)	15 years															$100	
	40	Solids Grinder (B) (Replaced in 2017)	15 years								$100								
	42	Surge Tank	15 years											$20					
	44	Emergency Power Generator (400kW_Replaced 2002)	25 years			$150													

EXHIBIT C
Wastewater Department Capital Outlay Plan

ITEM NO.		CAPITAL ITEM	USEFUL LIFE	ROLL OVER	FISCAL YEAR COSTS (1,000) 26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36	36/37	37/38	38/39	39/40	40/41
	45	Underground Diesel Storage Tank - TIUGA Conversion	25 years			$150													
	46	Force Main (Condition Assessment) (installed 2008)	25 years				$50												
PUMP ST. No.04	47	Pump Station P-4 (HWY 68) Est. 1969	Rehab.	$860	$540														
	48	Instrumentation	5 years						$10					$10					$10
	49	Remote SCADA Hardware and Software	10 years											$75					
	50	Pump Replacement (25hp_240v)	10 years											$60					
PUMP ST. No.05	54	Pump Station P-5 (SUNSET LN.) Est. 1969	Rehab.		$100	$1,000													
	55	Instrumentation	5 years								$10					$10			
	56	Remote SCADA Hardware and Software	10 years													$75			
	57	Flow Meter	10 years													$10			
	58	Pump Replacement (25hp_240v)	10 years			$100										$100			
	61	Emergency Power Generator (60kW)	15 years			$150													
	64	Access Road Improvement	One Time																
PUMP ST. No.06	65	Pump Station P-6 (PESCADERO PT.) Est. 2015	Rehab.																
	66	Instrumentation	5 years	$10						$10					$10				
	67	Remote SCADA Hardware and Software	10 years								$75								
	68	Pump Replacement (7.5hp_240v)	15 years						$25										
	69	Valves & Appurtenances	15 years						$15										
	70	Control Panel	15 years						$150										
PUMP ST. No.07	72	Pump Station P-7 (PBGL 18th) Est. 2012	Rehab.																
	73	Instrumentation	5 years	$10					$10					$10					
	74	Remote SCADA Hardware and Software	10 years							$75									
	75	Flow Meter	10 years	$15											$15				
	76	Wet Well Mixer	10 years									$20							
	77	Pump Replacement (60hp_480v)	10 years	$35								$80							
	78	Valves & Appurtenances	15 years				$15												
	79	Control Panel	15 years				$150												
	80	Emergency Power Generator (150kW)	15 years	$100															
PUMP ST. No.08	83	Pump Station P-8 (SPANISH BAY) Est. 2007	Rehab.																
	84	Instrumentation	5 years		$10					$10					$10				
	85	Remote SCADA Hardware and Software	10 years							$75									
	86	Wet Well Mixer (Installed 2019)	10 years				$10										$10		
	87	Pump Replacement (5hp_480v)	10 years									$25							
	88	Valves & Appurtenances	15 years			$15													
	89	Control Panel (Replaced 2021)	15 years											$150					

EXHIBIT C
Wastewater Department Capital Outlay Plan

ITEM NO.		CAPITAL ITEM	USEFUL LIFE	ROLL OVER	FISCAL YEAR COSTS (1,000) 26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36	36/37	37/38	38/39	39/40	40/41
VEHICLES / MOBILE EQUIP.	91	PB-1 Light Utility Truck (General) (2023)	10 years								$65								
	92	PB-2 Line Cleaning/Vacuum Truck (2021)	10 years						$450										$450
	93	PB-4 Heavy Utility Truck (PS Crew) (2019)	10 years				$75										$75		
	94	PB-5 Light Utility Truck (General) (2016)	10 years		$75										$75				
	95	PB-8 Line Cleaning Truck (2024)	10 years										$350						
	96	PB-9 Sewer Line Cleaning Light Utility Vehicle (UTV) (2023)	10 years									$25							
	97	PB-6 Dump Truck (2023)	15 years													$100			
	98	Trailer Mounted Sewer Rodder (to be surplused)	15 years																
	99	10" Portable Pump (1999)	15 years														$150		
	100	6" Portable Pump (2009)	15 years		$75														
	101	G1 Portable Generator (2004_60kW_120/240v)	15 years														$75		
	102	G2 Portable Generator (2006_60kW_120/240v) (Rebuilt '23)	15 years														$75		
	103	G3 Portable Generator (2001_60kW_240/480v) (Rebuilt '20)	15 years														$75		
	104	G4 Portable Generator (2004_60kW_120/240v)	15 years														$75		
	105	PB-3 CCTV Camera Van (2006)	20 years	$150	$40														
	106	PB-7 Crane Truck (2025)	20 years																
	107	Backhoe Loader (1999)	20 years					$80											
	108	Easement Line Cleaning Equipment	20 years	$50															
		TOTAL FISCAL YEAR COST (1,000)			$2,840	$2,810	$1,385	$1,170	$1,770	$1,230	$1,260	$1,455	$1,505	$1,505	$1,110	$1,355	$1,620	$1,175	$1,495

