

# Monterey Bay Engineers, Inc.

CIVIL ENGINEERING  
LAND SURVEYING  
SUBDIVISIONS

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STEVE C. WILSON, RCE 25,136, PLS 5,207  
BRIAN M. WILSON, PLS 7,771

August 26, 2009

Mr. Buddy Bloxham, Battalion Chief  
Carmel Highlands Fire Protection District  
73 Fern Canyon Road  
Carmel Highlands, CA 93923

Re: Annexation to Carmel Area Wastewater District  
Design of Sanitary Sewer Connection for Fire Station property  
Assessor's Parcel 241-073-002

Dear Mr. Bloxham:

We are pleased to present you with our proposal to complete the surveying, annexation legal descriptions, graphic exhibits, and annexation map for the above referenced properties. As you know, we have been, or will be, providing land surveying and civil engineering services to the owners of the Tydings, O'Boyle, and Keig properties for similar services, and we are very familiar with the Carmel Highlands area. We have recently completed other annexations to the Carmel Area Wastewater District that included the Local Agency Formation Commission (LAFCO) submittal and State Board of Equalization submittal. We have reviewed the latest LAFCO Application Requirements, and we are familiar with the processes.

We will also complete the topographic mapping, design, construction staking and construction observation for the proposed connection to the Carmel Area Wastewater District (CAWD) sewer system. We have visited the property to assess the current site conditions, and we have met at the CAWD offices to discuss the connection methodology.

Our work will consist of the following in approximately this order:

- 1) We will prepare an annexation map based on the record configuration of each of the property boundaries based on State Plane Coordinates. The map will show all of the required information as set forth by LAFCO and the State Board of Equalization. The map will be prepared in Autocad. The map will contain a vicinity map, and will show nearby streets, highways, and the existing Carmel Area Wastewater District boundaries in the vicinity of the annexation. We will prepare a new metes and bounds legal description of the property. The legal descriptions will be prepared in accordance with the standards established by LAFCO

and the State Board of Equalization. We will need to obtain the current vesting deed that contain the current ownership and legal description.

We have contacted Jacqueline Onciano with the Monterey County Planning Department. She has confirmed that the County Planning and Coastal Development Permit can be processed as an amendment to the original CAWD permit that was approved in 2004. The county's file number for the permit we need to modify is PLN030325. All four properties proposing to connect to the sewer system can be combined into one amendment application. The permit amendment fee is \$4,733.76. The county fees can be split four ways. The county will schedule a pre-application meeting upon receipt of preliminary conceptual plans, an application form, and payment of a \$450.00 fee. The \$450.00 fee will be credited to the permit modification application fee if the application is made within six months of the pre-application meeting. At the pre-application meeting, we will receive the list of items necessary to deem the formal application complete.

We have also contacted Mr. Steve Senet with the California Department of Transportation (CALTRANS) District 5 Office in San Luis Obispo. He reviewed with us the normal requirements for work within the state highway right-of-way. Lateral drilling for the highway crossing is preferred instead of an open trench cut. If an open trench is proposed, they will need a traffic control plan for reversible traffic, and depending on the time of year, they may require the work to be done at night. The probable fee from CALTRANS for the encroachment permit is \$1,148.00. Any pressure lines crossing the highway must be installed in a casing terminating at least five feet outside the pavement limits. CALTRANS prefers that any pipelines within their right-of-way be owned by the CAWD.

The plans must also be checked and approved by the CAWD to insure that the proposed installation meets their standards. The district wants to have jurisdiction over the valve isolating the existing system from the discharge line from your pump. This valve will be placed in a vault at the state highway right-of-way line. All sumps, wet wells, piping, pump, and pump controls on your property will be privately owned and maintained.

In addition to the Monterey County Planning permit we will need to apply for Building Permits to allow for the installation of the tank, pump, plumbing pipeline in the private property, and electrical service. The county's plan checking and permit fees are based on the valuation of the proposed work within private property.

The fees outlined in this proposal are based upon completing the plans from start to finish without major revisions. Our design work will consist of the following in closely this order:

- 2) We will rely on the site / topographic / grading plans for the fire station to the extent possible. It will be necessary to correlate the elevations shown on the plans for the Highlands Inn pumping station facilities with the elevations obtained from the existing plans. It will be necessary to gather some additional essential information regarding the existing trees, utilities, walkways, walls, extents of the concrete paving, and precise

elevations of your existing septic systems. We will also need to locate the state highway improvements and all utility improvements along the route of the proposed highway crossing. Accurate topographic mapping is essential for the development of the project construction plans.

