

MEETING DATE: 5/11/09

AGENDA ITEM: Approval of a Professional Services Agreement with PRP Engineering, Inc. to Provide Design Services for the Braddock Sewer Pump Station Improvement Project (P-521)

ATTACHMENTS

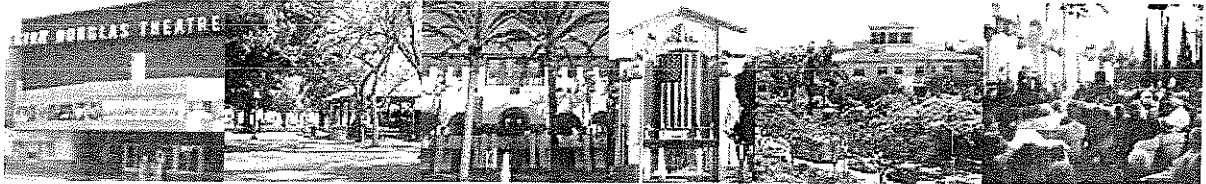
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prp engineering, inc.

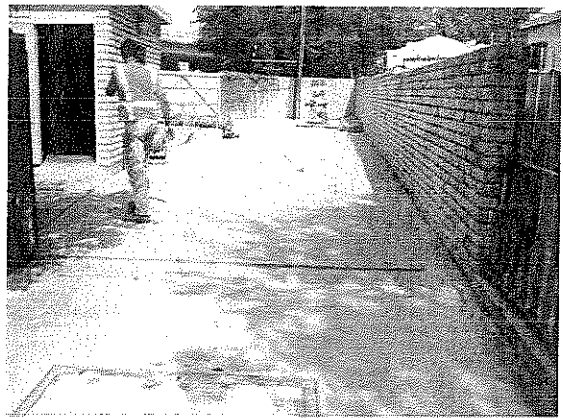
Water and Wastewater Engineers

Culver CITY

PUBLIC WORKS DEPARTMENT



Proposal For Design Services To Braddock Sewer Lift Station Improvements P-521



prp engineering, inc.

Water and Wastewater Engineers

February 12, 2009

JN1185

Mr. Steve Finton P.E.
Senior Civil Engineer
Culver City Public Works Department
9505 Jefferson Boulevard
Culver City, CA 90232-0507

**Subject: Proposed Engineering Services for the Braddock Sewer Lift Station Improvements
P-521, B-1417**

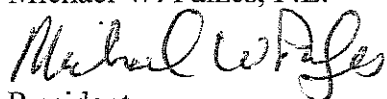
Dear Mr. Finton:

PRP Engineering, Inc. is pleased to submit the above referenced proposal for your review. Based on the RFP requested information, the proposal has provided you a detailed summary of our team's Project Approach and Scope of Work, summary of the Project Team Members and Recent Experiences similar to this project and Client References for the recent projects. In addition, there are Project Team Member's Resumes, Project Schedule, two Representative Projects with plans and photographs, and a summary table of sewer lift stations completed in the last 10 years. A separate package has been provided with the Summary of Plan Sheets, a Matrix of Man-hours for the Scope of Services and the related Fee Budget and the Hourly Rate Schedule. As stated throughout the proposal, our team has a good working knowledge of the project requirements and constraints and can complete the project requirements in a timely, cost effective manner. PRP's preparation of the Preliminary Design Report attached to the RFP provides our team with a more detailed insight of all the project constraints and objectives that are necessary to complete from the design and construction phases of the project.

The team members will include individuals that have been dedicated to PRP Engineering on similar projects in the past ten years. They are as follows: Mike Palzes and Henry Miedema for PRP Engineering, Inc., Hernan Montoya of Arcon Structural Engineers, Casey Cushman from Mullen & Associates, Electrical Engineers, and the site Survey and Civil plans will be prepared by Robbie Mahmood of APD Consultants. Project Team/Profile/Organization Chart/Resumes provides an overview of Project Team capabilities and recent similar projects demonstrating our past dedication and ability to complete projects very similar to yours.

Since its inception over ten years ago, PRP Engineering, Inc. has been a business in good financial standing. Also, PRP acknowledges that it is currently able to meet all insurance requirements as indicated in the City's RFP. PRP Engineering, Inc. has every confidence that it will be able to provide you with the best in engineering design services for the lift station improvement project. Please do not hesitate to contact me if you have any questions at (714) 374-0048.

Sincerely,
Michael W. Palzes, P.E.



President
PRP Engineering, Inc.

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SECTION 1 – PROJECT APPROACH AND SCOPE OF WORK

PRP Engineering's approach starts by identifying the project's *key issues*, which are outlined below.

- *Analysis of Project Improvements/Upgrade Requirements.*
- *Selection of an Experienced Design Team*
- *Identification of Project Submittals and Key Schedule Dates*
- *Draft a General Operation Summary*
- *Provide Quality Assurance/Quality Control*

I. ANALYSIS OF PROJECT IMPROVEMENTS/UPGRADE REQUIREMENTS

Braddock Sewer Pump Station was originally constructed almost 65 years ago in 1943, providing service to the developments in Culver City and a small portion of City of Los Angeles. In order for the facility to continue operating efficiently into the future, the City has identified the need for several upgrades/improvements in the preliminary design report and the RFP. In order to insure continued operation of the station during implementation of these improvements, it will be necessary to carefully evaluate and review each of the following critical issues during the Phase I study, which is the 20% submittal:

- A. Provide a Construction Phasing summary to assure sewage pumping service is maintained at all times and provide minimum requirements for the station's bypass pumping system.**
- B. Installation of the new deeper wet well structure with submersible pump units and conversion of the existing dry well into the valve vault. Provide new valves and upgrade the existing dry well ventilation system.**
- C. Provide a Wemco Pre-rotation Pump Configuration for self-cleaning Wet Well operation.**
- D. Removal and Replacement of the Existing Motor Control Center with larger solid-state starters.**
- E. Upgrade the Wet Well Control Systems with a Sonic Level Controller and a Hardwired Float Backup Control Scheme.**
- F. Construct the new inlet sewer to drain to the proposed wet well and maintain service in the sewers during the entire project.**
- G. Construct a new Magnetic Flow Meter and Vault.**

In order to guarantee that the facility's pumping capacity is not compromised, there are certain critical issues that should be addressed beforehand. During the Phase I investigation, the project improvements will be broken down into a phased construction sequence that will allow the station to maintain its pumping capabilities. Each of the City's requested upgrades will be identified and summarized in our *project approach*. These tasks are briefly summarized below.

- A. Provide a Construction Phasing summary to assure sewage pumping service is maintained at all times and provide minimum requirements for the station's bypass pumping system.**

The proposed project improvements will require the removal of the existing pump configuration and the piping that supplies the pumps from the existing wet well to construct the proposed wet well. The contractor will need to install a temporary bypass pumping system with submersible pumps for several months during the construction of the new wet well.

Therefore, a temporary pumping plan will be prepared that will identify the existing facilities connected with the temporary facilities. The contractor will be responsible for maintaining the pumping service at this facility by installing two submersible pumps in the existing wet well with valves and piping construct at the site grade. A city owned engine driven pump is onsite and would be used to provide backup pumping to the temporary submersible pumps. The temporary submersible pumps will require a temporary control system and motor control center to maintain the pumping service.

Additionally, a Construction Phasing summary will be prepared and included in the specification

requirements that highlight the construction phasing and improvements required during the temporary pumping operation. These tasks include:

1. Installation of the temporary pump system and connection of the temporary system to the existing force main.
2. Removal of the pumps and supply piping from the dry wet and wet well, plug the existing wet well where the three pipes are removed.
3. Construct the new wet well to the lower elevation to eliminate all pump operation levels from the inlet sewers. Configure the new wet well with one pre-rotation pump system and two submersible pumps.
4. Modify the existing dry well to accommodate the submersible pumps with a new check valves and isolation valves and provide a pressure sensor on each of the pump's piping systems.
5. Upgrade the existing dry well ventilation system with a supply and exhaust fan system that provides a minimum of 12 air changes per hour.
6. Construct the new Motor Control Center for the larger sized pump motors and construct the new station's level control system.
7. Setup the traffic control system to close half of Sawtelle Boulevard. Construct the new sewers to connect the existing sewer line with the new wet well. The 10" sewer will require a temporary connection to the existing wet well in order to construct the new 24" sewer manhole in the existing 10" sewer alignment.
8. Construct a new meter on the existing 16" force main in the existing site area in the vault around the existing force main.
9. Activate the sewer inlet system to the new wet well and commence pumping from the new well with the submersible pumps.
10. Abandon the existing 18" sewers flowing into the existing wet well and the 10" sewer flowing into the 18" sewer along Sawtelle Blvd. Abandon the existing wet well as required.
11. Replace the street improvements removed for the new sewer lines and wet well, including the replacement of the existing retaining wall removed by the dry well.

B. Installation of a new deeper wet well structure with submersible pumps and conversion of the existing dry well into the valve vault. Provide new valves and upgrade the existing dry well ventilation system.

The installation of a deeper wet well will eliminate the present problematic operation that exists at the Braddock pump station and eliminate the collection of sludge and solids in the wet well and the inlet sewer lines. The new wet well configuration will provide a narrow long well and provide an operational volume below the inlet sewer line. This type of operation with a taper wet well bottom will help eliminate the collection of solids in the well. The pumps will be a submersible type of unit that is mounted to a slide bar for easy removal from the well. The structure will require shoring in a limited area to avoid the existing MCI communication cables that were installed in the abandoned 10" oil pipeline. The contractor and the structural engineer will also need to be aware of the potential ground water at the lower elevations of the proposed structure to be included in the structural design and dewatered for the construction phase of the project. Therefore, the soils report that will be prepared for the city by a Geotechnical Engineer will be critical information needed for both the design and construction phases of the project.

The existing dry well will be modified to eliminate the existing pumps and supply piping. The existing supply piping wall penetrations will require plugging and repair. The existing check valves and isolation valves will be removed and replaced in a new configuration. A pressure sensor assembly will be provided to determine the pump's discharge pressure without clogging the pressure gage with sewage solids. Also, the existing ventilation system will be removed and upgraded to include a supply and exhaust fan for maintaining a minimum of 12 air changes per hour in vault per CA Industrial Relation Board requirements.

C. Provide a Wemco Pre-rotation Basin configuration for self cleaning wet well operation

Wemco submersible pumps will be utilized in the new wet well installation. The Wemco Hidrostral submersible pumps can be installed in a pre-rotation basin at a lower elevation than other pumps to provide a means of eliminating the collection of solids in the wet well. The pre-rotation basin is cast in concrete and supplied by the pump manufacturer and installed in wet well by the contractor approximately 18" lower than the wet well floor.

The lowered pump installation allows for the wet well floor to be sloped to the lowered area that collects the solids into the basin and the pre-rotation pump unit has an extended inlet to remove solids from basin. One of three submersible pump units will be furnished with the pre-rotation basin. However, the pre-rotation unit will be operated the same as the other two submersible units during the normal pump operation sequence. The City's operators will manually operate the pre-rotation unit on a weekly or bi-weekly basis and wash down the wet well to remove the solids that are collected and not pumped out during a normal pump cycle. The prerotation pumping operation will be a short duration of 20 -30 minutes. At the completion of manual operation, the operator would switch the station's operation back into the automatic level control sequence.

D. Removal and Replacement of the Existing Motor Control Center with larger solid-state starters

The existing MCC has starters for starting and running 30 Hp motors that presently pump the demands from the station. The new station configuration with lowered wet well and higher Total Dynamic Head (TDH) will be required for each of the pumps. The new pumps will require 45 Hp motors. Therefore, the present MCC 30 Hp starters will be inadequate for the 45 Hp demand. The new MCC will be provided with the 45 Hp solid-state starters commonly used in the wastewater applications. The existing generator and transfer switch will be connected to the new MCC and control system to operate two pumps in event of power outage. The existing generator will be capable of starting and running two of the 45 Hp motors plus auxiliary loads during a power outage.

E. Upgrade Wet Well Level Control Systems with an Ultrasonic Level Controller and a Hardwired Float Pump Backup Control Scheme

The proposed wet well upgrades will also provide a new wet well ultrasonic level controller system to control the start/stop sequence of the pumps. The proposed system has been successfully operating in many applications that our team has designed over the last 10 years and is commonly used by other agencies throughout southern CA. The ultrasonic level controller has provided a very accurate method of monitoring and controlling the wet well levels in a sewage pump station. Additionally, the wet well would be provided with a backup level control system that has float switches hardwired directly into the control system in the MCC that becomes the station's control system in the event of failure with the level transducer and/or level controller. These two level control systems provide a secured level of operation to prevent any potential failures at the station.

F. Construct the new inlet sewer to drain to the proposed wet well and maintain service in the sewers during the entire project

The project's new wet well will require new inlet sewer lines. The existing 10" sewer will require a temporary line to be constructed and connected directly into the existing wet well in order to construct the new 24" sewer and the 60" manhole in the present alignment of the 10" sewer. Ultimately the 10" sewer will connect into the 60" manhole but will require the temporary sewer service while the new improvements are under construction. The 24" sewer line and 60" manholes will be constructed approximately 20 feet deep and will require shoring of the trenches and closure of half of Sawtelle Boulevard to complete the new sewer construction. Traffic Control plans will be provided for the street closure during the sewer and wet well construction window. The City's staff has noted that pothole data will be provided for the new sewer alignment crossing the MCI/16" oil lines as noted in Exhibit 2 of the PDR. Once the new wet well and sewer lines are functioning with the new pumps, the

existing 10" sewer pipeline extended past the new 60" manhole to the existing 18" and manhole located in Braddock Street plus the sewer parallel to a portion of 18" sewer that extends into the existing wet well beyond the new 60" manhole built over the 18" sewer will be abandoned in place by filling the pipelines with slurry or sand and plugging the ends with concrete. The existing wet well would also be abandoned by filling with sand or slurry and removing a portion of the top of the structure.