WASTEWATER DEPARTMENT TOTAL $23,685,000

**Items are cost-shared with Recycled Water

EXHIBIT C
Wastewater Department Capital Outlay Plan

ITEM NO.	CAPITAL ITEM
1	**Fueling Station Rehabilitation** The fuel pump and monitoring and security system for the diesel and gasoline fueling station will be rehabilitated.
2	**Overhead Electric Door Motors (8)** Replace eight electric motors on metal overhead doors for Maintenance Building bays.
3	**Paint Exterior Buildings (2)** Paint exterior of maintenance shop and maintenance vehicle garage buildings every ten years.
4	**Roof Replacement (Maintenance Buildings)** Replace the roof on the maintenance shop and maintenance vehicle garage every thirty years. Approximately 10,000 sf of roof.
5	**SCADA System Rehabilitation**** Supervisory Control And Data Acquisition (SCADA) System shall be rehabilitated in FY2018/19 and FY2019/20.
6	**SCADA System Servers (3)**** Replace three servers for the SCADA system every five years, servers facilitates communication amongst Wastewater and Reclamation facilities.
7	**SCADA System Software**** Update SCADA System software every five years.
8	**Work Station Computers (4)** Replace four maintenance computer workstations and two black and white laser printers every five years.
9	**Underground Pipe Locator** Improved technology will increase the speed and accuracy of locating underground pipes for Underground Service Alert (USA) work requests.
10	**Confined Space Safety Equipment** Replace the confined space safety equipment, including tripod, winch, rescue lines, portable ventilation units, rescue baskets and air bottles used for permit required confined space entry and rescue operations every five years.
11	**Portable CCTV Equipment** Replace portable cctv equipment every ten years.
12	**Portable Sewer Rodder** Replace potable sewer rodder every ten years.
13	**Portable Lighting Tower** Replace the portable lighting tower used for emergency night time repairs every ten years.
14	**Sewer and Manhole Replacement Projects (CCTV)** The maintenance department inspects manholes and wastewater lines to identify problem areas. Each year the wastewater lines and manholes that require replacement or rehabilitation are identified and prioritized by condition. The annual sewer replacement project is designed to address the highest priority areas until the budget limit is reached. The allocation of $1,000,000 allows the replacement of approximately one mile of sewer main lines in the wastewater collection system.

EXHIBIT C
Wastewater Department Capital Outlay Plan

ITEM NO.	CAPITAL ITEM
15	**Sewer and Manhole CCTV Projects** Conduct CCTV assessment of gravity sewer mains, interceptor line, and manholes throughout District.
16	**Carmel Gate Metering Station** Rehabilitate Carmel Gate flume metering station that meters all wastewater flow to CAWD treatment plant.
17	**Pump Station P-1 (CYPRESS GROVE)** Est. 1969 Rehabilitate Sewer Pump Station P-1. Rehab scheduled for 2023.
18	**Instrumentation** Replace Sewer Pump Station Instrumentation every five years.
19	**Remote SCADA Hardware and Software** Replace SCADA system Hardware for pump station every ten years.
20	**Pump Replacement** Replace Sewer Pump Station Pumps every ten years.
21	**Valves & Appurtanances** Replace Sewer Pump Station Valves & Appurtanances every fifteen years.
22	**Control Panel** Replace Sewer Pump Station Control Panel every fifteen years.
23	**Force Main** Replace Sewer Pump Station Force-Main every twenty-five years.
24	**Pump Station P-2 (FANSHELL BEACH)** Est. 1969 Rehabilitate Sewer Pump Station P-2. Rehab scheduled for 2023.
25	**Instrumentation** Replace Sewer Pump Station Instrumentation every five years.
26	**Remote SCADA Hardware and Software** Replace SCADA system Hardware for pump station every ten years.
27	**Pump Replacement** Replace Sewer Pump Station Pumps every ten years.
28	**Valves & Appurtanances** Replace Sewer Pump Station Valves & Appurtanances every fifteen years.
29	**Control Panel** Replace Sewer Pump Station Control Panel every fifteen years.
30	**Force Main** Replace Sewer Pump Station Force-Main every twenty-five years.