- 3) An assessment of the condition of the existing septic tanks, pump vaults, and pumps will be necessary in order to determine the extents of the existing sewage disposal system can be used for the direct connection to the CAWD. It may be possible to use the existing septic tanks for storage volume and / or possibly for a pumping vault. It may be necessary to have the septic tanks we may use as holding tanks or pump vaults pumped to verify their size and condition unless we can find reliable information from past services made to the existing systems. The design intent is to install only one connection to the existing force main to serve both the Keig and the fire station property. It may be possible to install a duplex pump in the existing septic tank on the fire station property. Another possibility is installing a new pump vault with duplex pumps at the northwesterly corner of the fire station property. That would allow gravity connections for each property. An assessment of the costs for each option will be completed to yield the most economical design and to determine the allocation of costs between the fire district and Daniel Keig. We have not included septic tank pumping and inspection fees by Peninsula Septic Tank Service in our proposal.
- 4) We will complete a preliminary design of the connection piping, holding tanks, pumping vault, pump, pump controls, discharge piping, vaults, and connection to the existing gravity sewer main across State Highway 1. Our design will be directed at minimizing the disturbance to your new site improvements. We will also complete a cost comparison between the lateral boring and open trenching methods to identify which method is the most economical. We will attempt to use your existing facilities to the extent possible. We will give you our recommendations with the pros and cons of each option. You will need enough holding capacity such that power outages can be tolerated without overflowing the system. After the preliminary design is done, it will be reviewed by the CAWD for compliance with their standards. After we have agreed on the proposed design, the plans will be submitted to the CAWD for their comments.
- 5) After a consensus is reached with the CAWD, we will schedule and hold the pre-application meeting with the County of Monterey Planning Department. At this meeting, we will receive the list of items necessary to submit the application for the amendments to the County Planning and Coastal Development Permit. We will complete the plans, details, material specifications, show the environmental mitigation measures, along with other application materials as requested. The formal application for the permit amendment will then be made to the county. We will also meet with county staff and attend the hearings as necessary.
- 6) We have also received a list of items necessary for submittal of the plans to CALTRANS for the encroachment permit. We expect at least one set of plan review comments will be made, and the plans amended accordingly, before CALTRANS can issue the encroachment permit. We will work the CALTRANS District Office as necessary to secure the permit.

- 7) The construction work can only proceed after the Monterey County Building Department has issued the electrical and plumbing permits for the work. We will make the application for the building permits, including adding the necessary notes and details. We expect at least one round of plan check comments from the county before the permits can be issued.
- 8) Upon approval of the plans and issuance of the necessary permits, at the commencement of work, we will provide construction staking as required for this project. The staking may be limited to providing the horizontal positioning and design elevations for the proposed work. We will also provide periodic inspection of the work (as authorized by you) to ensure that it is being done in accordance with the design. The fees for this work can vary greatly depending upon your contractor's capabilities and the amount of time we are required to be present. We will also be present at the start-up of the pumping facility to make certain the installation is functioning properly and performs to specifications.

The fees contained within this proposal do not include soils testing, biological reports, forester's reports, landscape design, and any fees charged by the CAWD, the County of Monterey, CALTRANS, or other governmental agencies.

The professional fees for our services will be based upon the hours expended on this project. Given the uncertainties of working with two county departments and three other agencies, we believe a "time and materials" fee arrangement is the most equitable for both the client and the consultant. The design of the pumping system is relatively straight-forward, however, the unknown issues that may be important to any of the agencies involved is impossible to predict. If we do not perform work on portions of the project, especially fees estimated for permit processing, no fees will be due for any of the work for which we have not expended any time. It is our opinion that the fees for the included work outlined above will be approximately as follows:

- 1) LAFCO Annexation Map and Legal Description
- 2) Topographic Mapping, correlate elevations
- 3) Verify condition and suitability of existing tanks & pumps
- 4) Preliminary Design and Construction Cost alternatives
- 5) Processing Application through Monterey County Planning
- 6) CALTRANS Permits
- 7) County Building Department Permits
- 8) Staking, Inspections and Observation

\* Fees for these items will depend upon the ease or difficulty encountered with the permit applications, and plan checking.

\*\* Fees for this item may vary depending upon the amount staking required, construction and scheduling efficiency, and the capabilities of the contractors you select.

Upon completion of portions of the above work, or at the end of each month, a statement will be sent to you. If any billing is unpaid for a period of more than 30 days, work will be suspended on this project until full payment of any amount then due is made. Our rates for professional services, and extra work if authorized by you are:

Survey Crew (2 men and equipment)	\$150/hr
Principal Civil Engineer & Land Surveyor	\$130/hr
Staff Registered Civil Engineer	\$105/hr
Staff Professional Land Surveyor	\$105/hr
Assistant (EIT or LSIT)	\$ 80/hr
Senior Engineering Technician	\$ 70/hr
Engineering Technician or Draftsman	\$ 55/hr
Black & White Engineering copies (24x36)	\$ 2.00/sheet
Reimbursables: Plotting, Federal Express	at cost

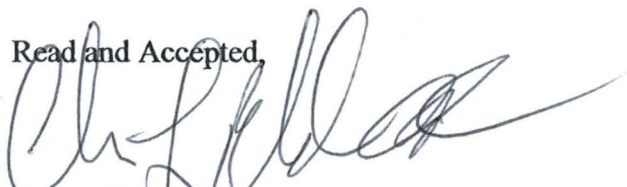
We look forward to this opportunity to be of service. Upon receipt of a signed copy of this agreement, with the Consulting Civil Engineers and Land Surveyors of California provisions attached, we will begin work. Please contact us if you have any questions.

