

**DISTRICT BOARD**

Megan Clark
Rabi Elias
Craig K. Murray
Judy Schriebman
Crystal Yezman

DISTRICT ADMINISTRATION

Mike Prinz,
General Manager
Michael Cortez,
District Engineer
Mel Liebmann,
Plant Manager
Dale McDonald,
Administrative Services Manager
Greg Pease,
Collection System/Safety Manager

October 2, 2020

To: Interested Parties

Re: **Request for Proposals (RFP)**
Miscellaneous Pump Station Improvements 2020
Job No. 20300-09, 21300-04, 21350-01, & 21600-01

Dear Prospective Consultants:

The Las Gallinas Valley Sanitary District is seeking proposals from qualified engineering firms to provide design services for miscellaneous pump station improvements. The proposal shall be prepared as per the guidelines set forth in the attached RFP.

If you would like your firm to be considered, five (5) hard copies **and** a PDF file of your proposal on a CD or USB flash drive must be mailed to the LGVSD Engineering Department, 101 Lucas Valley Road, Suite 300, San Rafael, CA 94903; Attention: Michael P. Cortez PE, District Engineer, no later than **2:00 PM on October 28, 2020**. An interview process for the selection of a consultant, if deemed necessary by the District, is tentatively scheduled for the week of November 2, 2020. Award of a contract for this RFP is scheduled for November 19, 2020.

Please contact me or Irene Huang at (415) 472-1734 if you have any questions.

Sincerely,

Michael P. Cortez, PE
District Engineer

**REQUEST FOR PROPOSALS
MISCELLANEOUS PUMP STATION IMPROVEMENTS 2020
(JOB NO. 20300-09, 21300-04, 21350-01, & 21600-01)**

1.0 BACKGROUND

The Las Gallinas Valley Sanitary District (LGVSD) is a facility consisting of a network of pipes and 28 pump stations, that collect and transport raw sewage to the treatment plant at 300 Smith Ranch Road, San Rafael, CA. The collection system consists of 105 miles of sewer pipes and 7 miles of force mains. Areas included in the District are Santa Venetia, San Rafael Meadows, Terra Linda, Marinwood, Captain's Cove, and Lucas Valley.

2.0 SCOPE OF SERVICES

This RFP covers the following projects listed in the District's 2020-21 Capital Improvements Program:

1. **Smith Ranch Pump Station Electrical Upgrades (Job No. 20300-09):** The Smith Ranch Pump Station control panel was installed in 2003 and nearing its useful life. The scope of work includes review of existing as-builts, site investigation, and design for replacement of outdated and obsolete components. See *Attachment 2* for as-builts. Special considerations shall be given to the following:
 - a. The District intends to retain the stainless-steel enclosure.
 - b. Provide a detailed sequence of work to maintain pump station operations during construction.
 - c. Deliverables shall include full set of plans and specifications and engineer's estimate necessary for publicly bid the project. LGVSD will provide "front end" boiler plate contract language.
 - d. The outdoor sump pump electrical conduit was inadvertently removed during a previous project. The plans shall include conduit detail for powering up the sump pump.

2. **Pump Station Site Lighting Improvements (Job No. 21300-04):** This project provides for design of the installation or replacement of existing **exterior** fluorescent, metal halide lamps, and high-pressure sodium light fixtures with LEDs that meet the current NFPA Electrical Code for classified environments at the following pump stations (See *Attachment 3* for Existing Pump Station Site Plans):
 - a. John Duckett Pump Station
 - b. Mulligan Pump Station
 - c. Descanso Pump Station
 - d. Smith Ranch Pump Station
 - e. Civic Center North Pump Station
 - f. Rafael Meadows Pump Station

- g. Northgate Industrial Park Pump Station
- h. Venetia Harbor Pump Station
- i. Hawthorn Pump Station
- j. Adrian Pump Station
- k. McPhail Pump Station

Consultant shall evaluate lighting needs at each pump station prior to start of construction. Pump station(s) may be removed from the above list if lighting is found to be sufficient upon evaluation.

Interior and some “area” lighting will be replaced through participation of PG&E’s *Total Energy Efficiency Retrofit Loan Program*. See *Attachment 4* for the proposal from CH Energy, a PG&E consultant that works directly with PG&E customers on implementation of energy efficiency projects. Consultant shall coordinate with PG&E consultant and contractor to avoid overlapping of scope.

In addition, consultant shall field verify that there is adequate electrical load capacity to safely accommodate all proposed lighting improvements.

Deliverable shall include full set of plans and specifications and engineer’s estimate necessary for publicly bid the site lighting improvements project. LGVSD will provide “front end” boiler plate contract language.

3. **Automatic Transfer Switches for Pump Stations (Job No. 21350-01):** This project provides for replacement of automatic transfer switches (ATS) and portable generator termination boxes or receptacles for all pump stations. Scope of work is for design only. Deliverable shall include full set of plans and specifications and engineer’s estimate necessary for publicly bid the project. LGVSD will provide “front end” boiler plate contract language. This project shall be coordinated with the *Emergency Bypass Pumping Analysis & Emergency Plan*.
4. **Emergency Bypass Pumping Analysis & Emergency Response Plan (Job No. 21600-01):** In 2015, the District DKF Solutions prepared emergency response plans for all District pump stations. Each plan identified the bypass connection point and portable generator hook up location. However, the plans have never been verified, tested, and fully implemented by the District. See Dropbox link for a copy of the *Emergency Response Plans*:
<https://www.dropbox.com/sh/0p02468k8nh2he9/AAClmDd3QizWYVfCmAKLnQY0a?dl=0>.

Scope of work as follows:

- a. Update all 28 emergency plans for District pump stations and deliver in PDF and word document format. Develop force main bypass plans in the event of force main failures and emergencies. Coordinate with District staff during preparation of emergency response plans.

- b. Design wet well and force main connection points for pump station bypass during routine maintenance, emergencies, and extended power outages. The District is currently procuring hoses and quick connects compatible with existing quick connect fittings for the current 4"x4" Godwin CD103m and 8"x6" Godwin CD180m towable emergency back-up trash pumps. Consultant shall consider current inventory of equipment parts for emergency response plans and during design. Coordinate with District staff during design.
- c. It should be noted that some minor pump stations such as pump stations within Marin Lagoon (9) and Captain's Cove (6) developments are similar in design; therefore, typical detail is acceptable.
- d. Deliverables shall include full set of plans and specifications and engineer's estimate necessary to publicly bid the project. LGVSD will provide "front end" boiler plate contract language. Prospective Consultants must be licensed professional engineers in the State of California.

3.0 PROPOSAL REQUIREMENTS AND CONTENTS

The proposal shall be prepared in accordance with the following. Material submitted in addition to that specifically required will not be reviewed.

1. **General Firm Information:** This section shall include the following:
 - a. Firm Project References. Submit three (3) references, including current contact name and phone number for similar project.
 - b. Organizational Chart
 - c. Résumés
 - d. Hourly Rates
2. **Maximum Number of Pages:** 10 single-sided pages including résumés, list of example projects, and fee schedule.
3. **Compensation:** Provide a matrix indicating an estimate of hours and fees to complete the services for each project. Also, provide separate itemized time and materials fee adjustments, where appropriate, for additional tasks you feel should be added.

4.0 CONSULTANT SELECTION PROCESS

If deemed necessary, the District may invite up to three (3) firms for oral interviews. The selection panel will consist of the General Manager, District Engineer, and Associate Engineer.

The criteria that will be used in evaluating the proposals include, but are not limited to the following:

1. Knowledge and understanding of Project requirements and District needs.
2. Approach to Project and understanding of the Scope of Work.

3. Commitment of key personnel and their experience.

5.0 TENTATIVE CONSULTANT SELECTION AND OVERALL PROJECT SCHEDULE

- | | |
|--|-----------------------------|
| 1. Request for Proposals Published | October 2, 2020 |
| 2. Questions on the RFP no later than: | October 23, 2020 |
| 3. Proposal Deadline: | October 28, 2020 at 2:00 PM |
| Oral Interviews (optional): | Week of November 2, 2020 |
| 4. Award of a Consultant Contract: | November 19, 2020 |
| 5. Contract Duration | 6 Months |

6.0 STANDARD CONSULTANT AGREEMENT

The Consultant selected to provide the Scope of Services shall use the attached District's standard consultant Agreement (*Attachment 1*). By submitting a proposal for this work, the Consultant agrees to utilize this form for the contract. Contractually required insurance coverage and endorsement information is shown in the body of the document.

ATTACHMENT 1

AGREEMENT
FOR CONSULTATION AND PROFESSIONAL ENGINEERING SERVICES

_____ SERVICES for
_____ PROJECT

(JOB NO. _____)

THIS AGREEMENT made this _____ day of _____, _____ by and between the **LAS GALLINAS VALLEY SANITARY DISTRICT** (hereinafter referred to as "District"), and _____, whose address is, _____ hereinafter referred to as "Consultant");

WITNESSETH:

IN CONSIDERATION of the mutual covenants and conditions herein contained, the parties do hereby agree as follows:

1. General

DISTRICT engages CONSULTANT to furnish the services hereinafter mentioned upon the covenants and conditions of this Agreement, at the compensation herein stipulated, and CONSULTANT accepts said engagement upon said terms.

2. Duties of Consultant; Services to be Performed by Consultant

CONSULTANT shall perform such duties and services as are listed on **Exhibit A** attached hereto, and is hereby referred to and made a part hereof by reference. Said services shall be completed according to the time schedule contained in **Exhibit A**.

3. Services or Materials to be Performed or Furnished by District

DISTRICT shall perform such services or furnish such materials to CONSULTANT in connection with this Agreement as are set forth on **Exhibit B**. If there are no entries on said **Exhibit B**, DISTRICT, shall not be required to provide any services or furnish any materials to CONSULTANT. Unless otherwise provided on **Exhibit B**, all said services and materials to be furnished by DISTRICT will be without cost to CONSULTANT.

4. Payment by District: Time and Manner of Payment

DISTRICT shall pay CONSULTANT, for all services to be rendered and all materials to be furnished under this Agreement, the amount specifically set forth and in the manner specifically set forth on **Exhibit C**. CONSULTANT agrees to accept said sum as full compensation for all services due under this Agreement. Notwithstanding any other language in the Agreement or any exhibits, CONSULTANT agrees that it will perform all tasks for a sum not to exceed _____ (\$_____ U.S. **Dollars**). This is an Agreement for a specific task as defined in Exhibit A, Consultant Services (Scope of Work), for _____ **Project**, and CONSULTANT has accurately determined the price of those tasks.

5. Authorization To Perform Services

The CONSULTANT is not authorized to perform any services, or incur any costs whatsoever under the terms of this Agreement until receipt of written authorization from the DISTRICT.

6. Additional Work

CONSULTANT shall be entitled to extra compensation for services or materials not otherwise required under this Agreement or described in **Exhibit A**, provided that DISTRICT shall first have identified the services or materials as extra, and requested such extra services or materials in writing, but in no event shall DISTRICT be liable for payment unless the amount of such extra compensation shall first have been agreed to in writing by DISTRICT.

7. Professional Skill

CONSULTANT represents that it is skilled in the professional calling necessary to perform the work agreed to be done by it under this Agreement. CONSULTANT represents and warrants to DISTRICT that it has all licenses, permits, qualifications that are legally required for CONSULTANT to practice its profession and that CONSULTANT shall, at its sole cost and expense, keep all such licenses, permits, and approvals which are legally required for CONSULTANT to practice its profession in effect. DISTRICT relies upon the skill of CONSULTANT to do and perform its work in a skillful manner, and CONSULTANT agrees to thus perform its work, and the acceptance of its work by DISTRICT shall not operate as a release of CONSULTANT from said Agreement. For purposes of this Agreement, "skillful manner" shall mean the standard of care prevailing in the industry in the San Francisco Bay Area during the term of this Agreement.

8. Equal Employment Opportunity

CONSULTANT shall not discriminate against any employee or applicant for employment and shall comply with the provisions of Section 12940 of the Government Code.

9. Compliance with Laws

CONSULTANT shall comply with all federal, state and District laws, statutes, ordinances, rules and regulations and the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting the performance of the Agreement. Any suit or action by either party shall be brought in the Superior Court for the County of Marin, California. The laws of the State of California shall govern this Agreement.

10. Labor Compliance

This project is subject to the requirements of Section 1720 et seq. of the California Labor Code requiring the payment of prevailing wages, the training of apprentices and compliance with other applicable requirements. Contractors and all subcontractors who perform work on the project are required to comply with these requirements. Prevailing wages apply to all projects over \$1,000 which are defined as a "public work" by the State of California.

The applicable California prevailing wage rate can be found at www.dir.ca.gov and are on file with the Agency's principal office, which shall be available to any interested party upon request.

Specifically, contractors are reminded of the need for compliance with Labor Code Section 1774-1775 (the payment of prevailing wages and documentation of such), Section 1776 (the keeping and submission of accurate certified payrolls) and 1777.5 in the employment of apprentices on public works projects. Further, overtime must be paid for work in excess of 8 hours per day or 40 hours per week pursuant to Labor Code Section 1811-1813.

No contractor or subcontractor may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)].

No contractor or subcontractor may be awarded a contract for public work on a public works project, unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.

All contractors/subcontractors and related construction services subject to prevailing wage, including but not limited to: trucking, surveying and inspection work must be registered with the Department of Industrial Relations as a “public works contractor”. Those you fail to register and maintain their status as a public works contractor shall not be permitted to perform work on the project.

This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

The Agency shall withhold any portion of a payment; including the entire payment amount, until certified payroll forms and related documentation are properly submitted, reviewed and found to be in full compliance. In the event that certified payroll forms do not comply with the requirements of Labor Code Section 1720 et seq., the Agency may continue to hold sufficient funds to cover estimated wages and penalties under the contract.

11. Independent Contractor; Not An Agent

CONSULTANT, at all times during the term of this Agreement is acting as an independent contractor in furnishing the services or materials and performing the work required by this Agreement and is not an agent, servant or employee of DISTRICT. Notwithstanding any other DISTRICT, state or federal policy, rule, regulation, law, or ordinance to the contrary, CONSULTANT and any of its employees, agents, and subcontractors providing services under this Agreement shall not qualify for or become entitled to, and hereby agree to waive any and all claims to, any compensation, benefit, or any incident of employment by DISTRICT, including but not limited to eligibility to enroll in the California Public Employees Retirement System (PERS) as an employee of DISTRICT and entitlement to any contribution to be paid by DISTRICT for employer contributions and/or employee contributions for PERS benefits.

Except as DISTRICT may specify in writing, CONSULTANT shall have no authority, express or implied, to act on behalf of DISTRICT in any capacity whatsoever as an agent or pursuant to this Agreement to bind DISTRICT to any obligation whatsoever.

12. Time

CONSULTANT shall devote such time to the performance of services pursuant to this Agreement as may be reasonably necessary for satisfactory performance of CONSULTANT'S obligations pursuant to this Agreement.

13. Indemnity

CONSULTANT agrees to indemnify and save harmless and defend with counsel acceptable to DISTRICT, the DISTRICT, its officials, officers, employees, agents, and volunteers from and against any and all losses, liability, suits, actions, costs, expenses, claims, causes of action and damages (including costs of defense) arising out of any personal injury, bodily injury, loss of life, or damage to property, or any violation of any federal, state, or municipal law or ordinance to the extent caused, in whole or in part, by recklessness, the willful misconduct or negligent acts or omissions of CONSULTANT, its officers, employees, agents, consultants, subcontractors or any officer, agent or employee thereof but excluding liabilities due to the active negligence of the DISTRICT. By execution of this Agreement, CONSULTANT acknowledges and agrees that CONSULTANT has read and understands the provisions hereof and that this paragraph is a material element of consideration. DISTRICT and CONSULTANT agree that this Agreement is consistent with Section 2782.8 of the Civil Code.

14. Insurance: Public Liability, Workers' Compensation, Errors and Omissions

CONSULTANT shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the CONSULTANT, its officers, subcontractors, agents, representatives, or employees.

CONSULTANT shall be required to meet all District Insurance Requirements. See **Exhibit D** for District Insurance Requirements.

15. Consultant Professional Team

CONSULTANT shall provide and maintain the professional team to perform and furnish the materials in connection with this Agreement whose names and capacities are set forth on **Exhibit E**. In the event that any member of said team shall leave the employ of CONSULTANT or be transferred to another office of CONSULTANT, CONSULTANT shall so advise DISTRICT and replace that member with a new member who is competent to perform the required work and who shall be satisfactory to DISTRICT. Such other agents or employee contractors or subcontractors not listed on **Exhibit E** as may be required to perform any portion of this Agreement shall be competent and shall be suitably experienced in the function which they perform.

16. Notices

Unless otherwise provided herein, all notices required hereunder shall be given by certified mail, postage prepaid and addressed to the party at the address indicated in the opening

paragraph of this Agreement provided, however, that in lieu thereof, notice may be given by personal delivery to the party at said address.

17. Title to Documents

All original calculations, photographs, maps, drawings, plans, design notes and other material or documents developed or used in connection with the performance of this Agreement shall be the property of DISTRICT provided, however, that CONSULTANT may provide DISTRICT with legible photostatic copies thereof in lieu of the originals upon approval by DISTRICT representative. All such material and documents shall remain confidential and may not be divulged, published or shared by CONSULTANT without the prior written consent of DISTRICT. Any plans and specifications shall bear the name of the CONSULTANT together with his certificate number, if any. If CONSULTANT'S working papers or product includes computer generated statistical material, CONSULTANT shall provide the material including the data base upon which it is based to DISTRICT in a mutually agreed upon computer machine-readable format and media.

18. Assignment

Neither party shall assign or sublet any portion of this Agreement without the written consent of the other party in writing.

19. Termination

Without limitation to such rights or remedies as DISTRICT shall otherwise have by law, DISTRICT shall also have the right to terminate this Agreement for any reason upon seven (7) days' written notice to CONSULTANT. This Agreement may also be terminated by either party upon seven (7) days' written notice should the other party fail substantially to perform in accordance with this agreement through no fault of the other or if the project is stopped by conditions beyond the control of the DISTRICT.

In addition to terminating this Agreement if CONSULTANT materially breaches any of the terms of this Agreement, DISTRICT'S remedies shall include, but not be limited to:

- Retain the plans, specifications, drawings, reports, design documents, and any other work product prepared by CONSULTANT pursuant to this Agreement;
- Retain a different consultant to complete the work described in **Exhibit A** not finished by CONSULTANT; and/or

This description of DISTRICT's remedies does not otherwise limit DISTRICT's remedies at law or equity.

20. Consultant Nondisclosure

CONSULTANT will not directly or indirectly use (other than for the DISTRICT), publish, or otherwise disclose at any time (except as CONSULTANT'S duties may require), either during or subsequent to the performance of consulting services, any of DISTRICT's confidential information (whether or not conceived, originated, discovered, or developed in whole or in part by CONSULTANT) as defined below.

“Confidential information” means information or material that is not generally available to or used by others, or the utility or value of which is not generally known or recognized as

standard practice whether or not the underlying details are in the public domain, including without limitation:

- a. Information or material that relates to DISTRICT'S inventions, technological developments, "know how", purchasing, accounting, merchandising or licensing;
- b. Trade secrets;
- c. Software in various stages of development (source code, object code, documentation, diagrams, flow charts), designs, drawings, specifications, models, data and customer information; and
- d. Any information of the type described above that DISTRICT obtained from another party and that the DISTRICT treats as proprietary or designates as confidential, or is obligated to do so by virtue of a third-party agreement, whether or not owned or developed by the DISTRICT.

The obligations of confidentiality imposed herein will not apply to confidential information that:

- a. Is or has been generally available to the public by any means, through no fault of CONSULTANT and without breach of these provisions.
- b. Is or has been lawfully disclosed to CONSULTANT by a third party without an obligation of confidentiality being imposed upon CONSULTANT.
- c. Has been disclosed without restriction by the DISTRICT or by a third party owner of confidential information.
- d. Was required to be disclosed pursuant to law.

CONSULTANT agree to deliver to DISTRICT promptly on request, or on the date of termination of CONSULTANT'S services, all documents, software, including any copies, and other materials in CONSULTANT'S possession pertaining to the business of DISTRICT and originating with the DISTRICT that came into CONSULTANT'S possession.

The disclosure of confidential information shall not be construed as granting either a license under any patent, patent application or any right of ownership in said confidential information.

CONSULTANT acknowledges and agrees that in the event of a breach or threatened breach of any provisions of this Agreement, the DISTRICT shall have no adequate remedy at law and shall therefore be entitled to enforce any such provision by temporary or permanent injunctive or mandatory relief obtained in any court without the necessity of proving damages, posting any bond or other security, and without prejudice or diminution of any other rights or remedies which may be available at law or in equity.

21. No-Waiver; Construction

Failure on the part of either party to enforce any provisions of this Agreement shall not be construed as a waiver of the right to compel enforcement of such provisions or any other provision. The singular number shall include the plural, and the masculine gender shall include the feminine gender and neuter gender whenever the context of this Agreement permits.

22. Mediation

Should any dispute arise out of this Agreement, the parties shall meet in mediation and attempt to reach a resolution with the assistance of a mutually acceptable mediator. Neither party shall be permitted to file a legal action without first meeting in mediation and making a good faith attempt to reach a mediated resolution. The costs of the mediator, if any, shall be shared equally by the parties. If a mediated settlement is reached, neither party shall be deemed the prevailing party for purposes of the settlement and each party shall bear its own legal costs.

23. Attorney's Fees

If a party brings any action, including an action for declaratory relief, to enforce or interpret the provisions of this Agreement, the prevailing party is entitled to reasonable attorneys' fees in addition to any other relief to which that party may be entitled. Such fees may be set by the court in the same action or in a separate action brought for that purpose.

24. Survival

All obligations arising prior to the termination of this Agreement and all provisions of this Agreement allocating liability between DISTRICT and CONSULTANT survive the termination of this Agreement.

25. Conflict of Interest

CONSULTANT may serve other clients, providing that activities in the service of other clients do not place CONSULTANT in a "conflict of interest" as that term is defined in the Political Reform Act codified at California Government Code § 81000 *et seq.* or Section 1090 *et seq.* of the Government Code.

26. Severability

If a court of competent jurisdiction finds or rules that any provision of this Agreement is invalid, void, or unenforceable, the provisions of this Agreement not so adjudged shall remain in full force and effect. The invalidity in whole or in part of any provision of this Agreement shall not void or affect the validity of any other provision of this Agreement.

27. Additional Provisions, Exhibits

Additional provisions of this Agreement are set forth on **Exhibits A through Exhibit F**. All Exhibits shall be attached to, and are hereby referred to and made a part hereof by reference.

28. Entire Agreement: Amendment

This contract supersedes any and all other agreements, whether oral or in writing, between the parties with respect to the subject of this contract. Except as to those documents specifically incorporated by reference into this contract, this contract contains all of the covenants and agreements between the parties with respect to the subject of this contract, and each party acknowledges that no representations, inducements, promises, or agreements have been made by or on behalf of any party except the covenants and agreements embodied in this contract. No agreement, statement, or promise not contained in this contract shall be valid or binding on the parties with respect to the subject of this contract. No modifications hereof shall be effective unless such modification is in writing signed by all parties to this Agreement.

IN WITNESS WHEREOF, the parties have hereunto set their hands the day and year first above written.

LAS GALLINAS VALLEY SANITARY DISTRICT

By _____
Mike Prinz, General Manager Date

CONSULTANT/SERVICE NAME

Signature Date

By _____
Print Name Title

NOTE: The following exhibits are hereby incorporated into this agreement by this reference:

- Exhibit A: Consultant Services (Scope of Work)
- Exhibit B: Services or Materials to be Performed or Furnished by District
- Exhibit C: Payment Schedule
- Exhibit D: District Insurance Requirements
- Exhibit E: Consultant Team
- Exhibit F: District Safe Work Requirements
 1. Contractor/Consultant Safe Work Requirements
 2. Confined Space Entry Program

Exhibit A

Consultant Services (Scope of Work)

Exhibit B

Services or Materials to be Performed or Furnished by District

Exhibit C
Payment Schedule

Exhibit D

District Insurance Requirements

Insurance Requirements for Professional Services

Consultant shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the Consultant, his agents, representatives, employees or subcontractors.

MINIMUM SCOPE OF INSURANCE

Coverage shall be at least as broad as:

1. **Commercial General Liability (CGL):** Insurance Services Office Form CG 00 01 covering CGL on an “occurrence” basis, including products and completed operations, property damage, bodily injury and personal & advertising injury with limits no less than **\$2,000,000** per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.
2. **Automobile Liability:** ISO Form Number CA 00 01 covering any auto (Code 1), or if Consultant has no owned autos, covering hired, (Code 8) and non-owned autos (Code 9), with limit no less than **\$1,000,000** per accident for bodily injury and property damage.
3. **Workers’ Compensation:** as required by the State of California, with Statutory Limits, and Employer’s Liability Insurance with limit of no less than **\$1,000,000** per accident for bodily injury or disease. (Not required if consultant provides written verification it has no employees)
4. **Professional Liability (Errors and Omissions):** Insurance appropriate to the Consultant’s profession, with limit no less than \$1,000,000 per occurrence or claim, \$2,000,000 aggregate. *(If applicable – see footnote next page)*

If the consultant maintains broader coverage and/or higher limits than the minimums shown above, the Entity requires and shall be entitled to the broader coverage and/or higher limits maintained by the contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the Entity.

Other Insurance Provisions

The insurance policies are to contain, or be endorsed to contain, the following provisions:

Additional Insured Status

The Entity, its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the Consultant including materials, parts or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to the Consultant’s insurance (at least as broad as ISO Form CG 20 10 11 85 or **both** CG 20 10, CG 20 26, CG 20 33, or CG 20 38; **and** CG 20 37 forms if later revisions used).

Primary Coverage

For any claims related to this contract, the **Consultant’s insurance coverage shall be primary** insurance coverage at least as broad as ISO CG 20 01 04 13 as respects the Entity, its officers,

officials, employees, and volunteers. Any insurance or self-insurance maintained by the Entity, its officers, officials, employees, or volunteers shall be excess of the Consultant's insurance and shall not contribute with it.

Notice of Cancellation

Each insurance policy required above shall provide that **coverage shall not be canceled, except with notice to the Entity.**

Waiver of Subrogation

Consultant hereby grants to Entity a waiver of any right to subrogation which any insurer of said Consultant may acquire against the Entity by virtue of the payment of any loss under such insurance. Consultant agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the Entity has received a waiver of subrogation endorsement from the insurer.

Self-Insured Retentions

Self-insured retentions must be declared to and approved by the Entity. The Entity may require the Consultant to purchase coverage with a lower retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. The policy language shall provide, or be endorse to provide, that the self-insured retention may be satisfied by either the name insured or Entity.

Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII, unless otherwise acceptable to the Entity.

Claims Made Policies (note – should be applicable only to professional liability, see below)

If any of the required policies provide claims-made coverage:

1. The Retroactive Date must be shown, and must be before the date of the contract or the beginning of contract work.
2. Insurance must be maintained and evidence of insurance must be provided **for at least five (5) years after completion of the contract of work.**
3. If coverage is canceled or non-renewed, and not replaced **with another claims-made policy form with a Retroactive Date prior to** the contract effective date, the Consultant must purchase "extended reporting" coverage for a minimum of **five (5) years** after completion of work.

Verification of Coverage

Consultant shall furnish the Entity with original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by the Entity before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the Consultant's obligation to provide them. The Entity reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.

Special Risks or Circumstances

Entity reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

Sub Contractors

Consultant shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and Consultant shall ensure that Entity is an additional insured on insurance required from subcontractors.

***Note:** Professional liability insurance coverage is normally required if the Consultant is providing a professional service regulated by the state. (Examples of service providers regulated by the state are insurance agents, professional architects and engineers, doctors, certified public accountants, lawyers, etc.). However, other professional Consultants, such as computer or software designers, technology services, and services providers such as claims administrators, should also have professional liability. If in doubt, consult with your risk management or insurance advisor.*

Exhibit E
Consultant Team

Exhibit F
1. Safe Work Requirements

LAS GALLINAS VALLEY SANITARY DISTRICT

CONTRACTOR SAFE WORK REQUIREMENTS

Revised June 8, 2017

SAFETY POLICY

Contractors and their subcontractors working for the Las Gallinas Valley Sanitary District shall comply with all applicable federal, state, and local safety orders in the performance of any work on District projects. In addition, Contractors and their subcontractors shall comply with all safety regulations and procedures listed in this Safe Work Requirements. Contractors shall take any additional precautions necessary to prevent injury or damage to persons, property, or interference with District operations.

Contractors shall be responsible for notifying employees, subcontractors, and invitees of these District Safe Work Requirements. No work within District facilities or on District contract work sites shall begin prior to such notification. Contractor shall not allow a new employee or new subcontractor to begin work on District projects without having conducted a full and proper safety orientation.

Contractors doing work at the Treatment Plant facility, lift stations or sewage conveyance systems shall schedule a safety orientation session for their site Superintendent and other Contractor-designated personnel with the Authorized District Representative prior to commencing work. The orientation session shall include emergency procedures, an explanation of applicable District safety policies, and any unique and inherent hazards of District facilities. It is then the responsibility of the Contractor's Superintendent or designated personnel to orient and so inform all personnel under the Contractor's supervision.

The District may, in its sole discretion, either temporarily or permanently remove a Contractor's employee from District work and/or terminate the Contractor's right to proceed for any violation of applicable Cal/OSHA Construction Safety Orders or these District Safe Work Requirements.

DEFINITIONS

As used in this Safe Work Requirement, the following definitions are applicable:

A. PARTS AND MATERIALS:

All products, materials, devices, systems, or installations installed by Contractor shall have been approved, listed, labeled, or certified as conforming to applicable governmental or other nationally recognized standards, or applicable scientific principles. The listing, labeling, or certification of conformity shall be based upon an evaluation performed by a person, firm, or entity with appropriate registered engineering

competence; or by a person, firm, or entity, independent of the manufacturer or supplier of the product, with demonstrated competence in the field of such evaluation.

B. CONTRACTOR

Designates “Contractor”, “Contractors”, “Sub-Contractors”, “Suppliers”, and all employees of each.

C. AUTHORIZED DISTRICT REPRESENTATIVE

The District’s Authorized Representatives shall be the employee(s) designated by the District to be responsible for communicating with the Contractor.

D. DISTRICT JURISDICTION

For the purposes of these regulations, “District” Shall mean the Las Gallinas Valley Sanitary District.

E. TREATMENT PLANT AND FACILITIES

For the purposes of these regulations, “Treatment Plant & Facilities” shall include the District's Wastewater Treatment Plant, lift stations and sewage conveyance systems located within the boundaries of the District.

EMERGENCY PROCEDURES

A. FIRST AID

Contractors shall be responsible for providing first aid and medical treatment for their employees and for compliance with the first aid requirements of all applicable Cal/OSHA Construction Safety Orders.

Contractors shall be responsible for making prior arrangements for emergency medical care and for transportation of injured Contractor personnel.

B. FIRE

When work is being performed which generates sparks or open flames, the Contractor will provide a fire watch, a person trained in the use of appropriate fire fighting equipment, whose only task is to observe and extinguish fires. A District “Hot Works” permit must be filled out and turned into the Collection System / Safety Manager, or General Manager when the Safety Manager is not available, when work is completed. Contractor shall ensure that appropriate fire extinguisher(s) are available at the specific work site for use in case of a fire. All Contractor’s employees shall be properly trained to use them.

In the event of a fire, Contractor shall immediately notify the nearest District employee and if possible, call emergency (911) and give the location of the plant, which is 300 Smith Ranch Rd. San Rafael. A map of the wastewater plant is included in this policy. Refer to Attachment A.

BASIC SAFETY RESPONSIBILITIES AT DISTRICT FACILITIES

A. COMMUNICATION

Contractor shall maintain close communication with the Authorized District Representative. Contractors should sign-in at the office at the beginning and end of each day along with a headcount of crew members.

B. RESPONSIBILITY

Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work. The Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss, to:

1. All employees on the work site and other persons and organizations who may be affected thereby.
2. All the work, materials, and equipment to be incorporated therein, whether in storage or off the site.
3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation, or replacement in the course of construction.

Contractor shall comply with all applicable laws and regulations (whether referred to herein or not) of any public agency having jurisdiction over the safety of persons or property, or the protection of persons from damage, injury, or loss, and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and facilities when performance of the work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property and facilities.

Contractor shall designate a responsible representative at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's Superintendent unless otherwise designated in writing by the Contractor to the District.