EXHIBIT C
Wastewater Department Capital Outlay Plan

ITEM NO.	CAPITAL ITEM
31	**Pump Station P-3 (SEAL ROCK)** Est. 1990 Rehabilitate Sewer Pump Station P-3.
32	**Instrumentation** Replace Sewer Pump Station Instrumentation every five years.
33	**Remote SCADA Hardware and Software** Replace SCADA system Hardware for pump station every ten years.
34	**Flow Meter** Replace Flow Meter every ten years.
35	**Wet Well Mixer (2)** Replace two Wet Well Mixers every ten years.
36	**Sump Pump Replacement** Replace duplex sump pumps every 10 years.
37	**Air Scrubber** Add description
38	**Pump Replacement (140hp)** Replace Sewer Pump Station Pumps every fifeteen years.
39	**Solids Grinder (A)** Replace Solids Grinder every fifteen years, Grinder (A) scheduled for replacement in FY22/23.
40	**Solids Grinder (B)** Replace Solids Grinder every fifteen years, Grinder (B) scheduled for replacement in FY32/33.
41	**Valves & Appurtanances** Replace Sewer Pump Station Valves & Appurtanances every fifteen years.
42	**Surge Tank** Add description
43	**Control Panel** Replace Sewer Pump Station Control Panel every fifteen years.
44	**Emergency Power Generator** Replace Emergency Power Generator every fifteen years.
45	**Underground Diesel Storage Tank - TIUGA Conversion** Replace Underground Diesel Storage Tank every twenty-five years.
46	**Force Main** Replace Sewer Pump Station Force-Main every twenty-five years.

EXHIBIT C
Wastewater Department Capital Outlay Plan

ITEM NO.	CAPITAL ITEM
47	**Pump Station P-4 (HWY 68)** Est. 1969
	Rehabilitate Sewer Pump Station P-4.
48	**Instrumentation**
	Replace Sewer Pump Station Instrumentation every five years.
49	**Remote SCADA Hardware and Software**
	Replace SCADA system Hardware for pump station every ten years.
50	**Pump Replacement**
	Replace Sewer Pump Station Pumps every ten years.
51	**Valves & Appurtanances**
	Replace Sewer Pump Station Valves & Appurtanances every fifteen years.
52	**Control Panel**
	Replace Sewer Pump Station Control Panel every fifteen years.
53	**Force Main**
	Replace Sewer Pump Station Force-Main every twenty-five years.
54	**Pump Station P-5 (SUNSET LN.)** Est. 1969
	Rehabilitate Sewer Pump Station P-5.
55	**Instrumentation**
	Replace Sewer Pump Station Instrumentation every five years.
56	**Remote SCADA Hardware and Software**
	Replace SCADA system Hardware for pump station every ten years.
57	**Flow Meter**
	Replace Flow Meter every ten years.
58	**Pump Replacement**
	Replace Sewer Pump Station Pumps every ten years.
59	**Valves & Appurtanances**
	Replace Sewer Pump Station Valves & Appurtanances every fifteen years.
60	**Control Panel**
	Replace Sewer Pump Station Control Panel every fifteen years.
61	**Emergency Power Generator**
	Replace Emergency Power Generator every fifteen years.
62	**Underground Diesel Storage Tank**
	Replace Underground Diesel Storage Tank every twenty-five years.

EXHIBIT C
Wastewater Department Capital Outlay Plan

ITEM NO.	CAPITAL ITEM
63	**Force Main**
	Replace Sewer Pump Station Force-Main every twenty-five years.
64	**Pump Station P-6 (PESCADERO PT.)** Est. 1969, rehab in 2015
	Rehabilitate Sewer Pump Station P-6.
65	**Instrumentation**
	Replace Sewer Pump Station Instrumentation every five years.
66	**Remote SCADA Hardware and Software**
	Replace SCADA system Hardware for pump station every ten years.
67	**Pump Replacement**
	Replace Sewer Pump Station Pumps every five years.
68	**Valves & Appurtanances**
	Replace Sewer Pump Station Valves & Appurtanances every fifteen years.
69	**Control Panel**
	Replace Sewer Pump Station Control Panel every fifteen years.
70	**Force Main**
	Replace Sewer Pump Station Force-Main every twenty-five years.
71	**Pump Station P-7 (PBGL 18th)** Est. 2012
	Rehabilitate Sewer Pump Station P-7.
72	**Instrumentation**
	Replace Sewer Pump Station Instrumentation every five years.
73	**Remote SCADA Hardware and Software**
	Replace SCADA system Hardware for pump station every ten years.
74	**Flow Meter**
	Replace Flow Meter every ten years.
75	**Wet Well Mixer**
	Replace one Wet Well Mixers every ten years.
76	**Pump Replacement**
	Replace Sewer Pump Station Pumps every ten years.
77	**Valves & Appurtanances**
	Replace Sewer Pump Station Valves & Appurtanances every fifteen years.
78	**Control Panel**
	Replace Sewer Pump Station Control Panel every fifteen years.