G. Construct a new Magnetic Flow Meter and Vault

A new flow meter will be constructed on the existing 16" force main pipeline in the existing site area for monitoring and recording the station's daily flows. The new meter will be constructed in a new vault that will be constructed around the existing 16" pipeline. The improvements will include a pipeline coupling for the installation and removal of the flow meter for maintenance and/or replacement. The flow meter will be furnished with a flow transmitter that would be installed in the control room or in the meter vault to transmit the flow signal to the station controller.

II. SELECT AN EXPERIENCED DESIGN TEAM

PRP Engineering's design team members have prepared similar projects to the Braddock Sewage Pump Station for the last ten years and previously worked together for 10-15 years for another engineering firm, totally 20 to 25 years experience in the design of sewage and water pump stations. Our past experience includes the preliminary and final design for the rehabilitation and upgrades to four sewage pump stations that service the Midway City Sanitary District. These were very similar improvements required compared with the Braddock Sewage Pump Station improvement requirements. The existing stations were 40 years old and the wet wells, pumps, controls valves, meter, emergency generators and control systems were replaced and upgraded. Additionally, the same team members prepared the preliminary and final design for the Shaw's Cove Lift Station located in Laguna Beach in a difficult access location approximately 15 feet above the beach along a public stairway that descends about 40 feet from the street level to the beach. The station was approximately 35 years old and required the construction of a new wet well and dry well, pumps, valves, emergency generator, controls and MCC. In addition, our design team prepared the preliminary and final design for the upgrades and improvements on two existing sewage lift stations owned by Santa Margarita Water District. The Felipe and Plano Lift Stations' rehabilitation and upgrades have been completed within the past five years. Section 2 of the proposal includes an organizational chart and a brief summary of each team member's recent project related experiences. Since this project requires expertise on many of the same issues and project constraints that are related to our past experience, PRP feels it is well qualified to perform these services for Culver City. The Midway City Sanitary District and the City of Laguna Beach lift stations upgrades and improvements are the two referenced projects that will meet the (RFP Section VII – *Qualification Criteria, Requirement No. 2*). The plans, sections and photographs of each representative project have been provided in (Section 4 – Similar Projects to this proposal.)

III. IDENTIFY KEY PROJECT EVENTS AND SCHEDULE DATES

Section 3 – Project Schedule of the proposal provides the detailed events and dates for the proposed scheduled project. The proposed schedule includes the key dates for the project submittals, project meetings, quality control review, and the bid award/project completion dates. The project schedule has been previously reviewed with each of the team leaders and we can guarantee that these dates will not be compromised. This is due in part to PRP's prior knowledge of sewage pump station standards and guidelines as well as our involvement for the preparation of the PDR plus our experiences with several recent sewage pump station rehabilitation and upgrade projects. Also, the Project Schedule has been provided in a graph format in Exhibit 3-1.

IV. DRAFT A GENERAL OPERATION SUMMARY

The preparation of a draft General Operation Summary during the beginning of Phase II services will assist the City's staff and the design team in resolving any outstanding issues that may have been overlooked or misunderstood with regards to the station's control requirements. Further, the General Operation Summary identifies the design team's level of understanding the project's operational parameters, including the control

sequence, collection of information, adjustable set points, and any special equipment operating procedures. Presentation of a draft General Operation Summary is essential so that the City's staff may readily express any concerns or comments regarding the facility's operation objectives as well as verify that all procedures are clearly understood by both parties.

V. QUALITY ASSURANCE & CONTROL

Section 3 of the proposal identifies the quality assurance and quality control events schedule up to the 90% plan submittal phase. Each Team Leader (e.g. electrical, mechanical, civil and structural) is responsible for performing in-house quality control before design plans are submitted to the City for review. Henry Miedema and Mike Palzes will also provide quality control review of the design package at two different levels of completion. All QA/QC review comments will be presented to the Team Leaders beforehand during an in-house meeting to assure all modifications are completed prior to the submittal to the City.

SCOPE OF WORK

The following tasks are required to complete the Engineering Design and Construction Support Services for the Braddock Sewer Pump Station Improvements P-521. The RFP's *Exhibit 5 Scope of Services* required tasks are briefly summarized in the following scope of work. In addition to the summary of scope of work, PRP agrees to comply with the detailed requirements of each task as described in Exhibit 5 of the RFP.

PHASE I

Task 1- Research and Investigation of District Records.

(Tasks 1.1.1–1.1.5) PRP's Design Team will research and coordinate with the related plans available from the City's records. All other existing documents, including reports, utility location maps, tract maps, existing construction plans, specifications, and any other pertinent information related to this project will also be reviewed. The City's geotechnical reports will be reviewed for geotechnical data necessary for the wet well design. A detailed review of the PDR & the original plans prepared for the Braddock station will be completed prior to proceeding with Task 2 Design Requirements & Preparation of Concept Plan.

Task 2-Design Requirements for Upgrade of Braddock Sewer Pump Station and Concept Plan (Tasks 1.2.1-1)

Preliminary layouts & sections of the new wet well and modified dry well will be presented to the City, including all the requirements highlighted in Task 1.2.1 requirements A to L. An outline of the general operation summary will provide an overview of station's control requirements for the 20% submittal package. A detailed evaluation of the existing MCC removal and replacement with solid state starters with control panels will be reviewed to confirm the space requirements are accommodated. A brief letter report summarizing all the project issues will be prepared and submitted with the 20 % recommendations.

Task 1.2.1B will provide a site survey and sewer invert elevations that will be used for the final design. **Task 1.2.2** will provide a 1"=200 ft scale site composite that demonstrates the proposed improvement areas that will be impacted during the Phase 3 construction phase. **Task 1.2.5** will include a minimum of a 2 meetings to discuss the preliminary layouts, construction phasing requirements, a site tour with the design team and presentation of the control instrumentation and control sequences with the general operation requirements. Anticipated meetings are summarized in *Section 3 – Project Schedule* of the proposal.

PHASE II

Task 1: Final Design and Construction Plans (Tasks 2.1.1-2.1.5)

A complete set of construction plans for this project shall be prepared utilizing the CADD system. Seventy five-percent and ninety-percent plan submittals and specifications will be provided to the City. All plans and specifications shall be prepared in accordance with Culver City standard drawings, Green Book and the Standard Plans for Public Works Construction drawings (latest edition) referenced whenever possible. All plans and profile sheets shall be prepared according to the information provided in the RFP. The Plan descriptions and list of anticipated drawings are summarized in Project Man-hour and Fee Budget submitted in a separate package. Plan and profile sheets shall be prepared at 1"=40' horizontal scale with 1"=4' or 1"=8' vertical scale and all sheets will be 24" x 36" and will be prepared and signed under the direction of California Registered Engineers. Submittals with two copies will be presented to the City at the 75% and 90% project completion phases.

Task 2: Technical Specifications (Tasks 2.2.1)

Detailed specifications will be prepared for all facilities and appurtenances, as listed in the RFP. A pre-purchased specification will also be prepared for the Wemco Pumps with all the final project requirements. We will check with the City for any other plans or details that need to be incorporated into the documents. The City's standard contract documents will be prepared and incorporated into the bid package. The specifications will also include a finalized General Operation summary plus a construction phasing summary and a detailed summary for the bypass operation and coordination for maintaining the pumping service at all times.

Task 3: Engineer's Estimate of Probable Construction Cost (Task 2.3.1)

An Engineer's cost estimate with a breakdown of the items required for construction will be promptly provided at the conclusion of the design phase and be made available to all prospective bidders.

Task 4: Project Meetings (Task 2.4.1)

A total of 4 coordination meetings are anticipated during the design phase of the project. The meeting summaries will include design plan review with the staff in order to meet the project's schedule. The meetings are anticipated for the 20, 50, 75, 90% submittals with a final coordination meeting are summarized in *Section 3 – Project Schedule* of the proposal.

Task 5: Project Deliverables (Tasks 2.5.1-2.5.2)

Original, wet signature vellums of the plans and camera ready originals of the technical specifications shall be submitted to the City for reproduction assembly and bidding. These shall be prepared and delivered according to the instructions contained in task. The budget for reimbursable related costs has been included as summarized in the RFP. The wet signature original set of mylar sheets will be provided to the City upon completion of construction and the plan revisions for the record drawings have been completed. The budget will include the allocations for blueprinting, reprographics, mileage, deliveries, expedited mail, copying, plotter time and miscellaneous related expenses.

PHASE III

Task 1: Bid Process Coordination (Task 3.1.1)

PRP shall provide information and clarification to potential bidders during the bid advertisement period and issue any necessary addenda for clarifications. Additionally, PRP will attend the pre-bid meeting to assist the City with project clarifications.

Task 2: Shop Drawing Review (Task 3.2.1)

An estimate of 35 shop drawing submittal reviews are noted in the RFP. The associated budget has been based on this quantity of 35 submittals with the budget to perform a second review as needed for the submittal acceptance.

Task 3: Construction Engineering Support Services (Task 3.3.1)

PRP's design team will provide engineering support services during construction in response to request for information or direction from the City's staff or for field coordination activities with the Contractor. A total of six site visits at 3 hours each plus three visits at 4 hours each are included in the budget. There are 24 hours allocated for the staff time for minor plan revisions to the construction drawings. A total of 60 hours requested in the RFP plus additional Design Team time have been budgeted for construction support services.

Task 4: Preparation of Record Drawing (Task 3.4.1)

A total of 16 hours has been budgeted for the preparation of the as-built drawings. The mylars originals and computer compact disks of the plans will be provided as defined in Task 2.5.1.

SECTION 2 – COMPANY/TEAM QUALIFICATIONS

I. DESIGN TEAM ORGANIZATIONAL CHART

PRP's design team has been highlighted in the organizational chart that is on the following page of the proposal's Project Team Profiles. The chart illustrates key team members responsible for each of the disciplines involved with the preparation of the Braddock Sewer Lift Station Improvements. Also, identified in the chart are the Project Manager, Assistant Project Manager & the Quality Control team members responsible for the completion of the project.

II. PROJECT TEAM PROFILES

PRP's Project Team is familiar with the Braddock Sewer Lift Station's proposed improvements and requirements due to preparation of the Braddock Lift Station preliminary design report attached to the City's RFP. Additionally, our team's recent experiences designing similar projects, such as the Midway City Sanitary District's Rehabilitation of the Westminster, Hammon, Willow and Brookhurst Sewer Pump Stations' Improvements and the City of Laguna Beach's Shaw Cove Lift Station Improvements illustrate our previous experience in the rehabilitation of sewer lift stations. Table 2-1 provides a vast summary of projects that have been designed by PRP's design team of Michael Palzes civil/mechanical, Henry Miedema quality control, Mullen & Associate's Casey Cushman electrical/instrumentation and Arcon Structural Engineers Hernan Montoya structural/architectural. Our history of successfully completed projects indicates our past experience can assure proper quality control throughout the course of the project. Our key personnel's qualifications are highlighted below.

❖ Michael W. Palzes, PE: *Project Manager/ Mechanical*

- RCE No. 42752
- B.S., Civil Engineering
- Over 26 years of experience specializing in pump/lift stations providing the civil/mechanical designs.
- Mr. Palzes and PRP's design team recently provided the services for the rehabilitation of four sewage pump stations in the Midway City Sanitary District that have served the City of Westminster and the Midway City areas for the past 40 years. The improvements included the demolition of the existing stations and the installation of new wet wells, valve and meter vaults, new pumps, valves, meters, piping, emergency generators, control room, Motor Control Centers, control system and SCADA system that had a total cost of over \$4.8 million with the construction completed February 2009.
- Mr. Palzes and PRP's design team prepared a preliminary design report for the City of Laguna Beach Shaw's Cove Lift Station Improvements to determine the facilities and phasing of the new facilities constructed. Final design plans were prepared for a new wet and dry well, new building, new MCC, new generator, pumps, piping and valves over the top of an existing wet well that was converted into a storage well. Project construction costs were \$1.5 M and completed 9/08.
- Mr. Palzes and PRP's design team provided preliminary and final design services with construction engineering assistance for the upgrades and modifications for the Plano Lift Station in Santa Margarita Water District. The project included providing an overflow basin to store the average flow of 2,200 gpm for one hour in wet well that provided 130,000 gallons of storage capacity. Additionally, the project included an overflow wet well bypass structure, bypass piping system, an additional pump unit, a new variable speed drive motor control center for four 200 Hp pump motors and new control system. The project cost was over \$1.1 million was completed 4/05.
- Mr. Palzes will assume all of the project manager responsibilities, including coordinating and scheduling of all other engineering disciplines, submittals, project budget control, QA/QC reviews, as well the mechanical plans of the project.

❖ Henry J. Miedema, PE: *Quality Control Review*

- RCE No. 16371
- B.S. Civil Engineering/MS Civil Engineering, MBA
- 38 years of experience in the design and construction of water resources facilities.
- Provided quality control review for PRP's design team on SMWD projects, including Felipe/Plano/

- Ortega/Horno/Pico/Talega/Interim Phase 2, 3 & 4 Sewages Lift Stations in the past 10 years
- Provided assistant project manager services and quality control for the Midway City Sanitary District's Sewer Pump Station Rehabilitation Project.
- Will provide the project quality control for PRP's design team as a contract employee.