Sincerely yours,



Steven C. Wilson  
President, Monterey Bay Engineers

Read and Accepted,

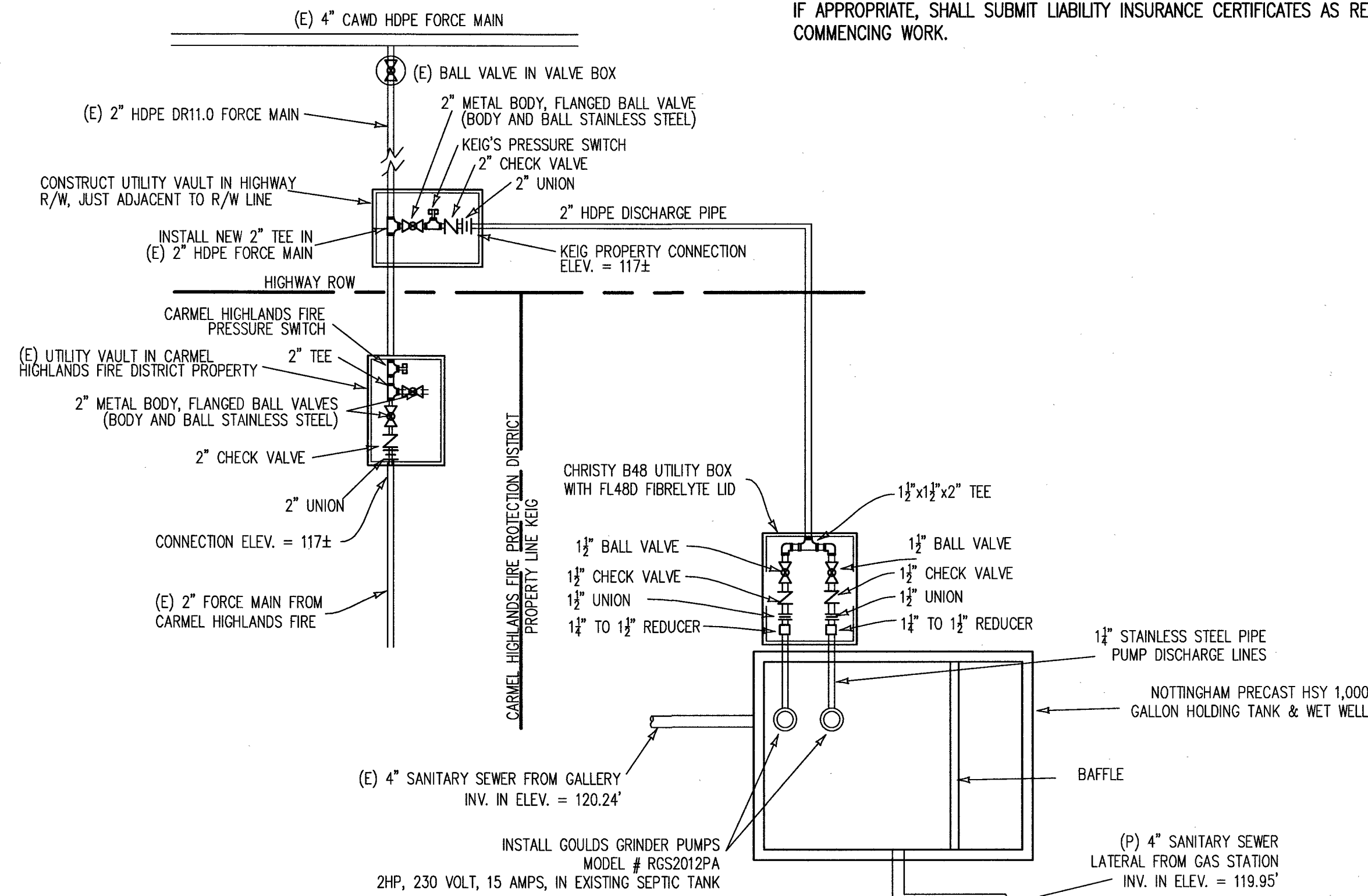


Buddy Bloxham  
Carmel Highlands Fire Protection District

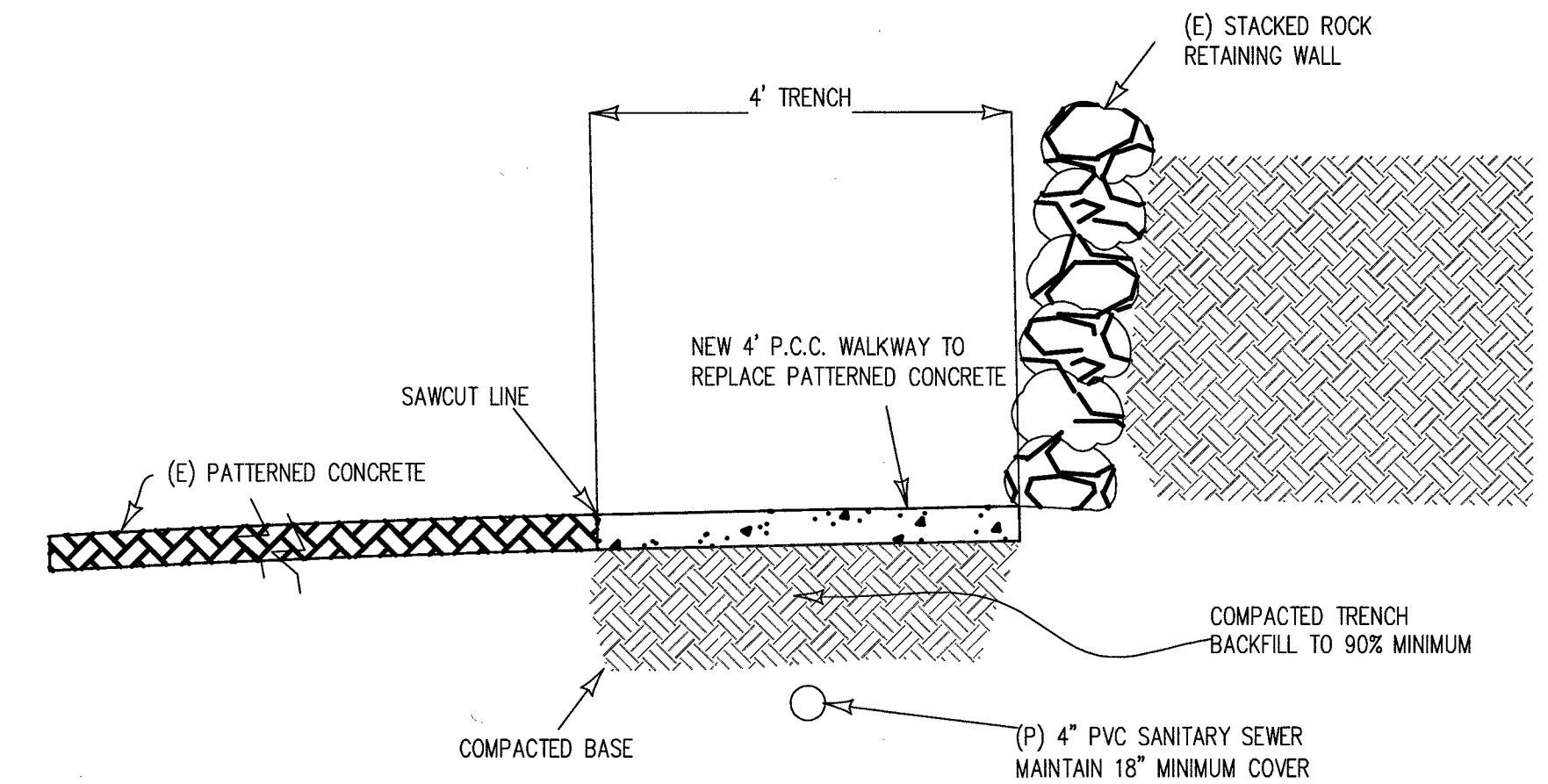




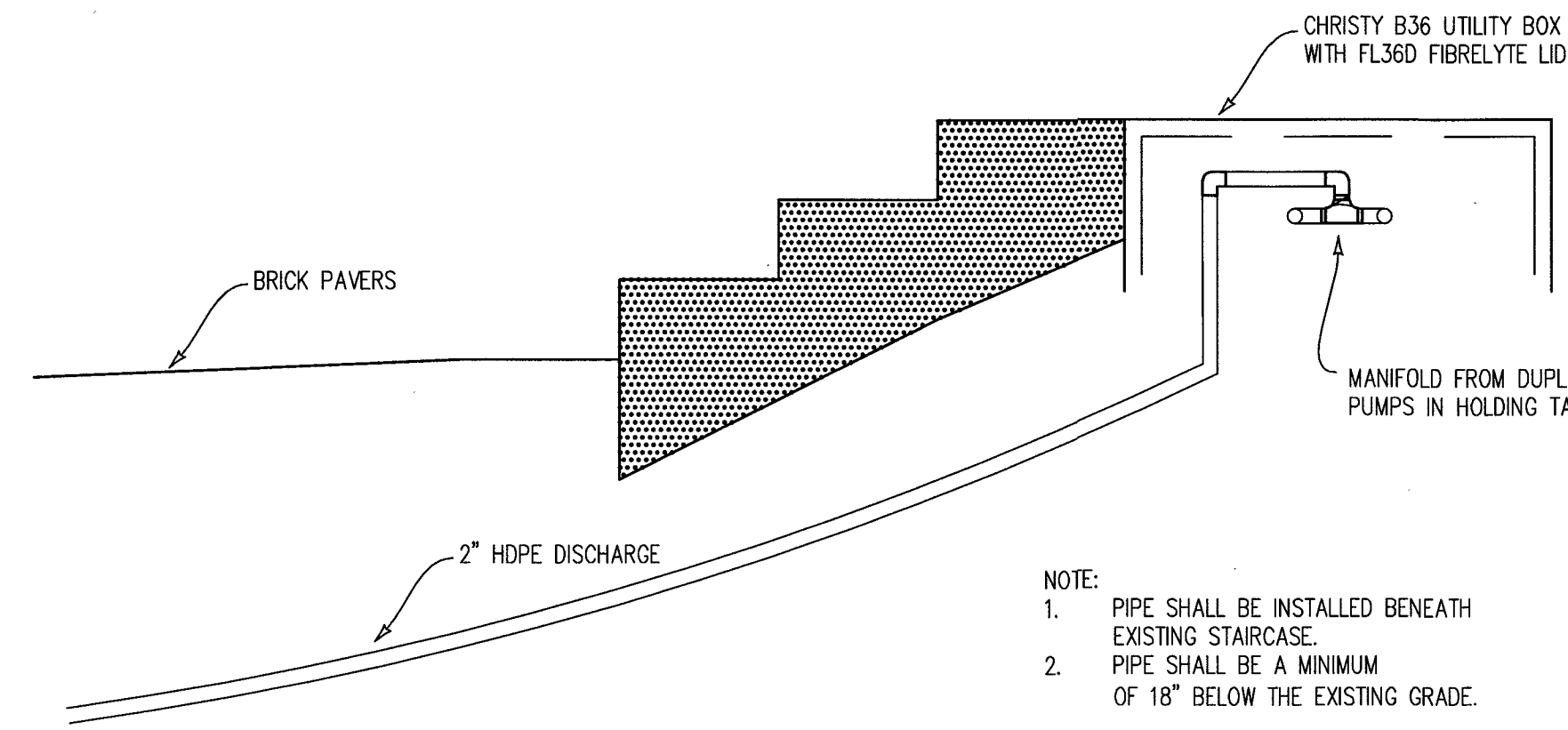
**NOTE:**  
 ANY WORK DONE TO THE DISTRICT FACILITIES, I.E. TIE-IN OF THE NEW LATERAL TO THE DISTRICT'S FORCE MAIN, SHALL BE DONE BY A LICENSED CONTRACTOR CERTIFIED BY THE PIPE MATERIAL MANUFACTURER. A WRITTEN CERTIFICATION SHALL BE PRESENTED TO THE DISTRICT PRIOR TO THE COMMENCEMENT OF WORK. AFTER THE WORK IS COMPLETED, APPLICANT SHALL ALSO PROVIDE A CERTIFICATION FROM THE MANUFACTURER THAT ALL WORK WAS COMPLETED IN ACCORDANCE WITH THEIR RECOMMENDATIONS. THE CONTRACTOR, AND SUB-CONTRACTOR IF APPROPRIATE, SHALL SUBMIT LIABILITY INSURANCE CERTIFICATES AS REQUIRED BY THE DISTRICT PRIOR TO COMMENCING WORK.