EXHIBIT C
Wastewater Department Capital Outlay Plan

ITEM NO.	CAPITAL ITEM
79	**Emergency Power Generator** Replace Emergency Power Generator every fifteen years.
80	**Underground Diesel Storage Tank - TIUGA Conversion** Replace Underground Diesel Storage Tank every twenty-five years.
81	**Force Main** Replace Sewer Pump Station Force-Main every twenty-five years.
82	**Pump Station P-8 (SPANISH BAY)** Est. 2007 Rehabilitate Sewer Pump Station P-8.
83	**Instrumentation** Replace Sewer Pump Station Instrumentation every five years.
84	**Remote SCADA Hardware and Software** Replace SCADA system Hardware for pump station every ten years.
85	**Wet Well Mixer** Replace one Wet Well Mixers every ten years.
86	**Pump Replacement** Replace Sewer Pump Station Pumps every ten years.
87	**Valves & Appurtanances** Replace Sewer Pump Station Valves & Appurtanances every fifteen years.
88	**Control Panel** Replace Sewer Pump Station Control Panel every fifteen years.
89	**Force Main** Replace Sewer Pump Station Force-Main every twenty-five years.
90	**PB-1 Light Utility Truck (General)** The PB-1 utility truck will be replaced. This vehicle is a half-ton four-wheel drive pickup truck with an estimated useful life of ten years.
91	**PB-2 Line Cleaning/Vacuum Truck** Reserve Vac-Con Line/Vacuum truck is used to remove blockages, roots, and debris from the collection system using a water jetting system every ten years. It contains a water storage tank, a water pump, vacuum fan, debris storage tank and 800 feet of hose.
92	**PB-4 Heavy Utility Truck (Pump Station Crew)** This is a one-ton 4WD utility truck used primarily for pump station maintenance. The truck has an expected useful life of ten years.
93	**PB-5 Utility Truck (General)** This is a heavy-duty 4WD utility truck primarily used by the field operations manager every ten years.

EXHIBIT C
Wastewater Department Capital Outlay Plan

ITEM NO.	CAPITAL ITEM
94	**PB-8 Line Cleaning Truck** Front-line equipment used on a daily basis to perform line cleaning activities to be replaced every ten years
95	**Sewer Line Cleaning Utility Vehicle (UTV)** Small utility vehicle with trailer jetter to be used for line cleaning when large line cleaning vehicles cannot access cleaning locations.
96	**PB-6 Dump Truck** This vehicle transports bulk material and allows the crew to perform more field construction work.
97	**Trailer Mounted Sewer Rodder** Replace the trailer-mounted continuous power rodder that is used to clear stoppages and perform routine root removal maintenance on wastewater lines and also provides a redundant capacity to clear sewer main lines if the line cleaning truck is out of service.
98	**10" Portable Pump** Replace the 10-inch, 3000-gpm portable wastewater pump, which allows the maintenance crew to bypass problem areas that require repair every fifteen years. The 10-inch diameter pump is sized to handle the expected wet weather flow for the 27-inch diameter interceptor line and to bypass pump station P3. This replacement will include a noise-reduction enclosure.
99	**6" Portable Pump** A trailer mounted 6-inch pump with sound-reducing enclosure capable of transporting wastewater will be purchased for smaller pump station bypass operations.
100	**G1 Portable Generator** Replace 60KW portable generator mounted on trailers with noise reduction enclosures every fifteen years to (used to serve Pump Station P-1)
101	**G2 Portable Generator** Replace 60KW portable generator mounted on trailers with noise reduction enclosures every fifteen years to (used to serve Pump Station P-2)
102	**G3 Portable Generator** Replace 60KW portable generator mounted on trailers with noise reduction enclosures every fifteen years to (used to serve Pump Station P-6)
103	**G4 Portable Generator** Replace 60KW portable generator mounted on trailers with noise reduction enclosures every fifteen years to (used to serve Pump Station P-4)
104	**PB-3 CCTV Camera Truck** Closed Circuit Television (CCTV) Camera Van to be purchased in FY 2025/26
105	**PB-7 Crane Truck** Flatbed truck and crane has a lifting capacity of 10,000 lbs.
106	**Backhoe Loader** This piece of equipment allows the maintenance crew to perform more field construction work and can be modified to act as a forklift.
107	**Easement Line Cleaning Equipment** This equipment extends the range of the line cleaning truck so that sewer lines located in areas with no vehicle accessibility can be reached without manually pulling hose.