❖ **APD Consultants Inc., Robbie Mahmood, PE: Assistant Project Manager/Civil Design & Surveying**

- RCE No 60421.
- M.S. Civil Engineering
- 25 years of experience in design and construction of Site Plans, Street Improvements & Pipeline Projects.
- Mr. Mahmood has worked with the City of Culver City previously and knows the City's staff, criteria and requirements. Recent projects include Sewer Replacement Project for various streets in Culver City, Fire Station No. 3 Fiber Optic Installation Project P-912, Cranks Road Sewer Project P-230, Residential Overlay Project P- 863. His expertise includes the design of roadways, drainage, hydrology, sewer, water, grading, and construction management. Mr. Mahmood has been managing projects in the public work sector as well as the private sector in Southern California. He has strong project management skills and can prove to be invaluable to any project.
- Mr. Mahmood will provide assistant project manager services for the Braddock Sewer Pump Station Improvement project. Additionally, APD will provide the Site Plan, Sewer Pipeline, Traffic Control Plans and the Site survey plan under the direction of Mr. Mahmood.

❖ **Mullen & Associates, Larry Mullen P.E. Quality Control *Electrical/Instrumentation***

- Casey Cushman E.E., Electrical/Instrumentation Team Manager
- B.S., Electrical Engineering
- 19 years of experience in electrical/instrumentation design projects, including 18 pump/lift stations for SMWD, with the most recent including the Felipe/Plano/Ortega/Horno/Pico/Interim Phase 2, 3 & 4 and Talega Lift Stations.
- Mr. Cushman was the electrical/instrumentation/SCADA team manager for MCSD Rehabilitation Pump Station project.
- Mr. Cushman will be manager for the electrical/instrumentation/control system design and responsible for design and coordination of the related improvements on the project.

❖ **Arcon Structural Engineers, Inc., Hernan Montoya, S.E. *Structural Team Manager***

- B.S. Civil Engineering/M.S. Structural Engineering
- Over 26 years of Structural design experience.
- Arcon Structural Engineers has provided the PRP Design Team with the design plans for numerous SMWD lift/pump station projects including Plano/Felipe/Ortega/Horno/Interim Phase 2, 3 & 4/Pico Lift Stations and Tesoro & Talega Zone II WBPS. Other structural design projects for PRP include City of Laguna Beach Shaw's Cove Lift Station, which included the construction of a new wet and dry well and a new building over the existing wet well that ultimately is used as a storage basin.
- Mr. Montoya was structural design manager for the Midway City Sanitation District's Pump Station Rehabilitation Project that modified and provided four existing sewer pump stations with new wet wells and valve vaults.
- Mr. Montoya will be responsible for design and coordination of the new wet well and modifications to the existing dry well for the Braddock Pump Station Improvements.

III. PROJECT REFERENCES

The following list is comprised of clients for reference of PRP Engineering's design team. These recently completed projects are similar in scope to the one proposed by the Culver City's Braddock Sewer Lift Station.

<u>Client</u>	<u>Project</u>
1. Midway City Sanitary District 14451 Cedarwood Street Westminster, CA 92683 <i>Contact: Ken Robbins, Assistant General Manager (714) 893-3553</i>	Westminster, Hammon, Willow & Brookhurst Sewer Pump Station Improvements
2. Santa Margarita Water District 26111 Antonio Parkway Las Flores, CA 92688 <i>Contact: Dan Ferons, Chief Engineer (949)459-6590</i>	Plano Lift Station Facility Improvements
3. City of Laguna Beach 505 Forest Avenue Laguna Beach, CA 92651 <i>Contact: David Shissler, Director Of Water Quality (949) 497-0378</i>	Shaw's Cove Lift Station Improvements

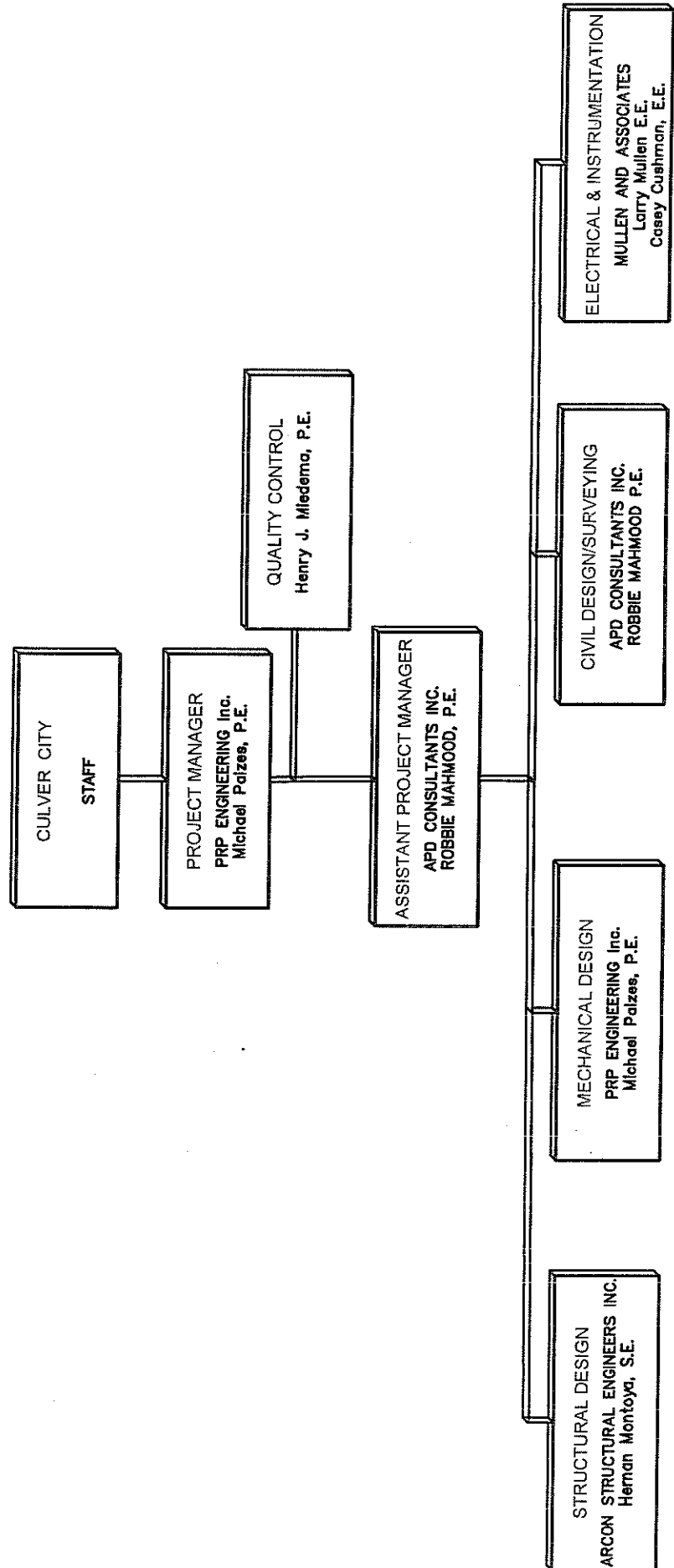
IV. PROJECT TEAM RESUMES

A resume for each of the key design team members has been provided for reference to the individuals experience, education and background. The resumes include recent similar projects to Braddock Sewer Lift Station that require many of the same improvements and design characteristics.

PRP ENGINEERING INC. DESIGN TEAM ORGANIZATION CHART

BRADDOCK SEWER PUMP STATION IMPROVEMENTS

P-521



PRP ENGINEERING INC.

SEWAGE LIFT STATION
NEW & REHABILITATION PROJECT EXPERIENCES

Project No.	Project Name	Project Description	Completion Status/Costs	Contact
1	Rehabilitation of Westminster, Hammon, Willow and Brookurst Sewage Pump Stations PDR & Final Design Plans/Specifications	Provided the preliminary and final design with construction support services for the Midway City Sanitary District's four pump station upgrades and improvements. The services included replacement of the wet wells and upgrade of pumps with submersible Wenco pumps, new valve and meter vaults, new emergency backup 150 kW generators, replacement of the Motor Control Centers (MCC), level control system and station control system, new SCADA control and monitoring system and provided new controls room to house the electrical and control systems. Services included Traffic Control plans for each facility, demolition plans and pumping bypass system requirements. Project provide preparation of the pre-purchase of the submersible pump units.	2/09 Costs: \$4.8 M	MCSD Ken Robbins 714- 893-3553
2	Rehabilitation & Upgrades Shaw's Cove Sewage Lift PDR & Final Design Plans/Specifications	Prepared a preliminary design study to rehabilitate existing facility located 20 ft above sea level along the Shaw Cove city public beach access path. The study evaluated the phasing, sequence of work, wet well increased capacity, dry/ wet well, emergency generator, onsite storage & new building and backup generator. Final design plans/specifications included all the PDR requirements and upgrades. Construction Engineering Assistance was provided for shop drawings, field clarifications and final inspections and startup assistance. Additionally, pre-purchase specifications and requirements were provided for the pre-purchase of the MCC, Pumps and Emergency Backup Generator.	9/08 Costs: \$1.5 M	City of Laguna Beach David Schiller 949-497-0328
3	Felipe Lift Station Upgrade Improvements PDR & Final Design Plans/Specifications	Preparation of PDR and Final Design Plans and Specifications for a 24 year old Santa Margarita Water District (SMWD) sewage lift station with two 40 Hp pumps housed in a dry well. Replacement of the pumps, valves, meter & piping with a new supply /exhaust ventilation system, modifications to the access entry rail support system, modification to replace the existing air bubbler level controller w/ a level transducer and backup hardwired float system, entire replacement of the existing MCC/Control system w/ a new MCC/Control system provided in a NEMA 3R walk-in enclosure and onsite emergency 125kW generator and skid mounted fuel storage system.	1/08 Costs \$500,000	SMWD Jaime Aguilar 949-459-6582
4	Plano Lift Station Upgrades Improvements PDR & Final Design Plans/Specifications	Preparation of the PDR/Final Design plans and specifications to add a fourth pump w/ a shaft driven 125 Hp motor unit with the piping, valves and miscellaneous improvements. Project included a wet well bypass over flow weir structure and 1 hour of average day storage structure that has the capability to bypass the original wet well through a new piping connection to pumps P1 and P2 supply piping in the dry well. Modification to the original P1 and P2 MCC starters plus replacement of the P3 starter system and a new P4 starter system w/ a new PLC controller and wet well level transducer.	2/05 Costs \$1.1 M	SMWD Jaime Aguilar 949-459-6582
5	Ortega Lift Station Upgrades Improvements PDR & Final Design Plans/Specifications	Project included the PDR and final design plans and specifications for two new pumps, piping and valves, the upgrade of the original MCC starters and PLC controller, onsite odor control biological treatment system, new above ground diesel storage tank and onsite one hour of average day storage structure.	11/05 Costs: \$800,000	SMWD Hector Garcia 949-459-6583

NEW & REHABILITATION PROJECT EXPERIENCES

Project No.	Project Name	Project Description	Completion Status/Costs	Contact
6	Hesperia Lift Station Improvements PDR & Final Design Plans and Specifications	Developer funded City of Hesperia sewage lift station for Tract no. 14591 111 lots and oversized for 1812 additional units. Prepared PDR and Final Design Plans/Specifications for 1082 gpm ultimate capacity and a 142 gpm Phase I operation capacity, which included: 3 submersible rail mounted pumps, valve and meter vaults, piping, dual 4" & 8" force main system, Variable Speed Drive MCC/Control System, 60 kW emergency generator w/ skid mounted diesel storage tank and odor control biological treatment system	Design Completed 4/07 Estimated Costs: \$850,000	City of Hesperia John Leveille 760-947-1451
7	Willow Oaks Estates Lift Station Improvements PDR & Plans/Specifications	Private Lift Station services trailer park community. Prepared PDR/plans and specifications for submersible dual rail mounted pump system with a valve and meter vault, emergency backup 60kW generator, future odor treatment system, MCC/Control system and 1800 LF of force main to connect to the City's gravity sewer system.	9/06 Costs: \$540,000	City of Hesperia John Leveille 760-947-1451
8	Horno Sewage Lift Station & Access Road, Pipeline, Sewer and Force Main PDR & Final Design Plans/Specifications Project	Prepared a detailed flow generation study, an odor generation & mitigation study and the preliminary design of lift station. Final design included 4 sets of 2 pumps operated in series to generate 406 ft head @ 1750 gpm per set of pumps, each pump is 150 Hp controlled by a VFD, emergency onsite storage for 1 hour of average flow, dry/wet well, 2800 sf building, 750 kW generator, flow meter w/ a bypass, valve vault & surge tank system, station capacity is 5400 gpm @ TDH= 428 ft.	2/04 Costs: \$4.1 M	SMWD Jaime Aguilar 949-459-6582
9	Talega Development Sewage Odor Generation Analysis & Mitigation Report	Prepared study to determine sewage odor generation within three lift stations, force main & gravity sewer conveyance system for present and future development demands. Provided a detailed evaluation of mitigation methods such as injection of peroxide, sodium hypochloride, ferrus chloride, magnesium chloride and others for neutralizing the odor generation within the system that is conveyed approx. 6 miles prior to treatment.	4/4/2006	SMWD Hector Garcia 949-459-6583
10	Leisure World Seal Beach PDR & Final Design Plans & Specifications 2-Sewage Lift Stations & 1-Storm Water Pump Station	Prepared a facility evaluation and recommendation study for a 28 year old onsite private sewage lift stations and storm water pump station. Prepared final design plans/specifications for three packaged pump and control systems.	4/04 Costs: \$275,000	Leisure World Seal Beach Carlos Martinez 562-431-6586
11	Pico Sewage Lift Station PDR & Final Design Plans & Specifications	Prepared a PDR for alternative layouts, pump selection, onsite storage & facility layout. Final design included 2 dry pit submersible 150 Hp pumps w/ wet well & 1 hour average flow onsite storage, 350 kW generator, surge tank, building, meter & bypass system, valve vault & site improvements.	3/03 Costs: \$1.65 M	SMWD Hector Garcia 949-459-6583
12	Interim Phase 4 & Phase 3 Expansion Sewage Lift Station PDR & Final Design Plans/Specifications	Prepared preliminary design report for three locations and utilized the pumps from interim Phase I & II LS, Final design included a wet well, 2-40 Hp submersible pumps, 1 hour average flow, a MCC/Instrumentation system and 150 kW generator in sound attenuated enclosure. All equipment was purchased for Interim Phase 2 LS & suitable to service Interim Phase 4.	11/02 Costs: \$620,000	Ladera Ranch John Markel 949-240-3363
13	City of Indian Wells Sewage Lift Station PDR & Final Design Plans	Prepared a PDR for alternative layouts, pump selection, dry/wet well & facility layout an over sizing analysis for additional CVWD capacity. Final design is on hold to negotiate the capacity cost sharing. Project includes 2 dry pit submersible pumps w/ wet well, 250 kW generator, surge tank, building, meter & valve bypass system.	6/05 Costs: \$865,000	Wildan Ken Taylor 714-940-6300