**(B) HOLDING TANK, SUMP, PUMP AND PIPING SCHEMATIC**  
 NOT TO SCALE

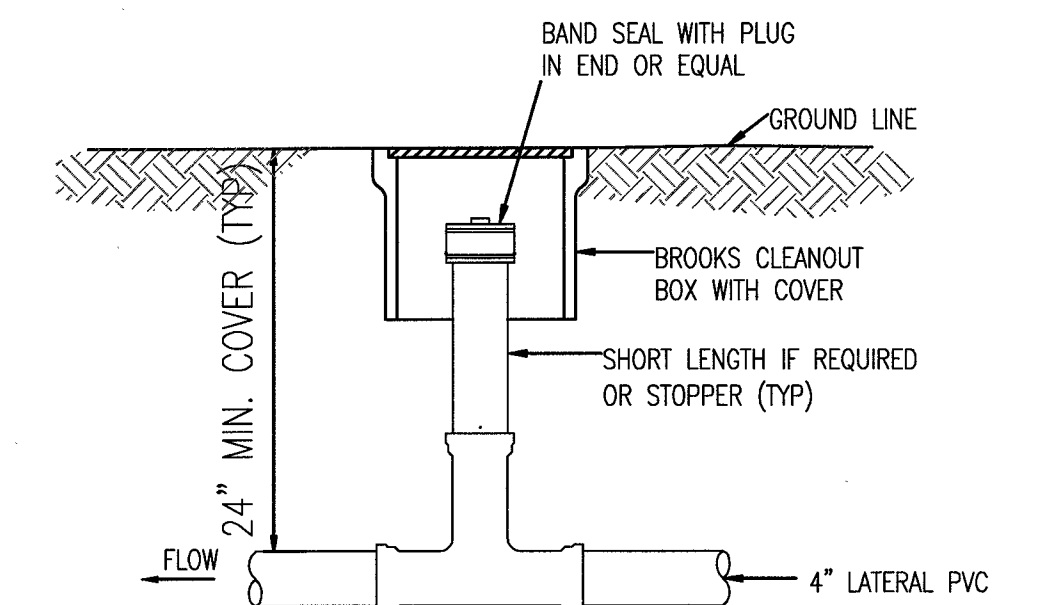


**(E) TRENCH DETAIL**  
 NOT TO SCALE

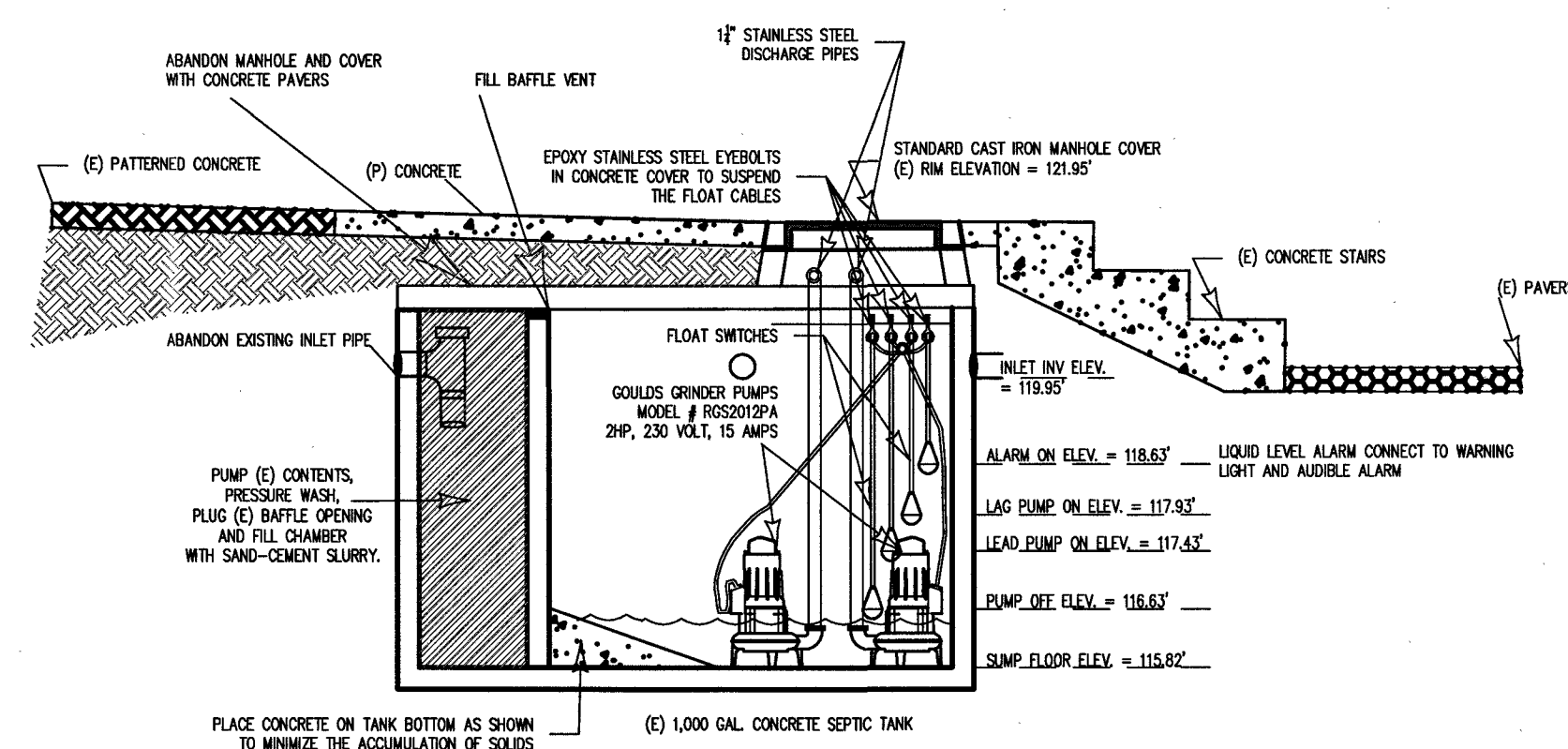


**NOTE:**  
 1. PIPE SHALL BE INSTALLED BENEATH EXISTING STAIRCASE.  
 2. PIPE SHALL BE A MINIMUM OF 18" BELOW THE EXISTING GRADE.

**(D) DISCHARGE PIPE ROUTING AT STAIRS**  
 NOT TO SCALE

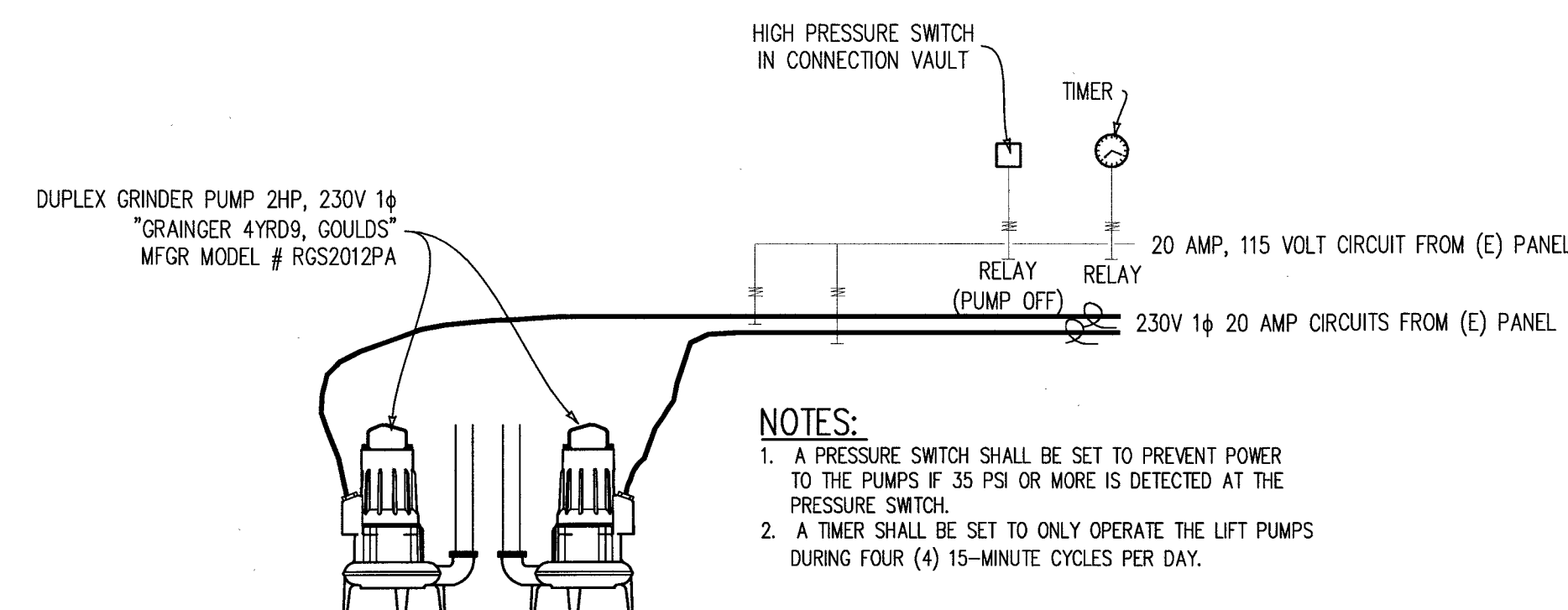


**(F) TWO-WAY CLEANOUT DETAIL**  
 NOT TO SCALE



**(A) SECTIONAL VIEW OF EXISTING SUMP AND SEPTIC TANK**  
 NOT TO SCALE

**NOTES:**  
 1. MINIMUM DISCHARGE FOR EACH PUMP TO BE 30 G.P.M. @ 33 FEET TOTAL HEAD.  
 2. PUMPS SHALL OPERATE ON SINGLE-PHASE 230 VOLT A.C. POWER, 15 AMPS.  
 3. CONFIGURATION AND DIMENSIONS SHOWN SHALL NOT BE CHANGED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.  
 4. ALL BRACKETS AND BOLTS TO BE STAINLESS STEEL.  
 5. CONTRACTOR SHALL SUBMIT MATERIAL SPECIFICATIONS AND MANUFACTURER'S DATA SHEETS ALONG WITH THE BID.  
 6. MONTEREY BAY ENGINEERS SHALL INSPECT AND APPROVE ALL PHASES OF INSTALLATION PRIOR TO SYSTEM OPERATION.  
 7. PUMP CONTROLS SHALL PROVIDE FOR ALTERNATING THE LEAD PUMP EACH TIME THE LIFT STATION OPERATES.  
 8. A VISIBLE AND AUDIBLE ALARM SHALL BE INSTALLED TO INDICATE THE FAILURE OF ONE PUMP, OR IF THE LIFT STATION WATER LEVEL RISES ABOVE THE ALARM FLOAT.  
 9. DISCHARGE PUMPS SHALL NOT BE IN OPERATION WHEN THE EXISTING 4" HDPE FORCE MAIN IS IN USE, BY CARMEL AREA WASTEWATER DISTRICT.  
 10. GROUT OPENINGS AROUND ALL SUMP PENETRATIONS WITH NON-SHRINK MORTAR.