**Items are cost-shared with Recycled Water

EXHIBIT D
Carmel Area Wastewater District Capital Outlay Plan

ITEM NO.		CAPITAL ITEM	ROLL OVER	FISCAL YEAR COSTS (1,000) 26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36	36/37	37/38	38/39	39/40	40/41
PLANNED PROJECTS	1	Carmel River FREE Mitigation Project (Funded by Grants/County, See Below)*																
	2	Utillity Mains Relocation Project (5.5% Collections)		$236	$63													
	3	Plant Bridge Retrofit Project		$32	$173	$473	$788	$315										
	4	WWTP Site Improvements Project		$206	$584	$584	$289											
	5	Digester No. 1 - Rehabilitation				$67	$400											
	6	Replace Older Turblex Blower					$17	$177										
	7	Influent Pump Station Wet Well Repairs																
	8	Lagoon Crossing Rehabilitation																
	9	Ocean Outfall Maintenance																
	10	Outfall Cathodic Protection Anode Bed and Rectifier Replacement						$50										
PROCESS AREA REHAB	11	Misc. Yard Piping Rehab and Maintenance Projects							$30	$30	$30	$30	$30	$30	$30	$30	$30	$30
	12	Influent/Headworks/Primary Rehab and Maintenance Projects							$33	$33	$33	$33	$33	$33	$33	$33	$33	$33
	13	EQ/Blowers/Aeration/Secondary Rehab and Maintenance Projects (Partial Reclamation)							$57	$57	$57	$57	$57	$57	$57	$57	$57	$57
	14	Chlorination/Dechlorination/Effluent Rehab and Maintenance Projects (Partial Reclamation)							$28	$28	$28	$28	$28	$28	$28	$28	$28	$28
	15	DAFT/Digestion/Dewatering Rehab and Maintenance Projects (Partial Reclamation)							$28	$28	$28	$28	$28	$28	$28	$28	$28	$28
	16	CAWD Treatment Plant - CIP		$175	$75	$50	$50	$30	$30	$30	$30	$30	$30	$30	$30	$30	$30	$30
		TOTAL FISCAL YEAR COST (1,000)		$649	$896	$1,174	$1,543	$572	$207	$207	$207	$207	$207	$207	$207	$207	$207	$207

CAWD TOTAL: $6,904,000

APPENDIX 11-1

Pebble Beach Community Services District

Outreach and Education

Pump rehab protects the bay

If you've driven 17-Mile Drive recently you may have noticed construction near Fanshell Beach and the Crocker Grove. In our ongoing commitment to protect public health and the environment, the District recently rehabilitated two wastewater pump stations at these locations. Diligent maintenance allowed us to get over 50 years of use before replacement.

"Like most coastal municipalities, our sewer mains use a gravity feed system with wastewater flowing down toward the ocean," said District Associate Engineer Chris Simmons. "With five of our eight pump stations located nearshore it's vital that equipment is reliable to prevent spills, protect the nearby marine ecosystem, and convey the nonstop flow of wastewater."

Besides being more reliable, the new pumps can be pulled to the surface for servicing. Previously, District personnel had to descend a 15-foot ladder into a confined underground space three times a week to ensure that equipment was operating at peak efficiency. Now all controls are above the surface so they can perform preventative maintenance much more safely.

The pumps move wastewater over the hill to the Carmel Area Wastewater District for treatment–but that's not the end of the story. Read on below to learn how our wastewater is recycled and returned to Pebble Beach to be used for irrigation.

PBCSD maintenance staff use a crane truck to move a new motor control panel into position during the rehabilitation of the Fanshell Beach pump station. The panel allows them to service the station more safely above ground, instead of 15 feet beneath the surface.

Conserving water for 30 years

Water shortages have been a way of life on the Monterey Peninsula for decades, but since 1994 the District's water reclamation project has been recycling millions of gallons of water annually. Through a public-private partnership with PBCSD, Pebble Beach Company, the Carmel Area Wastewater District (CAWD), and the Monterey Peninsula Water Management District, all wastewater from Pebble Beach and Carmel is transformed into pristine recycled water using a sophisticated microfiltration/reverse osmosis (MF/RO) system at the CAWD treatment plant. (The same MF/RO technology is now being used by Monterey One Water's Pure Water Monterey project to reclaim wastewater for household use.) The reclaimed water is used to irrigate all seven golf courses in Pebble Beach, as well as the Stevenson School athletic fields.

The reclamation project saves potable water, reduces drawdown on the overpumped Carmel River, and reduces wastewater outfall into Carmel Bay—all at no cost to the public. Fully funded by Pebble Beach Company and the Independent Recycled Water Users Group, the project uses an average of 1,000 acre-feet of water for irrigation each year, saving that same amount of potable water annually—about 326 million gallons—for use in residential homes and gardens.

PBCSD's Forest Lake Reservoir stores recycled water for golf course irrigation and serves as a fill station for CAL FIRE helicopters fighting wildfires.