C. GENERAL SAFETY REGULATIONS

Basic Rules:

- Work shall not begin until the Contractor's personnel have been informed of the District's Safe Work Requirements and potential hazards. The District employee responsible for the project is responsible for advising the Contractor of the District's Safe Work Requirements and potential hazards.
- All safety procedures applicable to the job being performed, including use of appropriate protection equipment, shall be followed.
- The Contractor's personnel shall **never** operate, use, adjust, modify or relocate any District equipment, switches, valves, or other controls. The Authorized

District Representative must be contacted should operation, adjustment, modification, or relocation of District equipment be necessary.

- Contractor's use of District instruments, tools, ladders, scaffolding or other equipment is not permitted except in cases of emergency as determined by a District supervisor or by permission from a senior Manager of the District.
- Drinking water shall be supplied by Contractor. **Do Not Drink Water from Hose Connections at any District Facility.**
 1. Hose bib connections are located throughout the treatment plant. Most of these supply treated wastewater and may or may not be posted with signs reading "Do Not Drink." In any case, **never** drink water from hose bibs or hoses.
 2. Water lines throughout the treatment plant are color coded (when not stainless steel) and labeled as follows:

Recycle Water Piping	Purple
Domestic Water Piping	Blue
Service Water Piping (Plant Effluent)	Gray
 3. Hose connections may be used to wash down equipment. Never hose down electrical or heated equipment of any kind. If an employee has used a gray or purple water hose for wash down, he/she should immediately wash their hands in domestic water with soap.
- NEVER make any connection to any water line without first verifying with the Authorized District Representative that contamination of the water lines will not occur.
- Use of alcoholic beverages and/or illegal drugs by Contractor or any employee is strictly prohibited. Smoking within the plant is prohibited. Use of prescription or non-prescription drugs which interfere with the individual's ability to work safely is also prohibited.
- Contractor shall advise the Authorized District Representative of any employee with any medical conditions that could put the employee in danger.

Personal Protection Equipment:

- Contractor shall be responsible for providing and assuring use by employees of all OSHA required protective equipment.
- Approved respiratory equipment shall be worn when the possibility of exposure to hazardous dusts, vapors, fumes, mists, or gases exists. In addition to all other safety regulations, pipes or conduit should be mechanically BLOCKED off when being worked on. District safety procedures shall be followed when working on, but not limited to, the following systems:
 - 1) Natural gas and sludge gas (Methane)

- 2) Ferrous Chloride
- 3) Polymer
- 4) Hypochlorite
- 5) Compressed Air
- 6) Sodium Bisulfite

- Contractor shall be responsible for determining the existence and location of such systems prior to commencement of work.

Power Tools and Welding Equipment:

- Gasoline and electrical powered hand tools shall be protected by approved ground fault circuit interrupters, or shall be double insulated. Cords shall be inspected daily prior to use. Damaged cords shall not be used on District work.
- Pneumatic driven power tools shall be disconnected from air lines when not in use. Hoses shall be inspected daily prior to use. Damaged hoses shall not be used on District work.
- Power tools shall be used only by trained personnel who have a valid license (when applicable, i.e, welding) in their possession. Proper warning signs shall be posted when these tools are in use.
- Electric and gas welding and cutting tools, including cords and gas hoses, shall be inspected daily prior to use. Damaged cords and gas hoses shall not be used on District work.
- Contractor and Contractor employees' tools and equipment used on District work sites shall be in safe operating condition and shall conform to the requirements of Cal/OSHA regulations. All personnel using such tools shall be properly trained.

D. BARRICADES AND SIGNS FOR TRAFFIC CONTROL

All Contractors, permittees, or agencies doing work for District which requires traffic control shall:

- 1) Install and maintain required traffic devices.
- 2) Provide appropriately equipped flag persons when required.
- 3) Provide adequate safeguards for workers and District personnel.
- 4) Maintain access for District personnel to all District facilities.

All work on streets, roadways, or similar thoroughfares shall comply with the Federal Highway Administration's "Manual on Uniform Traffic Control Devices for Streets and Highways" and any local ordinances. District Plant speed is *maximum* 10 mph.

SPECIAL PROCEDURES AND UNIQUE HAZARDS

A. **CONFINED SPACE ENTRY**

Confined spaces of all types exist throughout the District and throughout the plant and range from open trenches and manholes, to tanks, clarifiers and digesters. Contractors are required to meet Cal/OSHA safety standards for CONFINED SPACE ENTRY OPERATIONS, Title 8 Article 108 (Sections 5156-5159), or the most current CAL/OSHA applicable standards, and to provide a safe working environment for their employees. All Contractors directing or working in confined spaces are required to notify the Authorized District Representative. Contractors are responsible for all operations, testing, equipment calibration, ventilation, and entry per the Cal/OSHA standards. Contractors are responsible for all confined space permits and all appropriate equipment. Completed confined space permits are to be turned in to the District's safety manager.

B. **ELECTRICAL SUPPLY SYSTEMS**

The treatment plant's Electrical Supply System consists of two 65kW Gas Microturbine Generators, one 500kW diesel oil engine driven standby generator and one 380 KW trailer mounted standby generator, and solar power. All electrical power generated in the plant and PG&E power (beyond their transformer) is 480 volt, 3 phase, 60 Hz electricity and is delivered to one 480 volt switchgear panel. This panel is interconnected by cables and protected by breakers, relays and monitoring devices.

Electricity is dispersed from the switchgear through breakers and cables to motor control centers (MCC's), to power panels, to transformers (voltage reducers), to lighting panels and to motor driven pumps and equipment. Lockable control stations are located at each piece of equipment. 480 volt, 208 volt and 120 volt electricity is used in the plant. Contact the duty operator prior to working on any piece of electrical equipment. Electricity is hazardous and can burn or kill people.

All work on electrical systems shall be done in accordance with the State of California, CAL/OSHA, Article 33, Electrical Requirements for construction work, Low Voltage Electrical Safety Orders.

C. **FERROUS CHLORIDE SYSTEMS -**

The Ferrous Chloride System consists of a positive displacement pump with feed rate adjustment. Shut-off valves are located before and after the pump. Before working on this system, close all valves and disconnect the pump from electricity.

Ferrous Chloride is a dangerous chemical which will attack the skin, eyes and the mucous membranes of the mouth, throat and lungs. Contact the plant duty operator prior to working on this system.

D. DIGESTER GAS SYSTEM

The Digester Gas System consists of one steel tank, associated piping, compressors, flare, etc. Sludge is bacterially reduced in the tanks creating principally methane (CH₄) and other combustible hazardous gases, including hydrogen sulfide (H₂S). Hydrogen sulfide is toxic at very low concentrations. These gases are contained by the tank covers and piping which is located on overhead racks, in pipe trenches and buried throughout the plant. The gases are burned in large engines driving generators to make electricity for the plant. Heat from the engines is captured and piped to the digesters to heat the sludge, speeding up the digestion process.

Digesters and the stored gases within them are hazardous. No smoking, cutting, or spark-generating equipment is allowed on or within ten feet of any digester. Contact the duty operator prior to working on digesters.

E. HYPOCHLORITE SYSTEM

Hypochlorite, or concentrated chlorine bleach (12.5%), is used to disinfect, or kill bacteria and virus in the final effluent (water) discharged from the plant. Two tanks, each 7,000 gallons are used to store hypochlorite. Piping, valves, pumps, strainers (filters) and flow measuring and control equipment make up the system. Hypochlorite will attack clothing, skin, eyes and mucous membranes of the nose, mouth, throat and lungs. Contact the duty operator prior to working on the hypochlorite system.

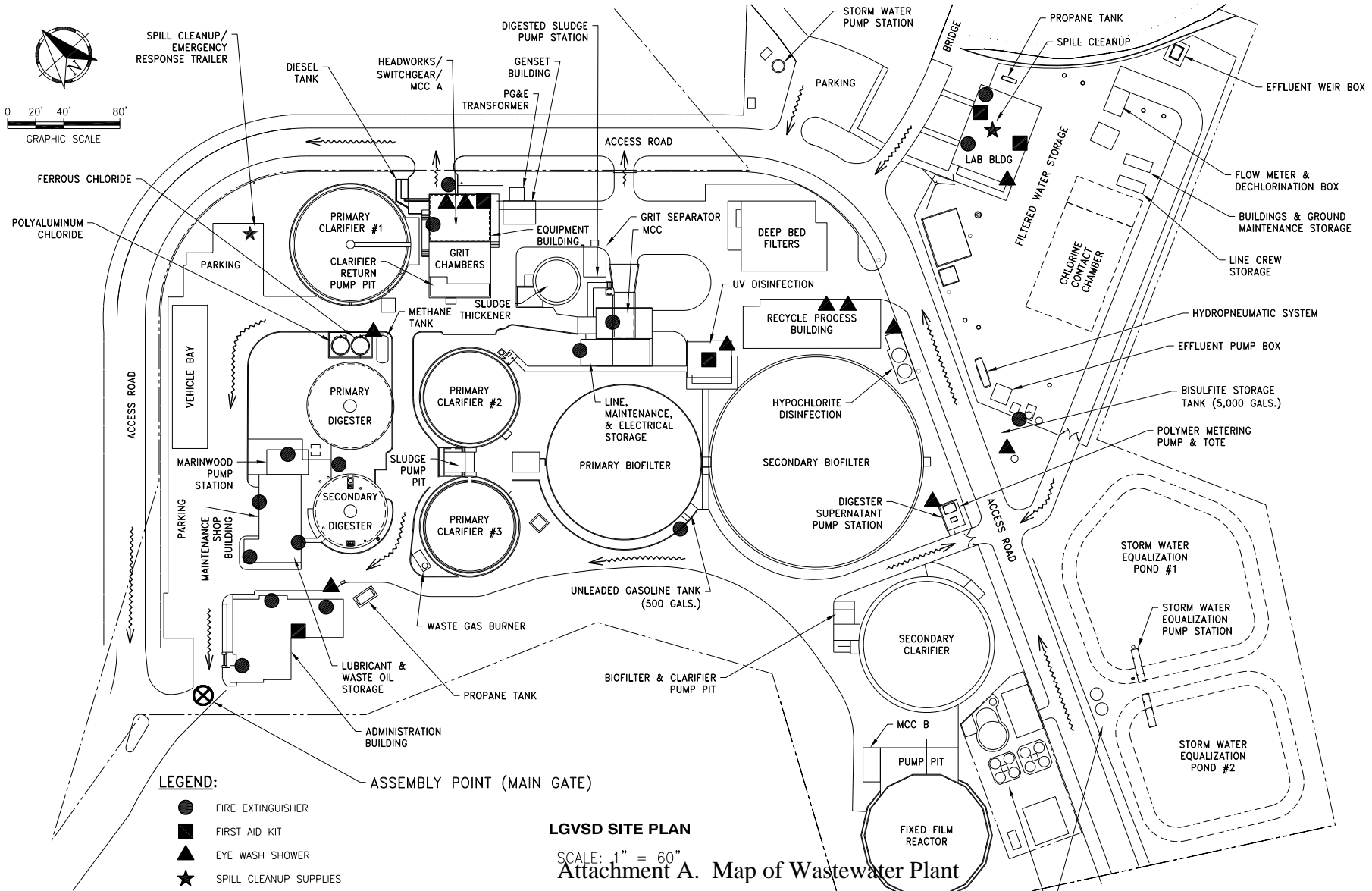
F. SODIUM BISULFITE

Sodium bisulfite is used when neutralizing sodium hypochlorite. Two tanks, each 4,000 gallons and one 2,500 gallons are used to store sodium bisulfite. Piping, valves, pumps, strainers (filters) and flow measuring and control equipment make up the system. Sodium bisulfite is an irritant to eyes, skin and mucous membranes. Inhalation of mist may cause irritation to respiratory tract. Contact the duty operator prior to working on the sodium bisulfite system.

G. GENERAL HAZARDS

Throughout District's treatment plant and facilities there are a number of extremely hazardous elements that are dangerous. They include, but are not limited, to:

- Flammable gas and petroleum.
- H₂S (hydrogen sulfite)
- Deep pools of liquid sewage which are rarely patrolled, and for which self-rescue is unlikely.
- Automatic start equipment.
- HBV (Hepatitis B Virus)



LEGEND:

- FIRE EXTINGUISHER
- FIRST AID KIT
- ▲ EYE WASH SHOWER
- ★ SPILL CLEANUP SUPPLIES

--- EVACUATION ROUTE

LGVSD SITE PLAN

SCALE: 1" = 60"

Attachment A. Map of Wastewater Plant

EMERGENCY EVACUATION ROUTES

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Las Gallinas Valley Sanitary District
WATER RECLAMATION FACILITIES

Exhibit F
2. Confined Space Entry Program

Las Gallinas Valley
Sanitary District

Confined Space
Entry
Program

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**LAS GALLINAS VALLEY SANITARY DISTRICT
Confined Space Entry Program**

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LGVS D CONFINED SPACE ENTRY PROGRAM

INTRODUCTION

The purpose of Las Gallinas Valley Sanitary District's confined space entry program is to protect employees who work in manholes, pump stations, tanks, or any other confined space that could expose employees to hazardous conditions or substances. The program establishes an entry permit system and procedures to ensure that potential hazards of each confined space are identified and evaluated and that appropriate safety precautions are taken before an employee enters the space.

Employees will be given an opportunity to participate in the development and implementation of LGVS D's confined space procedures. The program will be revised or procedures will be modified whenever suggestions or recommendations from employees would improve confined space safety.

The policies and procedures in this program are consistent with the requirements of Cal/OSHA General Industry Safety Orders, Title 8, Sections 5156 and 5157 and supersede previous confined space policies and procedures. The program applies to all employees who work in, or in connection with LGVS D confined spaces.

Confined spaces at LGVS D have been identified based on the definitions in Section 5157 as follows:

Confined Space is a space that:

1. Is large enough and so configured that an employee can bodily enter and perform assigned work; and
2. Has limited or restricted means for entry or exit; and
3. Is not designed for continuous employee occupancy.

Permit-Required Confined Space is a space that has one or more of the following characteristics:

1. Contains or has a potential to contain a hazardous atmosphere;
2. Contains a material that has the potential for engulfing an entrant;
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section; or
4. Contains any other recognized serious safety or health hazard.

Non-Permit Confined Space is a space that does not contain (or with respect to atmospheric hazards, has no potential to contain) any hazard capable of causing death or serious physical harm.

Employees who work in or in connection with confined spaces are required to follow the procedures described in this program and to take all the appropriate precautions to ensure that the work is performed safely. At no time should an employee enter a confined space or perform work in the space unless it can be done safely.

PERMIT-REQUIRED CONFINED SPACES

The tables on pages 4 and 5 list confined spaces at LGVSD that require a permit to enter. Potential hazards associated with these spaces include engulfment, toxic gases, explosive or flammable gases, oxygen deficiency, electrical and mechanical hazards, and may under certain circumstances involve heat stress. Warning signs will be posted at wet wells and similar locations to inform employees that the space requires a permit to enter. To prevent unauthorized entry, each of these spaces will be secured.

Using the entry permit, a non-entry evaluation must be done so that potential hazards can be identified and the appropriate safety precautions taken. The types of hazards that may be encountered, pre-entry safety checks, and the types of safety equipment that will be used are entered on the permit. Only the person designated as the entry supervisor has the authority to authorize the entry permit. At least three employees are required for a permit-required confined space entry which would include an attendant and a standby rescuer.

The tables on pages 4 and 5 that list permit-required confined spaces at LGVSD are not all-inclusive. Other spaces may be determined to be permit-required after evaluating the conditions or circumstances of the entry. The type of work to be performed in the space could introduce hazards to an otherwise safe space. Working with flammable or toxic substances, welding or other hot work, or drifting vapors from outside sources would make a space hazardous or potentially hazardous and therefore require a permit to enter.

ALTERNATE ENTRY PROCEDURES

Alternate procedures are allowed in permit-required spaces where it can be demonstrated and documented that the only hazard or potential hazard is an atmospheric one, and that continuous forced air ventilation alone will maintain the space safe for entry. A trained, qualified employee may enter these confined spaces without an attendant or rescue preparations provided the following conditions are met.

1. All unsafe conditions are eliminated before the confined space cover is removed.
2. The entrance to the space is guarded with a railing or other type of barrier to prevent an accidental fall through the opening and to protect employee in the space.
3. The atmosphere is tested before entry in the following order: O₂, LEL/LFL, H₂S.
4. No entrance is made until hazardous atmosphere is eliminated.
5. There is no hazardous atmosphere when employees are in the space.
6. Continuous forced ventilation is used.
7. The air supply is clean and will not increase hazards.
8. The air supply is directed to area where employees are working.
9. The atmosphere is tested every 15 minutes to ensure a hazardous atmosphere is not developing.
10. Records of pre-entry and entry monitoring data and inspection data are maintained.
11. The entrant certifies, in writing, that the required pre-entry measures have been taken.
12. Monitoring and inspection data, and the certification information are made available to each employee entering the space.

If a hazardous atmosphere develops in the space, or other hazards arise, alternate procedures can no longer be used and the space must be reclassified as a fully permitted space.

SPECIAL ENTRY PROCEDURES

There are a few confined spaces at LGVSD that are not considered permit-required confined spaces. As far as can be determined, these spaces do not contain any known hazard. However, as a precautionary measure, employees are required to follow certain special procedures before entering these spaces.

1. Test the atmospheric conditions prior to entry.
2. If atmospheric conditions are acceptable, entry can be made.
3. If atmospheric conditions are not acceptable, use alternate procedures.
4. If any other hazardous condition exists, follow permit-required confined space procedures.

THE ENTRY PERMIT SYSTEM

Confined space entry permits are to be issued for a specific purpose, a specific work crew, and for a specified period of time. The entry permit is a written authorization of the location and type of work to be done. It also authorizes the personnel assigned to the job, and verifies that potential hazards have been evaluated and controlled or eliminated, that proper safety precautions have been taken, and it is safe for workers to enter. The permit must be kept at the work site (outside the space) for the duration of the work and cancelled after the work is completed.

HOT WORK PERMIT

A hot work permit must be issued for any work that produces heat, sparks or flame in a permit-required confined space. This includes but not limited to brazing, cutting, grinding, soldering, and welding.

Table 1: Main Plant Permit-Required Confined Spaces

MAIN PLANT	Permit-Required	Alternate or Special Procedure	MAIN PLANT	Permit-Required	Alternate or Special Procedure
Marinwood Pump Station			Deep Bed Filter		
Pre Wet Well Structure	•		Bypass Channel	•	
Wet Well	•		Wet Well/Supply Pumps	•	
Valve Pit		SP	Valve Pit		SP
Flow Meter Pit (F1)		SP	Tanks	•	
Primary Clarifier			Weir Overflow Pit	•	
Tank	•		Underdrain	•	
Scum Pit	•		Inlet Channel	•	
Weir Overflow Pit	•		Center Column	•	
Chemical Tank	•		F8 Flow Meter Manhole	•	
Sodium Hydroxide Tank	•		Effluent Channel	•	
Methane Tank	•		Backwash Return Wet Well	•	
Methane Scrubber Tank	•		Hypochlorite Storage Tank	•	
Primary Digester			Digester Supernatant Pump Station		
Tank	•		Wet Well	•	
Valve Pit			Valve Pit		SP
Secondary Digester			Secondary Clarifier		
Tank	•		Tank	•	
Valve Pit		SP	Flow Meter (F4)	•	
Intermediate Flow Meter Pit (F3)	•		Effluent Box	•	
Aerated Grit			Scum Pit	•	
Tank	•		Fixed Film Reactor		
Scum Pit	•		Tank	•	
Outlet Channel	•		Underdrain	•	
Inlet Channel	•		Center Column	•	
Clarifier Return Pit			F4 Diversion Box	•	
Wet Well	•		Influent and Effluent Wet well	•	
Influent Flow Meter Pit		SP	Filter Water Storage Tank	•	
Grease Storage Tank	•		Chlorine Sample Pump #2		
Intermediate Clarifier East			Wet Well	•	
Diversion Structure	•		Valve Pit	•	
Tank	•		Chlorine Contact Chamber/DBF Backwash		
Scum Pit	•		Tank	•	
Weir Overflow Pit (2)	•				
Intermediate Clarifier West			Pipe Inspection Manhole	•	
Tank	•		Plant Effluent Water Pump Wet Well	•	
			Bisulfite		
Scum Pit	•		Wet Well	•	
Weir Overflow Pit	•		Tanks	•	
Sludge Thickener			White Shack Effluent Box		
Influent Pit	•		Wet Well	•	
Tank	•		Flow Meter Pit (F5)		SP
Scum Pit	•		Effluent Pipe Inspection Manhole	•	
Primary Biofilter			Stormwater Pump Station		
Valve Pit			Wet Well	•	
Pump Pit Dry Well		SP	Flow Metet Pit (F9)		SP
Underdrain	•		Miller Creek Plant Effluent Box Wet Well	•	
Prim/Sec Biofilter Diversion Vault	•		Storm Ponds Pump Pit Wet Wells	•	
Secondary Biofilter			Centrifuge Pit Tank	•	
Effluent Box	•		Gardener's Building (ventilate before entry)		
Underdrain	•		F4 - DBF Effluent Box	•	
Pump Pit	•		DBF Effluent Weir Box/Plant Water Pump	•	
			MMWD Backwash Return Wet Wells (2)	•	

Table 2: Reclamation, Collection System, and Pump Stations Permit-Required Confined Spaces

Location	Permit-Required	Alternate Procedure	Location	Permit-Required	Alternate Procedure
RECLAMATION			PUMP STATIONS		
Diversion box			McInnis Park		
Wet Well	•		Wet Well	•	
Valve Pit	•		Valve Pit		•
Underdrain	•		Smith Ranch		
Transfer Box			Wet Well	•	
Wet Well	•		Valve Pit		•
Valve Pit	•		Flow Meter Pit		•
Underdrain	•		Industrial Park		
Meter Pit (F7)		•	Wet Well	•	
Reclamation Pump Station			Valve Pit		•
Wet Well	•		John Duckett		
Flow Meter Pit (F6)			Wet Well	•	
Sludge Supernatant Pump Station			Valve Pit		•
Wet Well	•		Flow Meter Pit		•
Dry Well	•		Comminutor Deck		•
Valve Pit		•	Civic Center North		
Pond Diversion Gate Boxes	•		Wet Well	•	
Pond Inflow/Effluent Boxes	•		Valve Pit		•
Sludge Ponds (3)	•		Marin Lagoon (9)		
			Wet Well	•	
			Valve Pit		•
COLLECTION SYSTEM			Mulligan		
All Manholes	•		Wet Well	•	
Air Release Valves		•	Valve Pit		•
Valve Boxes	•		Venetia Harbor		
			Wet Well	•	
			Valve Pit		•
			Hawthorne		
			Wet Well	•	
			Dry Well		•
			Adrian Way		
			Wet Well	•	
			Valve Pit		•
			Descanso Way		
			Wet Well	•	
			Valve Pit		•
			McPhail		
			Wet Well	•	
			Valve Pit		•
			San Rafael Meadows		
			Wet Well	•	
			Valve Pit		•
SPECIAL ENTRY PROCEDURES (SP)					
1. Test atmospheric conditions prior to entry.					
2. If atmospheric conditions are acceptable, entry can be made.					
3. If atmospheric conditions are not acceptable, use alternate procedures.					
4. If any other hazardous condition exists, follow permit-required confined space procedures.					

DUTIES OF ENTRY TEAM

A permit-required confined space entry team will include an entry supervisor, entrant(s), and at least one attendant. Before an employee begins confined space work, the work must be authorized by the District Manager or Plant Superintendent. In the absence of the District Manager and Plant Superintendent, the designated employee-in-charge may authorize the work.

As long as each individual can fully perform his/her duties, an entry supervisor may be the same person as the entrant or the attendant. The safety precautions that should be taken with a permit-required confined space entry will vary depending on the types of hazards or potential hazards involved. Regardless of the types of hazards, it is the District's policy that in addition to an attendant, a standby rescuer must be part of the entry team.

Duties of Entry Supervisor

1. Verifies that acceptable entry conditions exist.
2. Ensures acceptable entry conditions are maintained.
3. Verifies that the information and procedures on the entry permit are accurate and complete.
4. Verifies that the equipment specified on the permit is in place and in good condition.
5. Reviews permit conditions and procedures with entrants and attendants.
6. Ensures unauthorized persons do not enter the space.
7. Signs the permit to authorize entry.
8. Cancels and files permit.

Duties of Entrant

1. Properly uses the safety equipment and tools supplied.
2. Promptly notifies the attendant if any prohibited condition exists or any warning signs or symptoms appear.
3. Quickly evacuates space if an order is given by the attendant or entry supervisor, if any prohibited condition is detected, or if an alarm is activated.
4. Maintains communication with the attendant to enable attendant to monitor status of space conditions and the entrants.
5. Adheres to the procedures and precautions indicated on the permit and provided in training.

Duties of Attendant

1. Remains outside the permit space until relieved by another attendant.
2. Maintains communication with entrants.
3. Maintains accurate count and identification of entrants.
4. Monitors activities inside and outside the space.
5. Orders entrants to evacuate if a prohibited condition exists, or behavioral effects of hazardous exposure are detected, or activities outside space could endanger entrants, or attendant cannot effectively perform all required duties.
6. Ensures unauthorized persons stay away from the space.
7. Performs non-entry rescue procedures or initiates on-site rescue operations.
8. Summons additional rescue services, when needed.

ENTRY PROCEDURES

Pre-Entry

1. Notify other work groups or employees who may be affected by any interruption in service.
2. Determine (by entry supervisor or other qualified person) what hazards or potential hazards are within the confined space.
3. Check that all safety equipment is available and in good working condition.
4. Check that atmosphere monitoring equipment has been calibrated as recommended by manufacturer.
5. Without entering space:
 - a) Test atmosphere and record readings on permit.
Acceptable atmospheric conditions: Oxygen not less than 19.5% or more than 23.5%, LEL/LFL not more than 10%, H2S not more than 10 ppm, CO not more than 25 ppm.
 - b) Ventilate the space or check that ventilation system is operating properly.
6. Ensure that all affected employees observe pre-entry atmospheric testing.
7. Set up barrier around entrance to prevent accidental falls and to protect employees from vehicles, or falling objects.
8. Check for physical hazards such as poor footing, structures and equipment that hinder movement, and extreme temperatures or humidity that could affect worker safety.
9. Secure and lock out all energy sources (electrical, mechanical, hydraulic, pneumatic, chemical) that are potentially hazardous to confined space workers. Follow lockout/tagout procedures.
10. Disconnect, blind, or block lines to prevent development of hazardous conditions.
11. Use continuous forced air ventilation. Ensure that there is no recirculation of exhausted air from blowers or the introduction of contaminants from the outside, such as traffic exhaust, or vapors or toxic substances from other areas. Place blowers at least 10 feet away from opening of space.
12. Entry supervisor reviews and authorizes entry permit if the space is safe to enter, and all preparatory steps required for safe entry have been taken.

Entry

1. Only employees who have been trained on LGVSD's confined space entry and work procedures are allowed to work in or around confined spaces.
2. Only the work activity specified on the authorized permit is to be performed in the confined space.
3. At least one attendant is required for confined space work.
4. If at any time during the performance of confined space work, dangerous atmospheric conditions develop, work must stop and the space evacuate immediately.
5. An attendant must be stationed outside the space at all times during the confined space operations and remain in constant communication with workers in the space.
6. The attendant must order evacuation of the space whenever:
 - a) a condition not allowed on the permit is observed
 - b) unusual behavior is observed
 - c) an outside situation endangers the confined space workers
 - d) the attendant must leave the work station

7. The permit must be cancelled if the air becomes hazardous after entry.
8. Respiratory equipment must be worn whenever a safe atmosphere cannot be assured after implementing pre-entry procedures.

Post-Entry

The entry supervisor:

1. Cancels the permit by entering date and time of cancellation and signature.
2. On the reverse side of the permit, makes note of any problems encountered during entry operations.
3. Places the cancelled permit in the safety files.
4. Notifies the Plant Superintendent if any equipment, safety gear or tools need to be repaired or replaced.

RESCUE PROCEDURES

It is the District's policy that all employees who work in or in connection with confined spaces must be trained in rescue procedures. Members of a permit space entry team must be knowledgeable of the hazards or potential hazards, be able to recognize the signs and symptoms of exposure, be trained in the selection and use of personal protective equipment, and be certified in first-aid and cardiopulmonary resuscitation. Prior to each entry the team will plan and prepare for non-entry and entry rescues and ensure that at least one standby is immediately available to provide rescue services.

Self-Rescue

If possible, entrants should immediately leave the confined space:

1. When an alarm sounds.
2. At the first sign of any exposure symptoms.
3. When ordered to evacuate by attendant or entry supervisor.

Non-Entry Rescue

If entrants cannot immediately evacuate the space at the first sign of trouble, the attendant should attempt a non-entry rescue by retrieving the entrant using a harness and hoisting equipment. The attendant must not enter the space unless relieved by another attendant. Retrieval systems must be used in vertical permit spaces more than 5 feet deep.

Entry Rescue

Rescuers are to assume that a hazardous atmosphere exists if an entrant has slurred speech, appears dizzy, disoriented, confused, unconscious, or displays any unusual behavior, or if communication with the entrant is lost. A self-contained breathing apparatus must be worn for entry rescues if a hazardous atmosphere is suspected or if there is any chance that it can develop. Call 911 for assistance or if specialized equipment is needed to remove a worker.

Outside Rescue Services

Although outside rescue services may be present at the time of the entry or summoned to give assistance and support in an emergency, members of the entry team must be prepared to give immediate assistance to any of the entrants who may need it.

NON-PERMIT CONFINED SPACES

All confined spaces are considered permit-required until pre-entry procedures demonstrate otherwise. A confined space may be designated a non-permit space, or a permit-required confined space may be reclassified a

non-permit space if all hazards have been eliminated. Because atmospheric hazards are controlled with ventilation and not eliminated in spaces, these spaces cannot be classified as non-permit spaces.

CONTRACTORS

Contractors and subcontractors who plan to work in LGVSD confined spaces will be given all available information on LGVSD confined space hazards, the permit system, and entry procedures. Contractors are required to use a permit system for entry into LGVSD permit-required confined spaces. Contractors are also required to coordinate work and entry activities whenever LGVSD employees and contractor employees will be working in or near the permit spaces.

At the conclusion of the contractor's work, the LGVSD supervisor in charge will debrief the contractor to determine if any hazards were encountered or created during entry.

TRAINING

All employees who work in or around confined spaces must be trained before performing any confined space work. At a minimum, the training will include:

1. Hazards of confined spaces.
2. Signs and symptoms of hazard exposure.
3. Duties of entrant, attendant, and entry supervisor.
4. Pre-entry and entry procedures.
5. LGVSD confined space permit system.
6. Selection and use of personal protective equipment.
7. Atmosphere test equipment.
8. Rescue procedures and equipment.
9. CPR/First Aid.

In addition, employees involved in confined space work will participate in simulated rescue operations at least once per year. Review training will be provided whenever the need is indicated, such as changes in procedures, introduction of new equipment, the hiring of new employees or whenever deficiencies in implementing the program are observed.

Training records will be maintained which will include names and signatures of trainees and trainers, dates and content of training. These records will be made available for inspection to employees or their representatives

LGVSD CONFINED SPACE ENTRY PERMIT

Date issued: _____ Permit Expiration Date/Time: _____ Location/Description of Space: _____ Street Address of Entry _____ Reason for Entry: _____	Work Site Permit: Authorized entry permit and monitoring data must remain at the work site until the job is complete.
	Fire Dept. Notified 472-0911 Before entry _____ initials After exiting _____ initials

Entry Supervisor: _____

Authorized Attendants and Initials _____ _____ _____	Authorized Entrant and Initials: _____ _____ _____
---	---

Note: Indicate which attendant is assigned standby rescue duties. Initial of attendants and entrants indicate they understand their assignments, responsibilities and duties.