NEW & REHABILITATION PROJECT EXPERIENCES

Project No.	Project Name	Project Description	Completion Status/Costs	Contact
14	Interim Phase 3 Sewage Lift Station PDR & Final Design Plans/Specifications	Prepared a PDR & Final Design Plans/Specifications for two phased Interim Lift Station w/ an ultimate pump rate of 1600 gpm @ 248 ft 125 Hp w/ a standby unit, 300 Kw generator, surge tank, walk-in MCC control room, 1 hour onsite average storage, site improvements and fire/chemical truck access. The Interim Lift Stations were funded & constructed by the Ladera Ranch Development to provide a temporary service until the District's lift stations were operational.	12/01 Costs: \$1.55 M	Ladera Ranch John Markel 949-240-3363
15	Interim Phase 1 & 2 Sewage Lift Station PDR & Final Design Plans/Specifications	Prepared preliminary analysis and final design plans/specifications for reselected equipment (pumps, generator, valves, controls, MCC) at two other Interim Lift Station locations. The station was relocated from Interim Phase 2 to Interim Phase 4 once the Interim Phase 3 LS was functional. Pumps were utilized for 4 month period at the Interim Phase 1, two years @ Interim Phase 2 and 1 year 3 months at the Interim Phase 4 Lift Station.	8/00 Costs: \$435,000	Ladera Ranch John Markel 949-240-3363
16	Talega No. 1 Sewage Lift Station PDR & Final Design Plans/Specifications	Prepared PDR & Final Design plans/specifications for high lift station that has two sets of pumps operated in series with two pumps to provide 406 ft @ 1650 gpm and a single motor drive for the two pumps operated in series. Facility includes a dry/wet well, building that houses the VFD/MCC/Instrumentation Controls, 450 kW generator, surge tank, flow meter, valve vault and miscellaneous site improvements. Station utilizes a 10" force main during the early low flow years and a 16" force main for the ultimate development service.	2/00 Costs: \$2.1 M	SMWD Hector Garcia 949-459-6583
17	Rehabilitation of Cordova Sewage Lift Station PDR & Final Design Plans/Specifications	Prepared a PDR and Final Design Plans to rehabilitate existing 30 year facility including on site emergency generator, building, control room, new pumps, piping, a temporary bypass wet well for recoating the existing wet well, update instrumentation system, surge tank, new MCC, etc.	8/98 Costs: \$0.92 M	SMWD Jaime Aguilar 949-459-6582

Michael W. Palzes P.E.

Resume

Project Manager/ Mechanical Design

Professional Registration

Registered Civil Engineer (California) RCE #42752

Education

Bachelor of Science, Civil Engineering, Cleveland State University, 1983

Professional Affiliations

American Society of Civil Engineers
Orange County Water Association
American Waterworks Association
AWWA Material Performance Committee

Experience

Michael Palzes is a Registered Civil Engineer in the State of California with over 25 years of experience in the field of civil/mechanical engineering, specializing in pump and lift station projects. As PRP's principal engineer/project manager, Mr. Palzes has held the responsibilities performed under several project team positions such as the project manager, quality control and coordination with the City's staff and all other engineering disciplines for design, reviews, scheduling and budget control. A summary additional sewage pump stations prepared and managed by Mike Palzes is provide in Section 2 Table 2-1. Recent lift station projects references are summarized as follows:

Westminster, Hammon, Willow and Brookhurst Pump Station Facility Improvements, Midway City Sanitary District: Project manager responsible for the preliminary and final design and construction of the four existing stations. The improvements included new wet wells, valve and meter vaults, pumps, valves, piping, meter, MCC, control system, generator, control room and SCADA system. Project was completed in 2/09 for \$4.8 M.

Shaw's Cove Sewage Lift Station: Project Manager responsible for the design and construction of the Shaw's Cove Lift Station upgrades and reconstruction. The project is presently on hold until funding for the city's construction phase is available. Design plans include a new facility constructed in front of the existing facility located on the side of a hill adjacent to the access path to the beach at Shaw's Cove. The project includes the construction of a new dry/wet well and building plus converting the existing structure into a storage well for emergency onsite storage. The project also includes all new controls, emergency generator, new pumps, valves, piping and appurtenances. The project will close the beach access for 6 months. The tributary area to the facility includes all the homes along Cliff Drive in Laguna Beach. Construction Costs \$1.85 M.

Plano Lift Station Improvements, Santa Margarita Water District: Preliminary and final design services were provided with construction engineering assistance for construction of a new overflow, storage and bypass wet well at the existing station. Project included adding an additional pump and motor, new wet well bypass piping and valves, new MCC and control system and site improvements for a construction cost of \$1.1 M Completed in 2/05.

Felipe Lift Station Facility Upgrades, Santa Margarita Water District: Preliminary and final design services with construction engineering assistance for existing station that required upgrades to the pumps , valves, meter, MCC and control system. Project also included a new 350 kW generator and a walk-in control room. Project was completed in 10/07 for a construction cost of \$650,000.

Ladera Ranch Phase 3 Interim Sewage Lift Station, Santa Margarita Water District: Preliminary and Final design plans and specifications were prepared for interim lift station that conforms to the District's standard requirements. The facility includes submersible pumps in a cast-in-place dry/wet/storage well, valve and meter vaults, emergency generator, MCC and instrumentation system housed in a walk in enclosure. Project cost was \$1,450,000.

Henry J. Miedema P.E.

Quality Control Engineer

Professional Registration

Registered Civil Engineer (California) RCE #1637
General Engineering Contractor # 437949

Education

Bachelor of Science, Civil Engineering, University of CA Berkley
Master of Science, Civil Engineering, University of CA Berkley
Master of Business Administration, University of Southern CA

Professional Affiliations

American Society of Civil Engineers
American Waterworks Association
Natural Honorary Civil Engineering Fraternities of Chi Epsilon and Tau Beta Pi
Orange County Water Association
Water Pollution Control Federation
Southern CA Water Utilities

Experience

Mr. Miedema is a registered civil engineer and licensed general engineering contractor in the State of California. His professional experience includes over 35 years in the water resources engineering field with extensive experience in both the water utility industry and as a consulting engineer. He is a proven team leader with a successful track record in managing large projects, client relations, business development, and management of a consulting firm.

Mr. Miedema will provide quality assurance and quality control review.

Westminster, Hammon, Willow & Brookhurst Pump Station Facility Improvements, Midway City Sanitary District: Provide services as Assistant Project Manager and Quality Control Reviews of the preliminary and final design plans for a \$4.8 Million sewage pump station rehabilitation. The improvements included new wet wells, valve and meter vaults, MCC, pumps, valves, generators, controls, SCADA system and control room. Project was completed February 2009.

Plano and Felipe Lift Station Rehabilitation and Improvements, Santa Margarita Water District: Provided quality control review for the lift stations preliminary and final design. Station improvements were \$1.1 M and \$650,000 completed in 2/05 and 4/07 respectively.

Horno, Pico and Ortega Lift Stations, Santa Margarita Water District: Provided quality control for the three new district lift station's preliminary and final designs. The station's costs were \$2.5 M, \$1.8 M and \$1.2 M, respectively.

Ladera Ranch Phase 2, 3 & 4 Interim Sewage Lift Station, Santa Margarita Water District: Preliminary and Final design plans and specifications were prepared for the phase 2, 3 & 4 interim lift stations that conformed to the District's standard requirements. The facilities included submersible pumps in a cast-in-place dry/wet/storage well, valve and meter vaults, emergency generator, MCC and instrumentation system housed in a walk in enclosure. Phase 3 project cost was \$1,450,000. Mr. Miedema provided quality control review for the PDR and the final design plans. Phase 2 Interim Lift Station cost was \$350,000 and Phase 4 was \$622,000.

Talega Lift Station for Santa Margarita Water District: Mr. Miedema had provided quality control review engineering and plan checking on the recent fast tracked Talega Lift Station project on the submittal phases of the contract.

APD Consultants, Inc.

Robbie Mahmood, P.E. – Principal/Project Manager

Education & Registrations

Professional Licensed Civil Engineer, 1999- California - #60421
University of Toledo, Ohio, M.S. – Civil Engineering, 1987
University of Toledo, Ohio, B.S. – Civil Engineering, 1984
UCI, Irvine CA -- Project Management Certificate, 2005

Professional Experience

Mr. Mahmood has more than 22 years of experience in civil engineering design, and construction management. His expertise includes management and design of sewer and water, roadways, drainage, grading and construction management.

Project Experience

Fire Station #3, City of Culver City (Project Manager)

The scope was to provide the necessary fiber optic communication system to the new Fire Station #3 at 6030 Bristol Parkway. New fiber optic cable and 3" PVC conduits were installed from Fire Station #3 site to the location at Overland Avenue and Sawtelle Boulevard. The design included the installation of pull boxes and splice boxes. Installation of the new 3" PVC conduit was by directional boring.

Cranks Road Sewer, City of Culver City (Project Manager)

APD Consultants, Inc. (APD) was selected by the City of Culver City to prepare plans, Specifications, and Estimates (PS&E) for the construction of sewer line on Cranks Road in the City of Culver City. Responsibilities included utility research and coordination with utility agencies.

City Wide Sewer Replacement Project, City of Culver City, CA (Construction Manager):

Perform construction management activities including review contractor's submittals and invoices and coordinate with the City staff, inspector and Contractor for replacing sewer lines in ten (10) streets in the City of Culver City.

2007 Residential Overlay Project, City of Culver City, CA (Construction Manager):

Perform construction management activities including review contractor's submittals and invoices and coordinate with the City staff, inspector and Contractor for a project to upgrade the residential pavement on 18 different street segments located within the City limits.

Oak Glen Road Widening Improvements, City of Yucaipa (Project Manager)

Responsibilities included the preparation of street improvements plans which include design of sidewalks and curb ramps, street widening, traffic signal design, preparation of necessary right-of-way documentation, signing, striping, traffic control and detour plans, specifications, engineering cost estimates, and "as built" drawings for the section of Oak Glen Road between Stonewood and Bryant Streets

Chase Drive, Phase III Street Improvements, City of Corona (Project Manager)

Project included widening Chase Drive from Garrettson Avenue to Sonrisa Drive. Improvements include the addition of biofilter swales, replacement of existing driveways, and the construction

of new curbs and gutters, curb ramps, driveways, storm drain system, relocation of existing electrical poles and design of meandering bike path.

Yucaipa Boulevard Widening Chicken Springs Wash Improvements Between 2nd Street and 4th Street, City of Yucaipa (Project Manager) This project was funded by CDBG. The scope of work was to prepare street improvements plans for the widening of Yucaipa Boulevard between 2nd and 3rd Streets and at 3rd and 4th Streets crossings with Chicken Springs Wash. The scope also included the design of sidewalks and curb ramps, street widening, preparation of necessary right-of-way documentation, hydrology and hydraulic analysis and design of storm drain pipes and energy dissipaters, grouted rip-raps, retaining walls, flood walls, preparations of specifications to comply with CDBG criteria, and engineering cost estimates.

Taber Road Improvements, City of Corona (Project Manager) The scope of work is to prepare construction plan and construction cost estimate and bid schedule for street improvements for approximately 1,750 linear feet of curb & gutter and sidewalk, drainage mitigation, restriping to accommodate design and bike lane on the east side of Taber Road, beginning approximately 450 feet southeast of Campton Avenue to approximately 325 feet south of Monif Circle.

2007/08 CDBG Street Improvements, School Street, Frontage Road, and Merrill Street, City of Corona (Project Manager) Responsible for preparation of street improvement plans, striping plans, and street lighting plans, cost estimate and bid schedule on School Street, Frontage Road and Merrill Street.

Lakewood Blvd./Stearns Street, City of Long Beach (Project Manager) The project included widening of Stearns Street at the intersection with Lakewood Blvd. in addition to removing and replacing the asphalt at Lakewood Blvd. Plaza. The improvements included modification of traffic signals, signing and striping, revising a bus pad, and removal and replacement of medians, curb ramps, and curbs and gutters.