Meet the new Staff

Mark Sullivan

We welcome Mark Sullivan, Accounting Technician, to the PBCSD team. Mark maintains our payroll, handles accounts payable and receivable, and helps with contract billing analysis and financial reporting. During his 19-year career he has served as an accountant for multiple municipalities, including the City of Capitola and the Santa Cruz Port District. Mark's deep knowledge of specialized city and district finances, as well as his accounting skills, make him well-qualified to maintain the integrity of the District's fiscal records. "The best part about working here is the people," said Mark. "The District takes care of its employees, and it's great to work in an environment where everyone supports each other and works as a team. Also the natural beauty on the Monterey Peninsula is breathtaking, and the weather can't be beat!"

District News

fall/winter 2014

Newsletter of Pebble Beach Community Services District

Fire protection and emergency medical services

Wastewater collection, treatment and recycling

Recycled water storage and distribution

Garbage collection, disposal, and recycling

Supplemental law enforcement

GreenWaste will be our new hauler starting July 2015

GreenWaste Recovery was the lowest bidder of all proposals received, and included new programs to help us meet mandated statewide recycling goals.

The District Board of Directors has approved a 15-year Solid Waste, Recyclable and Organics Collection Services Franchise Agreement with Green Waste Recovery Inc., following a region-wide competitive proposal process involving the District and six neighboring cities. Under the new agreement, GWR will take over services on July 1, 2015 when the current agreement with Waste Management (WM) expires. GWR was the lowest of the four cost proposals received, and has approved franchise agreements with the six other cities who participated in the competitive Request for Proposal: Carmel-by-the-Sea, Del Rey Oaks, Marina, Pacific Grove, Sand City and Seaside.

"Pebble Beach residents and businesses have been served well by Waste Management over the years, yet it is good public policy to reexamine and update longterm franchise agreements and open them to competition periodically," said District Deputy General Manager Suha Kilic. "I am happy to report that our new provider will employ current truck drivers who are very knowledgeable of our roads and service requirements." *(Cont. on page 3)*

The great egret is one of hundreds of species that depend on the Carmel River Lagoon and Wetlands which are adjacent to the CAWD treatment plant. The plant upgrade will help protect wildlife in the lagoon and in Carmel Bay.

New treatment plant design nearly complete

The design for the upgrade of our community's wastewater treatment facility is almost complete, with construction for Phase One slated for spring of 2015. Much of the equipment and infrastructure at the Carmel Area Wastewater District (CAWD) treatment plant is over 30 years ago and is at the end of its useful life. CAWD's Capital Improvements Projects 15-Year Master Plan outlines 16 replacement and rehabilitation projects for the renovation, which will be prioritized based on risk of mechanical failure, cost/benefit analysis, energy savings, economic factors and other exacting criteria.

CAWD is studying and testing many new, highly efficient technologies that will save energy and money, while at the same time repurposing and upgrading existing structures and systems whenever it is cost-effective to do so. For example, they are: exploring new pump technologies that could combine three waste streams so that one pump could do the job of three, testing new coagulants and polymers to decrease treatment times, and introducing variable speed motors that save electricity by adjusting power usage continuously to match the fluctuating plant intake throughout the day. *(Cont. on page 2)*

Top plant pick:

TRY THIS FIRESAFE, DROUGHT-TOLERANT, DEER-RESISTANT PLANT IN YOUR YARD!

Epilobium, commonly called California Fuchsia, features spectacular summer color and is a favorite of hummingbirds that love the plant's tubular, nectar-filled flowers. This low-growing (under one foot tall) fuchsia makes an attractive groundcover, needs little water, and reseeds easily. Now through early spring is the best time to put them in the ground. Handle the plants with care, and pick a spot with full sun and good drainage—or use moveable clay pots. There are several species, and we recommend our local native: brilliant, red-orange *E. septentrionale*, "Wayne's Silver."

Pebble Beach Community Services District (PBCSD) is a multi-purpose local government voted into existence by Del Monte Forest residents on July 1, 1982.

PBCSD administrative office
(831) 373-1274
3101 Forest Lake Road,
Pebble Beach, CA 93953
PBCSD.org
tinyurl.com/PBCSD-Facebook
tinyurl.com/PBCSD-Twitter

Garbage collection and recycling
Waste Management: 384-5000

Free 24-hour sewer service: 373-1274
If water is overflowing into your home it is an emergency. Call us immediately, day or night.

Fire and medical emergencies
call 911

PBCSD Board of Directors

President	Leo M. Laska
Vice President	Richard B. Gebhart
Director	Jeffery B. Froke, Ph.D
Director	Peter McKee
Director	Rick D. Verbanec
General Manager	Mike Niccum

Pump rehabilitation ensures health and safety

EASY DOES IT Contractors drive 25-foot pilings for The District's new pump station.