Pre-Entry Checks (complete before obtaining work authorization): <input type="checkbox"/> Notified other work groups. N/A _____ <input type="checkbox"/> Notified office personnel. N/A _____ <input type="checkbox"/> Checked that entry team training is current. N/A _____ <input type="checkbox"/> Reviewed entry procedures with team. N/A _____ <input type="checkbox"/> Set up barrier at entrance to space. N/A _____ <input type="checkbox"/> Checked that gas detection equipment calibration is current. N/A _____ <input type="checkbox"/> Performed pre-entry atmosphere tests. N/A _____ <input type="checkbox"/> Checked ventilation system. N/A _____ <input type="checkbox"/> Checked for physical hazards. N/A _____ <input type="checkbox"/> Secured and locked out energy sources. N/A _____ <input type="checkbox"/> Blocked or disconnected lines. N/A _____ <input type="checkbox"/> Discussed potential hazards with team. N/A _____ <input type="checkbox"/> Reviewed emergency response procedures. N/A _____ <input type="checkbox"/> Checked condition of safety equipment. N/A _____ <input type="checkbox"/> Obtained work authorization signatures. N/A _____	Potential Hazards: <input type="checkbox"/> Oxygen deficiency N/A _____ <input type="checkbox"/> Oxygen enrichment N/A _____ <input type="checkbox"/> Flammable gases or vapors N/A _____ <input type="checkbox"/> Toxic gases or vapors N/A _____ <input type="checkbox"/> Mechanical hazards N/A _____ <input type="checkbox"/> Electrical hazards N/A _____ <input type="checkbox"/> Engulfment/entrapment N/A _____ <input type="checkbox"/> Noise N/A _____ <input type="checkbox"/> Heat/Cold N/A _____ <input type="checkbox"/> Falls N/A _____ <input type="checkbox"/> Falling objects N/A _____ <input type="checkbox"/> Other N/A _____ Safety Equipment: <input type="checkbox"/> Gas detection equipment N/A _____ <input type="checkbox"/> Safety harness N/A _____ <input type="checkbox"/> Safety line N/A _____ <input type="checkbox"/> Wristlets N/A _____ <input type="checkbox"/> Hoisting equipment N/A _____	<input type="checkbox"/> Manhole hook N/A _____ <input type="checkbox"/> Barricades, cones, tape N/A _____ <input type="checkbox"/> Portable blower and hose N/A _____ <input type="checkbox"/> Explosion-proof lighting N/A _____ <input type="checkbox"/> Non-sparking tools N/A _____ <input type="checkbox"/> Tool bucket and line N/A _____ <input type="checkbox"/> Ladder N/A _____ <input type="checkbox"/> First aid kit N/A _____ <input type="checkbox"/> Fire extinguisher N/A _____ <input type="checkbox"/> Radio communication equipment N/A _____ <input type="checkbox"/> Cell phone N/A _____ <input type="checkbox"/> SCBA N/A _____ <input type="checkbox"/> Hard hat N/A _____ <input type="checkbox"/> Goggles, face shield N/A _____ <input type="checkbox"/> Gloves N/A _____ <input type="checkbox"/> Rain suit N/A _____ <input type="checkbox"/> Rubber boots N/A _____ <input type="checkbox"/> Other _____ _____
--	---	---

Hot Work:
 Does the entry involve hot work? Yes No If Yes, complete and attach a hot work permit.

Special Instructions:

Monitoring Data: Record monitoring data at 15-minute intervals on the reverse side of this permit.
Acceptable Atmospheric Conditions: Oxygen not less than 19.5% or more than 23.5%, LEL/LFL/not more than 10%, H₂S not more than 10 ppm.

Work Authorization Signatures All confined space work must be authorized by the General Manager, Plant Manager or Collection Crew Manager Work authorized by: _____ Date/Time: _____	Entry Authorization I certify that the confined space work authorized by this permit has been reviewed with the entry team and that acceptable entry conditions exist and the necessary equipment for safe entry has been provided. Entry supervisor signature: _____	Permit Cancellation Date: _____ Time: _____ Entry supervisor signature: _____
---	---	--

LGVSD CONFINED SPACE ALTERNATE PROCEDURES

Location/Description of Confined Space: _____

Entry into this confined space without an entry permit is allowed if the only potential hazard posed by the space is a hazardous atmosphere and the following measures are taken:

1. Any condition making it unsafe to remove the entrance cover is eliminated before the cover is removed.
2. The atmosphere is tested prior to entry.
3. No entry is made if there is a hazardous atmosphere.
4. Continuous forced ventilation is used.
5. The opening of the space is guarded by a railing or other temporary barrier.
6. The air supply is clean and is directed to where employees will be working.
7. The atmosphere is periodically tested and monitoring data is recorded.
8. Employees will immediately evacuate the space if a hazardous atmosphere is detected.

Certification: *I certify that on the date indicated, the conditions and pre-entry measures described above existed or were implemented and this space was determined to be safe for entry.*

<i>Signature</i>	<i>Date</i>	<i>Signature</i>	<i>Date</i>

Monitoring Data: Record the pre-entry test data, monitor the space continuously and record the readings every 15 minutes.

Date	Time	%O ₂	CO	%LEL	H ₂ S	Initials	Date	Time	%O ₂	CO	%LEL	H ₂ S	Initial

P:\Safety\Alternate Permit
 Revised September 2008

LGVSD HOT WORK PERMIT

This form is to be filled out by employee before performing hot work.

Name: _____

Date: _____ Time: _____ Location of job: _____

Detailed description of job: _____

	YES	NO
1. If the job is planned to be done indoors, can it be done outdoors or in the welding shop? If yes, move to one of these locations.	<input type="checkbox"/>	<input type="checkbox"/>
2. Have all combustible materials (solids, liquids, gases) been removed from the work area?	<input type="checkbox"/>	<input type="checkbox"/>
3. Are there any gas lines or other lines carrying combustible/flammable materials?	<input type="checkbox"/>	<input type="checkbox"/>
4. If yes, have all lines be disconnected, blanked or otherwise protected?	<input type="checkbox"/>	<input type="checkbox"/>
5. Has atmospheric test data been collected in the work area?	<input type="checkbox"/>	<input type="checkbox"/>
6. Is a fire watch needed for this job?	<input type="checkbox"/>	<input type="checkbox"/>
7. Is a fire extinguisher or water hose available and ready to use at the job site?	<input type="checkbox"/>	<input type="checkbox"/>
8. Can flame or sparks ignite materials in work area or on lower floors or levels?	<input type="checkbox"/>	<input type="checkbox"/>
9. Are non-flammable tarps used to cover combustibles in the work area?	<input type="checkbox"/>	<input type="checkbox"/>
10. Have affected employees reviewed or given specific safety instructions?	<input type="checkbox"/>	<input type="checkbox"/>
11. Have screens been set up in the work area?	<input type="checkbox"/>	<input type="checkbox"/>

Special precautions to be taken: _____

<p>I have reviewed and approved this permit:</p> <p>Date: _____ Time: _____</p> <p>_____</p> <p style="text-align: center;">Signature of District Manager</p>	<p>Please make note of any actions taken based on the above responses.</p>
---	--

Revision: February 2006
 P:\Safety\Hot Work Permit

LGVSD CONFINED SPACE ENTRY PROCEDURES SUMMARY

Pre-Entry

1. Obtain work authorization from the District Manager or District Superintendent.
1. Perform non-entry evaluation of the space to identify potential hazards.
2. Test atmosphere, check ventilation system and check for physical hazards in and around work area.
3. Ensure affected employees observe pre-entry testing.
4. Gather appropriate safety equipment and check that all of it is in good working condition.
5. Without entering the space, secure and lockout energy sources and disconnect or block lines.
6. Place barricade or railing around opening to space.
7. Make sure there are no ignition sources near the confined space.
8. Complete pre-entry checks.
9. Have the Entry Supervisor authorize the entry permit.
10. Test atmosphere of space again. If there is no air contamination or O₂ deficiency, entry may proceed provided permit conditions and appropriate safety procedures are in effect.
11. If there is contamination or O₂ deficiency, ventilate 10 minutes and test again. If contamination persists, do not enter. Notify the Entry Supervisor.
12. Prior to entry, ventilate manholes and other confined spaces known or suspected to be hazardous.
13. Maintain continuous ventilation. Existing ventilation must be augmented whenever there is a potential for hazardous atmosphere or initial tests indicate contamination.
14. Keep the entry permit and monitoring data at the work site until the job is complete. Entry permits are valid only for the duration indicated on the permit.

Entry

1. Do not work in or around confined spaces if you are not properly trained or experienced in safe entry and rescue procedures.
2. Wear respiratory equipment whenever a safe atmosphere cannot be ensured.
3. Attendant must be in constant communication and visual contact with entrant and must monitor activities inside and outside of space.
4. Attendant must order evacuation if he/she observes any activity not on the permit, unusual behavior, or an outside situation that endangers the entrant.
5. Perform only the work authorized on the permit.

Rescue

1. Attendant never performs entry rescue unless relieved by another attendant.
2. Perform rescue from outside the space whenever possible.
3. Use respiratory equipment if entry rescue is performed.
4. Call 911 for rescue assistance.

Post-Entry

1. Note on back of permit and notify the District Superintendent of any unsafe or unusual conditions encountered during the confined space work.
2. Have Entry Supervisor cancel and file the permit.
3. Submit the cancelled permit to the Safety chairperson for review and filing.
3. Notify the Plant Superintendent if any equipment, safety gear or tools need to be repaired or replaced.

ELECTRICAL COMPONENTS

	EARTH GROUND
	CHASSIS GROUND
	GROUNDING RECEPTACLE
	FUSE
	HORN
	TRANSFORMER
	SOLENOID
	OVERLOAD RELAY
	CIRCUIT BREAKER
	MOTOR (NO. DENOTES HORSEPOWER)
	COIL
	RELAY CONTACT, N.O.
	RELAY CONTACT, N.C.
	SHIELDED CABLE
	BLOCKING DIODE
	TERMINAL BLOCK

PRESSURE SWITCHES

	OPEN - CLOSURES ON RISING PRESSURE
	CLOSED - CLOSURES ON FALLING PRESSURE
	OPEN - OPENS ON RISING PRESSURE
	CLOSED - OPENS ON FALLING PRESSURE

LIMIT SWITCHES

	NORMALLY OPEN
	HELD OPEN
	NORMALLY CLOSED
	HELD CLOSED

LEVEL FLOAT SWITCHES

	CLOSURES ON RISING LEVEL
	CLOSURES ON FALLING LEVEL
	OPENS ON RISING LEVEL
	OPENS ON FALLING LEVEL

TEMPERATURE SWITCHES

	CLOSURES ON RISING TEMPERATURE
	CLOSURES ON FALLING TEMPERATURE
	OPENS ON RISING TEMPERATURE
	OPENS ON FALLING TEMPERATURE

TIME DELAY CONTACTS

	OFF DELAY TIMER	INST. CLOSE TIME OPEN
		INST. OPEN TIME CLOSE
	ON DELAY TIMER	INST. OPEN TIME CLOSE
		INST. CLOSE TIME OPEN

OPERATORS

	PUSHBUTTON WITH LOCKOUT STOP
	PUSHBUTTON NORMALLY CLOSED
	PUSHBUTTON NORMALLY OPEN
	TWO POSITION SELECTOR SWITCH
	THREE POSITION SELECTOR SWITCH X DENOTES CLOSED CONTACT IN THAT POSITION
	TOGGLE SWITCH
	PILOT LIGHT
	PILOT LIGHT - PUSH TO TEST

DRAWING LEGEND

	EXISTING EQUIPMENT, WIRING, DEVICES (SHADED)
	NEW WORK
	DEMOLISH OR REMOVE

GENERAL NOTES

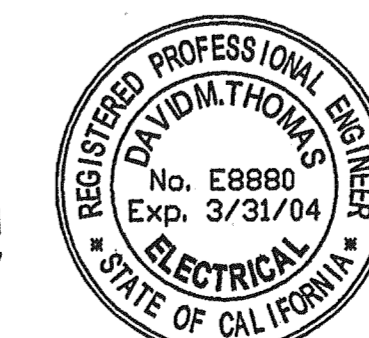
- ALL CONDUITS AND EQUIPMENT SHOWN ARE DIAGRAMMATIC. CONTRACTOR IS RESPONSIBLE TO VERIFY EXISTING CONDITIONS AND ROUTE CONDUITS WITHOUT DISTURBING EXISTING UTILITIES. IN ADDITION, FEASIBILITY OF THE LOCATION OF THE EQUIPMENT SHALL BE FIELD VERIFIED. COORDINATE WITH ALL TRADES.
- VERIFY, LOCATE AND PRESERVE ALL UNDERGROUND UTILITIES. REPAIR ALL UTILITIES DAMAGED DURING CONSTRUCTION TO OWNER'S SATISFACTION.
- MINOR CHANGES IN WORK DUE TO EXISTING CONDITIONS SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER.
- ELECTRICAL CONTRACTOR SHALL VISIT JOB SITE AND VERIFY EXISTING CONDITIONS BEFORE BIDDING AND SHALL INCLUDE IN HIS BID THE NECESSARY COSTS TO CONSTRUCT THIS PROJECT IN ACCORDANCE WITH THE INTENT OF THE CIVIL DRAWINGS, THE ELECTRICAL DRAWINGS, SPECIFICATIONS, AND ALL APPLICABLE CODES.
- THE ELECTRICAL INSTALLATION SHALL COMPLY WITH ALL LOCAL, STATE, AND NATIONAL CODES, LAWS, AND ORDINANCES APPLICABLE TO ELECTRICAL WORK.
- ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE LISTED BY UNDERWRITERS LABORATORIES.
- AT LEAST TWO WORKING DAYS PRIOR TO ANY EXCAVATION WORK, THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT AT 1-800-227-2600 FOR LOCATING AND MARKING UTILITIES IN THE AREAS OF THE WORK.

ASD PACKAGE PUMP CONTROL REQUIREMENTS

- PROVIDE COMPLETE TRIPLEX PUMP CONTROL SYSTEM COORDINATED WITH EXISTING 4-20mA MICROMAC SPEED SIGNAL AND RUN CONTACTS AS INDICATED.
- INTERLOCK OUTPUT AND BYPASS CONTACTORS TO PREVENT SIMULTANEOUS CLOSURE.
 - PROVIDE AUXILIARY CONTACT ON OUTPUT CONTACTOR TO ENABLE ASD.
 - PROVIDE MANUAL-OFF-AUTO SELECTOR SWITCH FOR EACH PUMP WITH MANUAL SPEED BEING SET ON HIM.
 - PROVIDE ASD AUTO-OFF-BYPASS SELECTOR SWITCH.
 - PROVIDE BYPASS AUTO ON-OFF SELECTOR SWITCH WITH AUTO OPERATION OF BYPASS ON ASD FAULT SIGNAL.
 - PROVIDE ASD FAULT, PILOT LIGHT AND RUNNING CONTACTS AS INDICATED.
 - PROVIDE CONTROLS INTEGRATED WITH CONTROLS MOUNTED IN EXISTING CONTROL PANEL AS INDICATED.
 - CONNECT ASD'S ON 4-20mA SIGNAL AND RUN CONTACTS AS INDICATED.
 - UTILIZE EXISTING 120VAC CONTROL POWER SOURCE.
 - PROVIDE SIX POLE MAIN DISCONNECT IF EXISTING CONTACTOR AND OVERLOAD ARE REUSED.
 - PROVIDE SURGE SUPPRESSION DEVICES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION ACROSS EACH COIL.
 - COORDINATE EXISTING OVERLOAD RELAY WITH BYPASS OPERATION.
 - COORDINATE EXISTING MOTOR INTERNAL THERMAL OVER-TEMPERATURE SWITCHES WITH ALL MODES OF OPERATION.
 - PROGRAM HIM AND DRIVE AS REQUIRED BY THE DISTRICT.
 - PHASE WORK TO MAINTAIN PUMP STATION IN OPERATION DURING THIS WORK.
 - ASD COMPARTMENT AND PANEL VENTILATION SHALL BE SIZED PER MANUFACTURER'S REQUIREMENTS.

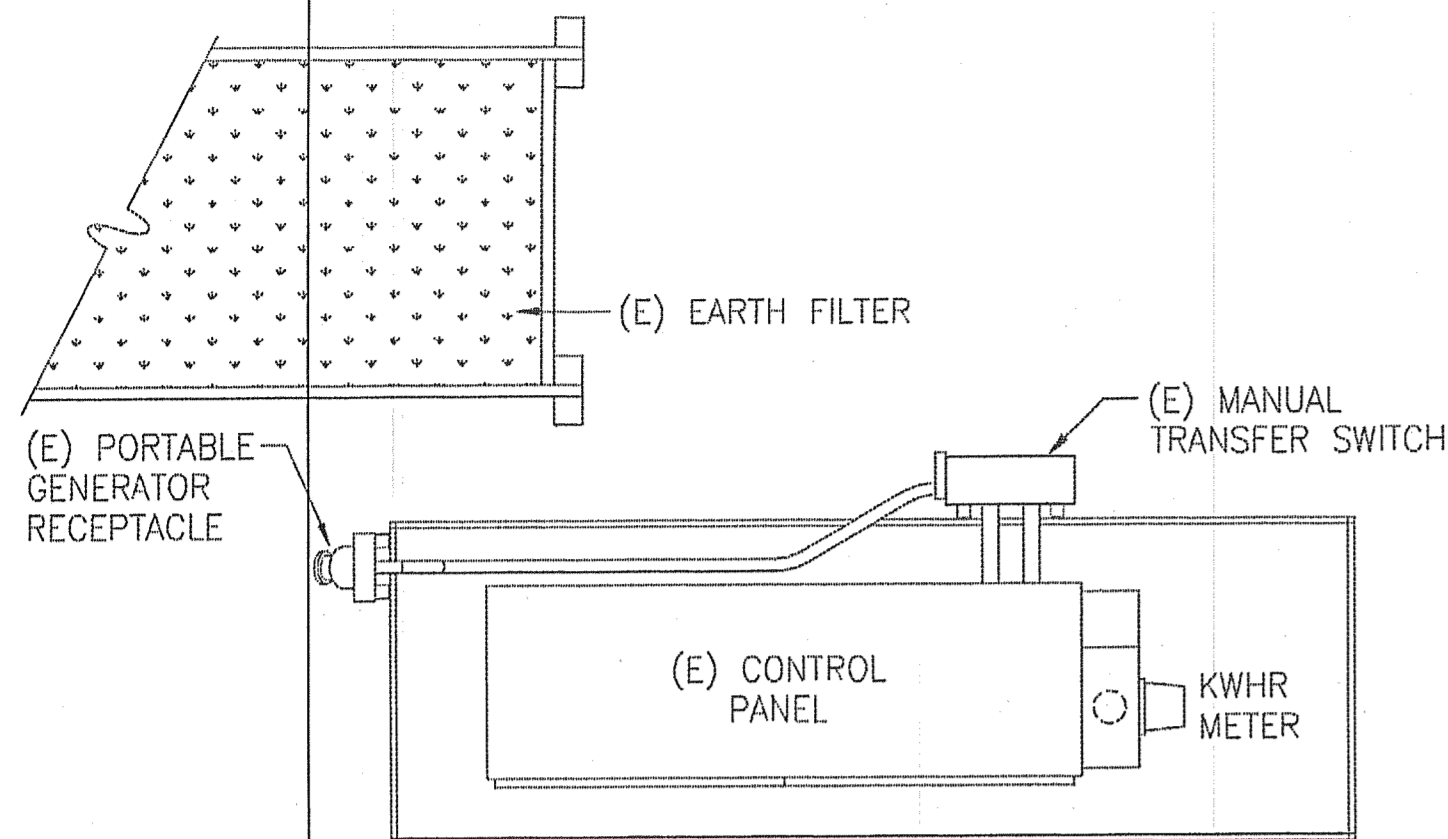
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REVIEW PRINT
NOT FOR CONSTRUCTION

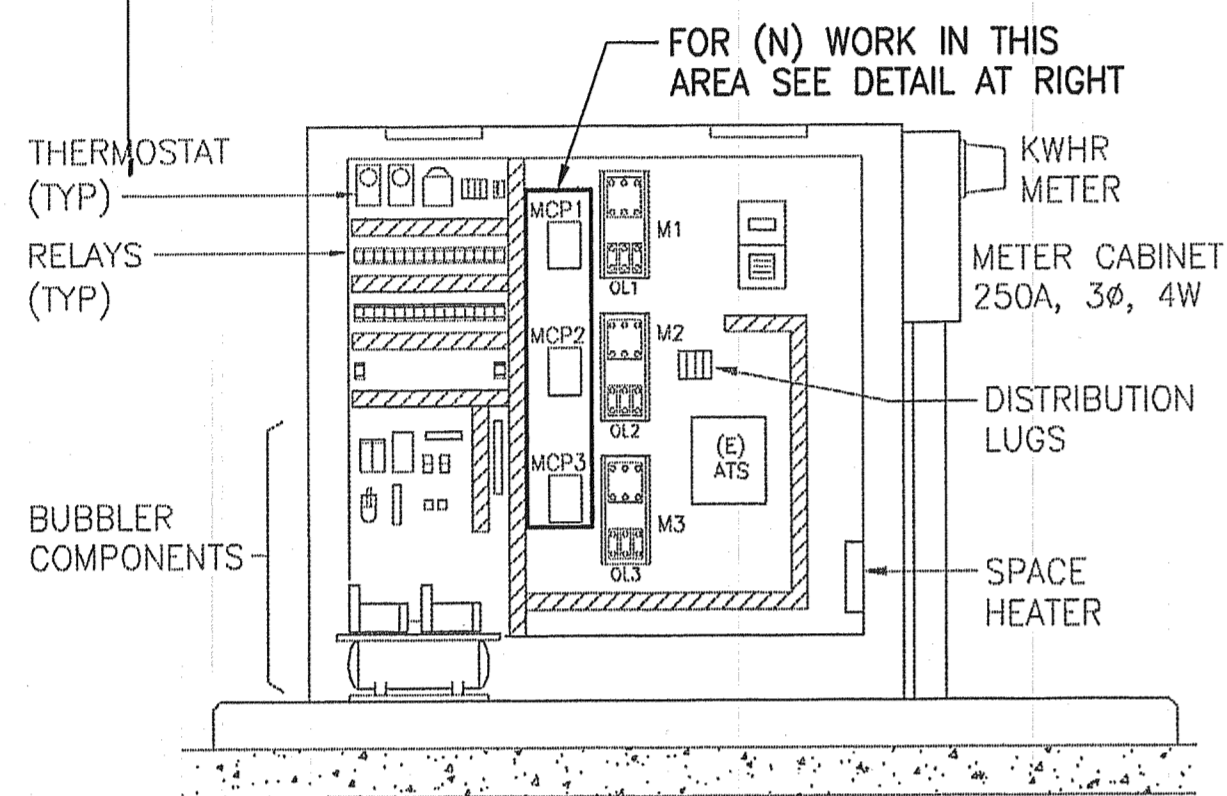


LAS GALLINAS VALLEY SANITARY DISTRICT Marin County, California		
SMITH RANCH ROAD PUMP STATION IMPROVEMENTS		
ELECTRICAL LEGEND AND GENERAL NOTES		
DCV CONSULTANTS 8 DIGITAL DRIVE, SUITE 250 NOVATO, CALIFORNIA 94949		
PHONE: 415-382-7961	FAX: 415-382-8107	
Drawn by: WHM	Job No.: 225-03	Scale: 1/2"=1'-0" UON
Checked by: DMT		Date: 8/01/2003

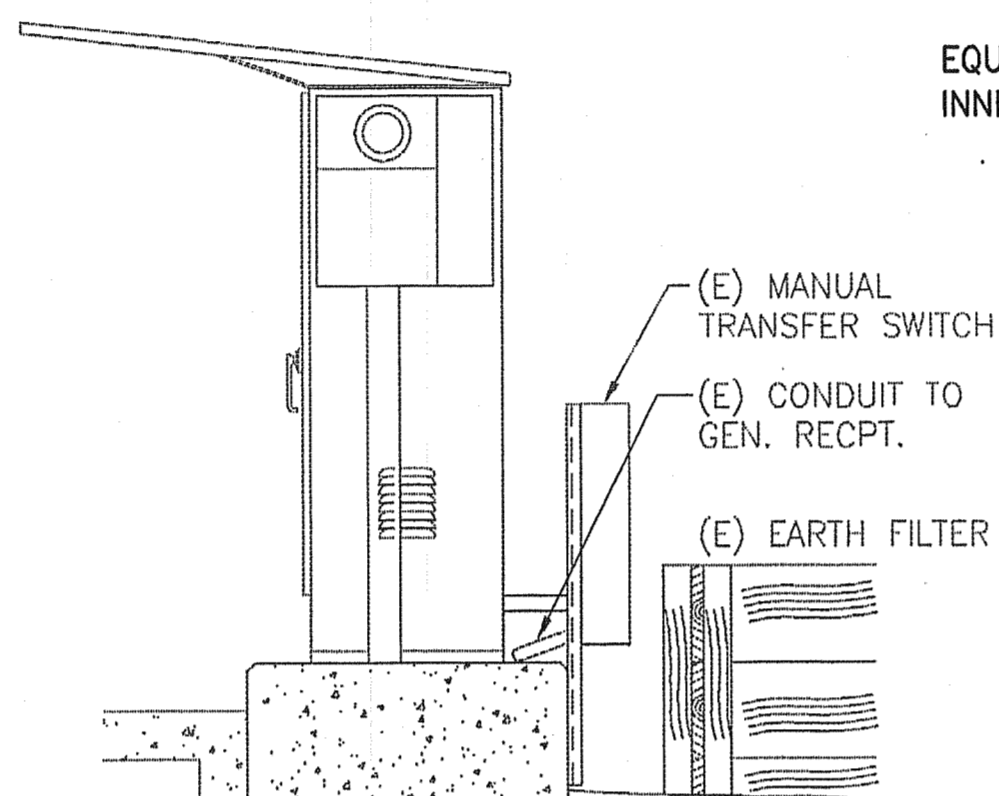
Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of the project, including safety of all persons and property; that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, except for liability arising from the sole negligence of design professional.



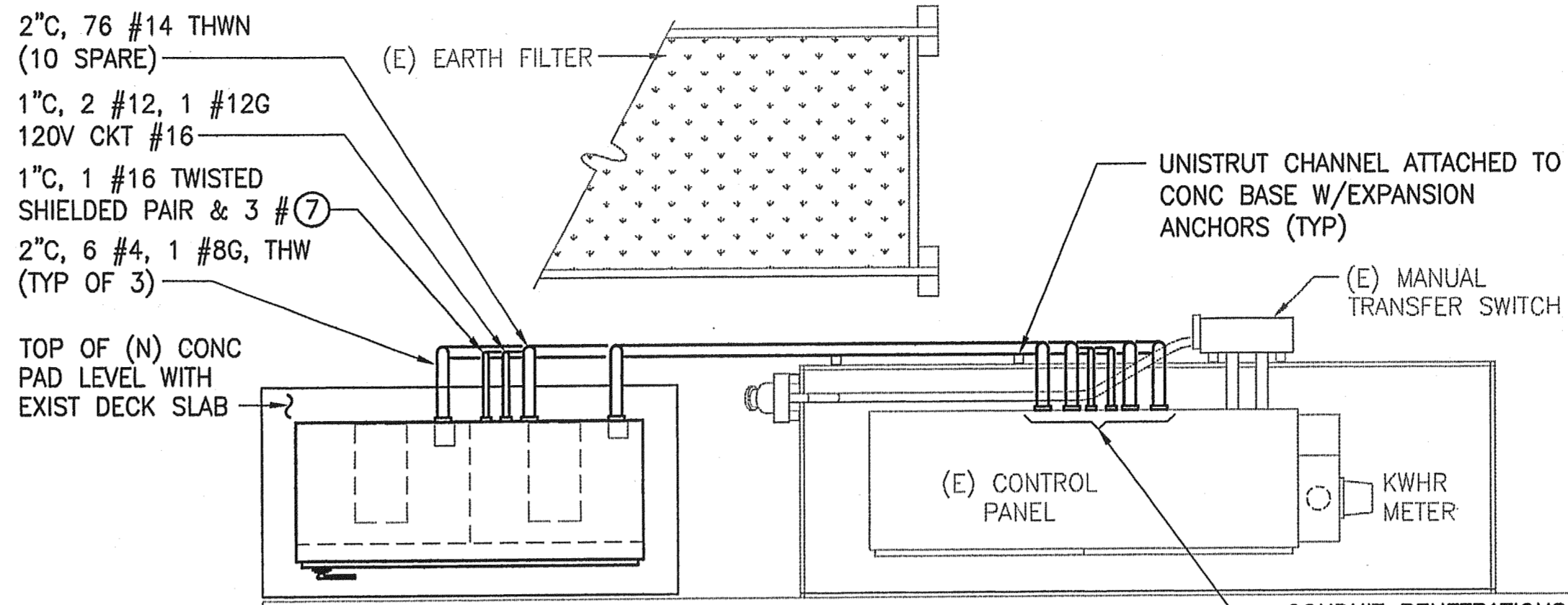
(E) CONTROL PANEL PLAN VIEW



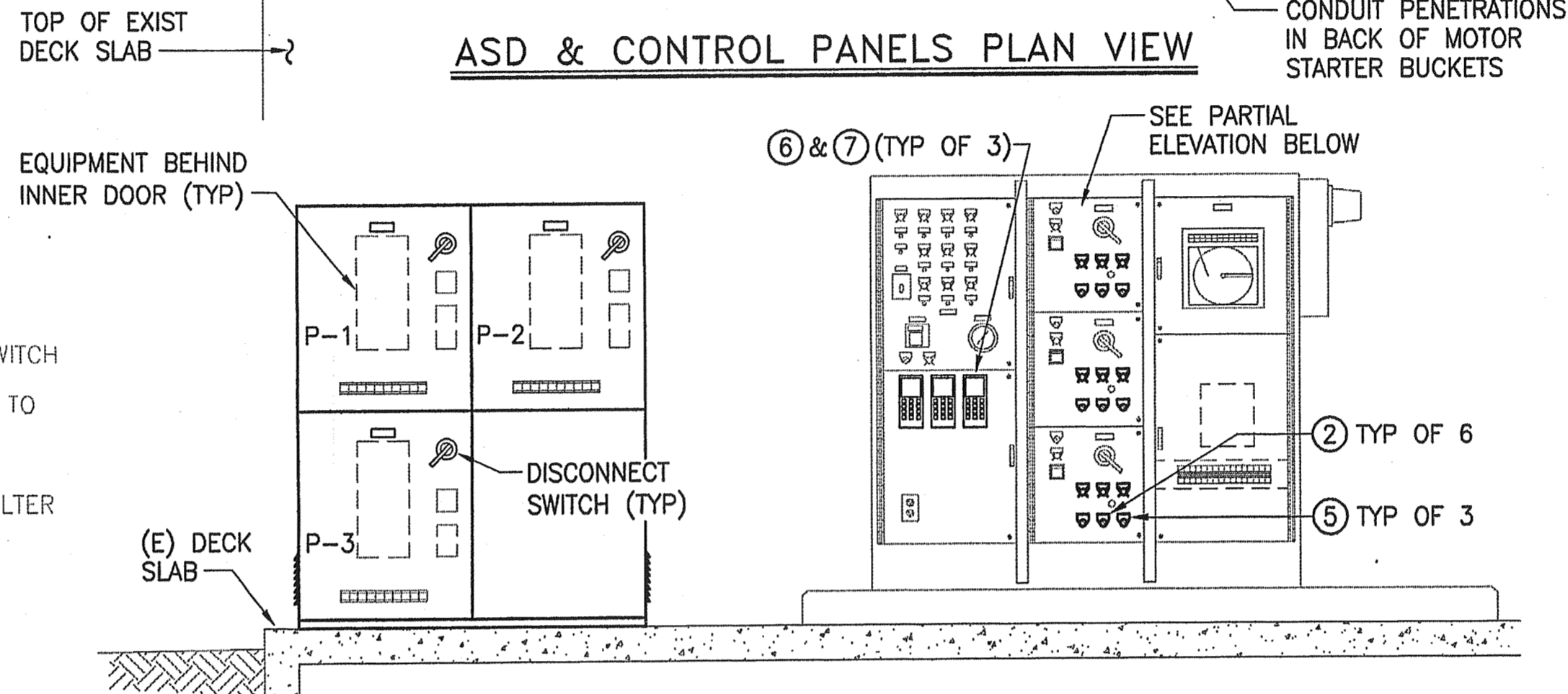
(E) CONTROL PANEL INSIDE FRONT ELEVATION
(BEHIND MOTOR STARTER DOORS)