Hoag Medical Office Building, 19582 Beach Boulevard, City of Huntington Beach (Project Manager) Performed project management for the preparation of precise grading and drainage plans, driveway entrances along Beach Boulevard, sidewalk, curb ramps, sewer, water, erosion control and area drain plans, in addition to preparation of hydrology and hydraulic analysis, SWPPP and WQMP reports.

Carson Street, et al, County of Los Angeles Department of Public Works (Project Manager): Responsible for the preparation concept report, Design and construction documents required for reconstruction improvements on a 0.80 mile portion of Carson Street and a 0.90 mile portion of Westminster Avenue. Project required close coordination with the materials and design division of County of Los Angeles Department of Public Works.

CASEY H. CUSHMAN

Project Manager

EDUCATION:

California Polytechnic University - 1989 Bachelor of Science,
Electrical Engineering.

PROFESSIONAL SOCIETIES:

Member, Institute of Electrical and Electronic Engineers.
Member Eta Kappa Nu Honor Society.

EXPERIENCE:

Mr. Cushman has experience in Power Distribution and Control Systems Design. Projects include: commercial and industrial buildings; water pump stations; chlorination facilities and treatment plants. He has been with Mullen and Associates since 1987. Previously with Cash & Associates. His background includes: PLC programming, computer applications, CAD system design, motor control ladder logic, digital telemetry, instrumentation design, power generation - transient analysis, and large site distribution systems.

Typical Projects he has managed include:

Recent Projects: 1.) Talega Lift Station- PLC control w/ VSD units operating 2- 200 Hp units. 2.) Shaw's Cove Lift Station- Facility upgrade and rebuild project 2 new controls & generator set. 3.) Interim Phase 2, 3, 4 Lift Station Ladera Ranch- design three lift station for interim service of Ladera Ranch for 2 - 4 years of temporary service w/ PLC controller that is signaled from the Tesco bubbler to start/stop pumps. Interim Phase 3 LS 3-150 hp pumps, Interim Phase 2 & 4 LS 40 hp units.

Treatment Plants: 1.) Mount Woodson Ranch Waste Treatment Plant- a PLC controlled process with standby generation system. 2.) Upgrade of Chino Basin Plant #1, including revised diagrams, instrumentation, motor control centers, hazardous area design electrical equipment.

Pump Stations: 1.) Antonio Pump Station - 3-450hp, 2-250hp pumps controlled through a local PLC and remote telemetry. All backed up with a 900kw diesel generator. 2.) Date Street Pump Station- 7-600hp pumps, 4160v motor control, including sub-station, new building, and PLC pump control.

Industrial/Manufacturing: Designed electrical power and lighting for 140,000 square foot plastic injection molding plant, including double ended 12,000 volt service for redundant power and reduced energy rates. Lighting involved both high bay H.I.D. system and a task oriented fluorescent system.

Commercial: Engineered medium voltage distribution system for a three-story, 160,000 square foot Target Store, including 250kw diesel generator, 100hp fire pump, eight (8) elevators, two (2) escalators parking garage, and digital control systems.

HERNAN MONTOYA**Structural Engineer****Education**

- B.S., 1977, Civil Engineering (Major in Structures), Universidad del Valle, Cali, Colombia
- M.S., 1983, Civil Engineering (Major in Structures), California State University of Long Beach

Registration

- Structural Engineer (CA) #S002819
- Professional Civil Engineer (CA) #36919
- "B" General Building Contractor (CA) #604249
- Professional Civil/Structural Engineer (OR) #15595PE
- Professional Civil Engineer (NV) #13354
- Professional Civil Engineer (Republic of Colombia) #873 (Valle)

Current Job Responsibilities

Currently Mr. Montoya is the President of **Arcon Structural Engineers, Inc.**, responsible for all structural aspects of commercial, industrial and civil projects.

Project Experience

Mr. Montoya has over twenty five years of experience as a structural engineer. He has worked in a wide variety of structural projects in charge of engineering, quality assurance, coordination with clients, other consultants and building officials, and field support for various commercial, residential, industrial, civil and public works projects, including hotels, restaurants, apartment complexes, senior housing, warehouses, office complexes, schools, mining plant equipment supports and structures, bridges, etc. Professional experience also includes repair and retrofitting of existing building and bridge structures. Arcon Structural Engineers' Hernan Montoya provided the structural design on many of the PRP Engineering Inc. sewage lift stations projects including:

Westminster, Hammon, Willow and Brookhurst Pump Station Facility Improvements, Midway City Sanitary District: Responsible for the design and rehabilitation of the four 40 year old stations that included providing the design of the new wet wells at the four facilities for a \$4.8 M project that was completed in 2/09.

Plano Lift Station Improvements, Santa Margarita Water District: Provided the structural design of a 58,200 gallon emergency storage, overflow, and bypass wet well facility. Project was completed 2/05 for \$1.1 M.

Horno Lift Station, Santa Margarita Water District: Arcon provided the preliminary and final design engineering and architectural services for a new wet well, dry well and storage well with a block building in the Ladera development. The building had to match the development design theme. The project was completed in 10/04 for a construction cost of \$2.5 M.

Pico Lift Station, Santa Margarita Water District: Arcon provided structural and architectural preliminary and final design services for a \$1.9 M sewage pump station located in Talega Valley. The building design had to match the developer's design theme for the Talega Valley. Project was completed in 3/02.

Interim Phase 3 & 4 Lift Stations, Ladera Ranch DMB, Responsible for the design of below ground wet, dry and storage wells for the sewage lift station design by PRP engineering.

Talega Zone II Water Booster Pump Station , Santa Margarita Water District, Responsible for the Structural design of the building and pump support system in the 4-125 hp pump station that included a generator, pump, control and electrical service rooms within the Talega Development.

Los Alisos Lift Station, Rancho Trabuco, CA For Santa Margarita Water District. Served as Project Structural Engineer for the underground I.D. #3 sewage lift station.

SECTION 3 - PROJECT SCHEDULE

The City award for the Design/Engineering Services is anticipated to be February 24, 2009. PRP has prepared a schedule to allow for the requested task and timeline completing the project with the final plans and specifications on June 23, 2009. In order to conform to PRP's proposed schedule, the City's key staff members would have to be present during the review submittal meetings in order to resolve any design issues. PRP anticipates that the 20%, 50%, 75% and 90% City submittal review comments will require follow-up meetings within 10 to 12 days after each submittal in order to maintain the project's completion date per the attached schedule. A summary of all the key submittals and project review periods are highlighted in the following summary. A graph of the project schedule has been attached as Exhibit 3-1.

Descriptions

Milestone Dates (2009 – 2010)

Proposal Phase

Proposal Submittal	February 12
Project Team Interview	February 17
City Counsel Award to Consultant	February 24

PHASE I

Project Kickoff Meeting & Site Tour	March 5
Project Meeting No. 2. Preliminary Layouts 20% Submittal	March 24

PHASE II

General Operation /Control/Instrumentation Design Meeting No. 1	April 7
Project Status Update 50% Review Design Meeting No. 2	April 14
In-house Quality Control Review Completed 75% Submittal	April 21
Project Status 75% Plan Submittal	April 28
District 75% Review/Comments Design Meeting No. 3	May 7
In-house Quality Control Review Completed 90% Submittal	May 19
City's 90% Submittal	May 26
City's 90% Review/Comments Design Meeting No. 4	June 4
Final Quality Control Review Completed	June 16
Finalize Pre-purchase Specification for Wemco Pumps	June 18
City's 100% Submittal PM to Review Comments w/ Staff	June 18
City's Approval/Signature	June 23

Bid Phase

Bid Advertisement	June 25
Pre-bid Meeting	July 21
Wemco Pre-purchase Bid Quotation	July 22
Bid Opening	July 28
Bid Award	August 11

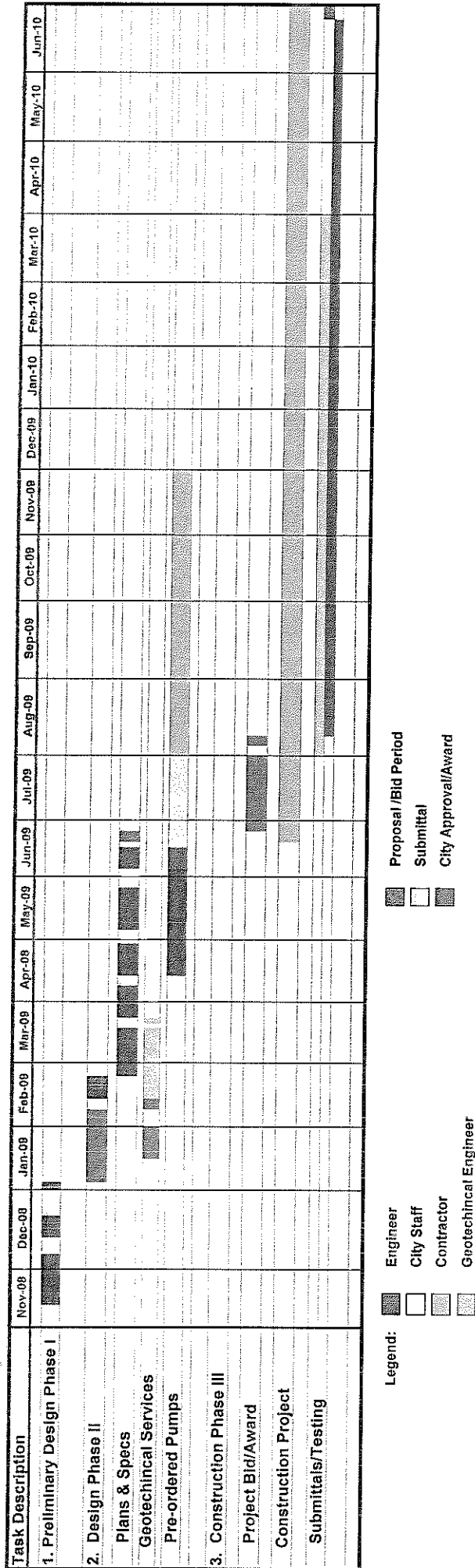
Construction Phase

Start Construction Schedule	August 25
Construction Completion	July 1, 2010

Items in bold indicate meetings to be attended by Project Team and City's staff, with the exception of the 100% submittal meeting, which will be between the Project Manager and City's staff.

Exhibit No. 3-1

Culver City
Braddock Sewer Pump Station Improvements
Design/Construction Project Schedule



SECTION 4 – SIMILAR PROJECTS

Section 4 provides the City's *Section VII – Qualifications Criteria Requirement No. 2* with two similar projects to the proposed Braddock Sewer Pump Station requested improvements. Both of these projects are very similar to the proposed Braddock Sewer Pump Station improvements with new wet wells provided with new pumps, valves, piping, meter, motor control center, control system and the existing facility requiring temporary pumping and detailed construction phasing to complete the project requirements. All of the PRP Engineering current design team's members were responsible for the design of these two referenced projects, including the mechanical engineer, structural engineer, electrical engineer and quality control engineer.

The Midway City Sanitary District's Westminster, Hammon, Willow and Brookhurst Sewer Pump Station Improvements was a \$4.8 million project that rehabilitated the four 40 year old stations while maintaining service with a temporary pumping system at each of the facilities while constructing the new wet wells. This project replace the pump configuration from original dry pit pumps to Wemco Hidrostal submersible pumps the same as proposed for the City's project. Additionally, all the original equipment was replaced with new valves, piping, flow meter, MCC, control system, emergency generator and site improvements. This project also converted the original Willow Pump Station Wet Well into the valve vault for the new improvements. The plans, sections and photographs are provided for the Hammon and Willow Pump Stations as a reference of one similar project.

City of Laguna Beach Shaw's Cove Lift Station Improvements was a \$1.5 million project that rehabilitated the existing 35 year old station while maintaining the service in a very difficult construction site located along the stairway access to the beach approximately 30 feet lower than street elevation. This project had a new larger wet well constructed with a new dry well for the pump units, valves and piping, a new building to house the new emergency generator and control system plus converted the old wet well and dry wells into an emergency storage well for the new facility. As shown in the attached photograph of the facility, the new facility improvements have been completed. However, additional work was added to the contractor's contract to construct additional relating walls behind the building supporting the residence side yards along the city R/W. The plans, sections and photographs are provided for the facility as a similar project.