If you've driven near Pescadero Point recently you probably noticed the District's current Capital Improvement Project to replace wastewater pump station P-6. As part of our ongoing commitment to protect public health and the environment, over the next three years we will be rehabilitating three pump stations that were installed in the late 1960s and are now at the end of their useful life.

The current pump station upgrade will increase the capacity of the station's wet well, allowing operators more time to prevent spills should malfunctions arise. Pipelines in the Forest flow downhill toward the ocean, where our pump stations then convey the wastewater to the Carmel Area Wastewater District (CAWD) plant for treatment (see related article, page one).

"Most of our pump stations are in close proximity to the ocean so keeping them in top condition is a priority," said District Principal Engineer Nick Becker. "The new station will also be safer to operate for our maintenance crew." In the original station, District personnel had to descend a vertical ladder 30 feet underground into a confined space three times a week to perform preventative maintenance and ensure that equipment was operating at peak efficiency. Now, a new submersible wet well system will allow them to pull the pumps to the surface for servicing instead.

The District's engineering and maintenance staff work together to ensure that our eight underground pump stations and 80 miles of sewer mains are in top condition to prevent spills and overflows. Their stellar performance is why the District was honored with the 2014 Collection System of the Year award for the Monterey Bay section, presented by the California Water Environment Association (CWEA). Even more impressive, we also placed second in the statewide Collection System of the Year award category, thanks to our ongoing maintenance and capital improvement programs.

Although the CAWD plant keeps a low profile hidden off Highway One, it is of paramount importance to the health of our community, environment, economy—our general quality of life.

New treatment plant *(Cont. from page 1)*

Total plant rehabilitation will cost approximately $30 million over the next 15 years, a third of which will be covered by PBCSD. This is based on our contractual agreement with CAWD in which we own one third of plant capacity in exchange for paying one third the cost of capital improvements, as well as operating costs based on the amount of our wastewater flow. PBCSD has been setting aside reserves in its long-range financial planning to cover its share of the cost of improvements.

This important renovation will ensure that we have safe, efficient wastewater treatment now and for future generations, which safeguards the health of our community, as well as the environment, economy, and our general quality of life. CAWD's Capital Improvements Projects 15-Year Master Plan can be viewed at CAWD.org under the "financial" tab.

Capital project update

Undergrounding on schedule

The District capital improvement project for undergrounding overhead high voltage electrical main lines and communication utilities is continuing on schedule. PG&E and Comcast have completed undergrounding in the 1.6 mile Phase One project area on Colton and Forest Lake Roads, with PG&E removing associated electrical poles. AT&T anticipates completion by the end of the year, after which they will remove remaining poles which were shared by the three utilities.

Phase Two of the project will continue where Phase One left off, along an approximately 2.5 mile section of Forest Lake Road from Hawkins Way to The Lodge. Design details are still being finalized as the three utilities explore options to save costs and enhance services along the route area. For example, PG&E will expand its 21 kilovolt distribution circuit to serve The Lodge at Pebble Beach, which will improve system reliability for surrounding neighborhoods, especially during special events when electrical demand is high.

The undergrounding project is a large, multi-phase, multi-year undertaking aimed at undergrounding overhead electrical and communication main lines within the Forest. The District will continue to evaluate the scope and budget of the project as work progresses.

These high voltage electrical and communication lines no longer snake through the trees in our Phase One project area. Undergrounding will increase service reliability and reduce Forest-wide outages caused by storms and falling branches.

Pebble Beach has new waste hauler *(Cont. from page 1)*

The agreement includes new, innovative recycling programs designed to help Pebble Beach meet recently passed legislation, AB 341, which established a statewide 75 percent recycling goal by 2020. The carts currently in use will be replaced with new industry standard colored carts: black for trash, blue for recycling, and green for yard waste. GWR will use public facilities which will be constructed at Monterey Regional Waste Management District (MRWMD) landfill in Marina, including a Compressed Natural Gas (CNG) vehicle fueling station, a maintenance yard, and a local customer service call center. As with our current hauler, GreenWaste trucks will be fueled with environmentally friendly CNG which has a dramatically lower carbon footprint than gasoline.

WM will continue providing services until June 30, 2015, with GWR taking over the next day. There is no need for residents to contact either provider. GWR will conduct outreach to everyone in the Forest before the transition to provide information on improvements and ensure a seamless flow of service.

Big Green event collects over 12 tons of waste!

Pebble Beach residents drove 373 vehicles through our Big Green household hazardous waste collection event in September. The event collected a total of 5.9 tons of electronics, 5.1 tons of household hazardous waste, 900 pounds of mixed paper and 290 pounds of pharmaceuticals. The Monterey Regional Waste Management District salvaged 1,164 pounds of reusable products that will be offered free of charge at their Last Chance Mercantile.