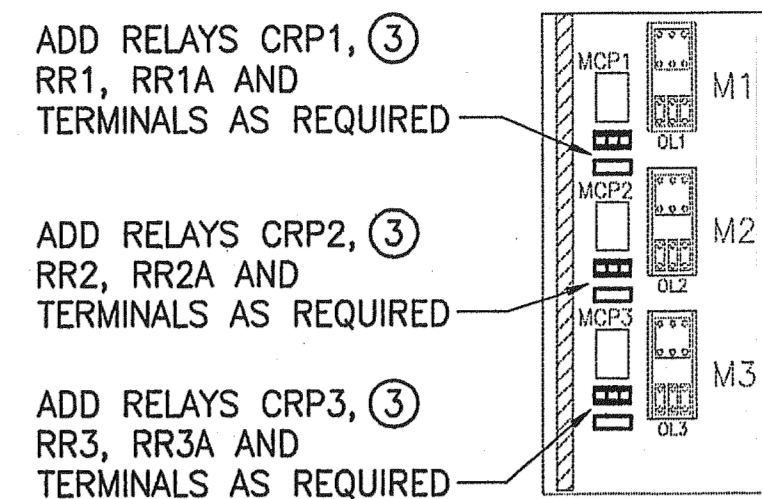
(E) CONTROL PANEL SIDE ELEVATION



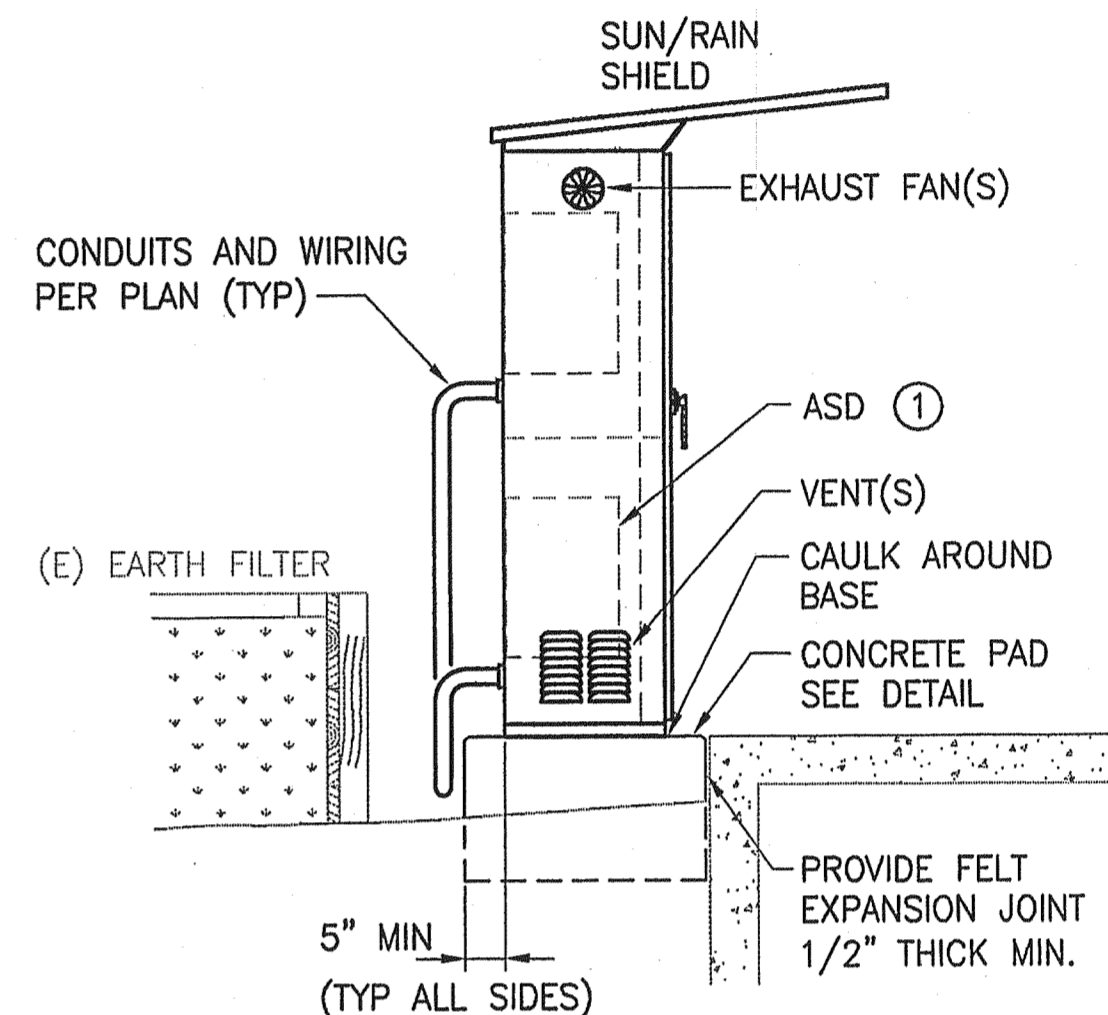
ASD & CONTROL PANELS PLAN VIEW



ASD & CONTROL PANEL INSIDE FRONT ELEVATION
(BEHIND OUTER DOORS)



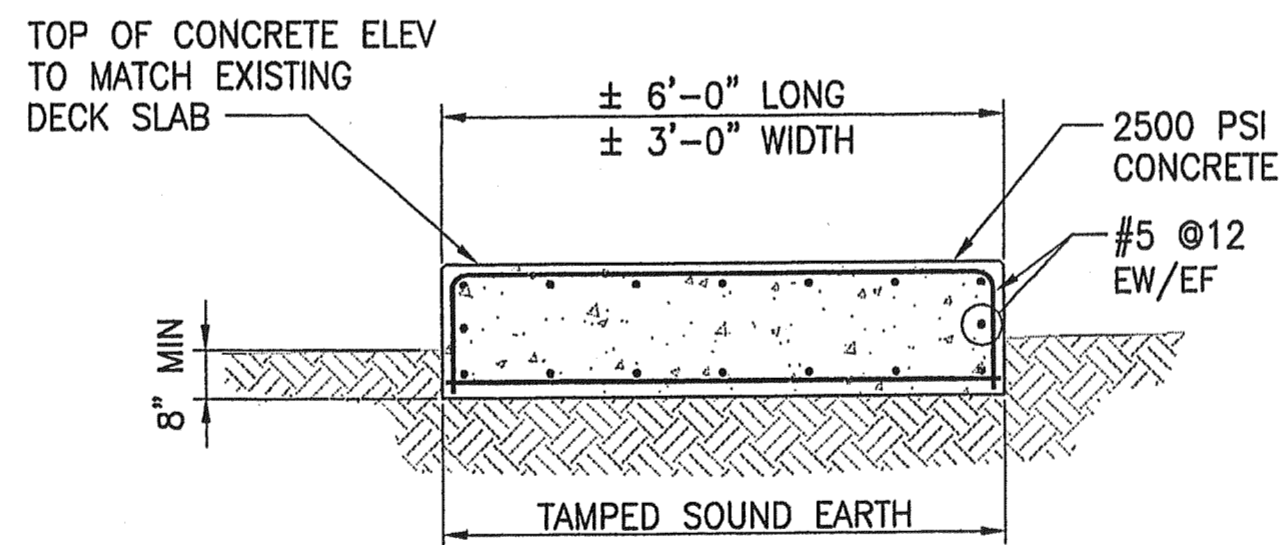
(N) WORK BEHIND MOTOR STARTER DOORS



ASD PANEL SIDE ELEVATION

BILL OF MATERIALS

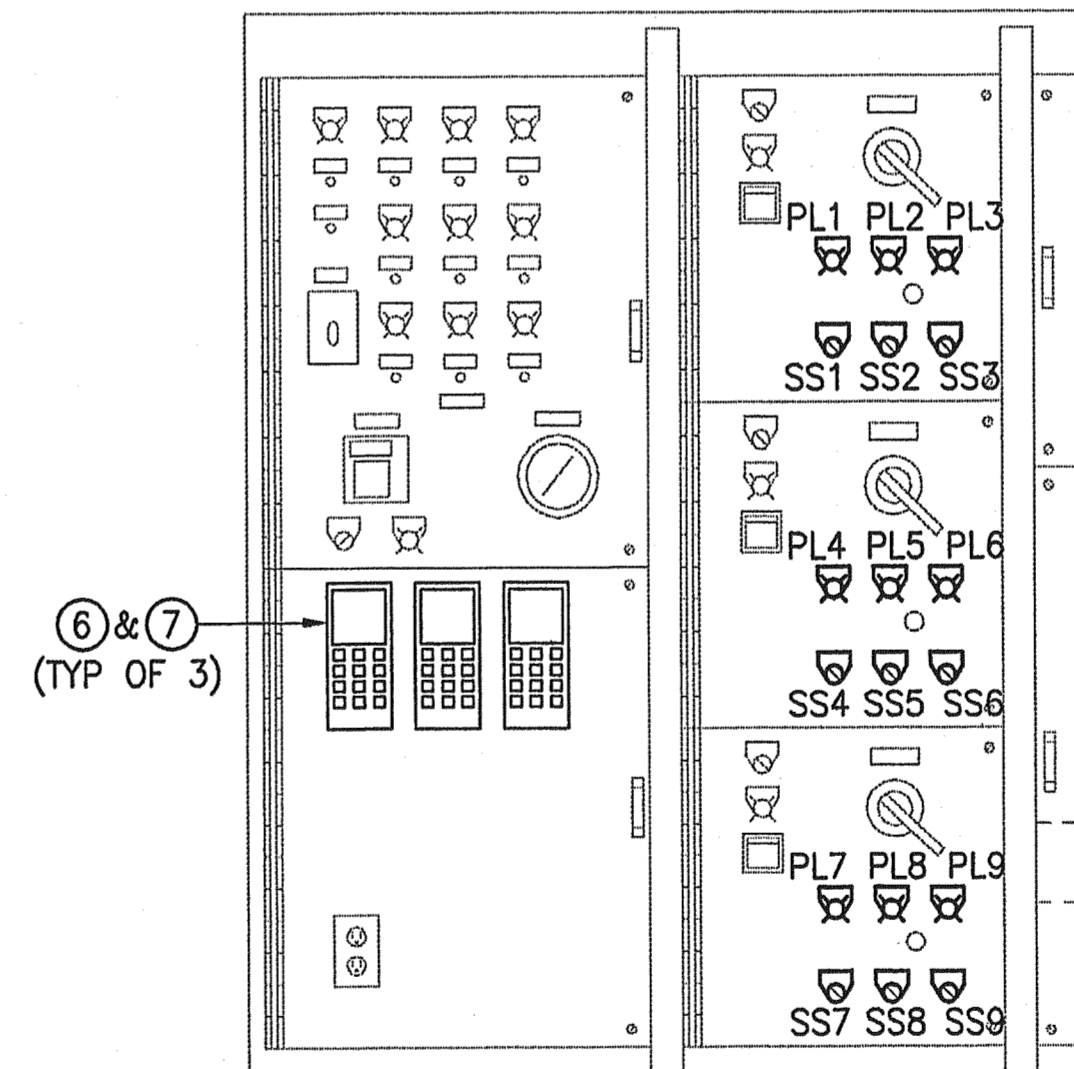
ITEM	QUANTITY	DESCRIPTION	ITEM	QUANTITY	DESCRIPTION
①	3	ADJUSTABLE SPEED DRIVE PACKAGE; INPUT VOLTAGE: 208 VAC, 3Ø, 4 WIRE LOAD; 20 HP SUBMERSIBLE PUMP ENCLOSURE: NEMA 3R, TYPE 316L STAINLESS STEEL, DEAD FRONT, PAD LOCKABLE, 3-POINT LATCHING MANUFACTURER: ALLEN BRADLEY POWERFLEX 700 #20BB065NOAYNANDO IP20 OPEN ENCLOSURE	②	6	SS1,2,4,5,7,8; 3-POSITION SELECTOR SWITCH IDEC #ASD340N, WITH ENGRAVED NAMEPLATE TO MATCH EXISTING
③	9	CRP1,CRP2,CRP3,RR1,RR1A,RR2,RR2A,RR3,RR3A; IDEC #RR2PULAC120V WITH IDEC #SR2P-05C SOCKET	④	NOT USED	
⑤	3	SS3,SS6,SS9; 2-POSITION SELECTOR SWITCH IDEC #ASD211N, WITH ENGRAVED NAMEPLATE TO MATCH EXISTING	⑥	3	PANEL MOUNT HIM, ALLEN BRADLEY #20-HIM-C3
⑦	3	PANEL MOUNT HIM CABLE, LENGTH AS REQUIRED, ALLEN BRADLEY #1202	⑧	3	FUSE HOLDER, 3P, ALLEN BRADLEY #1492-FB W/30A, CLASS J FUSES
⑨	3	TVSS, INNOVATIVE TECHNOLOGY #XT-40-3Y201	⑩	3	PL1,PL4,PL7; PILOT LIGHT - GREEN IDEC #APD1126-G "BYPASS RUN"
⑪	3	PL2,PL5,PL8; PILOT LIGHT - RED IDEC #APD1126-R "ASD FAULT"	⑫	3	PL3,PL6,PL9; PILOT LIGHT - GREEN IDEC #APD1126-G "ASD RUN"



CONCRETE PAD DETAIL
NOT TO SCALE

SHEET NOTES

- ① PROVIDE FACTORY TRAINED TECHNICIAN FOR A MINIMUM OF FOUR (4) HOURS AT FIELD START UP.
- ② PROGRAM ASD'S PRIOR TO SHIPPING. INCLUDE DOCUMENTATION ON ALL SETTINGS AND PARAMETERS.
- ③ CONTRACTOR MAY PROVIDE AS A BID OPTION A NEW BYPASS CONTACTOR AND OVERLOAD RELAY IN ASD PANEL IN LIEU OF REUSING EXISTING.
- ④ BILL OF MATERIAL PROVIDES AN ASSISTANCE TO THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL MATERIAL REQUIRED FOR A COMPLETE INSTALLATION AND FULLY OPERATIONAL SYSTEM.



CONTROL PANEL PARTIAL ELEVATION
(BEHIND DOORS)
SCALE: 1" = 1'-0"

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NOT FOR CONSTRUCTION**

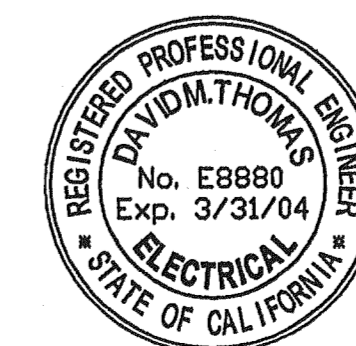
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LEGEND

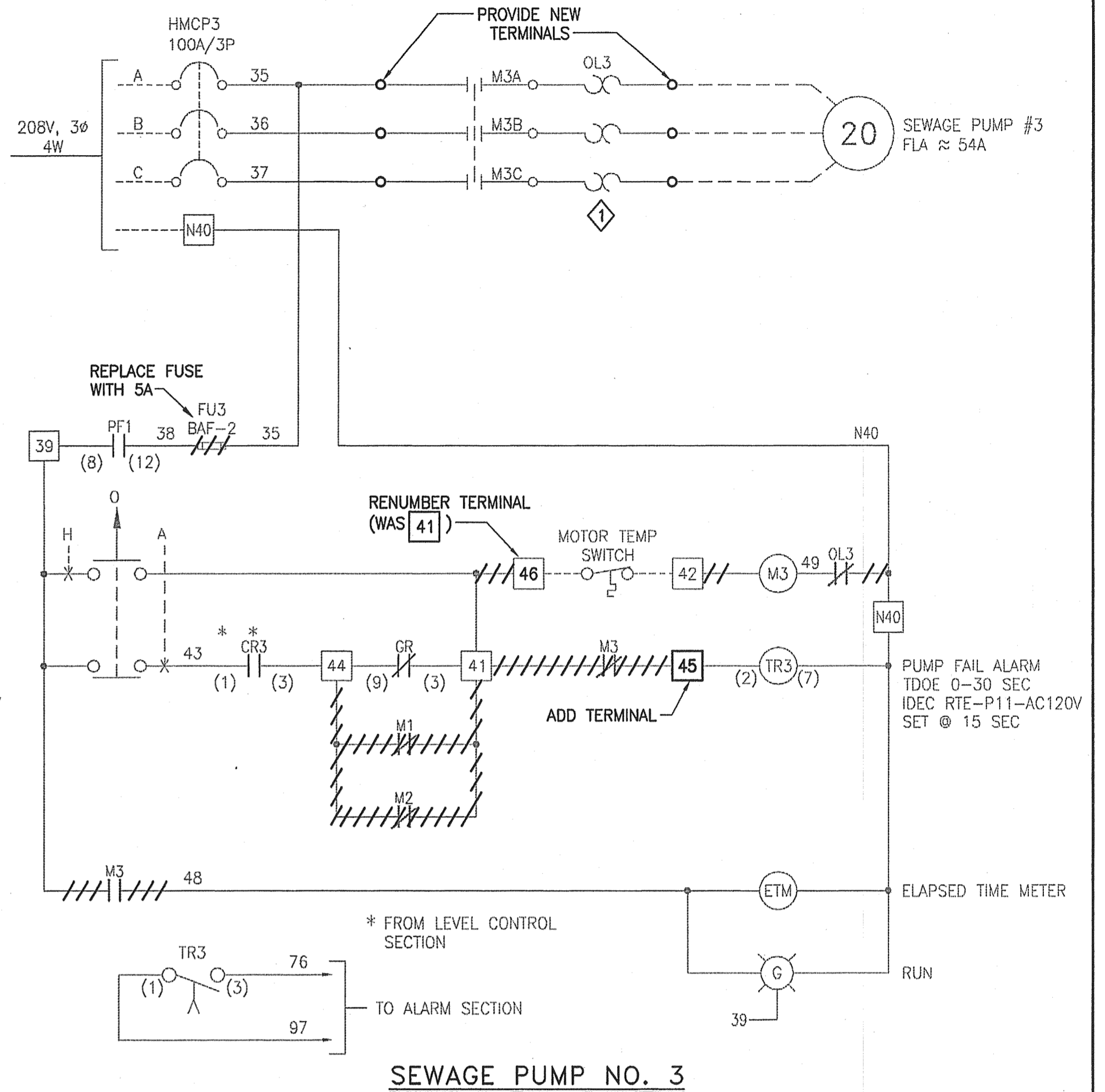
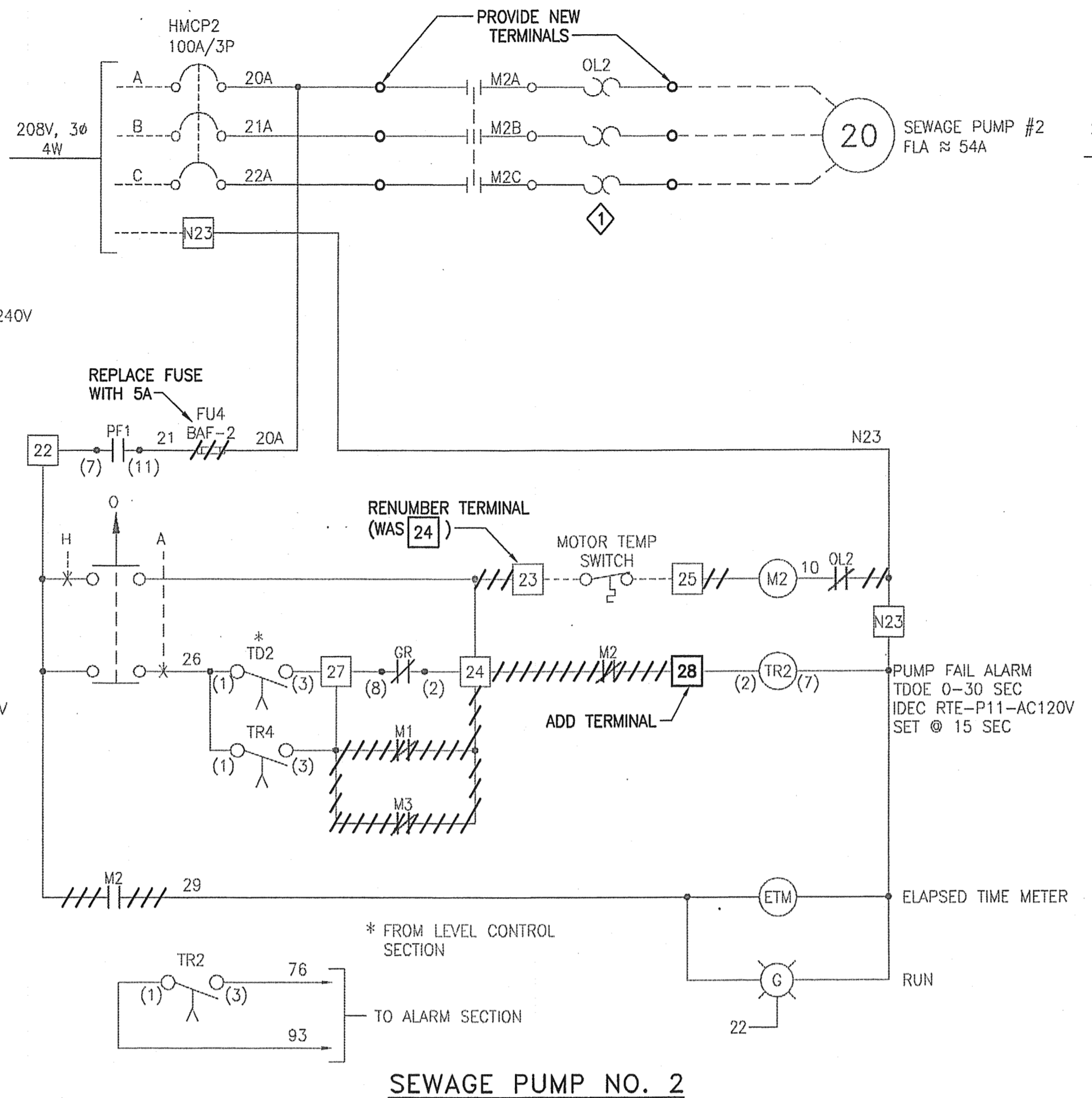
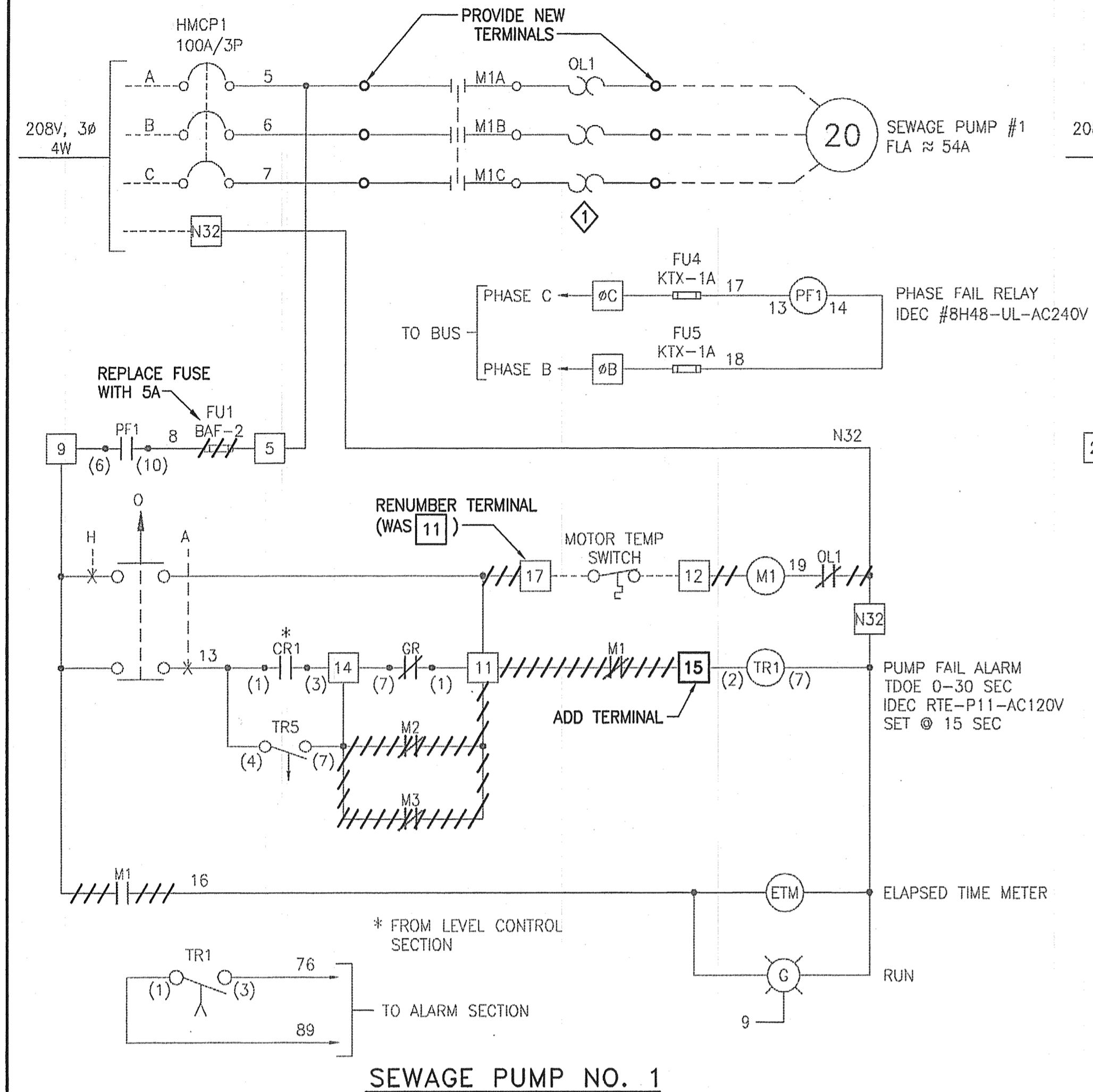
SS1,SS4,SS7	ASD HAND-OFF-AUTO SELECTOR SWITCH
SS2,SS5,SS8	ASD DRIVE-OFF-BYPASS SELECTOR SWITCH
SS3,SS6,SS9	ASD AUTO BYPASS, ON-OFF SELECTOR SWITCH
CRP1	CONTROL RELAY, PUMP #1 RUN
CRP2	CONTROL RELAY, PUMP #2 RUN
CRP3	CONTROL RELAY, PUMP #3 RUN
RR1,RR1A	CONTROL RELAY, PUMP #1 RUNNING
RR2,RR2A	CONTROL RELAY, PUMP #2 RUNNING
RR3,RR3A	CONTROL RELAY, PUMP #3 RUNNING

Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of the project, including safety of all persons and property; that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, except for liability arising from the sole negligence of design professional.

CELSOC
CONSULTING ENGINEERS AND
LAND SURVEYORS OF CALIFORNIA



LAS GALLINAS VALLEY SANITARY DISTRICT Marin County, California		
SMITH RANCH ROAD PUMP STATION IMPROVEMENTS		
ELECTRICAL		
CONTROL PANEL DETAILS		
DCV CONSULTANTS 8 DIGITAL DRIVE, SUITE 250 NOVATO, CALIFORNIA 94949		
PHONE: 415-382-7961	FAX: 415-382-8107	
Drawn by: WHM	Job No.: 225-03	Scale: 1/2"=1'-0" UON
Checked by: DMT	Date: 8/01/2003	

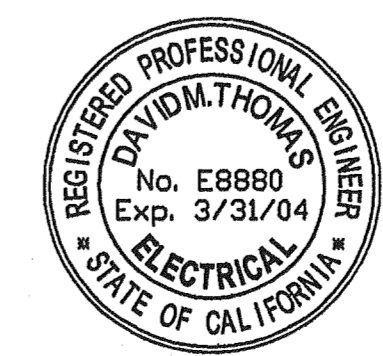


SHEET NOTES
 ① SEE ③ ON SHEET E2.

E3

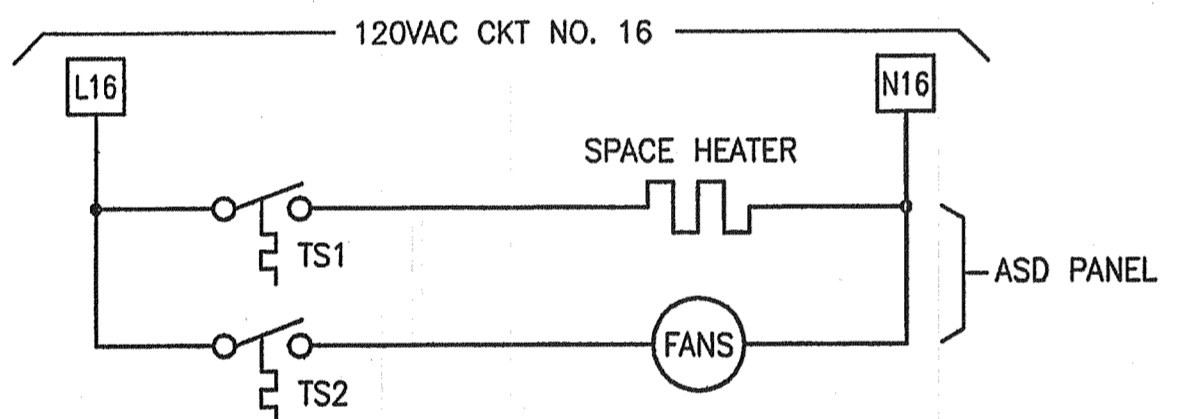
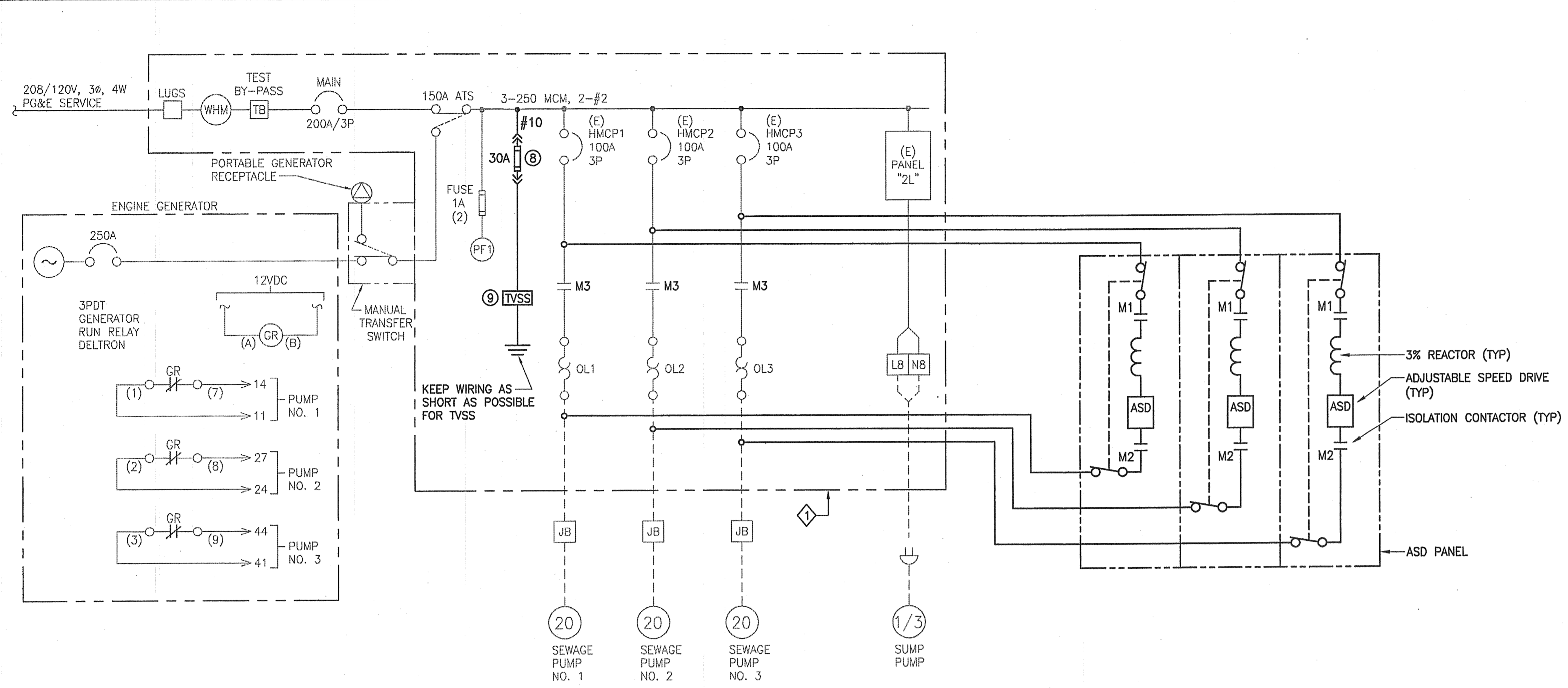
REVIEW PRINT
 NOT FOR CONSTRUCTION

Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of the project, including safety of all persons and property; that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, except for liability arising from the sole negligence of design professional.