**NOTES:**  
 1. A PRESSURE SWITCH SHALL BE SET TO PREVENT POWER TO THE PUMPS IF 35 PSI OR MORE IS DETECTED AT THE PRESSURE SWITCH.  
 2. A TIMER SHALL BE SET TO ONLY OPERATE THE LIFT PUMPS DURING FOUR (4) 15-MINUTE CYCLES PER DAY.

**(C) PUMP CONTROL SCHEMATIC**  
 NOT TO SCALE



7/26/2024

REVISIONS		SEWER CONNECTION DETAILS	
DATE	BY	A PORTION OF	
JUL 22 2015	SCW	RANCHO SAN JOSE Y SUR CHIQUITO	
JUL 26 2024	SCW	CARMEL HIGHLANDS PROPERTY	
		VOLUME 1, SURVEYS, PAGE 93	
		CARMEL HIGHLANDS AREA	MONTEREY COUNTY
		PREPARED FOR	
		DANIEL J. KEIG	
		BY	
		MONTEREY BAY ENGINEERS, INC.	
		607 CHARLES AVE SUITE B	(831) 899-7899 SEASIDE, CALIFORNIA 93955
SCALE	DATE	DRAWN BY	SHEET
AS SHOWN	JULY, 2015	SCW	2 OF 2
JOB No. 09-031			



**Monterey Bay Engineers, Inc.**

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**From:** "Jim Merritt" <jmerritt@shapecal.com>  
**To:** <mbayengr@mbay.net>  
**Cc:** "David Sollid" <Sollid@cawd.org>  
**Sent:** Friday, April 01, 2011 5:23 PM  
**Attach:** Highlands Inn PS Carollo -Bestor Flygt Pumps.pdf  
**Subject:** Highlands Inn PS

Steve:

Attached is the packet that I have for the Highlands Inn PS. Includes general layout drawings, flushing connection elevation and distance from the pump station, pump curves and field data from two separate days.

I ran another system loss curve showing what a continuous flow would have for a loss, assuming the static is the max elevation in the line, using the total distance and ignoring the low points and possible air locks and blocked low points.

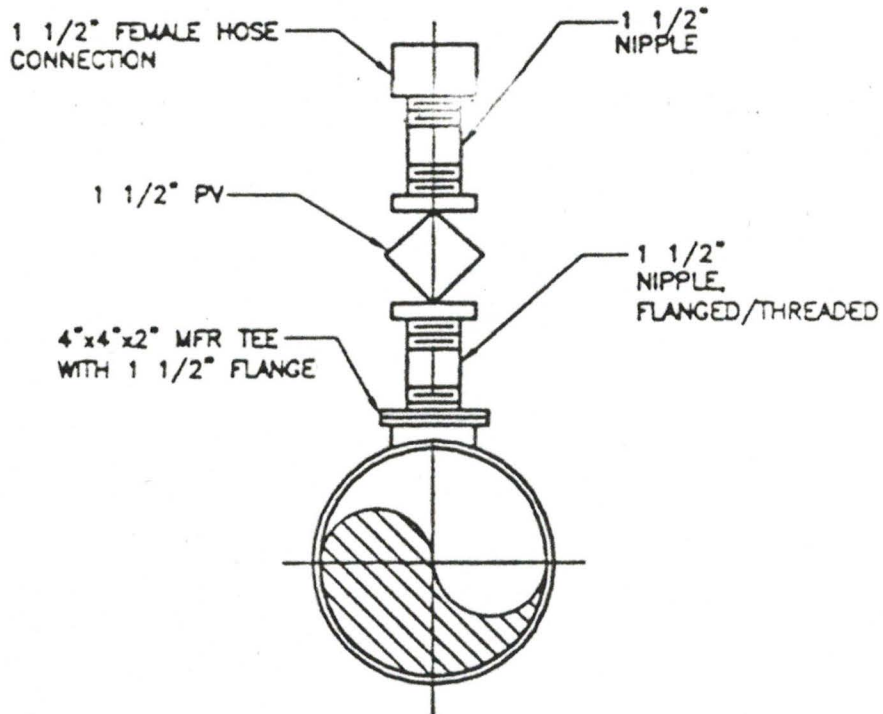
When the pumps pump, for 5 minutes for an example, the velocity in the 4 inch HDPE is above 3 ft/sec, but this happens for only a part of the line, pumping in slugs. I think that the solids slide back down into the low points, causing sedimentation at the low points. Thus the high heads that we are seeing. The pumps are requiring a rebuild every six months due to the high heads( operating at the left side of the curve). The seals and shaft are being subjected to high thrust /axial loads and high radial loads. David and I have talked about flushing out the line below San Jose Creek ( low point) and maybe taking a pressure reading on location 15 and 12, to measure the loss in this section.

I have a meeting schedule for Monday ( 4 April 2011) at 1:30PM at Dave's office at the plant. I will confirm this date and time on Monday with Dave.