New service!

Drop off unwanted medicine at the firehouse

PBCSD Medical Waste Take-back Program:
Monday through Thursday, 10 am to 4 pm
Pebble Beach Fire Station lobby,
3101 Forest Lake Road

The District's new medical waste take-back program provides a secure, environmentally responsible way to dispose of expired or unused medications, medicinal liquids, vitamins and supplements, needles and syringes, and all prescription, over-the-counter and veterinary drugs. We now have two kiosks located inside the fire station lobby on Forest Lake Road—one for pharmaceutical waste, and another for sharps, needles, syringes, scalpels, lancets and blood glucose test strips.

Please remove perscription labels or mark out your personal information, and bring your unwanted pharmaceuticals to the fire station during take-back hours.

Do not dispose of medicines down the toilet or drain—they pollute the environment, harm aquatic wildlife, and can contaminate drinking water supplies.

Get District alerts on Facebook & Twitter!

Receive PBCSD emergency updates through your Facebook or Twitter account! Subscribe to us at tinyurl.com/PBCSD-Facebook or tinyurl.com/PBCSD-Twitter so we can alert you to emergencies near your home and let you know about important District news and events.

READY FOR RAIN (from left) District Engineer/Paramedic Ryan Vanderhyde, Firefighter Jason Mahan, Engineer Chris Stegall Firefighter, and Marilou Young fill sandbags for Forest residents.

Have a safe winter: 6 tips

1. Falling branches and downed power lines are a hazard in the Forest. Follow weather reports and stay inside during storms. Tune to 1620 AM radio for road closures and other hazard updates. The District's Reverse 911 System will contact you with emergency alerts so be sure your information is current—to update call 647-5642.

2. If you live in a flood-prone area, keep plastic sheeting, plywood and tools handy for waterproofing doors and openings. Prevent storm drain backups by keeping street gutters and catch basins near your home clear of leaves and debris. Clean out your house gutters before the rainy season begins.

3. Pick up free sandbags at the main fire station at Forest Lake and Lopez Roads. If needed, we can assist you with loading and unloading sandbags and placing them in your home. For more information please call 375-4204.

4. Refresh your disaster preparedness kit now so you can be self-sufficient for at least three days without power or water. For more more information, visit ready.gov. In case of evacuation, take your pets with you. The SPCA for Monterey County provides animal housing outside area shelters.

5. Have a fire-free holiday: keep live Christmas trees watered and away from radiators, space heaters, and fireplaces. Have your tree supplier saw a fresh cut on your tree, and put it in water as soon as possible or within three hours, before the sap seals the base. Make sure lights and artificial trees have the Underwriter's Laboratory (UL) label, discard any lights with frayed wires or cracked sockets, and do not use electric lights on metallic trees.

6. Be sure your fireplace chimney is regularly serviced so it's clean and safe for winter fires. Burn small, hot fires to minimize the buildup of flammable creosote in your chimney.

FIREFIGHTER-APPROVED HOLIDAY GIFTS
Keep loved ones safe with gifts such as first aid/disaster kits, fire extinguishers, escape ladders, flashlights and portable radios.

DRIVING TIP: BEWARE OF SLIPPERY ROADS AFTER FIRST RAINS

More vehicle accidents occur during the "first flush" rains of winter when precipitation activates oil and other substances that have accumulated on pavement over the dry season. Be especially aware on the Forest's many curvy roads, and at intersections where vehicles stop and start. Use your headlights when it's raining–it's the law–and don't be afraid to switch between high and low beams as you pass oncoming vehicles so you can see further down the road.

Two ways to dispose of your holiday tree

1. Curbside pick-up through Jan. 16: Trees three feet tall and under can be disposed of whole at the curb. Taller trees must be cut so that the trunk is in sections no longer than three feet long.

2. Drop off through Jan. 31: Drop off any size tree, no cutting required, at the Pebble Beach Company Corporation Yard located at Lopez and Sunridge Roads.

Before recycling your tree you must remove the tree stand and all ornaments, lights, tinsel, and decorations.

Thanksgiving & Christmas Garbage Schedule

Regular Pick-up	Holiday Pick-up
Thurs., Nov. 27	Fri., Nov. 28
Fri., Nov. 28	Sat., Nov. 29
Thurs., Dec. 25	Fri., Dec. 26
Thurs., Jan. 1	Fri., Jan. 2

Free 2015 Clean-up Weeks

Leave out up to seven additional cans, bags or boxes during:

Jan. 5-9 March 30-April 3

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Pebble Beach Community Services District
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