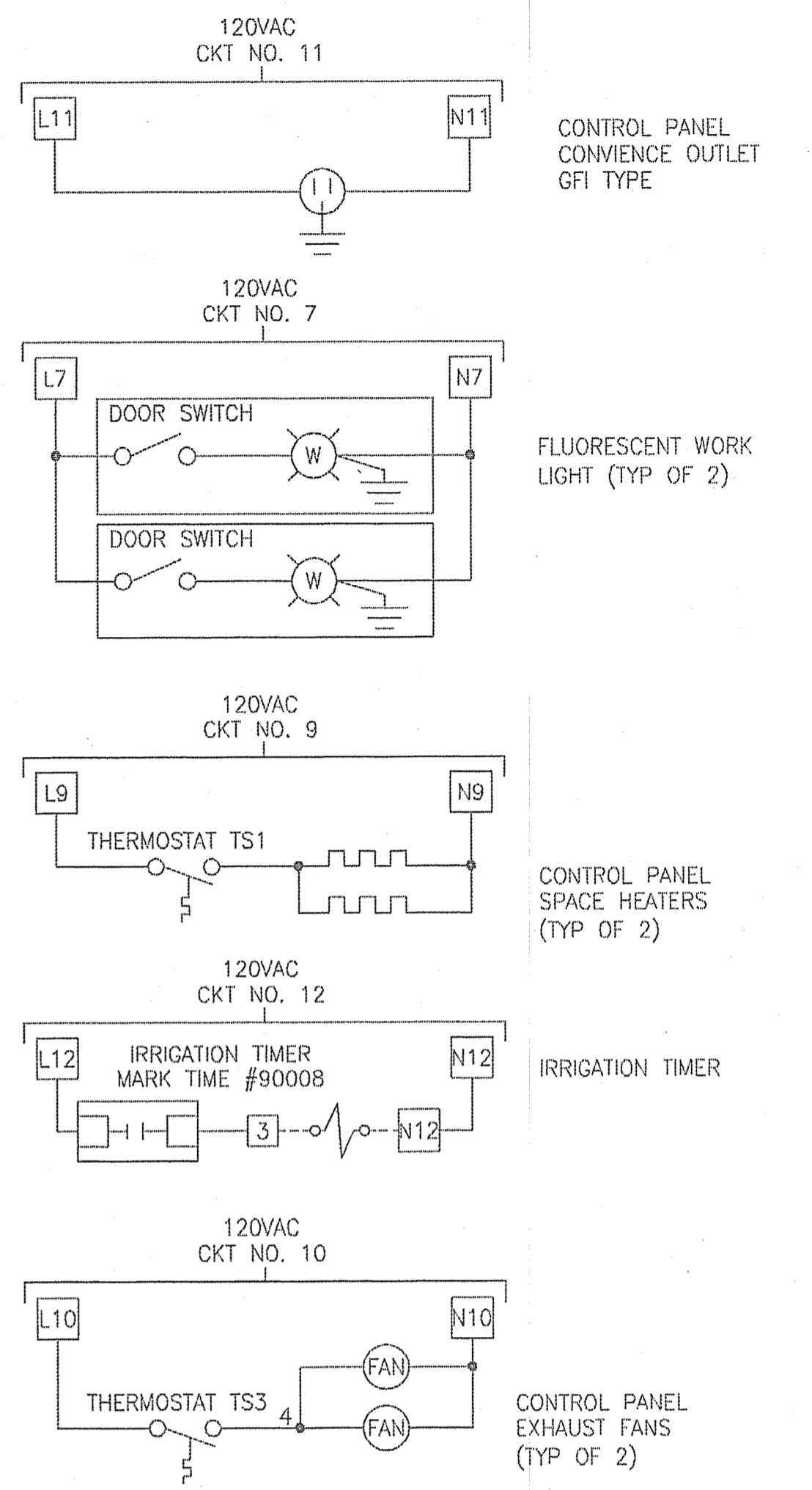


LAS GALLINAS VALLEY SANITARY DISTRICT Marin County, California		
SMITH RANCH ROAD PUMP STATION IMPROVEMENTS		
ELECTRICAL DEMOLITION MOTOR STARTER DIAGRAMS		
DCV CONSULTANTS 8 DIGITAL DRIVE, SUITE 250 NOVATO, CALIFORNIA 94949		
PHONE: 415-382-7961	Job No.: 225-03	Scale: AS SHOWN
Drawn by: WHM	Checked by: DMT	Date: 8/01/2003

RFP: D:\Projects\225-03 LovSD Smith Ranch Road PS ASD\225-03 E1-8.dwg Aug 01, 2003 11:50
 Xrefs:



PANELBOARD "2L" - 208/120V, 3φ, 4W, 70A MAIN, SN, 3P					
CKT NO	SERVING	BRKR. TRIP	BRKR. TRIP	SERVING	CKT NO
1		70		20/1	JACKET WATER HEATER 2
3	MAIN	3		20/1	BATTERY CHARGER 4
5				15/1	ALARM PANEL 6
7	PANEL LIGHT	15/1			SUMP PUMP 8
9	PANEL HEATERS				PANEL VENT FAN 10
11	RECEPTACLE				IRRIGATION CONTROLLER 12
13	VALVE PIT LIGHTS				FLOW METER 14
15	AUTO SENSORY				ASD FANS/HEATER 16



SHEET NOTES

1. CHECK PHASE ROTATION ON MOTOR FEEDERS PRIOR TO DEMOLITION AS A REFERENCE ON START UP.

NOTE

1. THE WIRING CONNECTION DETAILS SHOWN ON THE CONTROL SCHEMATICS ARE FOR GENERAL ILLUSTRATION OF OPERATION AND GENERAL GUIDANCE FOR THE CONTRACTOR. SPECIFIC INTERCONNECTION DETAILS ARE THE RESPONSIBILITY OF THE CONTRACTOR, PANEL VENDOR AND VARIOUS EQUIPMENT SUPPLIERS.

**REVIEW PRINT
NOT FOR CONSTRUCTION**

E4

LAS GALLINAS VALLEY SANITARY DISTRICT
 Marin County, California

SMITH RANCH ROAD PUMP STATION IMPROVEMENTS

ELECTRICAL

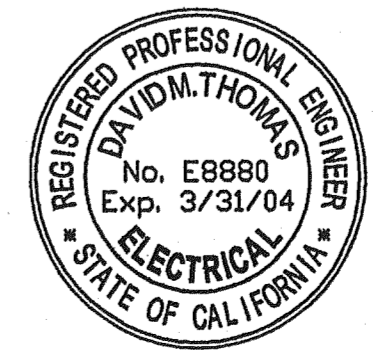
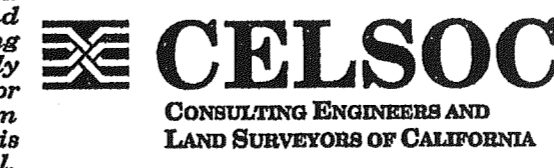
ONE LINE DIAGRAM

DCV CONSULTANTS
 8 DIGITAL DRIVE, SUITE 250
 NOVATO, CALIFORNIA 94949

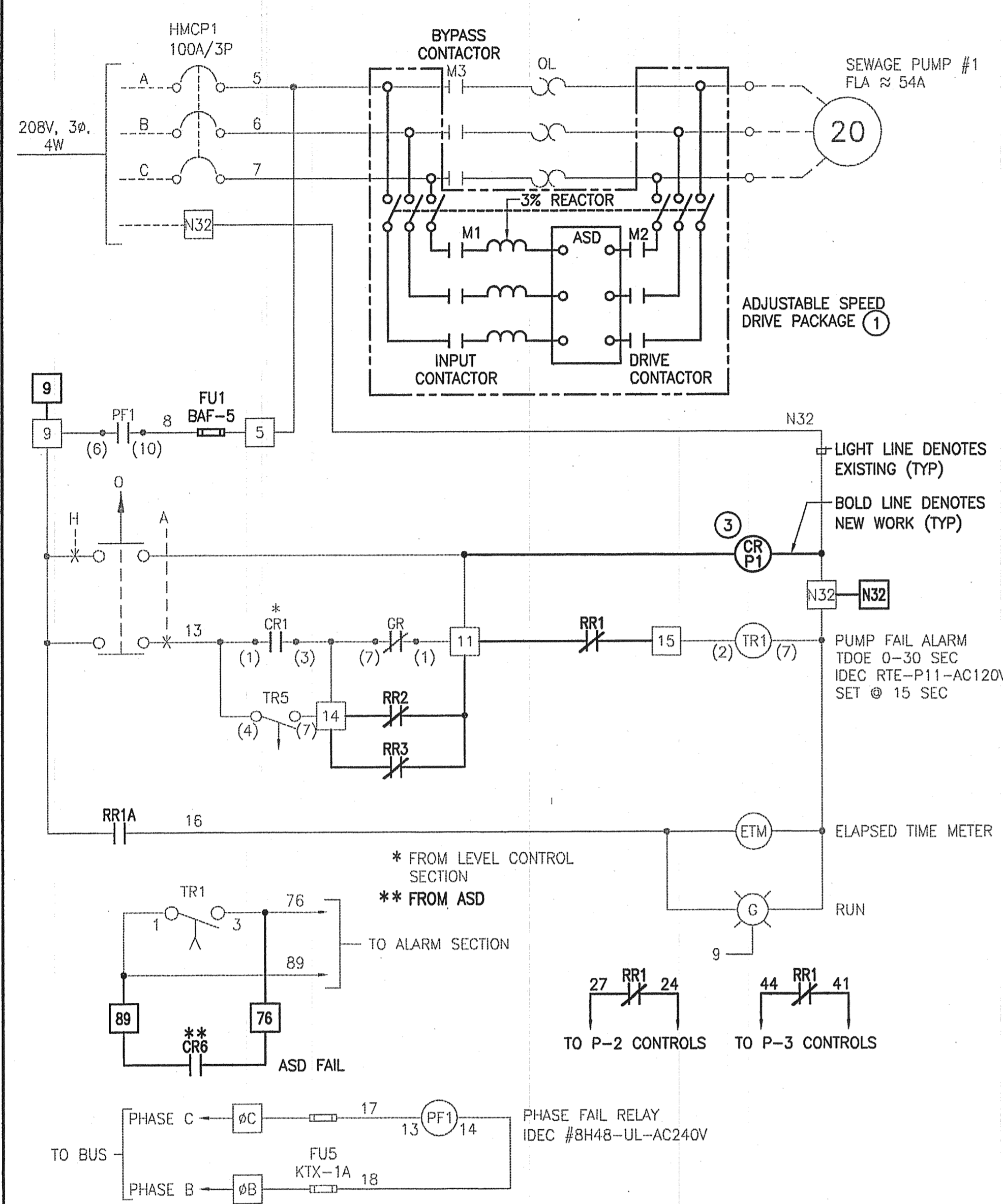
PHONE: 415-382-7961 FAX: 415-382-8107

Drawn by: WHM Job No.: 225-03 Scale: AS SHOWN
 Checked by: DMT Date: 8/01/2003

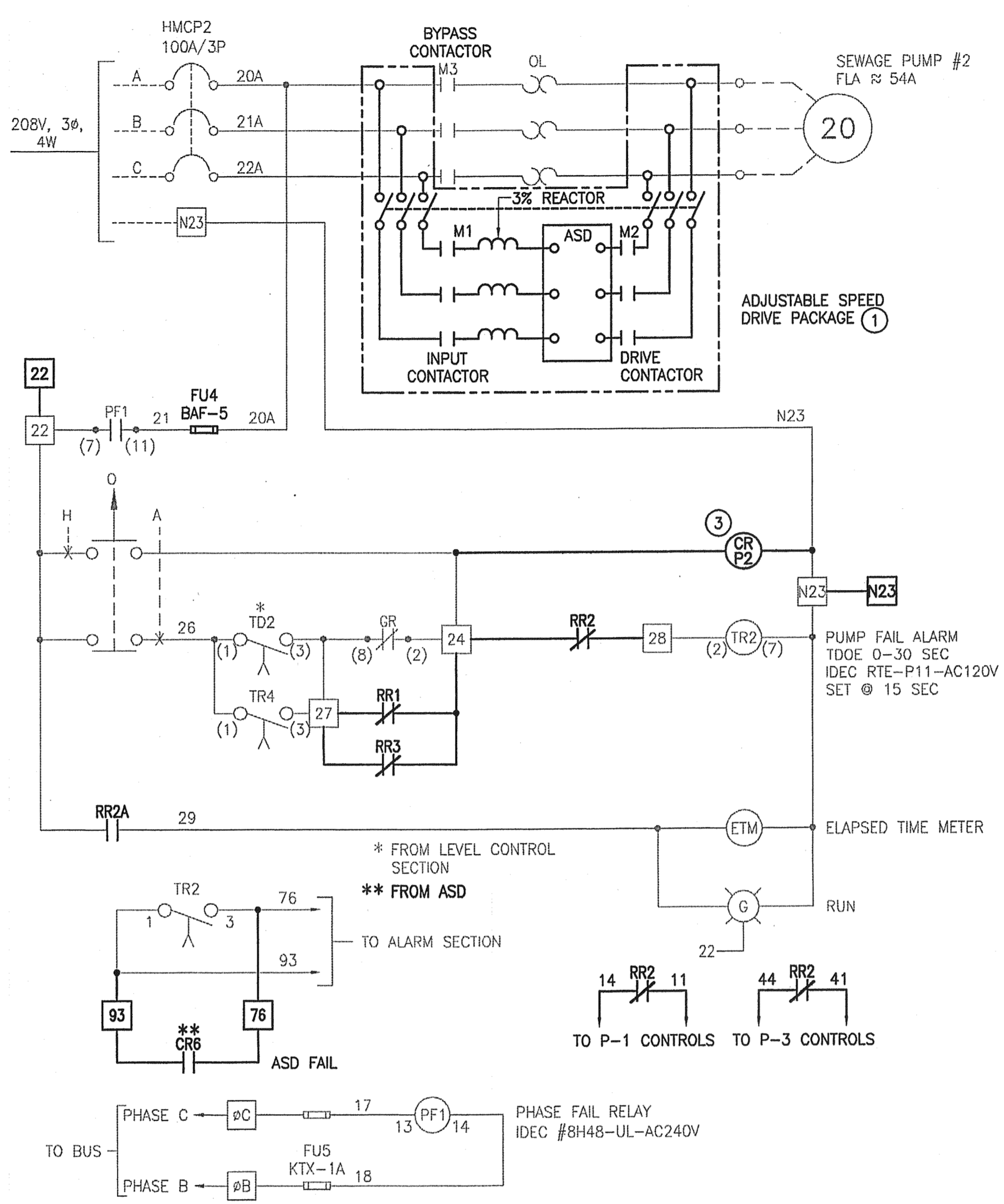
Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of the project, including safety of all persons and property; that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, except for liability arising from the sole negligence of design professional.



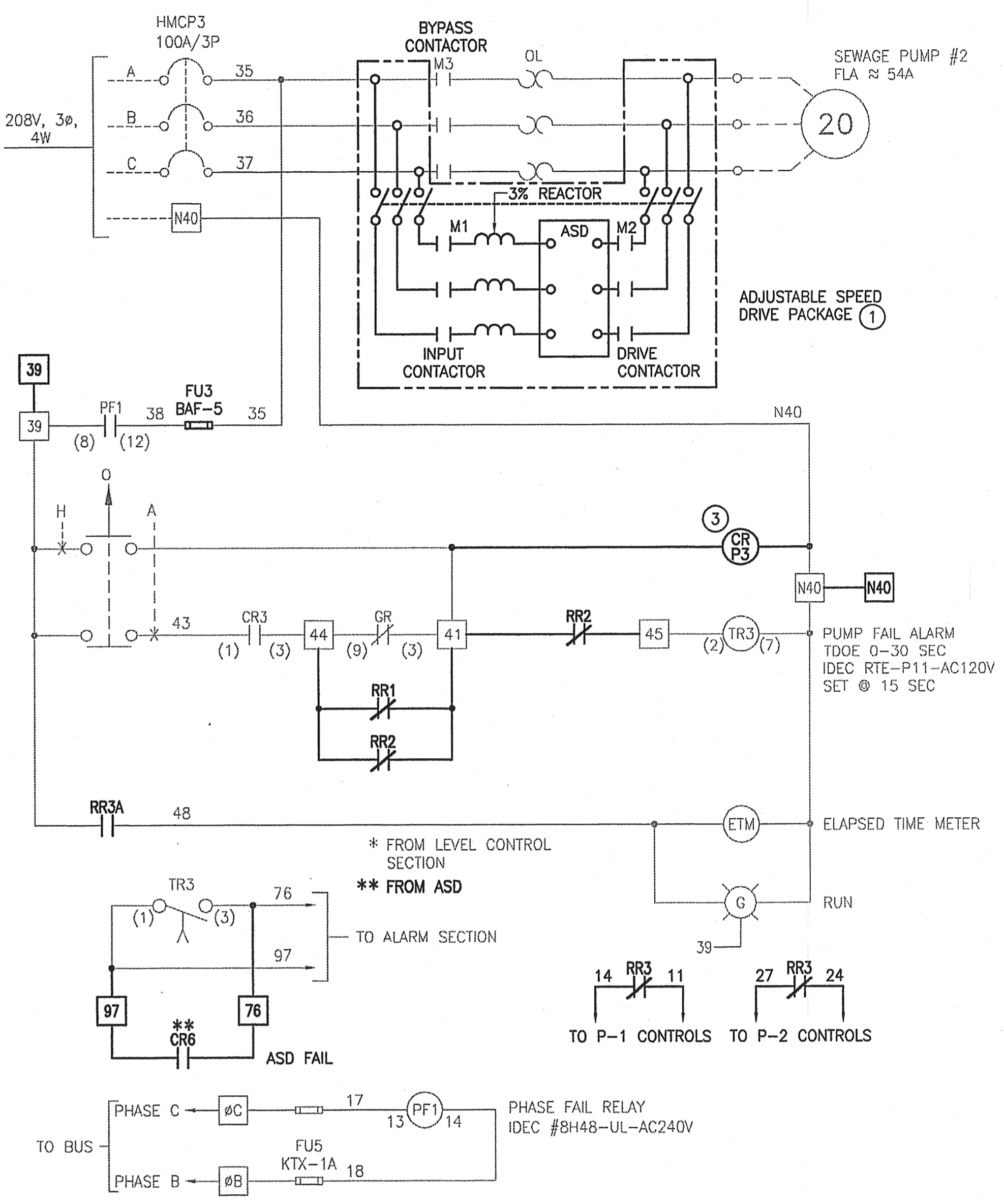
RFP 225-03 LVSD Smith Ranch Road PS ASD\225-03 E1-6.dwg Aug 01, 2003 11:56



SEWAGE PUMP NO. 1



SEWAGE PUMP NO. 2



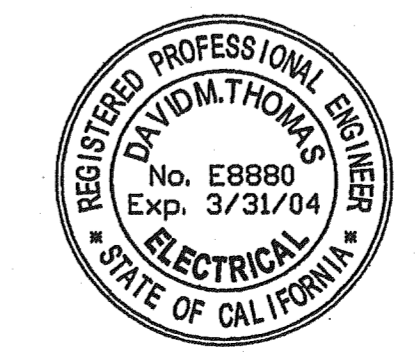
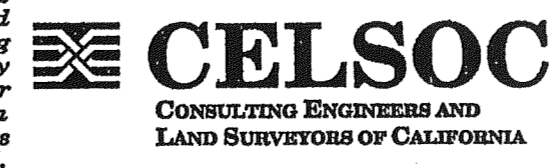
SEWAGE PUMP NO. 3

NOTE
 1. THE WIRING CONNECTION DETAILS SHOWN ON THE CONTROL SCHEMATICS ARE FOR GENERAL ILLUSTRATION OF OPERATION AND GENERAL GUIDANCE FOR THE CONTRACTOR. SPECIFIC INTERCONNECTION DETAILS ARE THE RESPONSIBILITY OF THE CONTRACTOR, PANEL VENDOR AND VARIOUS EQUIPMENT SUPPLIERS.

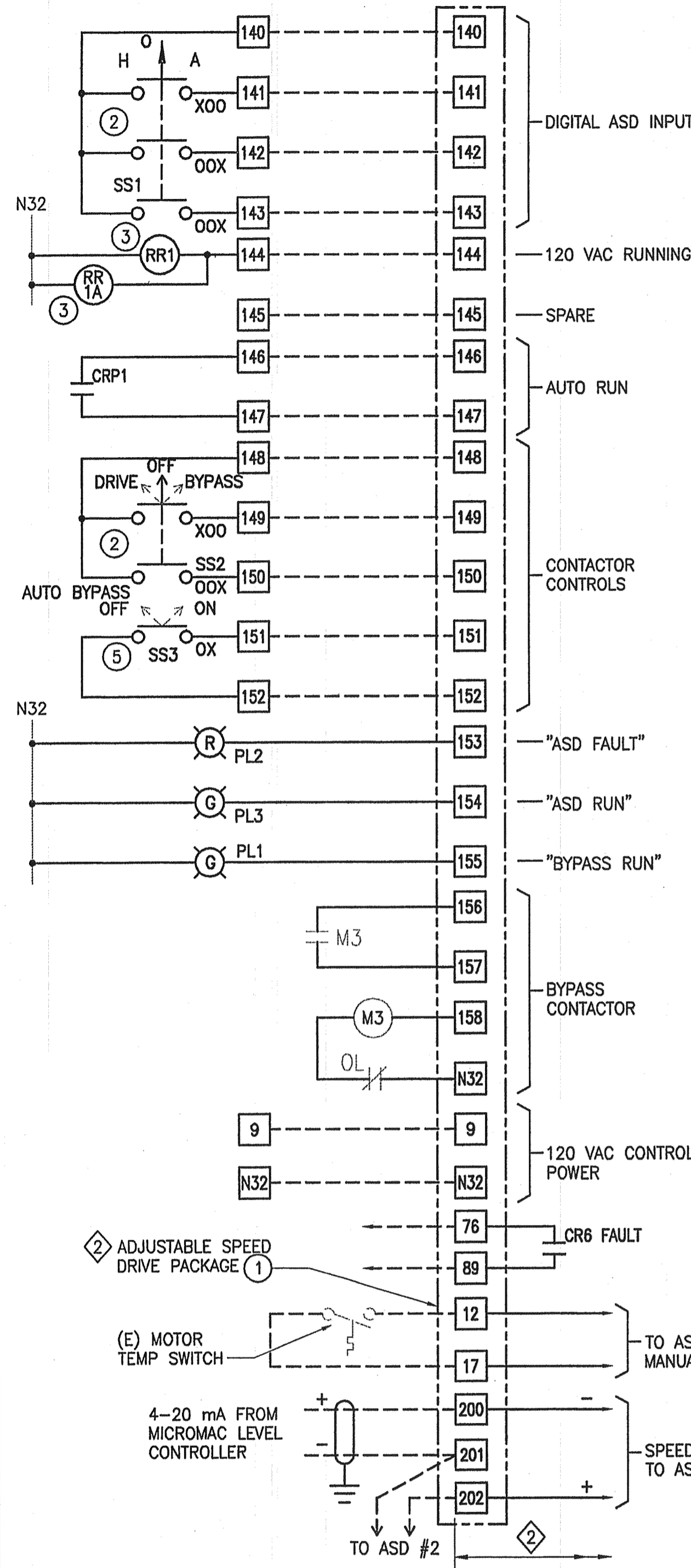
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**REVIEW PRINT
 NOT FOR CONSTRUCTION**

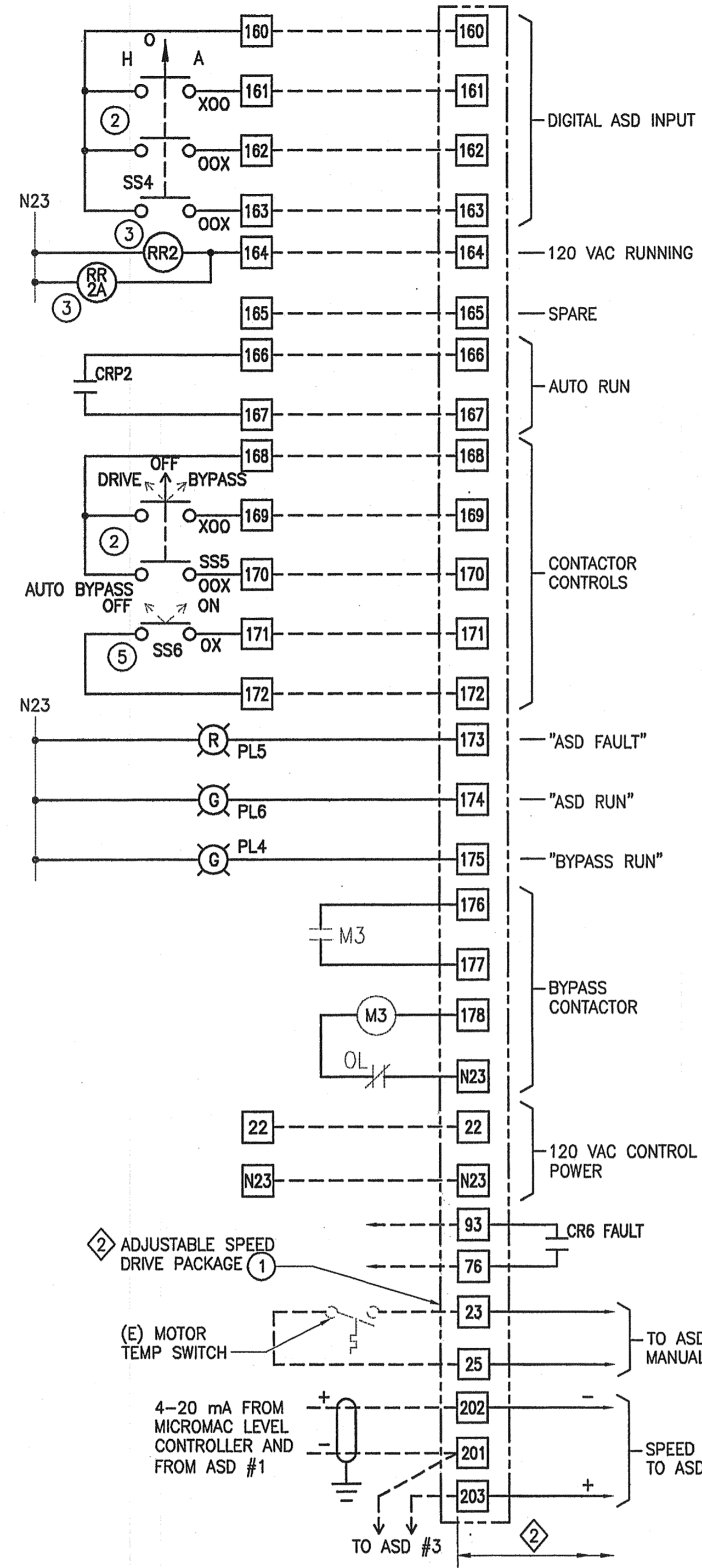
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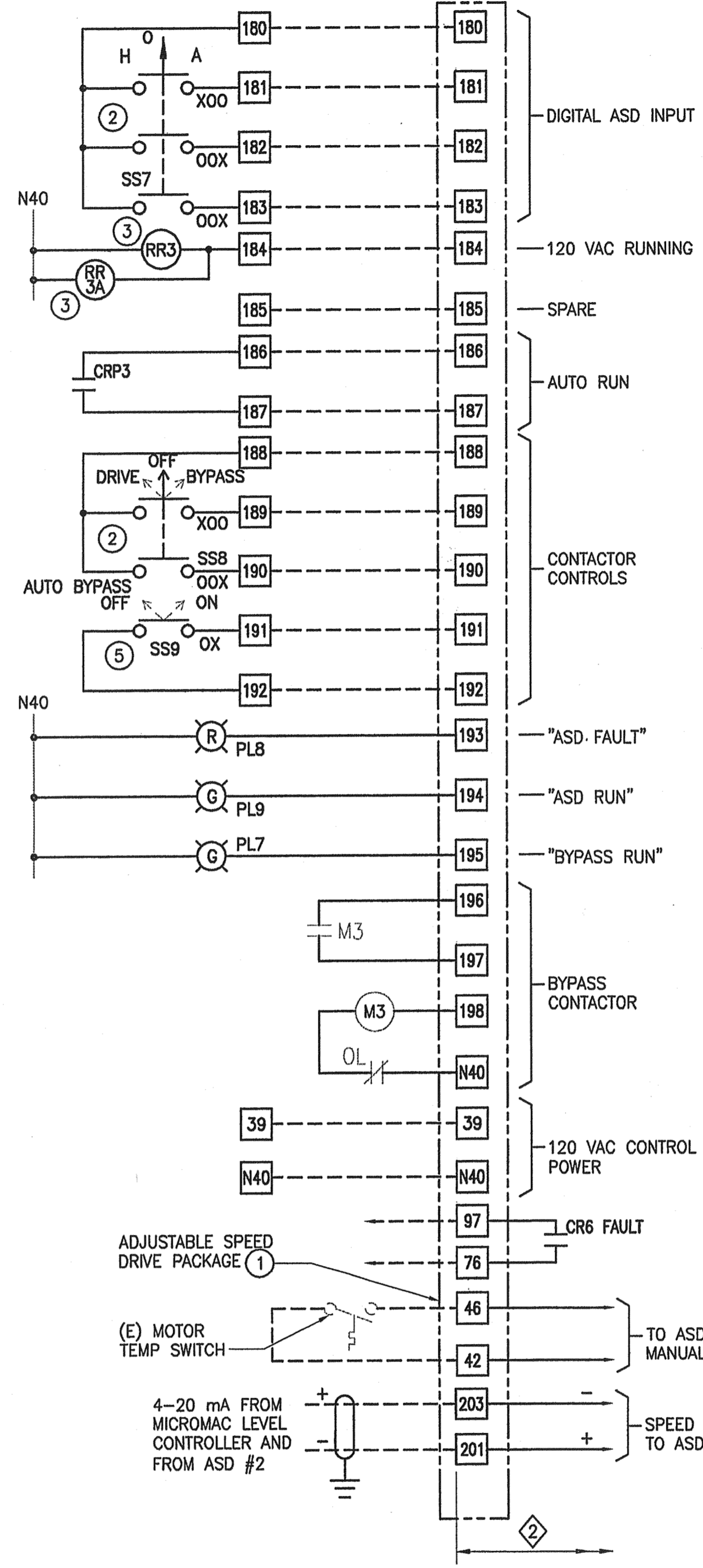
LAS GALLINAS VALLEY SANITARY DISTRICT Marin County, California		
SMITH RANCH ROAD PUMP STATION IMPROVEMENTS		
ELECTRICAL SEWAGE PUMPS MOTOR STARTER DIAGRAMS		
DCV CONSULTANTS 8 DIGITAL DRIVE, SUITE 250 NOVATO, CALIFORNIA 94949		
PHONE: 415-382-7961	FAX: 415-382-8107	
Drawn by: WHM	Job No.: 225-03	Scale: AS SHOWN
Checked by: DMT		Date: 8/01/2003



SEWAGE PUMP NO. 1



SEWAGE PUMP NO. 2



SEWAGE PUMP NO. 3

NOTE
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SHEET NOTES
① ADD TERMINALS IN EXISTING MCC FOR CONNECTIONS TO ASD PANEL.
② REFER TO ASD CONTROL PACKAGE SHOP DRAWINGS FOR FINAL CONNECTIONS.