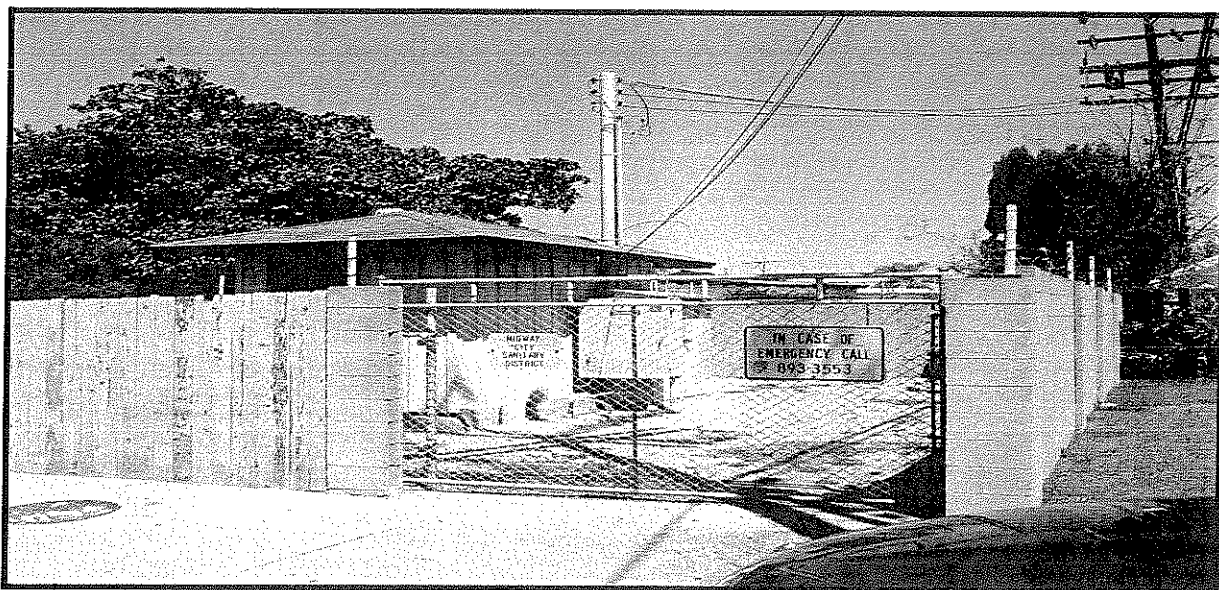
Representative Project No. 1

Hammon and Willow Sewer Pump Station Improvements

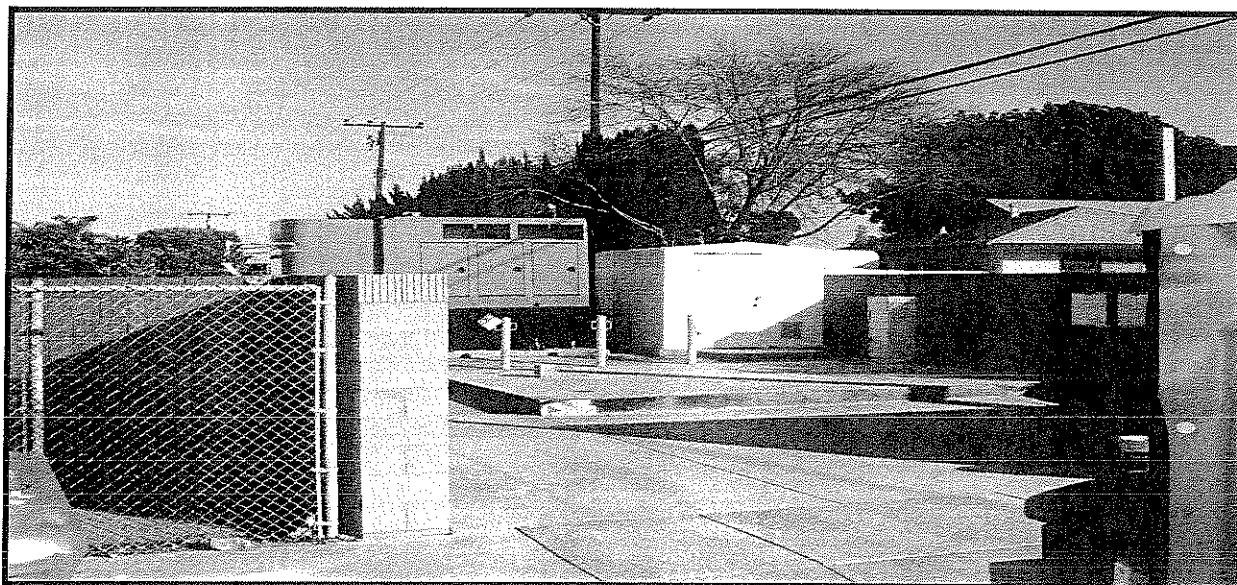
Midway City Sanitary District

Representative project

Hammon Lift Station Rehabilitation



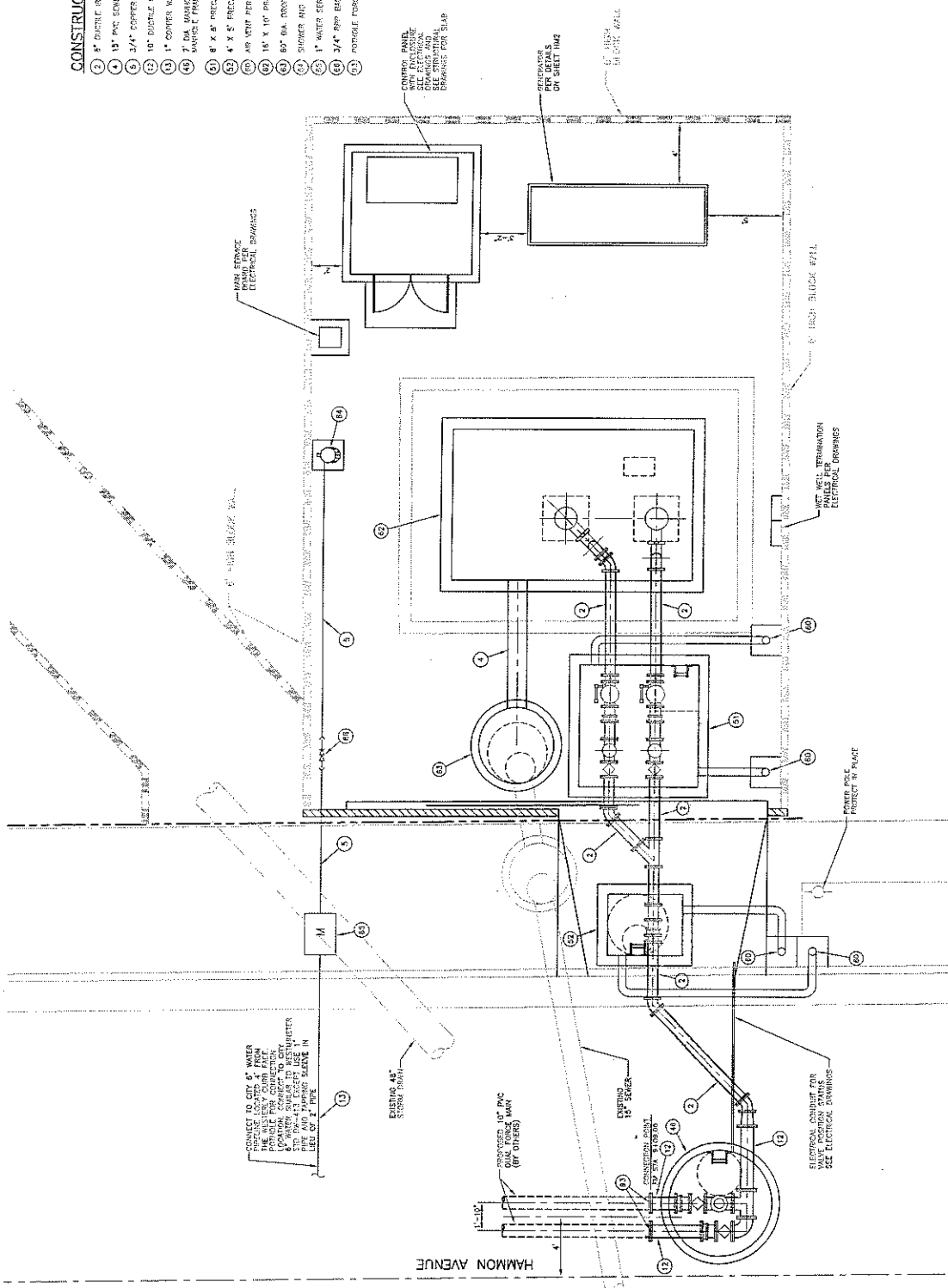
Original Facility



New Facility

CONSTRUCTION NOTES:

- | | |
|------|---|
| 3" | 8" DUCTILE IRON PIPE |
| 4" | 12" CORR. COPPER PIPE |
| 5" | 3/4" CORR. WOOD LINE, PVC TYPE W/REINFORCED |
| 6" | 12" CORR. WOOD PIPE |
| 7" | 12" CORR. WOOD PIPE |
| 8" | 12" CORR. WOOD PIPE |
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| 100" | 12" CORR. WOOD PIPE |



MIDWAY CITY SANITARY DISTRICT

SHEET
HC2
30 OF 77

HAMMON PUMP STATION
SITE PIPING PLAN



prp engineering, inc.
WATER AND WASTEWATER ENGINEERS
15568 BROOKHURST ST., SUITE 185
WESTMINSTER, CA. 92683
(714) 374-0048

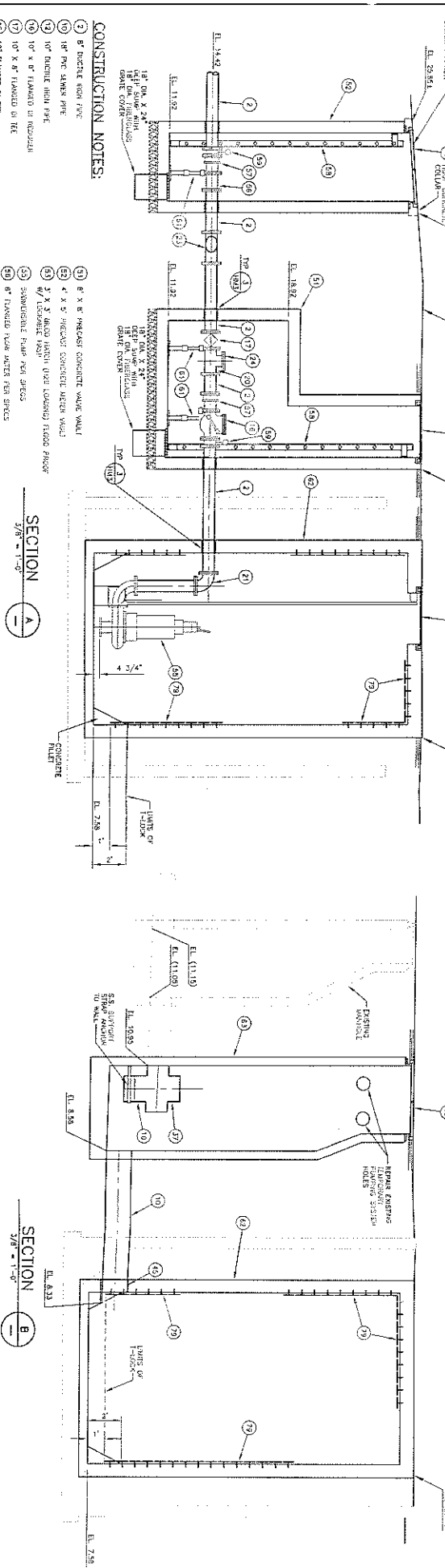
RECEIVED
MICHAEL N. PALZES
PROJECT ENGINEER
RECOMMENDED
42752
PROJECT MANAGER
RCE NO.
DATE

DESIGNED	JEFF WILCOX
DRAWN	JEFF WILCOX
REVIEWED	H.J. MEDEMA
JOB NUMBER	1138

SCALE
AS
NOTED

APPROVED	DATE
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REV.	DATE	BY	DESCRIPTION
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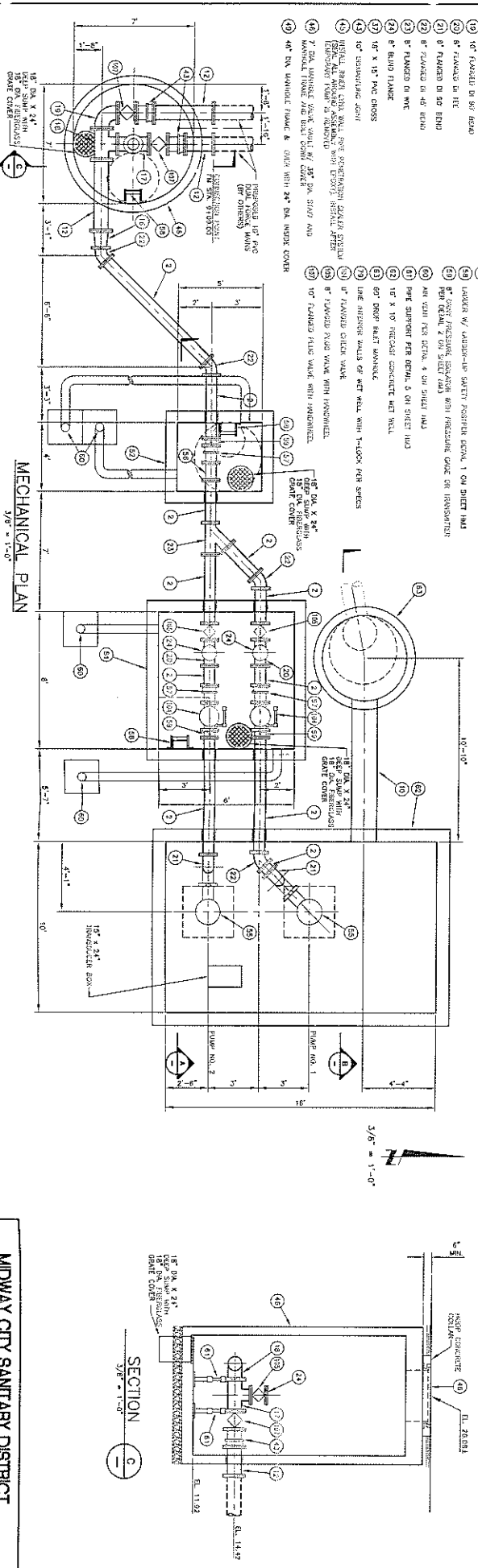
CONSTRUCTION NOTES:

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SECTION A
3/8\"/>

SECTION B
3/8\"/>

SECTION C
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MECHANICAL PLAN
3/8\"/>

REV	DATE	DESCRIPTION	APPROVED DATE
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prp engineering, inc.
 WATER AND WASTEWATER ENGINEERS
 1000 W. 10TH AVENUE, SUITE 200
 DENVER, CO 80202
 (303) 733-1000

MIDWAY CITY SANITARY DISTRICT
 HAMMON PUMP STATION
 MECHANICAL PLAN & SECTIONS

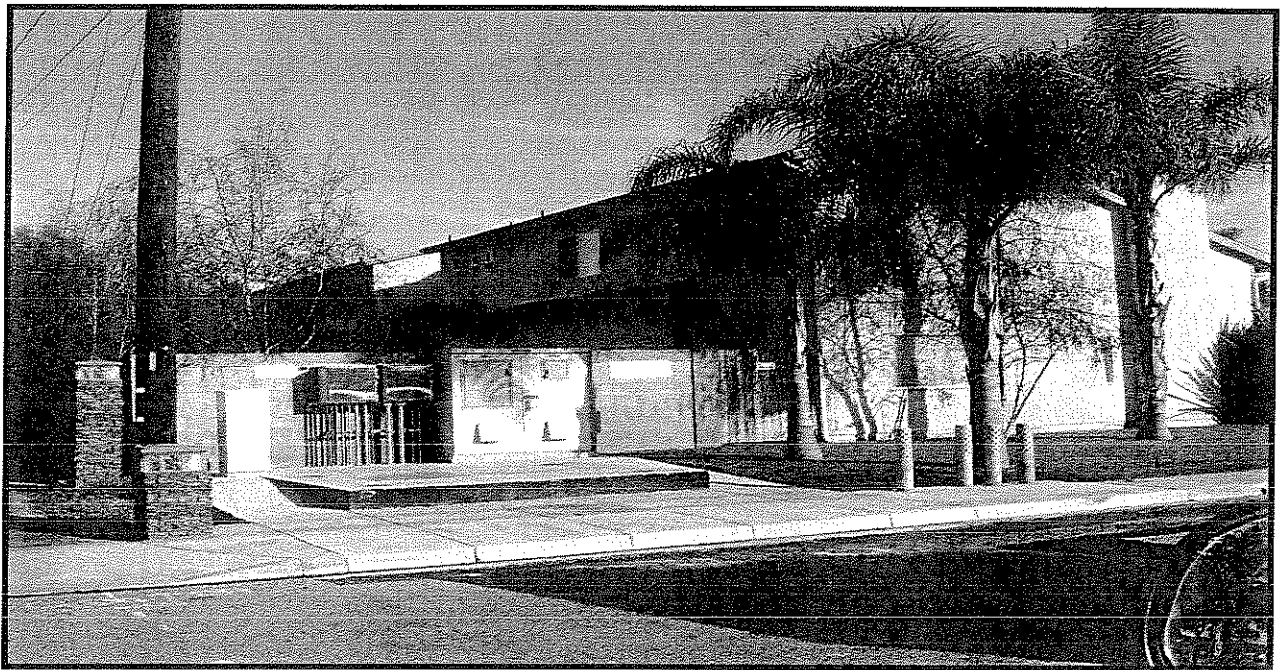
SHEET
HM1
 31 of 77

Representative project

Willow Sewer Pump Station Rehabilitation

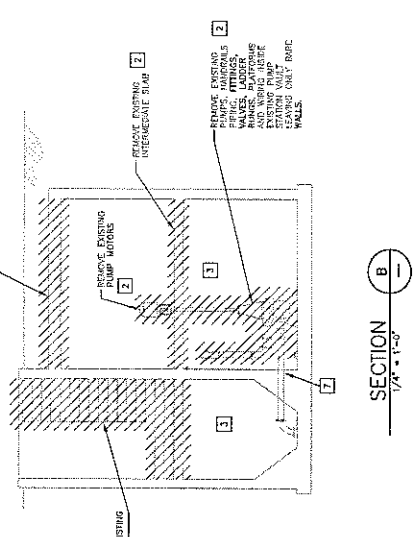
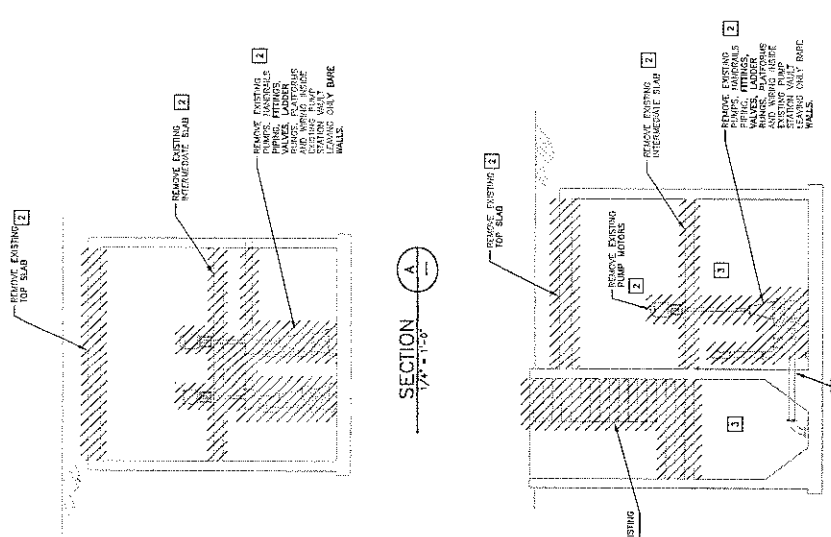
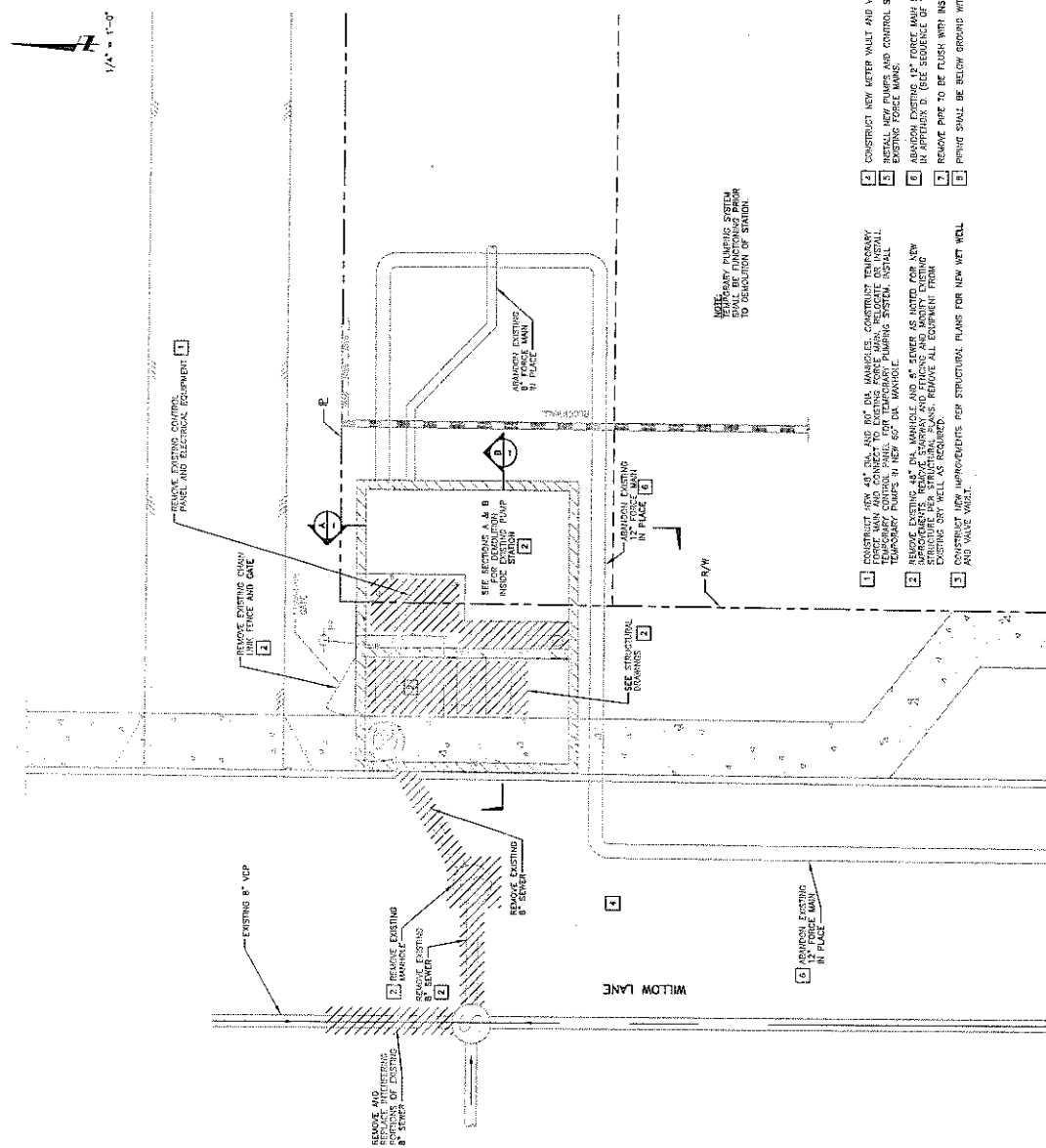


Original Facility



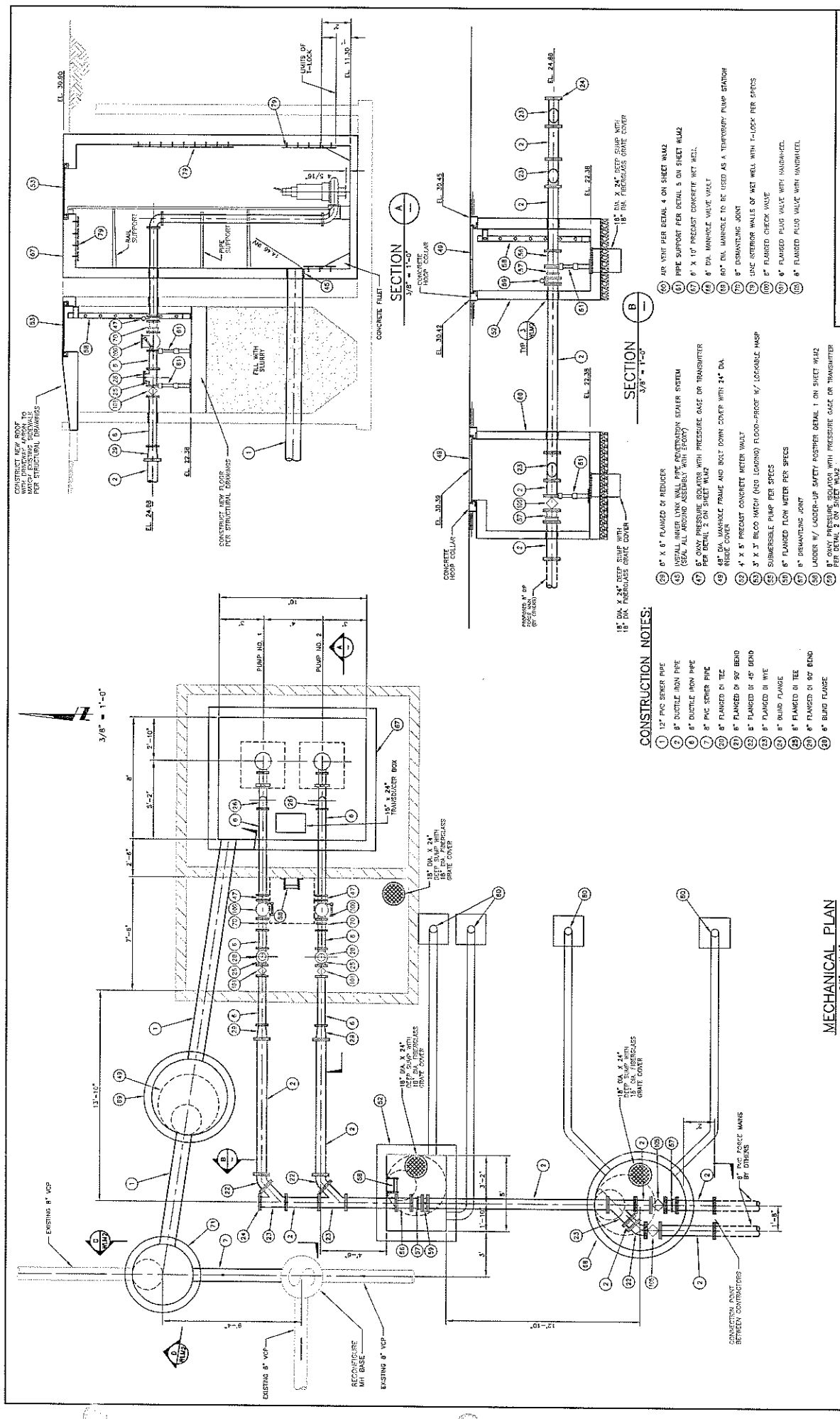
New Facility

Midway City Sanitary District



- | | |
|---|--|
| 1 | CONSTRUCT NEW 45" DIA. AND 80" DIA. MANHOLES, COUNTERTYPED TEMPORARY CONCRETE, 12' DEEP, WITH 12" DIA. MANHOLE. INSTALL TEMPORARY CONTROL RINGS FOR TEMPORARY RAINING SYSTEM. INSTALL TEMPORARY PLANS IN NEW 60" DIA. MANHOLE. |
| 2 | REMOVE EXISTING 45" DIA. MANHOLE AND 8" TOWER AS NOTED FOR NEW STRUCTURE. REMOVE EXISTING 12" DIA. MANHOLE AND 8" TOWER AS NOTED FOR STRUCTURE. REMOVE ALL EQUIPMENT FROM EXISTING S.W. WELL AS REQUIRED. |
| 3 | CONSTRUCT NEW IMPROVEMENTS PER STRUCTURAL PLANS FOR NEW S.W. WELL. |
| 4 | CONSTRUCT NEW WATER WALL AND VALVE VAULT PER SHEET W-101. |
| 5 | INSTALL NEW PUMPS AND CONTROL SYSTEM. CONNECT NEW SYSTEM TO THE EXISTING FORCE MAINS. |
| 6 | ABANDON EXISTING 12" FORCE MAIN. SLURRY FILL PER BID ITEM 11 IN APPENDIX D. (SEE SEQUENCE OF WORK IN SPECIFICATIONS) |
| 7 | REMOVE PIPE TO BE PLUSH WITH INSIDE WALL. |
| 8 | PRINTING SHALL BE BELOW GROUND WITH STREET RIGHT OF WAY. |