Jim

James Merritt  
Shape Inc  
6600 Koll Center Parkway, Ste:#220  
Pleasanton, CA 94566-3107

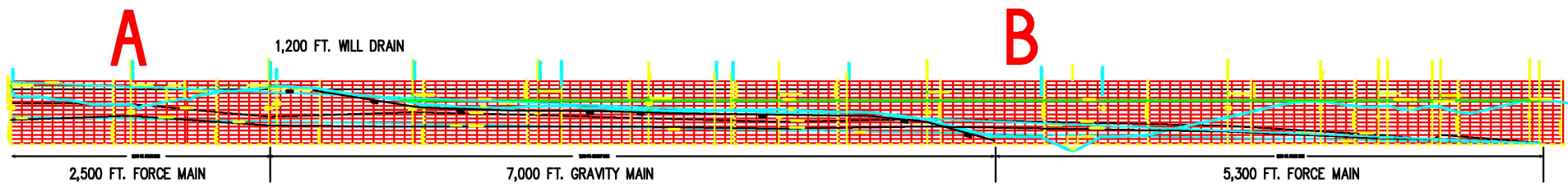
Tel: 925-485-9720 , ext#103  
Fax: 925-485-6085  
Mobile: 925-699-8865

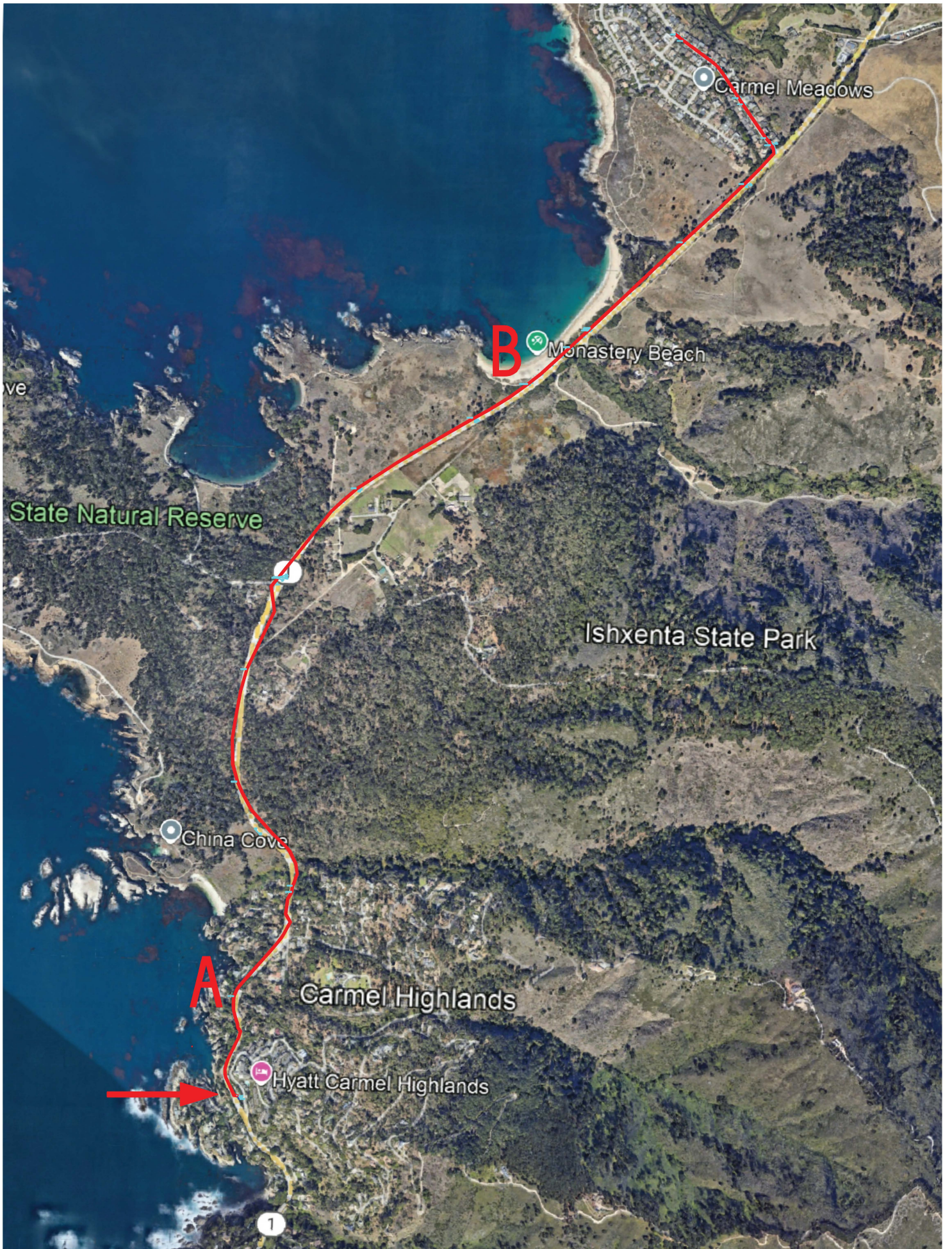


NOTES:

1. SEE \_\_\_\_ FOR FLUSHING INLET VAULT.
2. PROVIDE MIN 12" CLR BETWEEN END OF HOSE CONNECTION AND INSIDE WALL OF VAULT.

P203 FLUSHING CONNECTION  
 TYP 11-01-96





Carmel Meadows

**B** Monastery Beach

State Natural Reserve

Ishxenta State Park

China Cove

Carmel Highlands

Hyatt Carmel Highlands

1