E6

REVIEW PRINT
NOT FOR CONSTRUCTION

LAS GALLINAS VALLEY SANITARY DISTRICT
Marin County, California

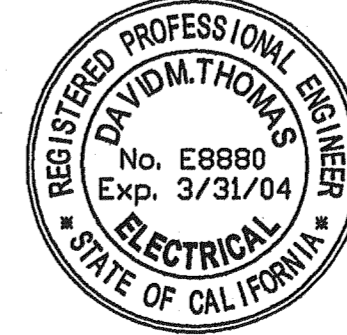
SMITH RANCH ROAD PUMP STATION IMPROVEMENTS

**ELECTRICAL
SEWAGE PUMPS
MOTOR STARTER DIAGRAMS**

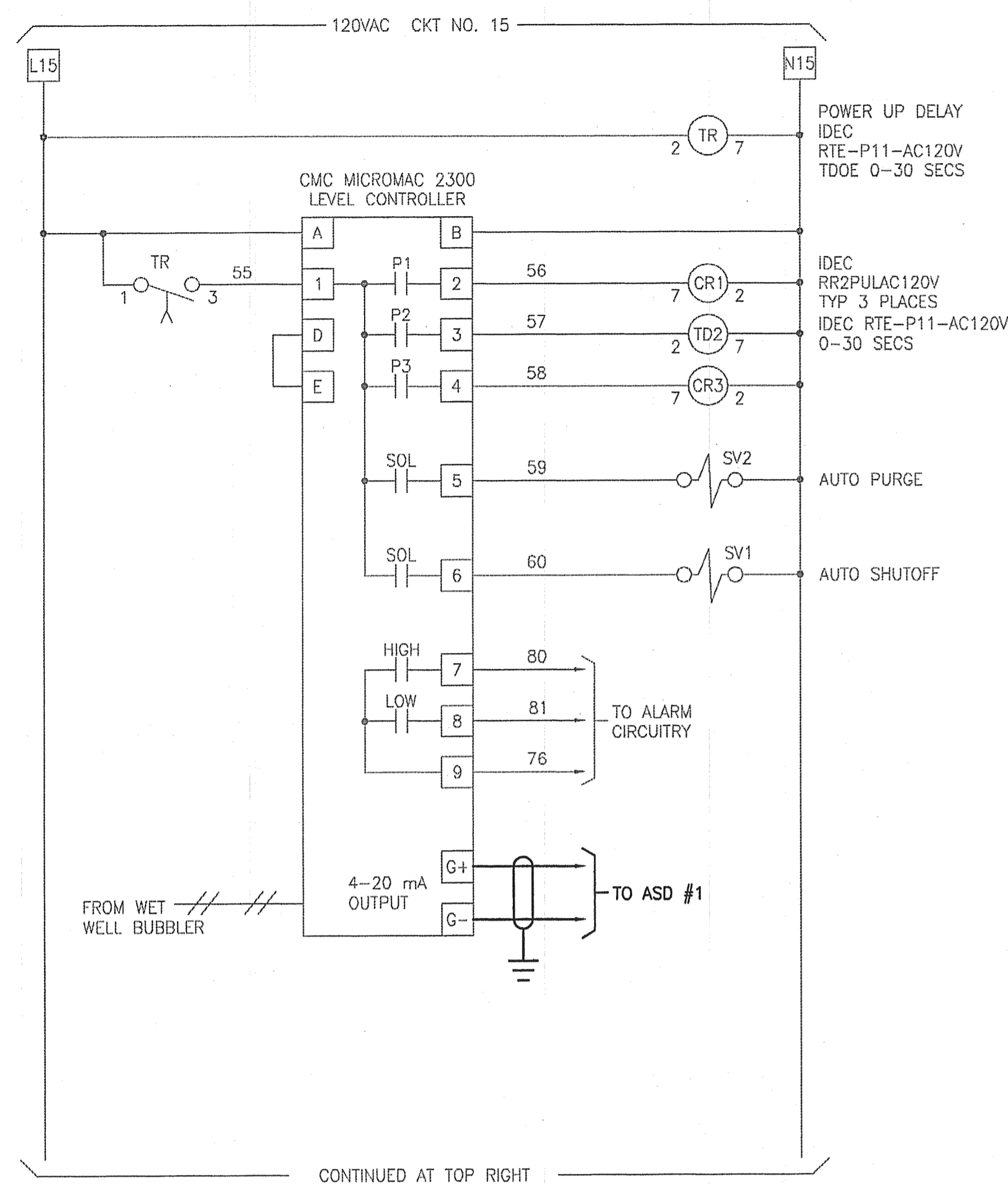
DCV CONSULTANTS
8 DIGITAL DRIVE, SUITE 250
NOVATO, CALIFORNIA 94949
PHONE: 415-382-7961 FAX: 415-382-8107

Drawn by: WHM Job No.: 225-03 Scale: AS SHOWN
Checked by: DMT Date: 8/01/2003

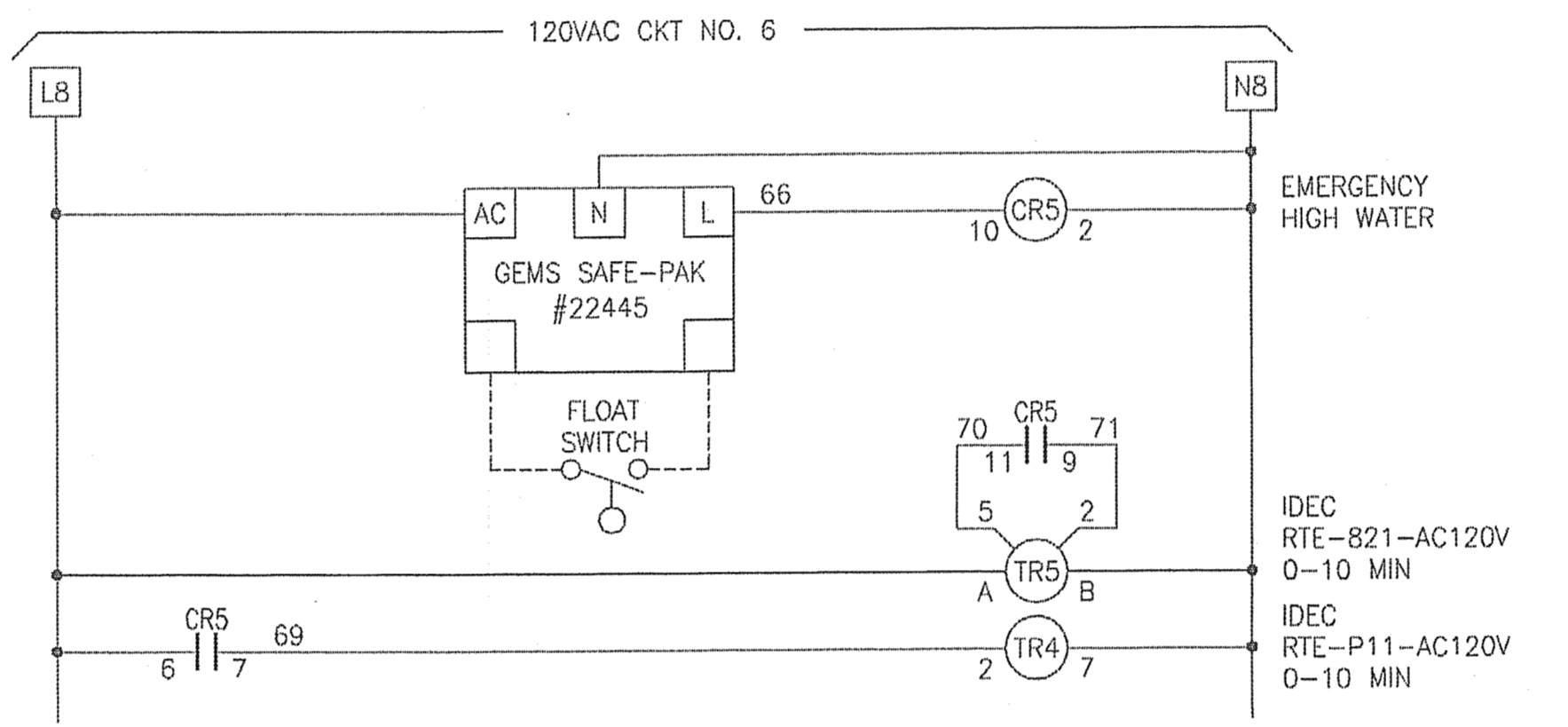
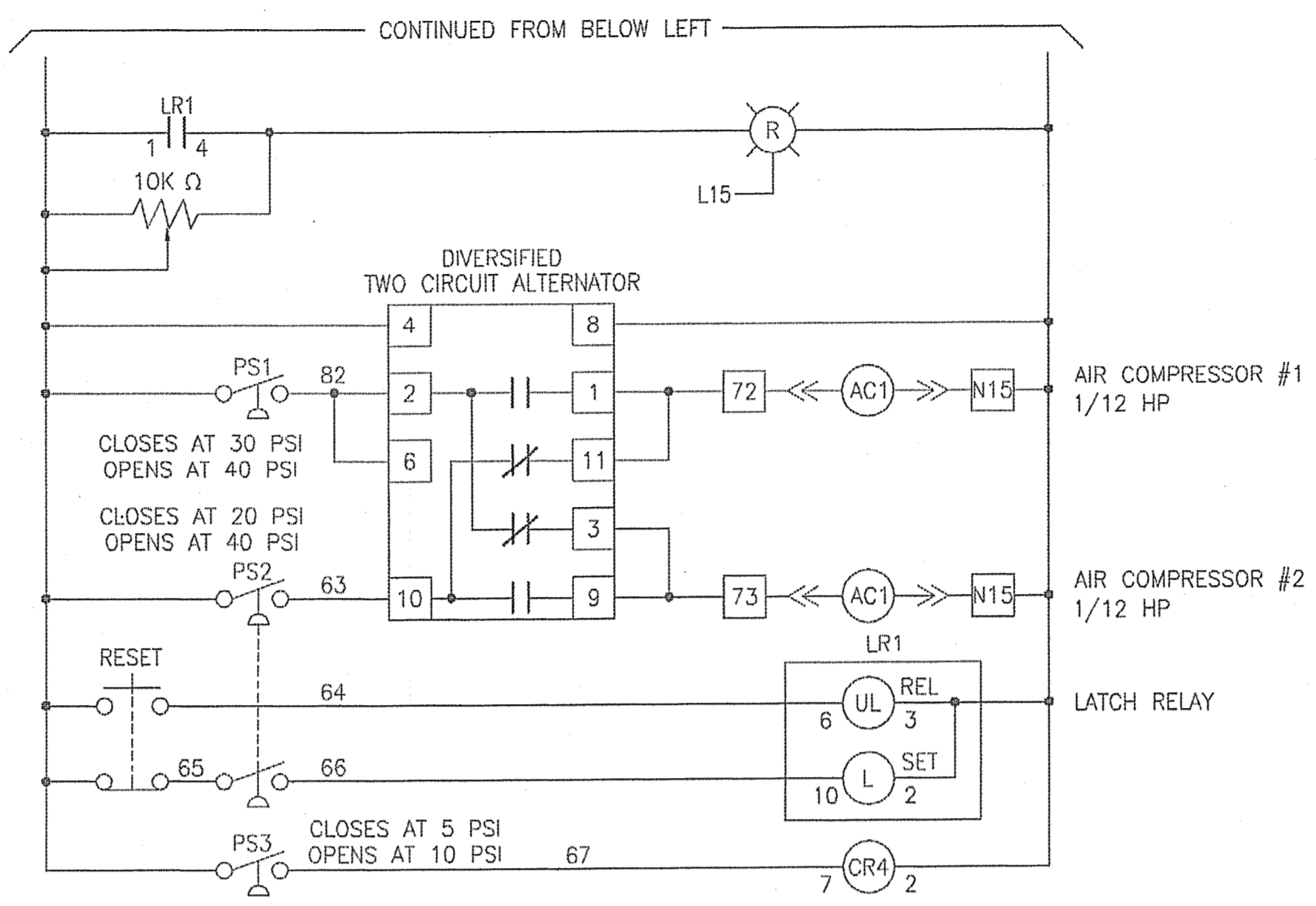
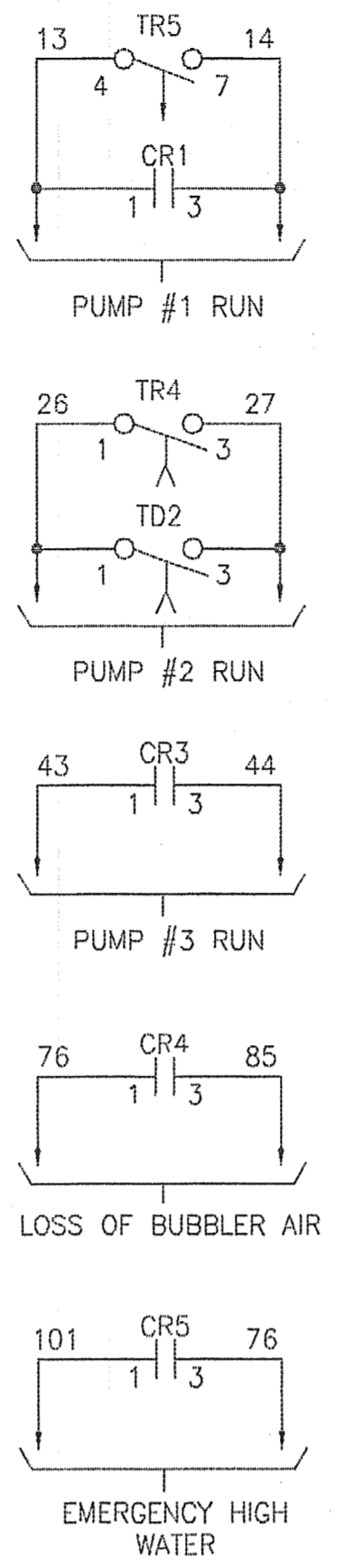
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RFP DCV PUMP STATION IMPROVEMENTS 2020
 Projects\225-03 LGVSD Smith Ranch Road PS ASD\225-03 E1-8.dwg Aug 01, 2003 12:10



CONTINUED AT TOP RIGHT

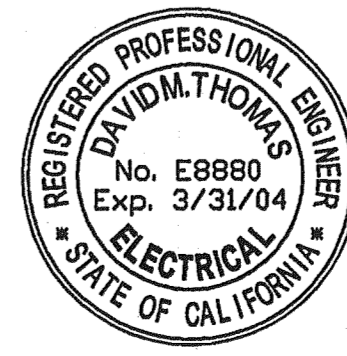
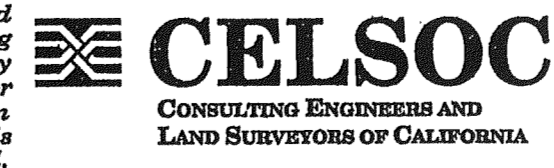


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E7

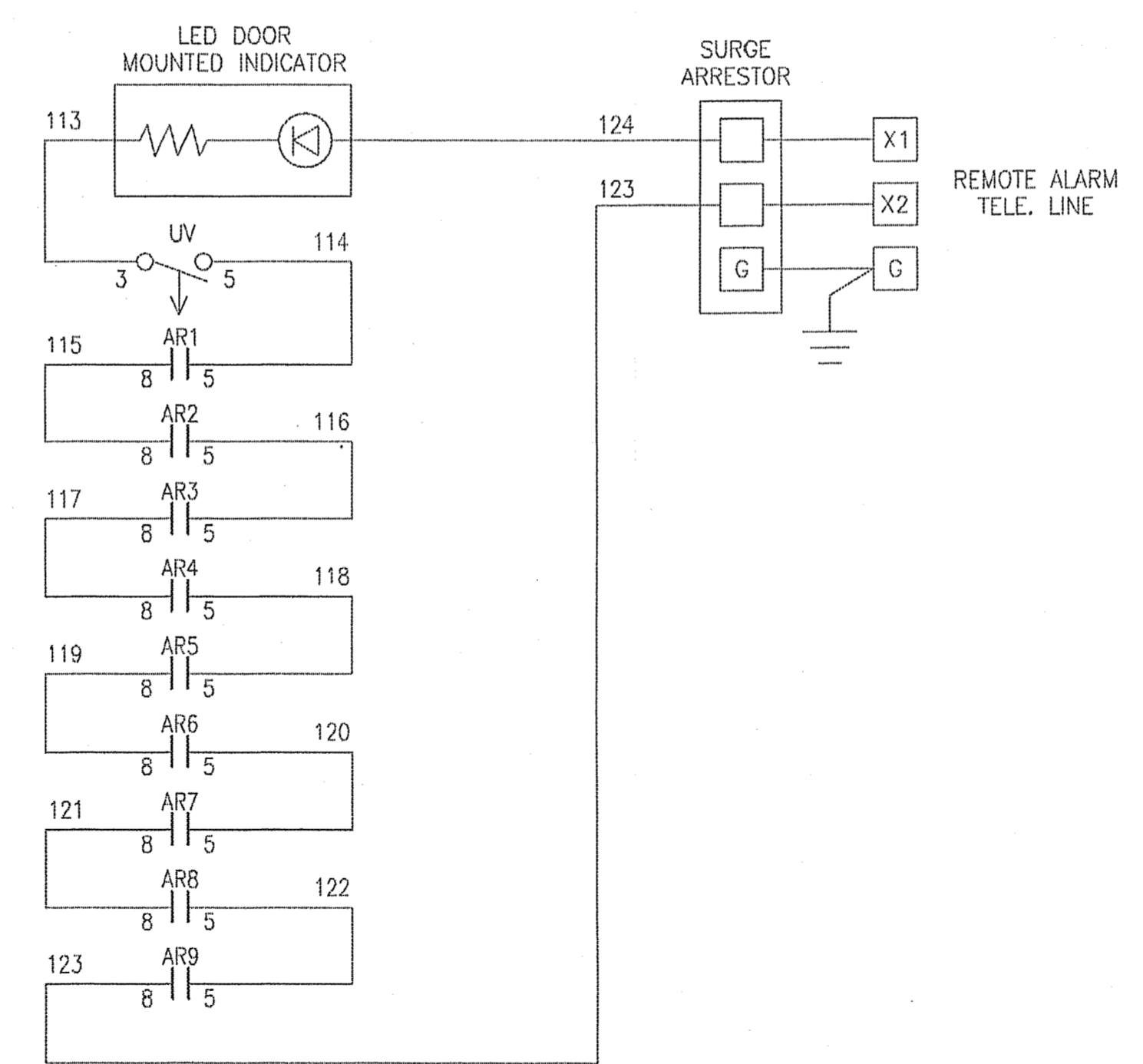
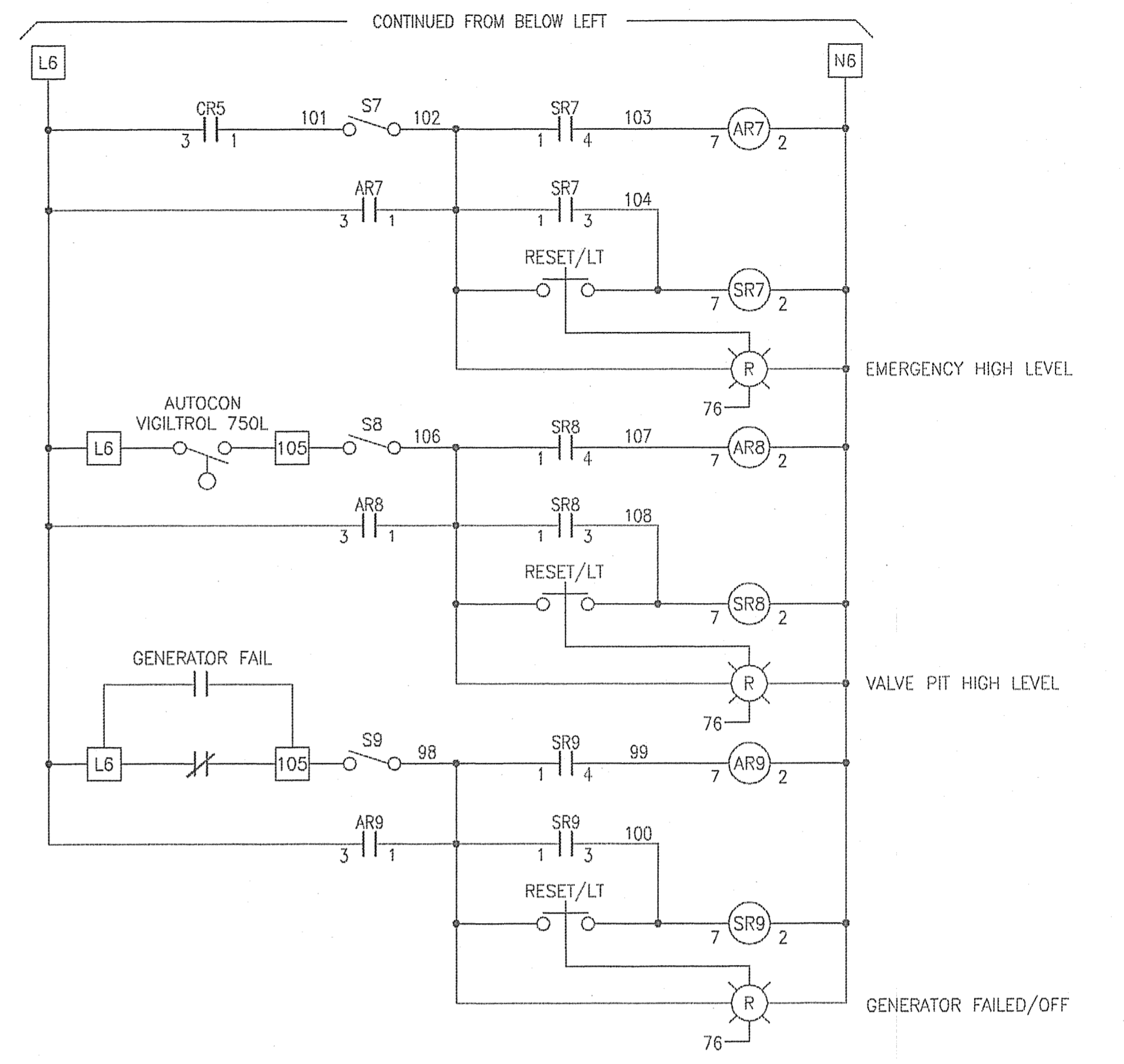
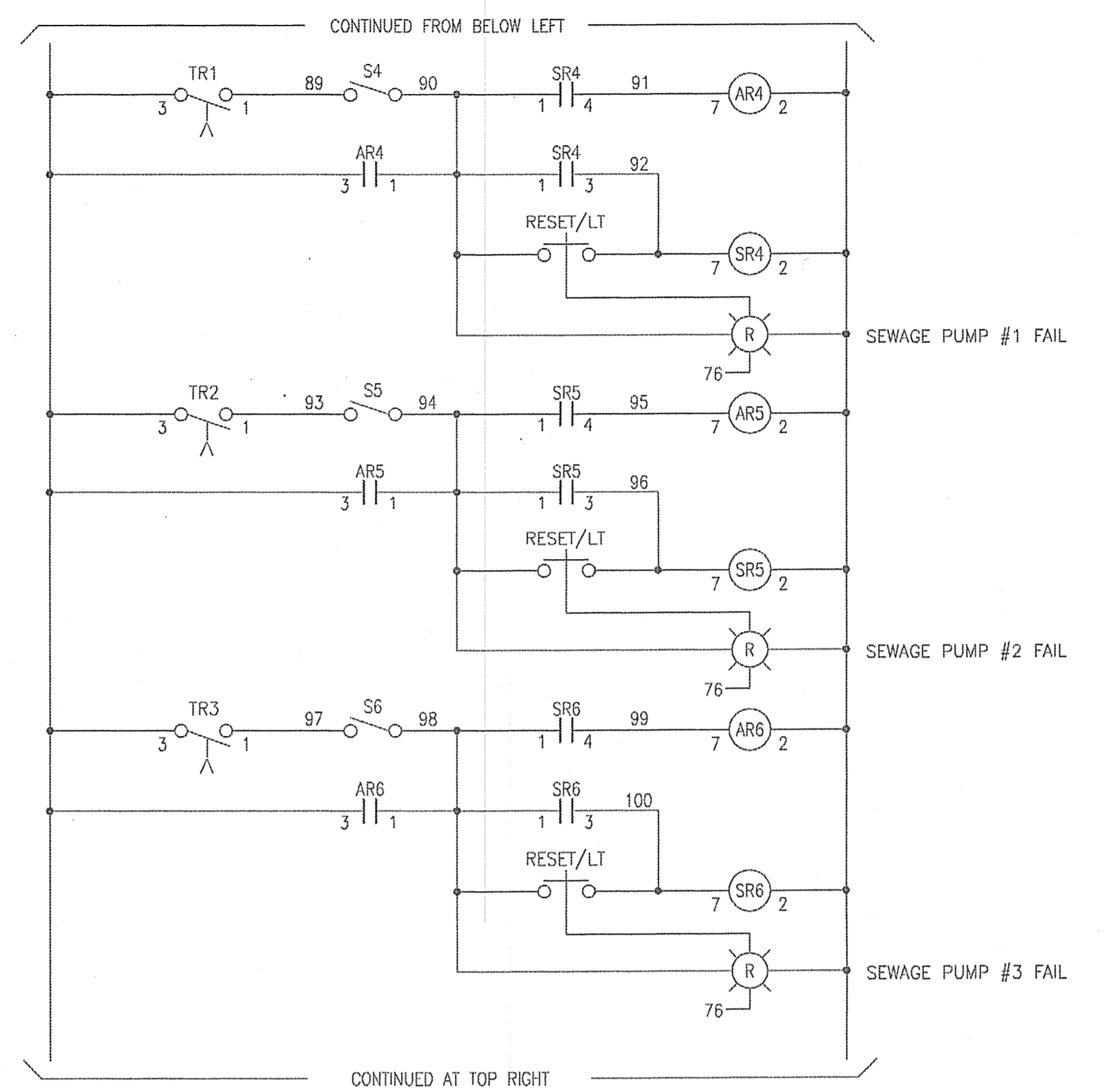
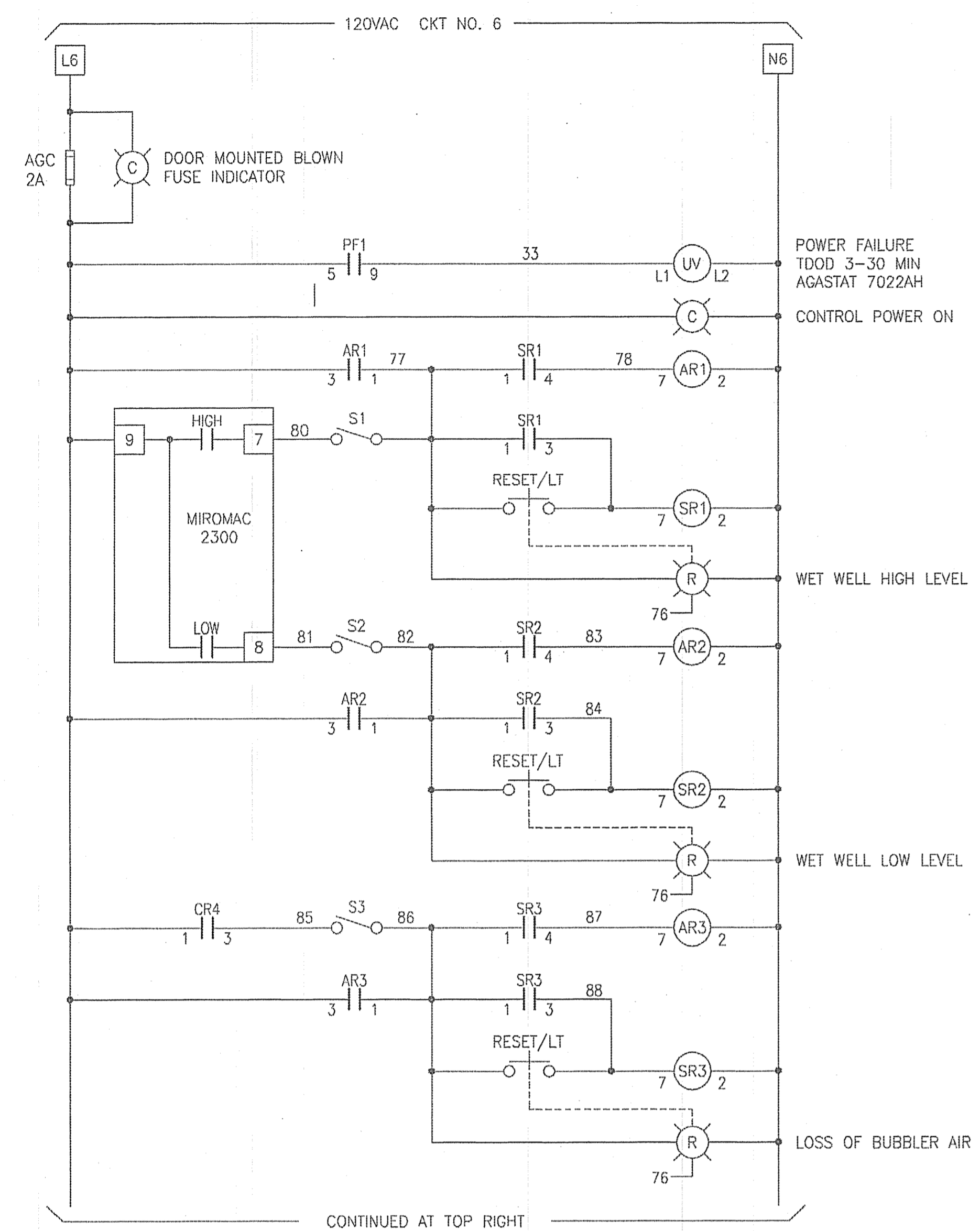
**REVIEW PRINT
 NOT FOR CONSTRUCTION**

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LAS GALLINAS VALLEY SANITARY DISTRICT			
Marin County, California			
SMITH RANCH ROAD PUMP STATION IMPROVEMENTS			
ELECTRICAL LEVEL SYSTEM ELEMENTARY DIAGRAM			
DCV CONSULTANTS			
8 DIGITAL DRIVE, SUITE 250 NOVATO, CALIFORNIA 94949			
PHONE: 415-382-7961		FAX: 415-382-8107	
Drawn by: WHM	Job No.: 225-03	Scale: AS SHOWN	
Checked by: DMT		Date: 8/01/2003	

RFP 225-03 LGVSD Smith Ranch Road PS ASD\225-03 E1-8.dwg Aug 01, 2003 12:20
 Projects\225-03 LGVSD Smith Ranch Road PS ASD\225-03 E1-8.dwg Aug 01, 2003 12:20
 Xrefs:



Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of the project, including safety of all persons and property; that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, except for liability arising from the sole negligence of design professional.