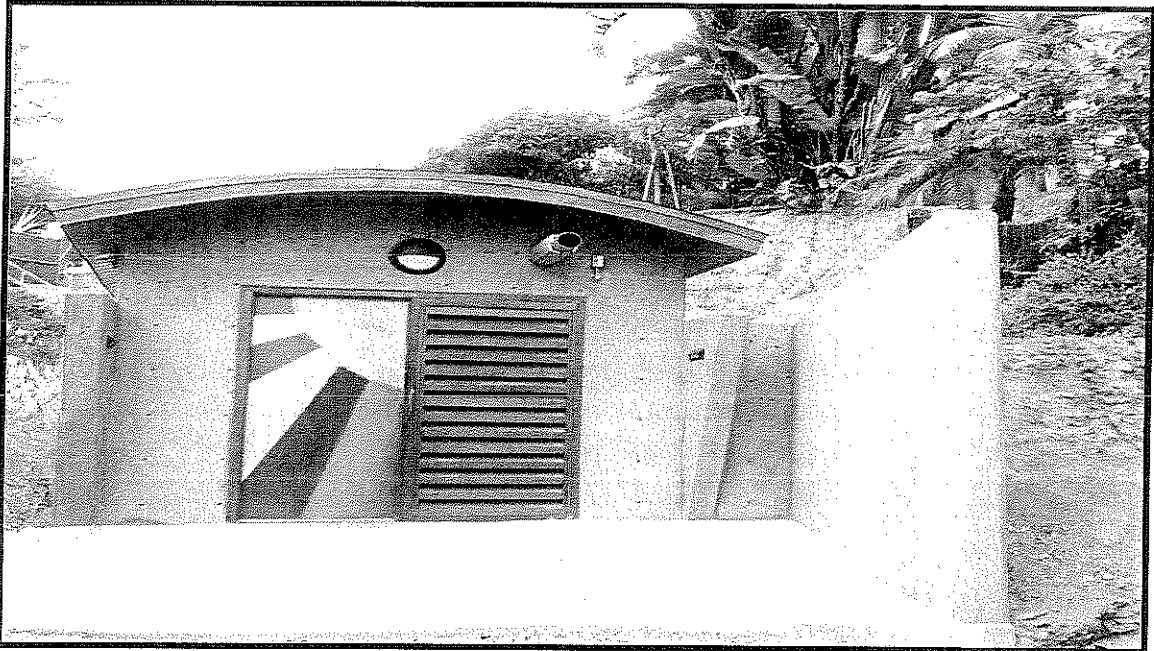
NOTE:
TEMPORARY PUMPING SYSTEM
SHALL BE FUNCTIONING PRIOR
TO DEMOLITION OF STATION.



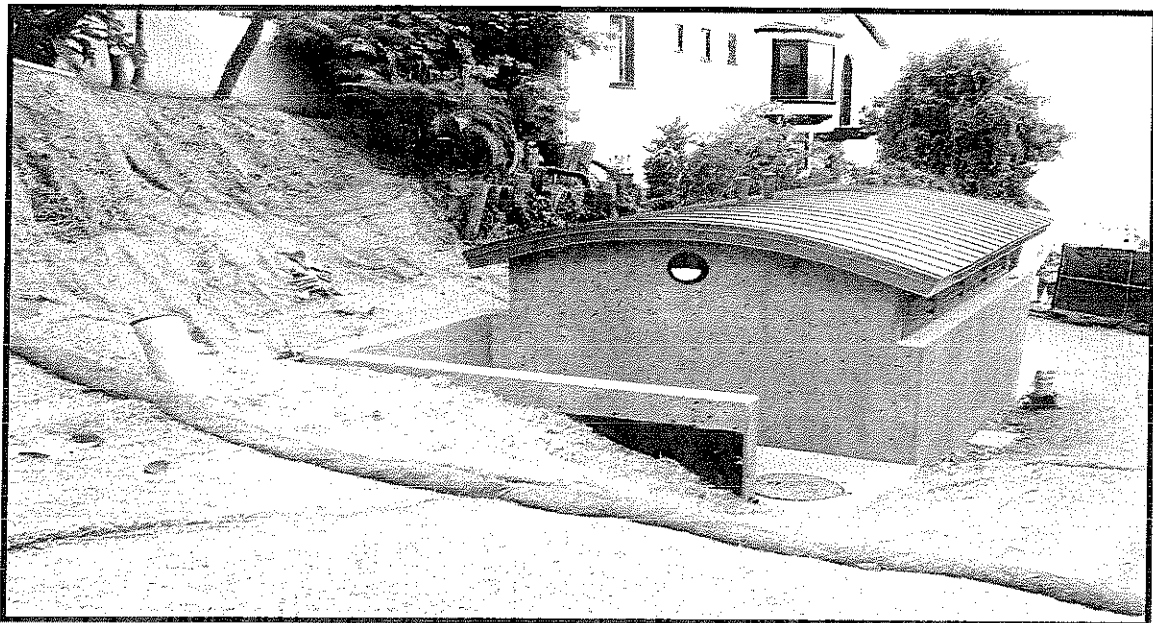
Representative Project No. 2
Shaw's Cove Lift Station Improvements
City of Laguna Beach

Representative project

Shaw's Cove Lift Station Improvement

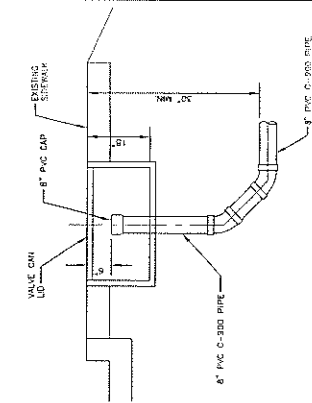


New Facility - front

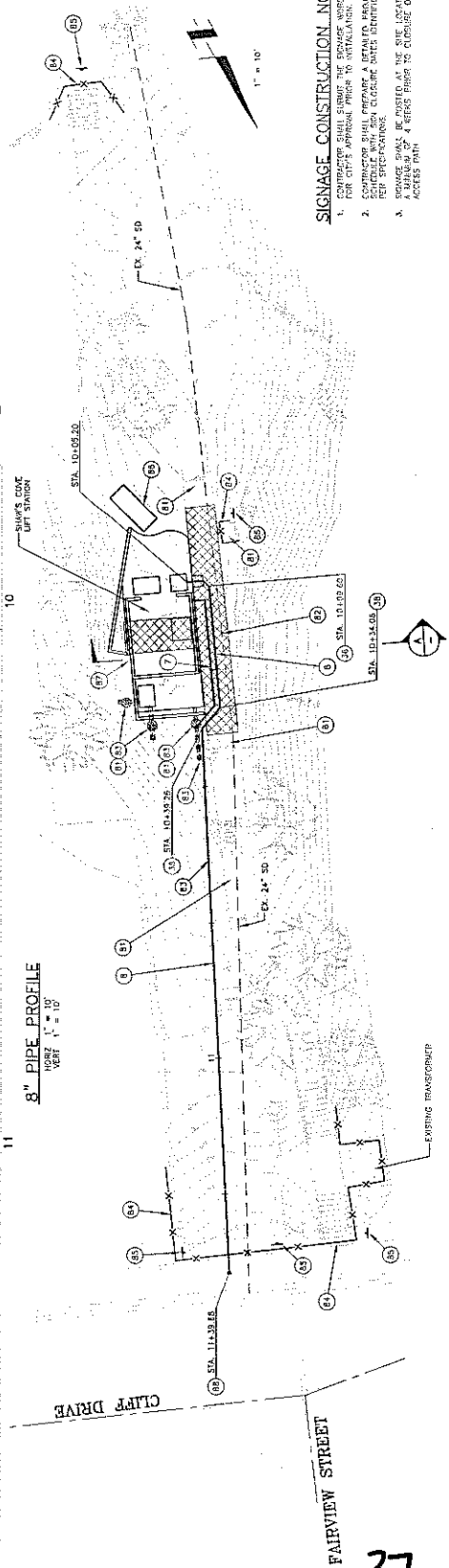


New Facility - rear

City of Laguna Beach



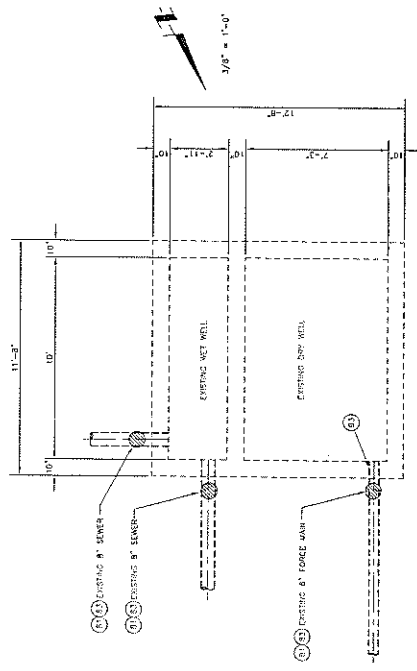
VACUUM TRUCK CONNECTION DETAIL



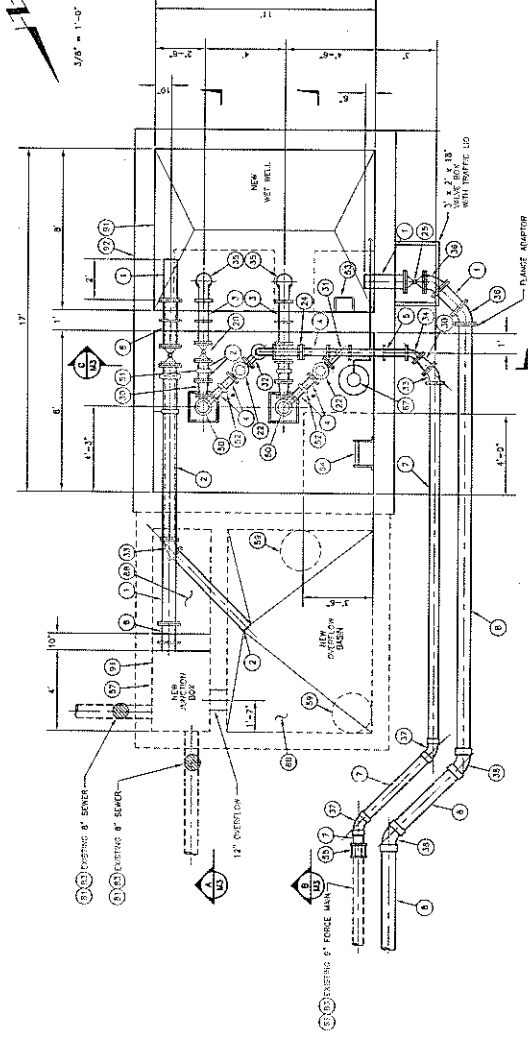
SIGNAGE CONSTRUCTION NOTES

1. CONTRACTOR SHALL SUBMIT THE SIGNAGE WARNING FOR CITY'S APPROVAL PRIOR TO INSTALLATION.
2. CONTRACTOR SHALL PREPARE A DETAILED PROJECT SCHEDULE WITH SIGN CLOSING DATES IDENTIFIED PER SPECIFICATIONS.
3. SIGNAGE SHALL BE POSTED AT THE SITE LOCATIONS A MINIMUM OF 4 WEEKS PRIOR TO CLOSURE OF ACCESS PATH.

- MATERIALS LIST**
- 1 8" DUCTILE IRON PIPE
 - 2 8" DUCTILE IRON PIPE
 - 3 8" DUCTILE IRON PIPE
 - 4 8" DUCTILE IRON PIPE
 - 5 8" DUCTILE IRON PIPE
 - 6 8" DUCTILE IRON PIPE
 - 7 8" DUCTILE IRON PIPE
 - 8 8" DUCTILE IRON PIPE
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 - 100 8" DUCTILE IRON PIPE



EXISTING LOWER LEVEL PLAN



PROPOSED LOWER LEVEL PLAN

NOTE: UNLESS OTHERWISE SPECIFIED, ALL PIPE SHALL BE 100% FULLY RESTRAINED JOINTS. ALL PIPE SHALL BE LIMITED AND COMED PER SPECIFICATIONS REQUIREMENTS.