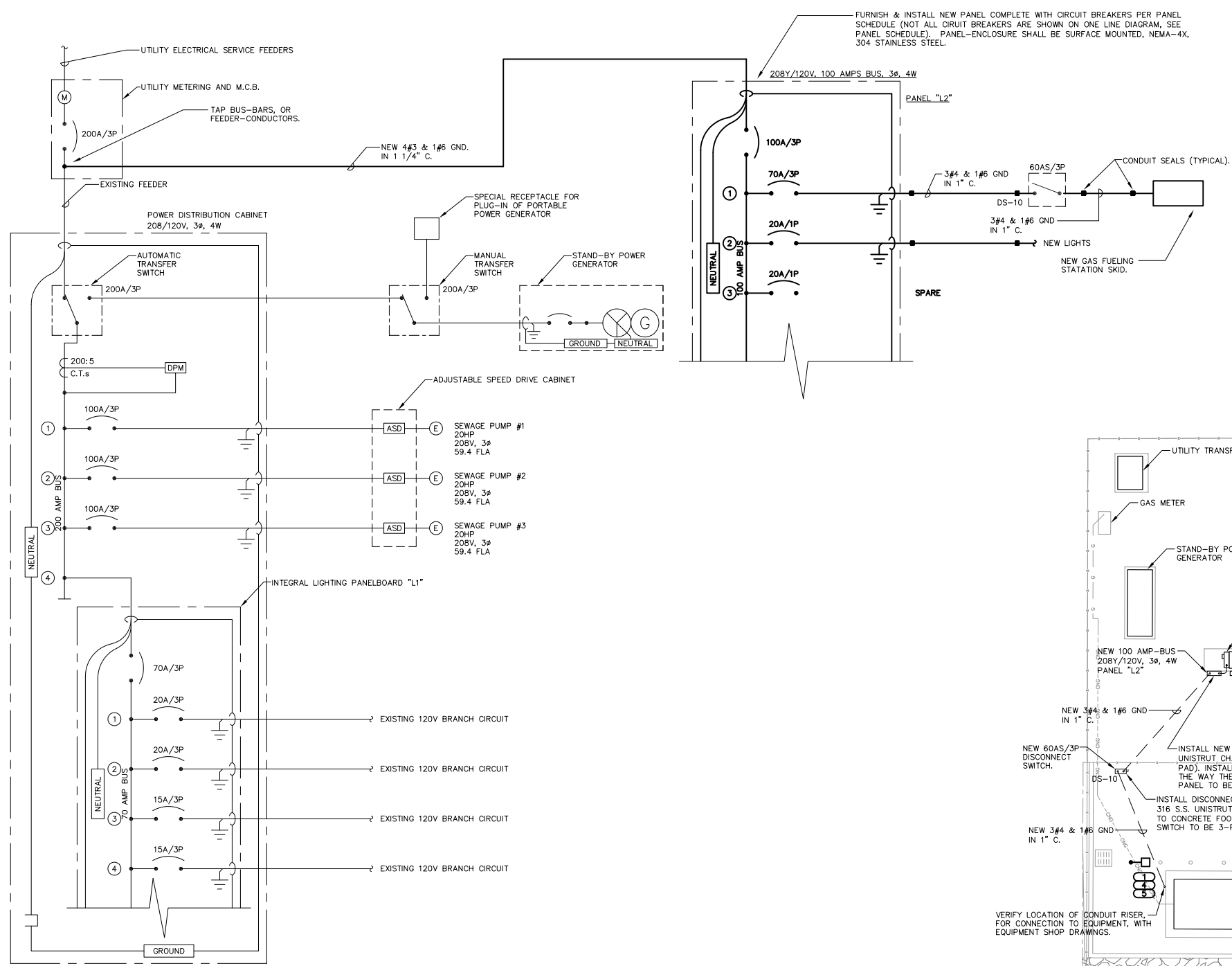


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 FOR REFERENCE ONLY**

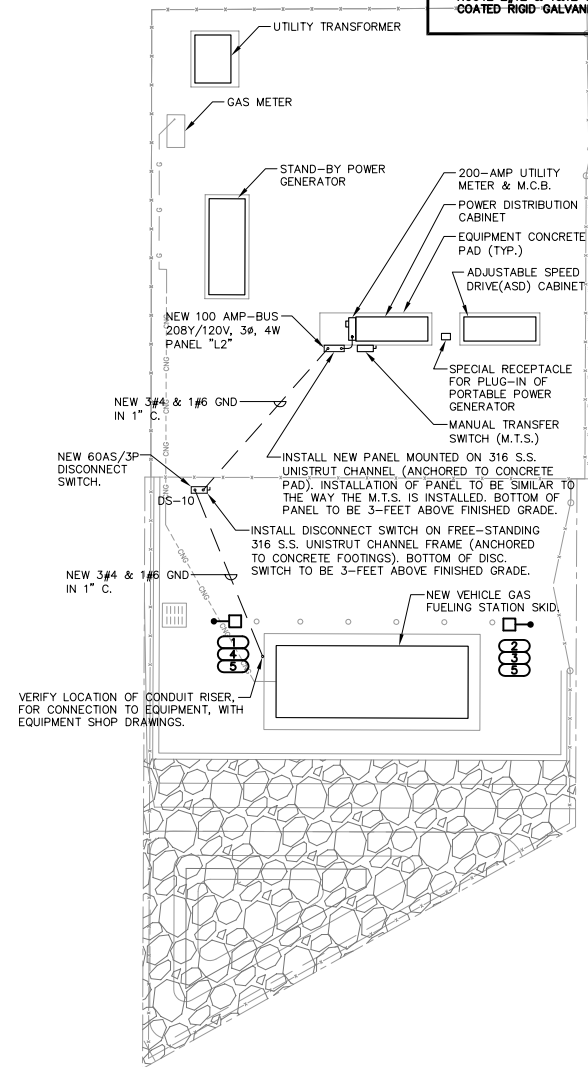
E8

LAS GALLINAS VALLEY SANITARY DISTRICT Marin County, California		
SMITH RANCH ROAD PUMP STATION IMPROVEMENTS		
ELECTRICAL EXISTING CONTROL DIAGRAMS		
DCV CONSULTANTS 8 DIGITAL DRIVE, SUITE 250 NOVATO, CALIFORNIA 94949		
PHONE: 415-382-7961		FAX: 415-382-8107
Drawn by: WHM	Job No.: 225-03	Scale: AS SHOWN
Checked by: DMT		Date: 8/01/2003

- GENERAL NOTES**
- REFER TO ELECTRICAL INSTALLATION NOTES ON DRAWING #E0.
 - UNLESS OTHERWISE NOTED, ALL ELECTRICAL EQUIPMENT AND ELECTRICAL FEEDERS SHOWN ON ONE LINE DIAGRAM & ON ELECTRICAL PLAN (FOR THE SMITH RANCH ROAD PUMP STATION) ARE EXISTING.
 - REFER TO SHEET E8 FOR POLE BASE MOUNTING DETAIL.
- KEYNOTES**
- LIGHTING FIXTURE: RAB FFLED-52-T-N-PC OR PRE-APPROVED EQUAL. PHOTOCELL TO CONTROL BOTH FIXTURES.
 - LIGHTING FIXTURE: RAB FFLED-52-T-N OR PRE-APPROVED EQUAL.
 - POLE: RAB PS4-11-15WT OR PRE-APPROVED EQUAL. 15'-0" POLE, 4" SQUARE, STRAIGHT, STEEL, WITH MAINTENANCE HOLE AND COVER. PROVIDE AND INSTALL SEAL/GASKET TO SEAL ANY PENETRATIONS.
 - POLE: RAB PS4-11-15WT OR PRE-APPROVED EQUAL. 15'-0" POLE, 4" SQUARE, STRAIGHT, STEEL, WITH MAINTENANCE HOLE AND COVER. MOUNT SINGLE POLE EXPLOSION PROOF SWITCH: APLETON EDSC175-F2 OR PRE-APPROVED EQUAL. 42" ABOVE GRADE. SWITCH TO CONTROL BOTH LIGHT FIXTURES. PROVIDE AND INSTALL SEAL/GASKET TO SEAL ANY PENETRATIONS.
 - CIRCUIT (2) LIGHT FIXTURES TO (1) 20AMP/1P BREAKER IN PANEL-L2. ROUTE 2#12 & 1#12 GND IN 1/2" PVC COATED RIGID GALVANIZED CONDUIT.



ONE LINE DIAGRAM - SMITH RANCH ROAD PUMP STATION



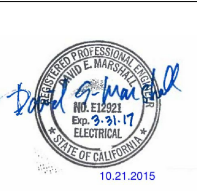
SMITH RANCH ROAD - NATURAL GAS FUELING STATION

SCALE: 1/8"=1'-0"

K J ENGINEERING CONSULTANTS
 The FUTURE.
 Built SMARTER.
 San Francisco, CA 94105
 201 Mission St., Suite 1200
 Tel: 415.654.1837
 www.kjw.com
 PROJECT #14.0873.00

W W ENGINEERING CONSULTANTS
 San Francisco, CA 94105
 201 Mission St., Suite 1200
 Tel: 415.654.1837
 www.kjw.com
 PROJECT #14.0873.00

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PREPARED BY:
 CORNERSTONE ENVIRONMENTAL GROUP, LLC
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NO.	DATE	DESCRIPTION	BY	APPR'D
1	8-11-15	BID ADDENDUM #1	JR	BW
2	8-28-15	BID ADDENDUM #3	AR	BW
3	9-23-15	CONFORM SET RFI RESPONSE	AR	BW
4	11-03-15	CONFORMED SET RFI RESPONSE	AR	BW

CONFORMED
 JOB NO. 14600-04

LAS GALLINAS VALLEY SANITARY DISTRICT
 MARIN COUNTY, CALIFORNIA

BIOGAS ENERGY RECOVERY SYSTEM
 SMITH RANCH ROAD - PUMP STATION
 NATURAL GAS FUELING STATION

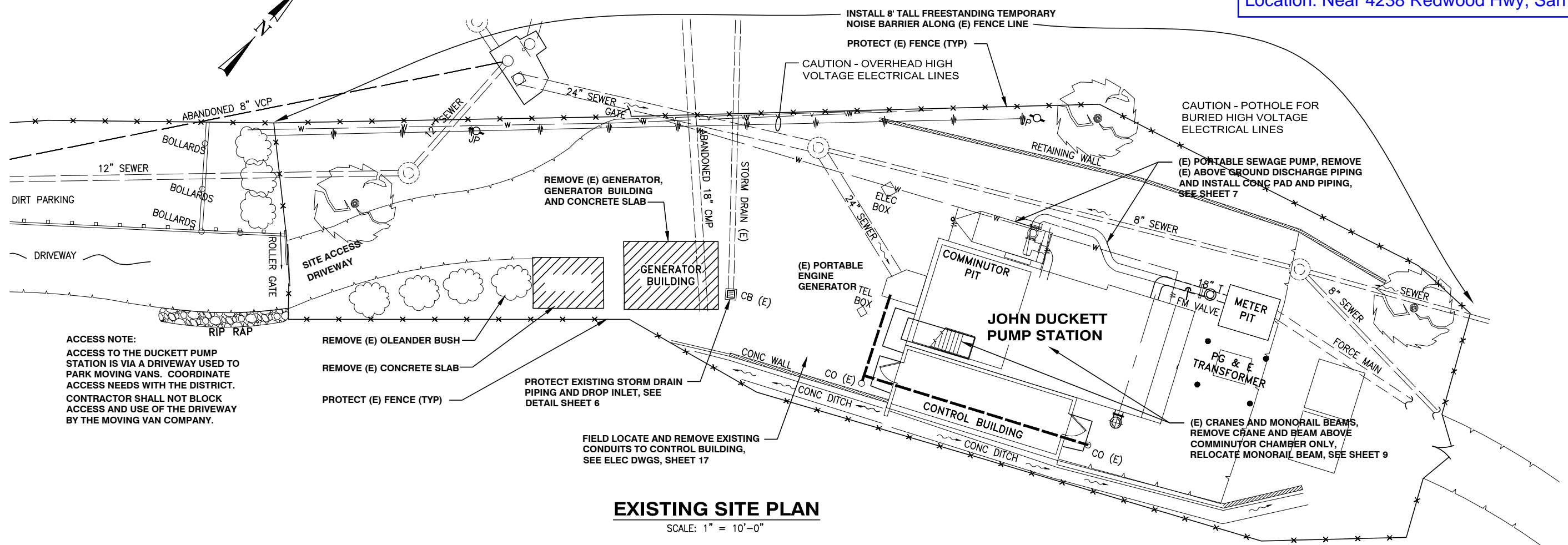
CHECKED	DRAWN	SCALE	
MDS	JAB	SHOWN	
APPROVED	DESIGNED	DATE	
DEM	JAB	7/31/15	
GENERAL MANAGER	DISTRICT ENGINEER		
MARK R. WILLIAMS	MICHAEL P. CORTEZ		
	RCE # 54039		
SHEET	PLAN NO.	DRAWING NO.	REVISION NO.
47 OF 52	E6		

PLOTTED: EXTEND
 SAVED: 1:1
 BORDER: 22,34

COLOR: No.
 RED 0.70MM
 YELLOW 0.20MM
 GREEN 0.25MM
 CYAN 0.40MM
 BLUE 0.50MM
 MAGENTA 0.20MM
 WHITE 0.35MM
 GRAY 0.15MM
 9 0.15MM
 10 1.00MM
 100 0.70MM
 210 0.60MM

ATTACHMENT 3 - Existing Pump Station Site Plans

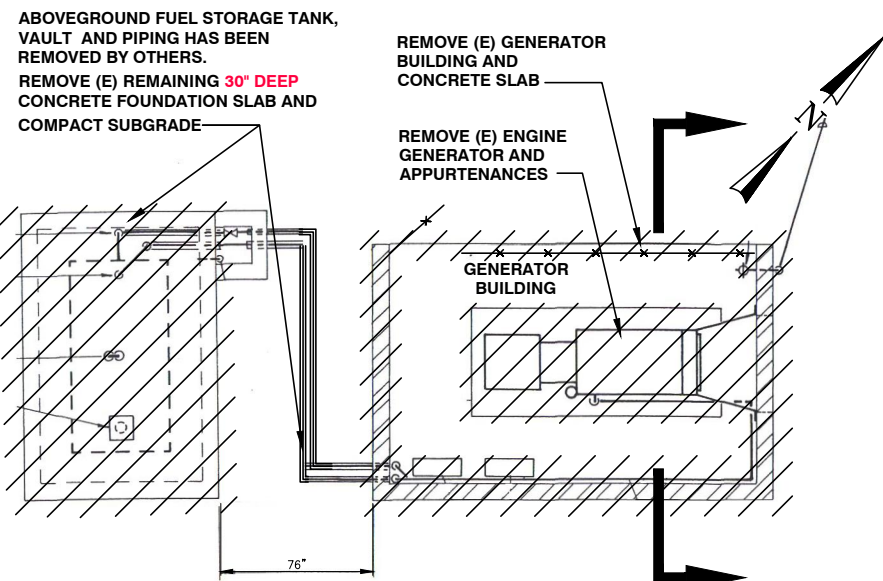
John Duckett Pump Station
 Location: Near 4238 Redwood Hwy, San Rafael



EXISTING SITE PLAN

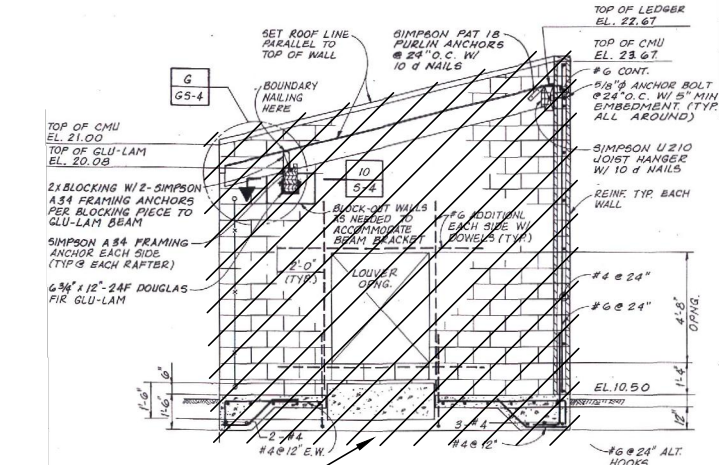
SCALE: 1" = 10'-0"

ACCESS NOTE:
 ACCESS TO THE DUCKETT PUMP STATION IS VIA A DRIVEWAY USED TO PARK MOVING VANS. COORDINATE ACCESS NEEDS WITH THE DISTRICT. CONTRACTOR SHALL NOT BLOCK ACCESS AND USE OF THE DRIVEWAY BY THE MOVING VAN COMPANY.



DEMOLITION PLAN

RFP - MISC PUMP STATION IMPROVEMENTS 2020



DEMOLITION SECTION

SCALE: 1/4" = 1'-0"

NOTES:

1. THE JOHN DUCKETT PUMP STATION IS AN OPERATING SEWAGE PUMP STATION. THE CONTRACTOR IS RESPONSIBLE FOR HIS ACTIONS OR HIS SUBCONTRACTOR'S ACTIONS THAT DISRUPT THE OPERATION OF THE PUMP STATION. THE DISTRICT SHALL BE NOTIFIED 48 HOURS PRIOR TO THE CONTRACTOR COMMENCING HIS OPERATIONS ON THE SITE. SEE SPECS SECTION 01010, 1.02.
2. THE DISTRICT WILL CONTINUE TO MAINTAIN AND SERVICE THE PUMP STATION DURING THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN WORKING AROUND PUMP STATION CONTROLS. THE CONTRACTOR SHALL NOT BLOCK THE DISTRICT'S ACCESS TO THE WET WELL OR VALVE PIT.
3. THE CONTRACTOR SHALL COORDINATE WITH DISTRICT PERSONNEL FOR ANY SHUT DOWN OF EXISTING PUMP STATION AND/OR UTILITIES. PUMP STATION SHUTDOWNS SHALL LAST NO LONGER THAN 30 MINUTES, AND CAN OCCUR NO MORE THAN 4 TIMES DURING THE CONSTRUCTION PERIOD. PUMP STATION SHUTDOWNS (e.g. SYSTEM OUTAGE REQUESTS, SOR'S) SHALL BE PRE-APPROVED AND SCHEDULED AND ARE AT THE DISTRICT'S SOLE DISCRETION. NO SHUTDOWN SHALL OCCUR DURING WET WEATHER EVENTS.
4. THE CONTRACTOR MAY TEMPORARILY RELOCATE THE EXISTING PORTABLE ENGINE GENERATOR ONLY A SUFFICIENT DISTANCE TO ACCESS THE CONDUIT TRENCH. CONTRACTOR SHALL COORDINATE ANY RELOCATION WITH THE DISTRICT. CONTRACTOR MUST MAINTAIN STANDBY ELECTRIC POWER TO THE PUMP STATION AT ALL TIMES.
5. THE CONTRACTOR SHALL REMOVE AND REPLACE TWO EXISTING DOORS AND CASINGS AS SHOWN ON SHEET 5. EACH EXISTING DOOR MAY NOT BE REMOVED UNTIL ITS REPLACEMENT DOOR IS ONSITE AND READY TO BE INSTALLED. IN THE EVENT THAT DEMOLITION AND SECURE, LOCKING INSTALLATION CANNOT OCCUR ON THE SAME DAY, THE CONTRACTOR SHALL PROVIDE CONTINUOUS SECURITY STAFF DURING THE HOURS THE STATION IS UNMANNED.
6. THE CONTRACTOR SHALL CAREFULLY REMOVE EQUIPMENT SELECTED BY THE DISTRICT FOR SALVAGE AND DELIVER THEM TO THE DISTRICT YARD.
7. ALL REMOVED EQUIPMENT AND DEMOLITION DEBRIS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OR RECYCLED AT A LEGAL DISPOSAL SITE.
8. THE CONTRACTOR SHALL CONFINE HIS ONSITE STORAGE TO THE AREA DESIGNATED BY THE DISTRICT.
12. THE PUMP STATION AND CONTROL ROOM SHALL BE SECURED TO PREVENT UNAUTHORIZED ACCESS AT ALL TIMES. AT THE END OF EACH WORK DAY, ALL OPENINGS SHALL BE SECURED WITH VANDAL PROOF COVERINGS USING 1" THICK PLYWOOD, MINIMUM.
13. THE CONTRACTOR SHALL PROVIDE EFFECTIVE TEMPORARY WEATHER PROTECTION FOR ANY PUMP STATION BUILDING MODIFICATIONS DURING CONSTRUCTION.
14. THE CONTRACTOR SHALL PROVIDE AN 8' TALL FREESTANDING TEMPORARY NOISE BARRIER ALONG THE FULL LENGTH OF THE NORTHERN FENCE LINE OF THE PUMP STATION AS INDICATED. THE BARRIER SHALL BE BY ENVIRONMENTAL NOISE CONTROL, (707) 252-9019 OR APPROVED EQUAL.

RECORD DRAWING NOVEMBER 2012

These record drawings (or corrected specifications) have been prepared, in part, on the basis of information compiled and furnished by others. The Engineer will not be responsible for any errors or omissions which may have been incorporated into this document as a result.

4
OF
18

LAS GALLINAS VALLEY SANITARY DISTRICT
 Marin County, California

STANDBY GENERATOR REPLACEMENT PROJECT

JOHN DUCKETT PUMP STATION

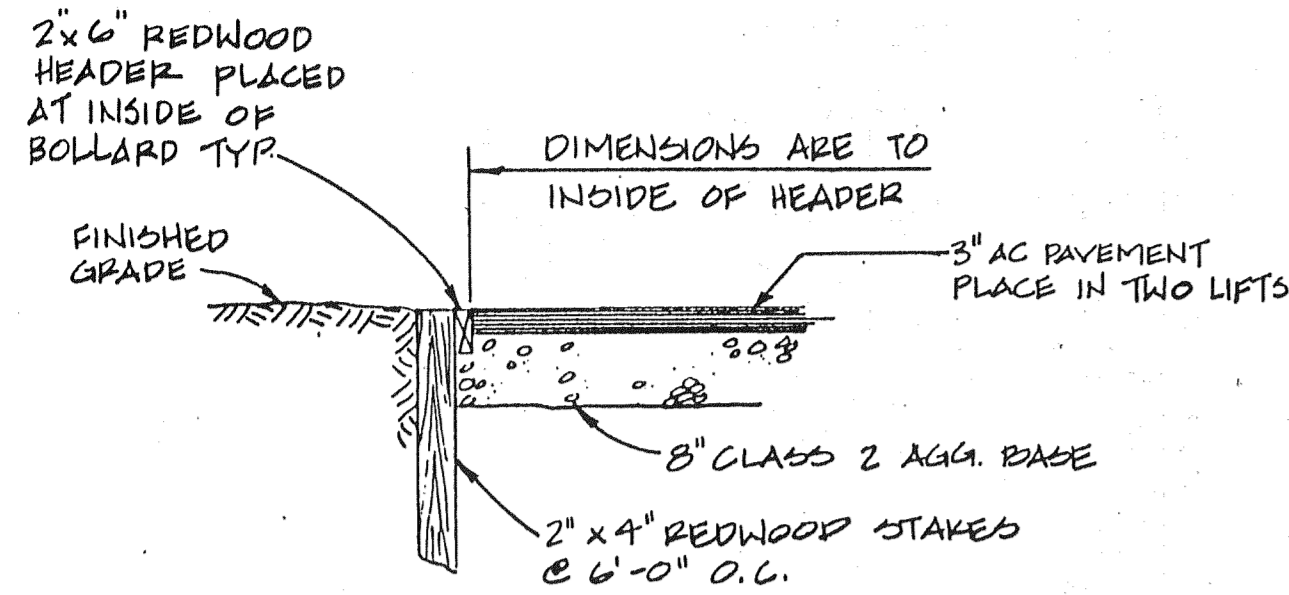
EXISTING SITE PLAN AND DEMOLITION REQUIREMENTS

NUTE ENGINEERING
 907 MISSION AVE SAN RAFAEL, CALIFORNIA TEL 415-453-4480

Drawn by: pm Job No.: 797 AS SHOWN
 Checked by: MTW Date: NOVEMBER 2011

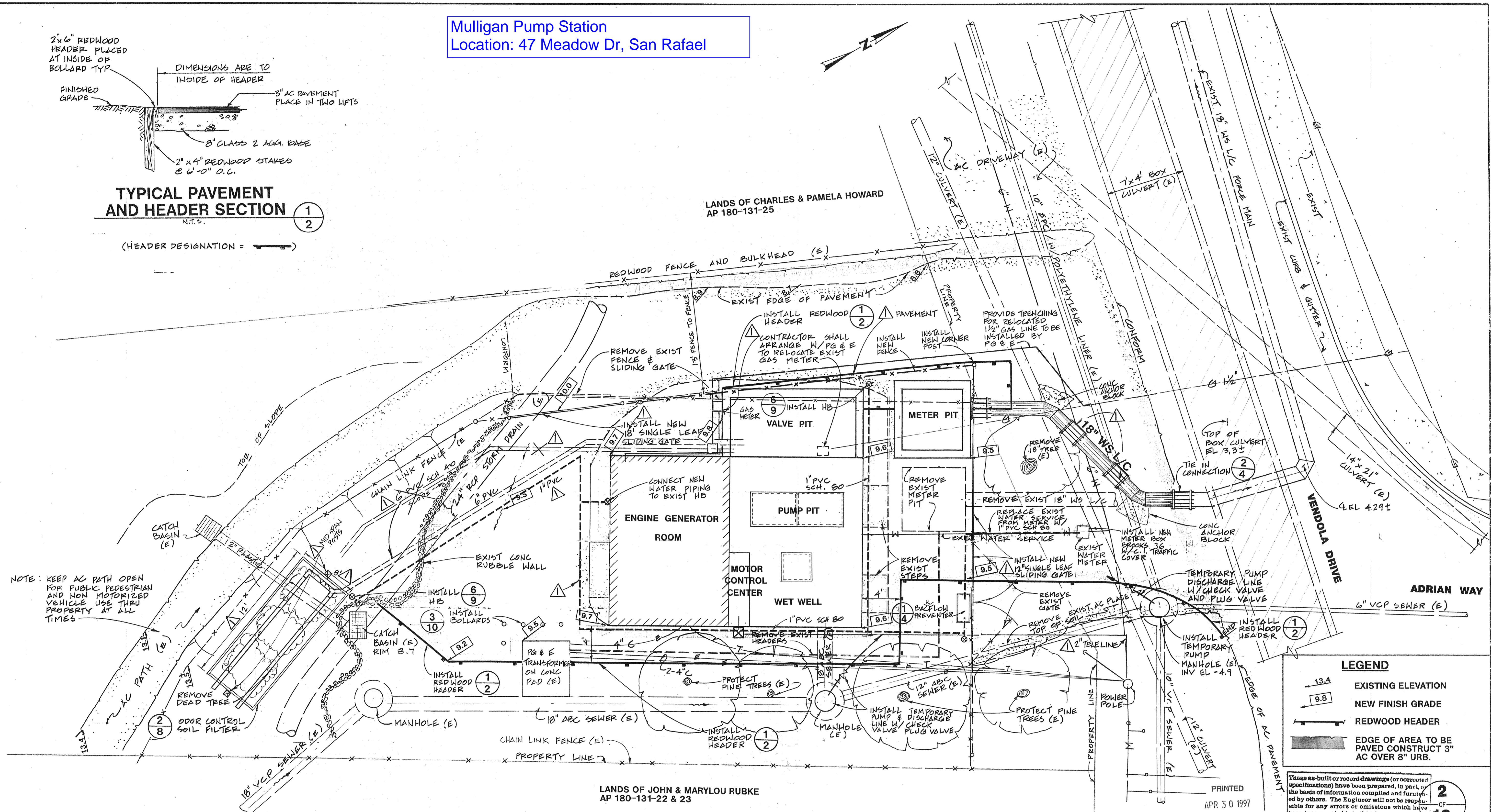
Printed: November 14, 2012, 3:04 PM
 L:\District\Las Gallinas\7970-Duckett and CCN Generator Replacements\7970-Duckett PS Eng-Gen.dwg Layout: 4 SITE PLAN Progress:up:

Mulligan Pump Station
Location: 47 Meadow Dr, San Rafael



TYPICAL PAVEMENT AND HEADER SECTION
N.T.S.

(HEADER DESIGNATION = )



NOTE: KEEP AC PATH OPEN FOR PUBLIC PEDESTRIAN AND NON-MOTORIZED VEHICLE USE THRU PROPERTY AT ALL TIMES

NOTES

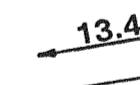
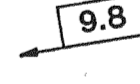


1. THE CONTRACTOR SHALL INSTALL AND MAINTAIN TEMPORARY FENCING AROUND THE WORK AREA. TEMPORARY FENCING SHALL BE INSTALLED TO SEPARATE THE WORK AREA FROM THE PEDESTRIAN PATH WHICH MUST BE KEPT OPEN AT ALL TIMES. CHILDREN USE THE PATH TO GO TO AND FROM SCHOOL.
2. THE CONTRACTOR SHALL HIRE A PROFESSIONAL ARBORIST TO ADVISE ON THE STEPS TAKEN TO PROTECT THE FOUR PINE TREES ALONG THE RUBKE PROPERTY. THE CONTRACTOR SHALL TAKE THE MEASURES RECOMMENDED BY THE ARBORIST.
3. THE MULLIGAN PUMP STATION IS IN THE COUNTY OF MARIN JURISDICTION.
4. THE CONTRACTOR SHALL SAVE AS MUCH OF THE EXISTING LANDSCAPING AS POSSIBLE.
5. RELOCATE AND REINSTALL ABOVEGROUND LANDSCAPE IRRIGATION LINES AS NECESSARY FOR THE WORK.

SITE PLAN
SCALE: 1" = 5'-0"

TEMPORARY PUMPING NOTES (SEE SPECS)

1. THE DISTRICT WILL OPERATE THE EXISTING PUMP STATION UNTIL THE CONTRACTOR IS READY TO TAKE IT OUT OF OPERATION. WHILE EXISTING PUMP STATION IS IN OPERATION, CONTRACTOR SHALL ALLOW DISTRICT VEHICLE ACCESS FOR MAINTENANCE AND SHALL MAINTAIN ELECTRIC AND GAS SERVICE.
2. IN ORDER TO TAKE THE EXISTING PUMP STATION OUT OF OPERATION OR SEVER ANY UTILITY LINES, THE CONTRACTOR SHALL INSTALL TEMPORARY PUMPS IN TWO EXISTING MANHOLES TO SERVE SEWERS ENTERING THE PUMP STATION SITE AND CONNECT THE PUMP DISCHARGES TO THE EXISTING FORCE MAIN AT THE EXISTING METER PIT. A HIGH WATER ALARM SHALL BE INSTALLED IN ONE OF THE MANHOLES AND CONNECTED TO THE EXISTING ALARM CIRCUIT TO THE DISTRICT TREATMENT PLANT.
3. DURING TIE-INS, WHEN PUMPS ARE OUT OF OPERATION OR WHEN EXISTING FORCE MAIN IS CUT, THE CONTRACTOR SHALL PROVIDE TANK TRUCKS TO PUMP OUT SEWAGE AND CONTAIN ANY SPILLS. (SEE SPECS)
4. DISCHARGE OF RAW SEWAGE TO WATER COURSES IS STRICTLY PROHIBITED.

LEGEND

	13.4	EXISTING ELEVATION
	9.8	NEW FINISH GRADE
		REDWOOD HEADER
		EDGE OF AREA TO BE PAVED CONSTRUCT 3" AC OVER 8" URB.

PRINTED APR 30 1997
NUTE ENGINEERING


AS BUILT 4-15-97

LAS GALLINAS VALLEY SANITARY DISTRICT
Marin County, California

MULLIGAN PUMP STATION IMPROVEMENTS

SITE PLAN

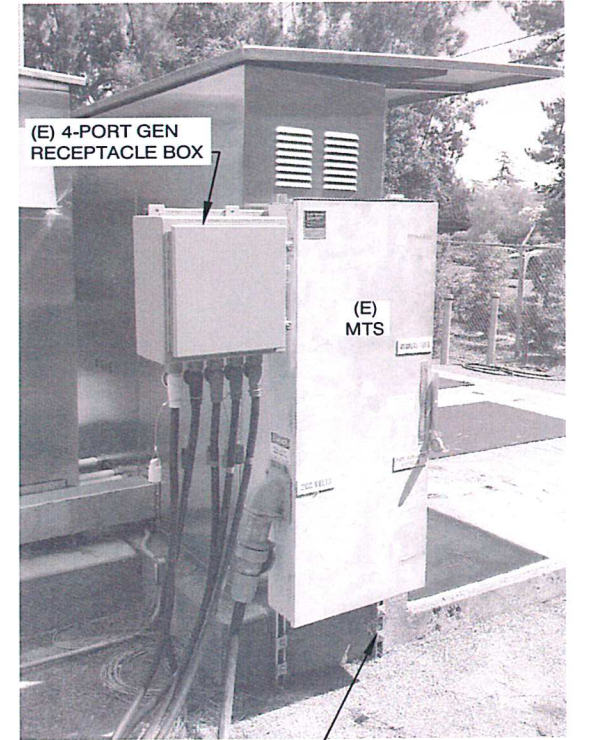
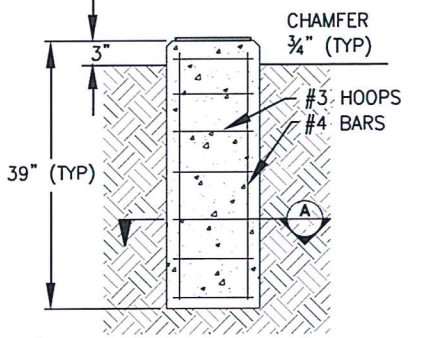
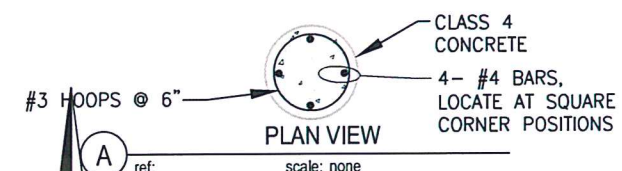
NUTE ENGINEERING
SAN RAFAEL, CALIFORNIA

Drawn by: 	Job No.: 6063	Scale: AS SHOWN
Checked by: WEN	6063-PS	Date: JUNE 1995

Descanso Pump Station
Location: 807 Descanso Way, San Rafael

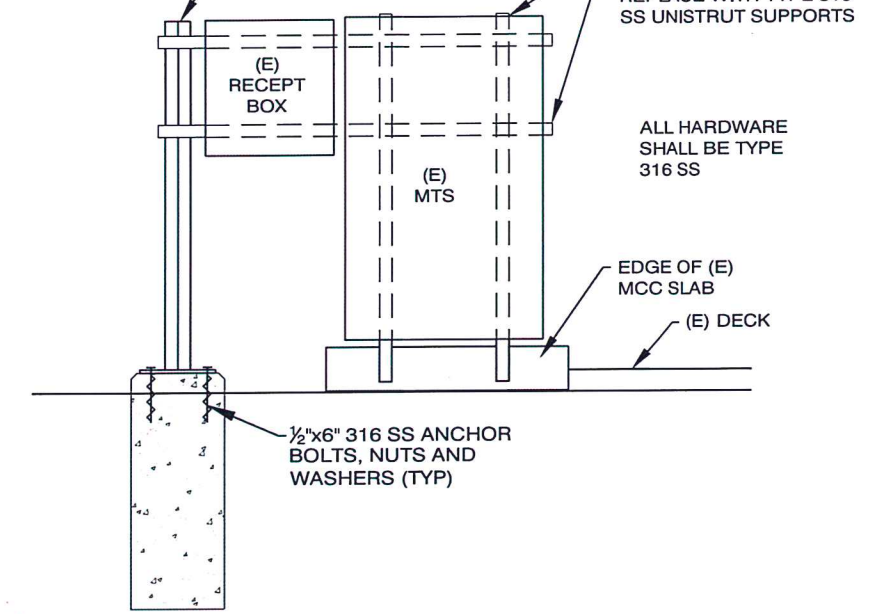
PUEBLO PARK
(MARIN COUNTY
PARKS DEPT.)

PEDESTRIAN
WALKWAY



2 ref: scale: none
CONC FOOTING

INSTALL (N) TYPE 316
SS BACK TO BACK
UNISTRUT SUPPORT
W/ CONC FOOTING



1 ref: scale: none
MTS AND PORTABLE GEN BOX SUPPORTS

CONFORMED

JOB NO. 14300-06

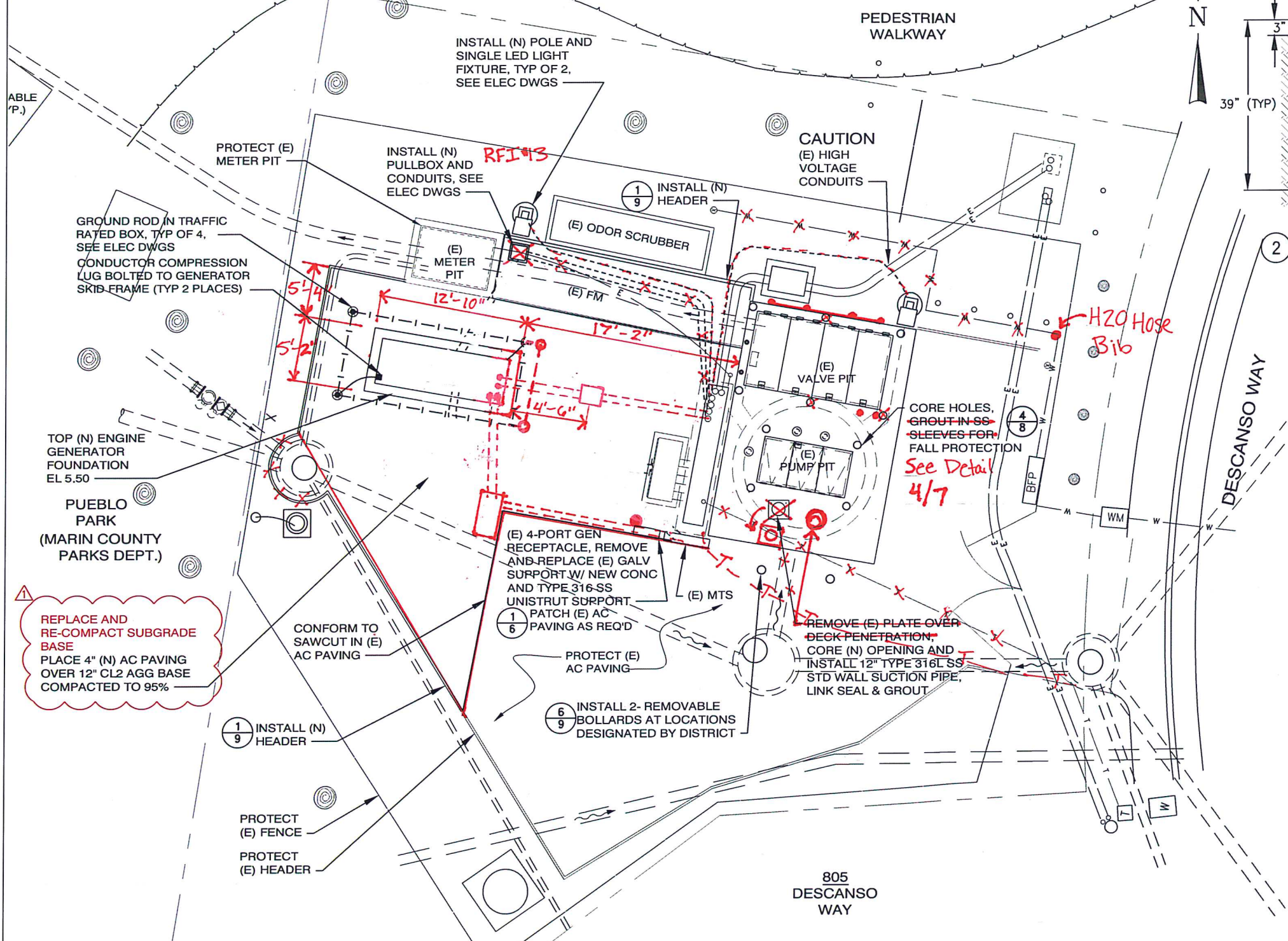
LAS GALLINAS VALLEY SANITARY DISTRICT
MARIN COUNTY, CALIFORNIA

DESCANSO PUMP STATION
GENERATOR INSTALLATION - RELIABILITY UPGRADES

CONSTRUCTION SITE

CHECKED M. CORTEZ	DRAWN P. MILLS	SCALE SHOWN
APPROVED M. WILLIAMS	DESIGNED MARK T. WILSON	DATE 1/27/17
GENERAL MANAGER MARK R. WILLIAMS		DISTRICT ENGINEER MICHAEL P. CORTEZ

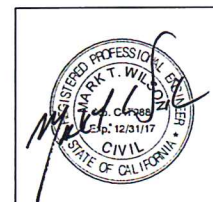
SHEET 6 of 14	PLAN NO. ----	REVISIONS	REVISION NO. 1
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SITE PLAN
SCALE: 1" = 5'-0"

GENERATOR LAYOUT NOTE:

1. THE DISTRICT MAY REQUEST THE NEW GENERATOR AND FOUNDATION SLAB TO BE ROTATED 90° (NINETY DEGREES) FROM THE POSITION SHOWN ON THE PLANS, AT NO ADDITIONAL COST.
2. THE CONTRACTOR SHALL INCLUDE FILLING THE TANK AND ALL REQUIRED FUEL TO COMPLETE START-UP AND TESTING.

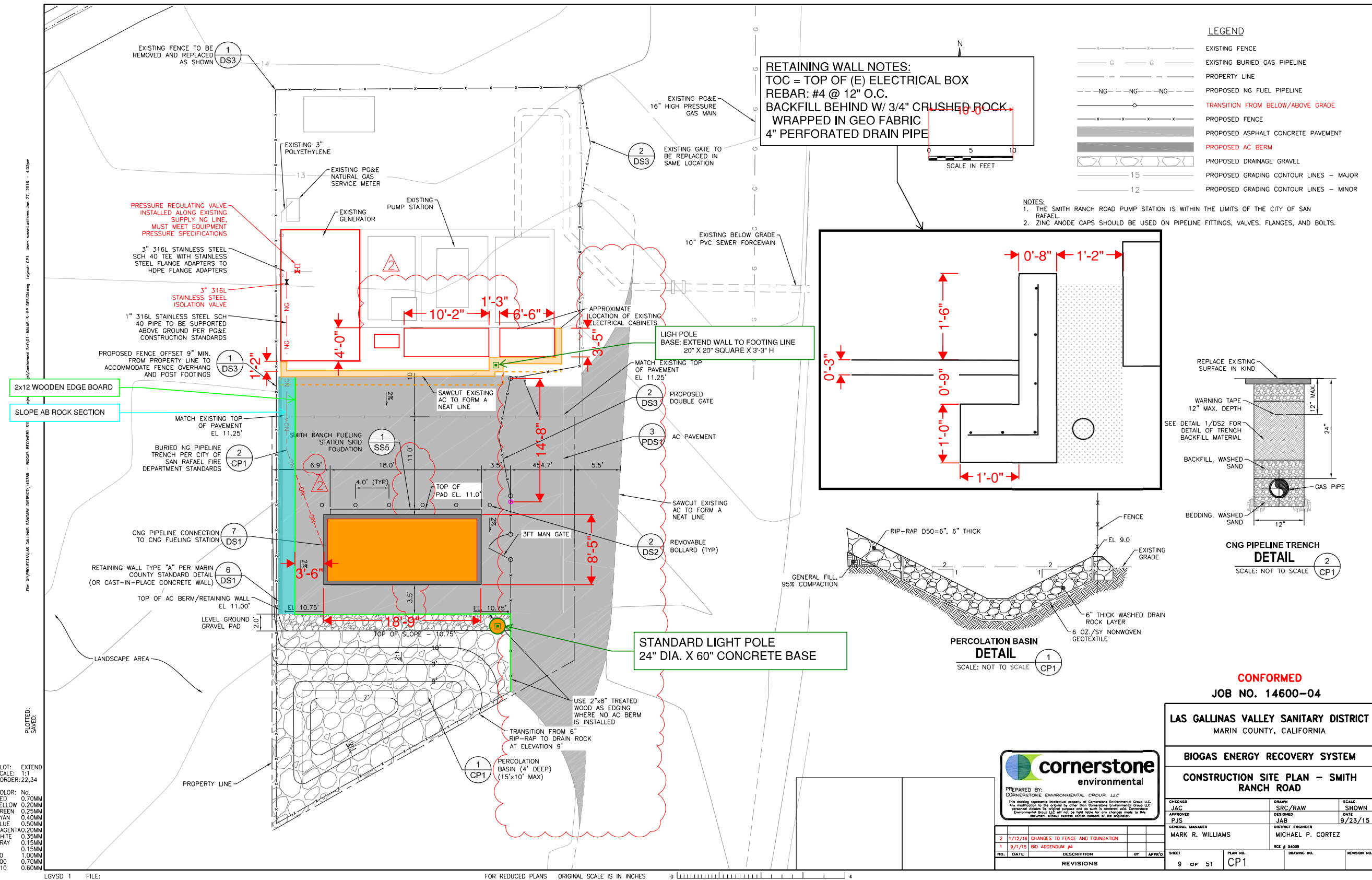


NUTE ENGINEERING
907 MISSION AVE SAN RAFAEL, CALIFORNIA
TEL 415.453.4480 FAX 415.453.0343

NO.	DATE	DESCRIPTION	BY	APPROV
1	1/20/17	ADDENDUM 1		MPC

R:\PROJECTS\14000 Projects\14300-06 Descanso PS Gen Installation & Reliability Upgrades\3 - Construction\PS V7 PLANS-SECTION-DETAILS - CONFORMED.dwg Layout: Construction
 PLOTTED: 1/27/2017 11:41 AM
 SAVED: January 27, 2017
 PLOT: EXTEND
 SCALE: 1:1
 BORDER:
 22,34
 COLOR: No.
 RED 0.70MM
 YELLOW 0.20MM
 GREEN 0.25MM
 CYAN 0.40MM
 BLUE 0.50MM
 MAGENTA 0.20MM
 WHITE 0.35MM
 GRAY 0.15MM
 9 0.15MM
 10 1.00MM
 100 0.70MM
 210 0.60MM

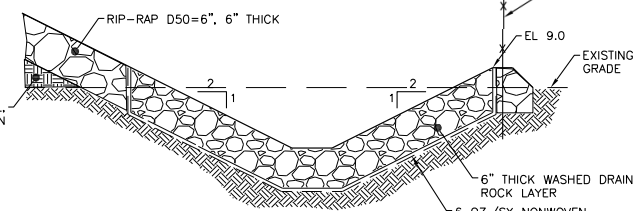
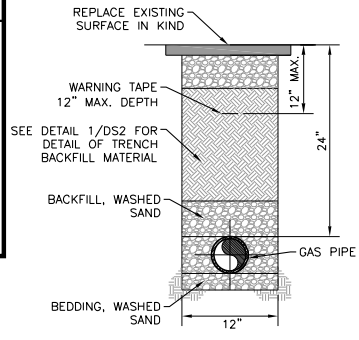
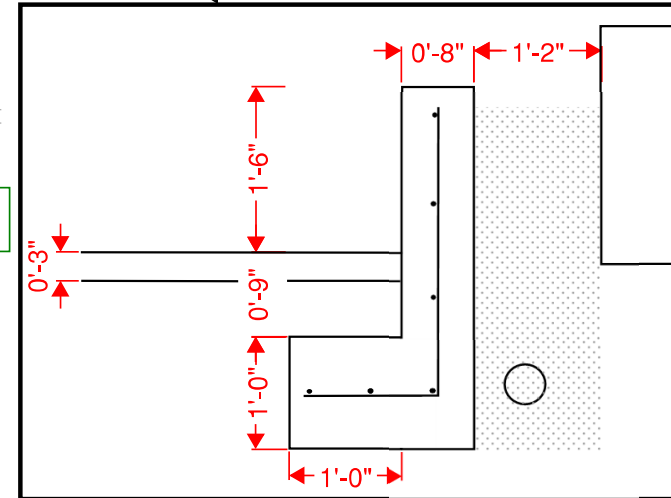
Smith Ranch Pump Station
Location: Silveira Parkway cross Smith Ranch Rd, San Rafael



RETAINING WALL NOTES:
 TOC = TOP OF (E) ELECTRICAL BOX
 REBAR: #4 @ 12" O.C.
 BACKFILL BEHIND W/ 3/4" CRUSHED ROCK
 WRAPPED IN GEO FABRIC
 4" PERFORATED DRAIN PIPE

- LEGEND**
- - - - - EXISTING FENCE
 - G - G - EXISTING BURIED GAS PIPELINE
 - - - - - PROPERTY LINE
 - - - - - PROPOSED NG FUEL PIPELINE
 - - - - - PROPOSED FENCE
 - - - - - TRANSITION FROM BELOW/ABOVE GRADE
 - - - - - PROPOSED ASPHALT CONCRETE PAVEMENT
 - - - - - PROPOSED AC BERM
 - - - - - PROPOSED DRAINAGE GRAVEL
 - - - - - PROPOSED GRADING CONTOUR LINES - MAJOR
 - - - - - PROPOSED GRADING CONTOUR LINES - MINOR

NOTES:
 1. THE SMITH RANCH ROAD PUMP STATION IS WITHIN THE LIMITS OF THE CITY OF SAN RAFAEL.
 2. ZINC ANODE CAPS SHOULD BE USED ON PIPELINE FITTINGS, VALVES, FLANGES, AND BOLTS.



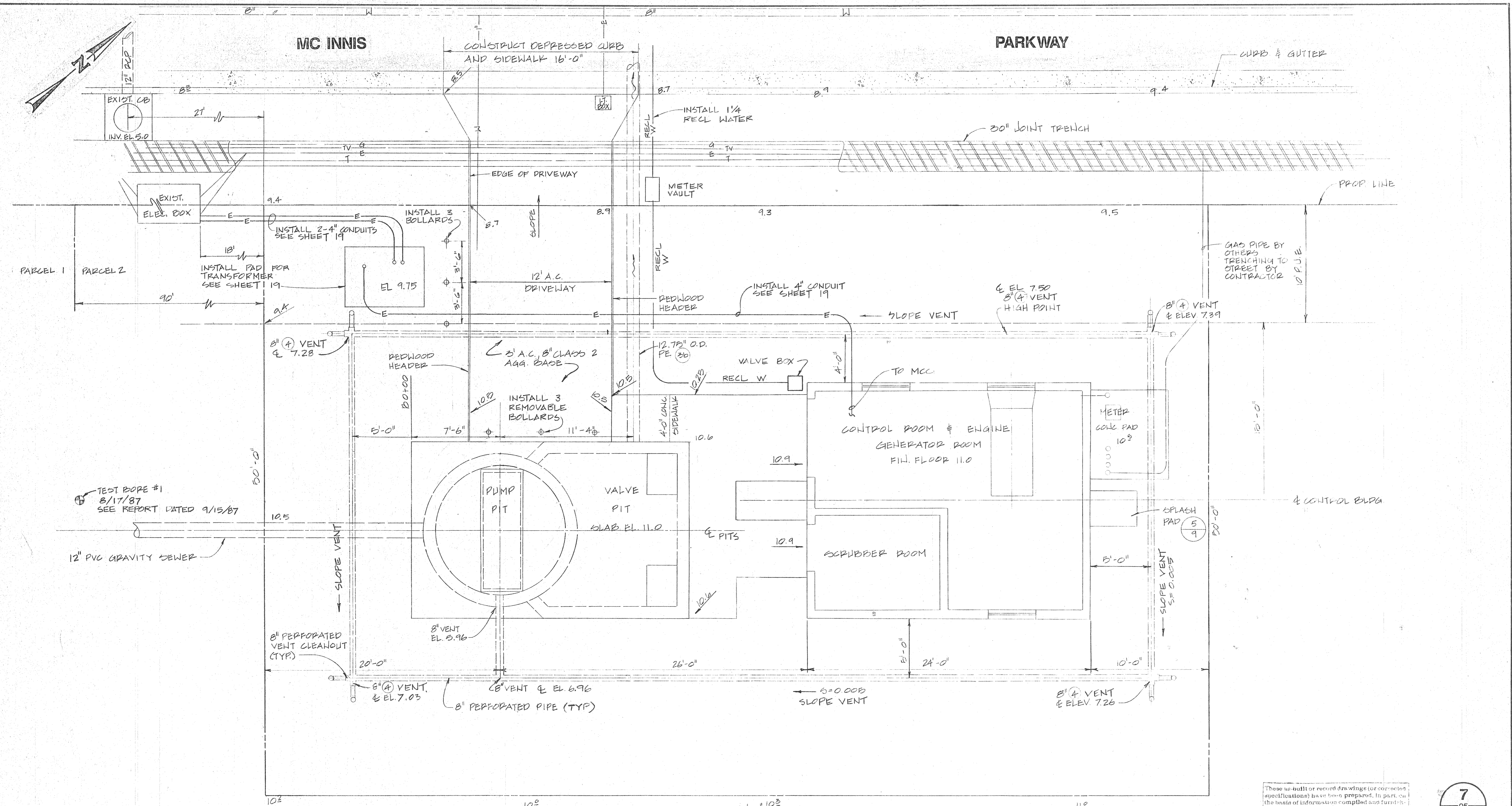
CONFORMED
JOB NO. 14600-04

LAS GALLINAS VALLEY SANITARY DISTRICT MARIN COUNTY, CALIFORNIA		
BIOGAS ENERGY RECOVERY SYSTEM		
CONSTRUCTION SITE PLAN - SMITH RANCH ROAD		
CHECKED JAC	DRAWN SRC/RAW	SCALE SHOWN
APPROVED PJS	DESIGNED JAB	DATE 9/23/15
GENERAL MANAGER MARK R. WILLIAMS		DISTRICT ENGINEER MICHAEL P. CORTEZ
NO. DATE DESCRIPTION BY APP'D		SHEET PLAN NO. DRAWING NO. REVISION NO.
2 1/12/16 CHANGES TO FENCE AND FOUNDATION		9 OF 51 CP1
1 9/1/15 BID ADDENDUM #4		



PREPARED BY:
 CORNERSTONE ENVIRONMENTAL GROUP, LLC
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- PLOT:** EXTEND
SCALE: 1"=1'
BORDER: 22,34
- COLOR:** No. 0.70MM
 RED 0.20MM
 YELLOW 0.20MM
 GREEN 0.25MM
 CYAN 0.40MM
 BLUE 0.50MM
 MAGENTA 0.20MM
 WHITE 0.35MM
 GRAY 0.15MM
 9 0.15MM
 10 1.00MM
 100 0.70MM
 210 0.60MM



These as-built or record drawings (or correction specifications) have been prepared, in part, on the basis of information compiled and furnished by others. The Engineer will not be responsible for any errors or omissions which have been incorporated into this document as a result.

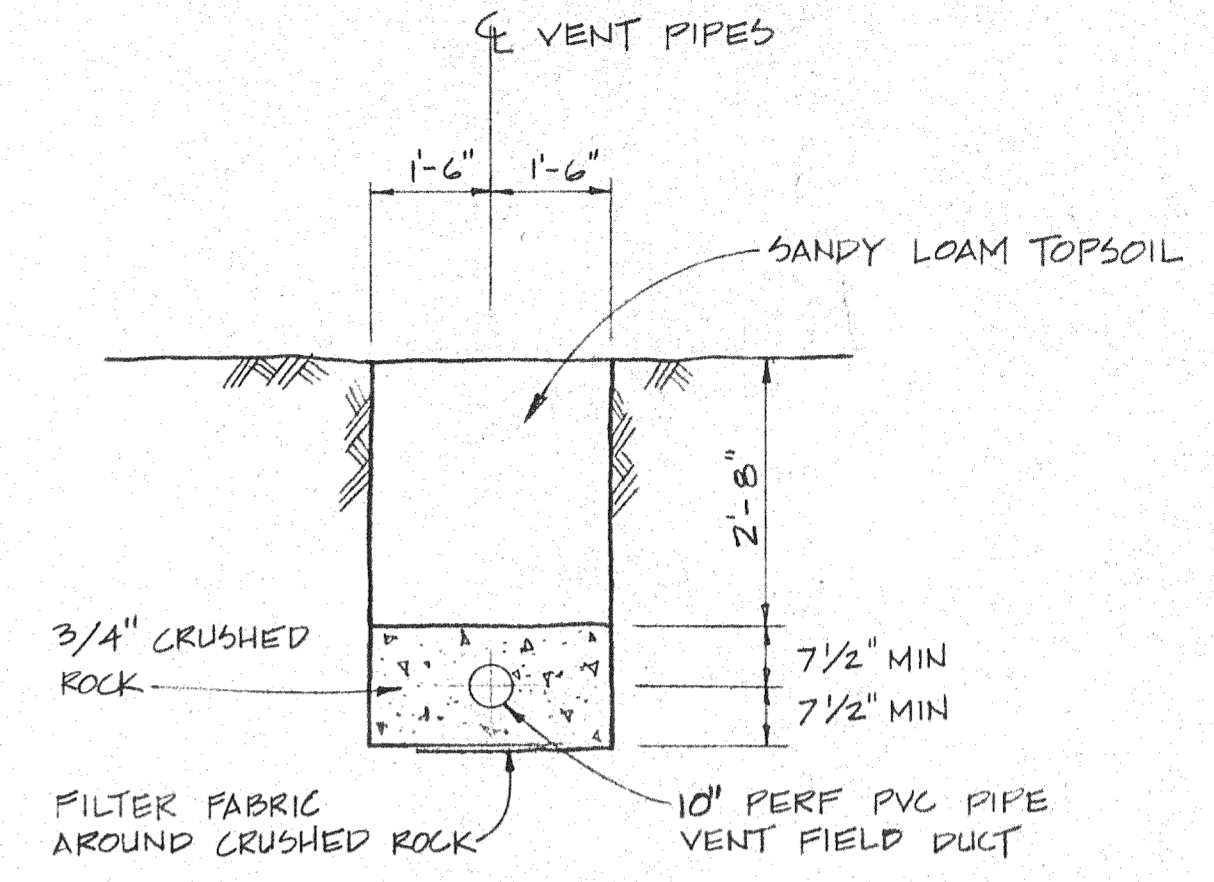
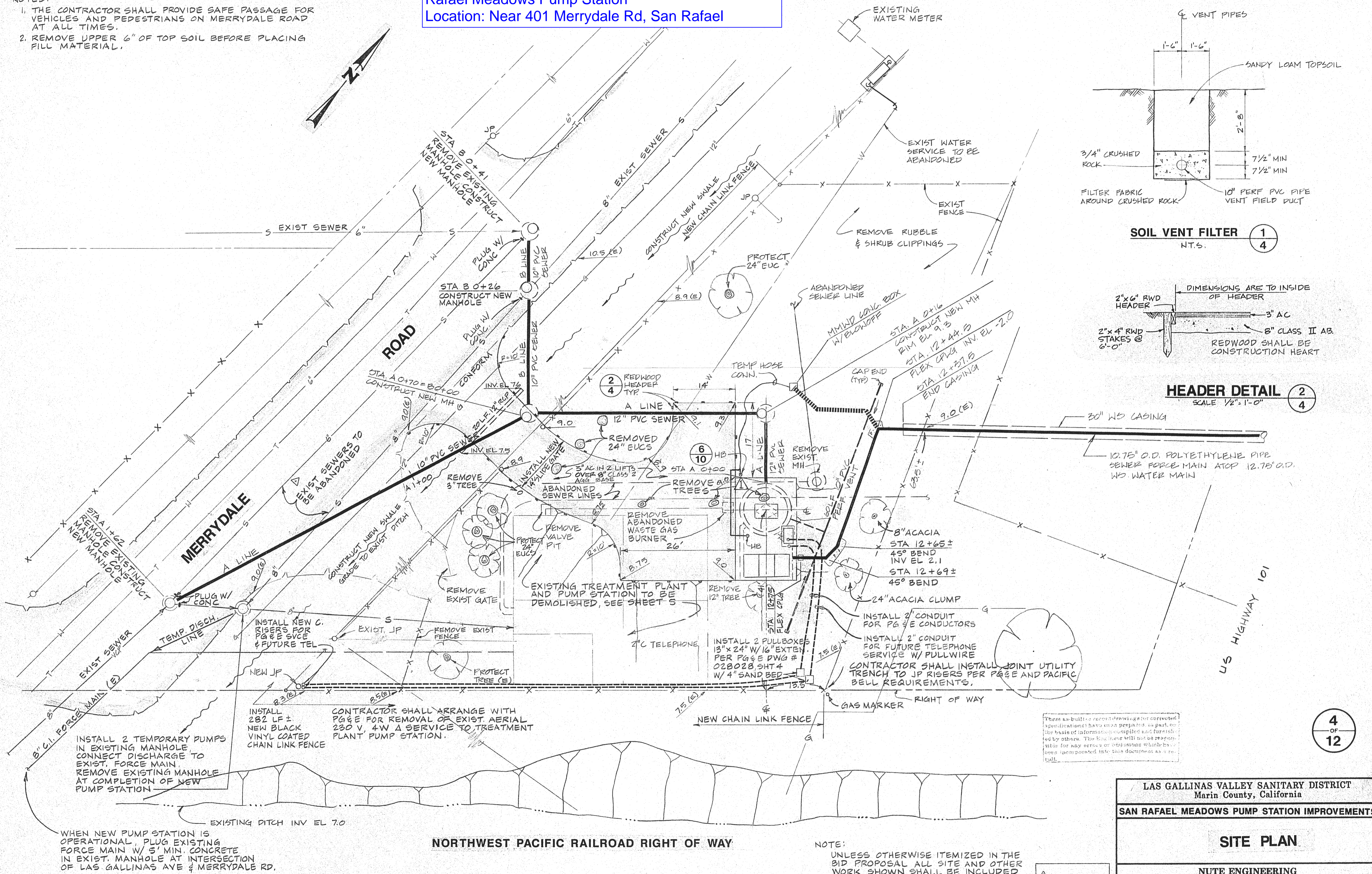
7
OF
21

Civic Center North Pump Station
Location: Near 111 McInnis Parkway, San Rafael

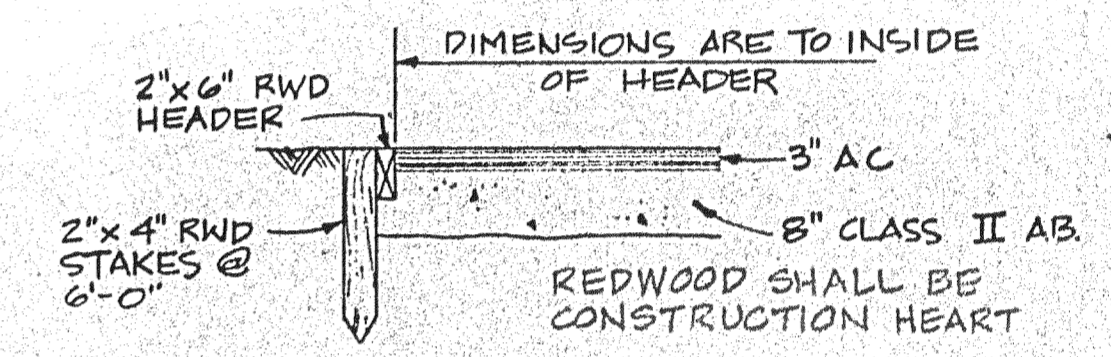
CITY OF SAN RAFAEL, CALIFORNIA Civic Center North Assessment District	
CIVIC CENTER NORTH PUMPING FACILITIES	
PUMP STATION	
SITE PLAN	
NUTE ENGINEERING SAN RAFAEL, CALIFORNIA	
Drawn by: AJM	Scale: 1/4" = 1'-0"
Des/Chkd by: WJEN	Date: APRIL 1993

- NOTES:
1. THE CONTRACTOR SHALL PROVIDE SAFE PASSAGE FOR VEHICLES AND PEDESTRIANS ON MERRYDALE ROAD AT ALL TIMES.
 2. REMOVE UPPER 6" OF TOP SOIL BEFORE PLACING FILL MATERIAL.

Rafael Meadows Pump Station
 Location: Near 401 Merrydale Rd, San Rafael



SOIL VENT FILTER 1
 N.T.S. 4



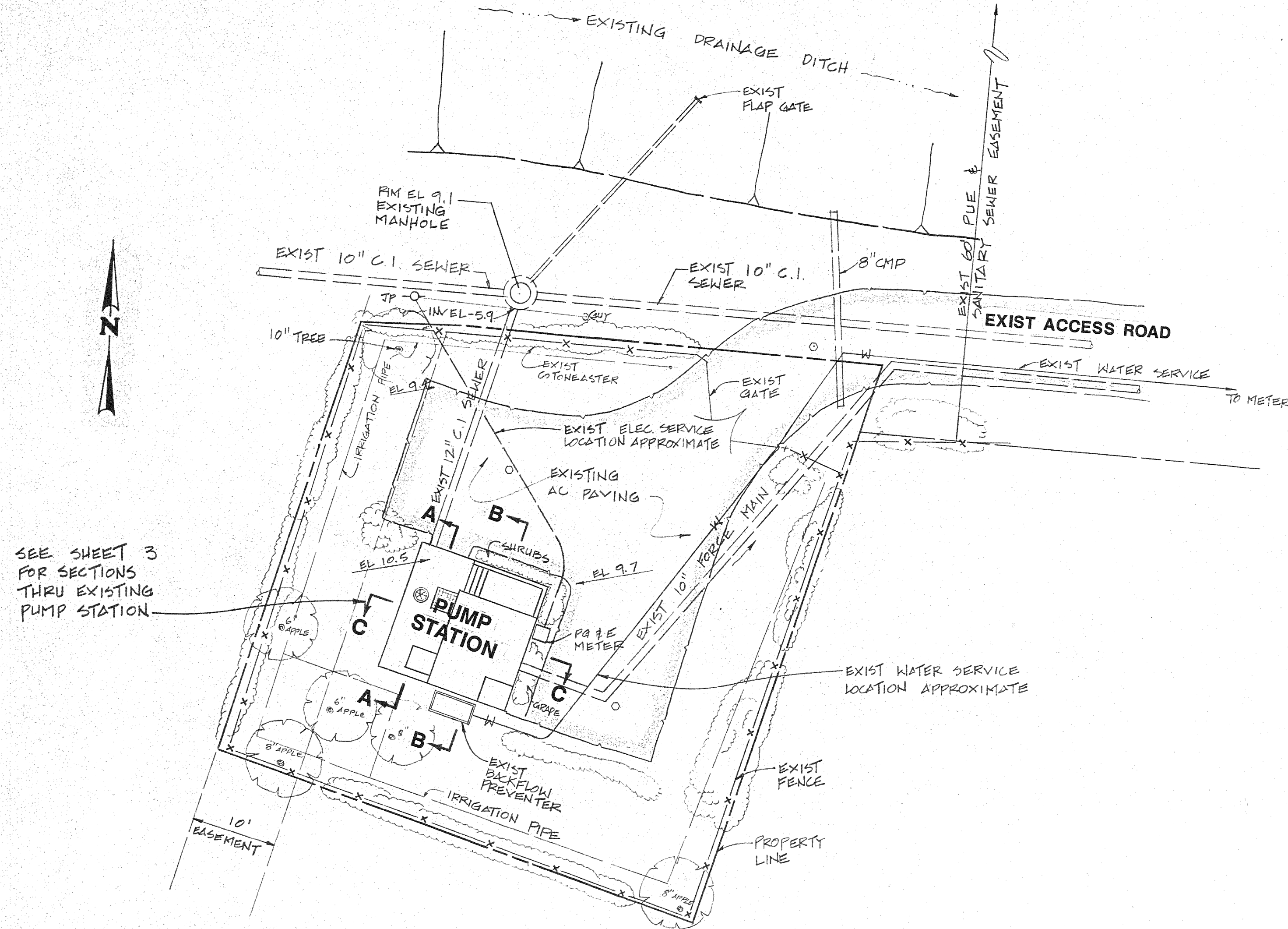
HEADER DETAIL 2
 SCALE 1/2\"/>

4
 OF
 12

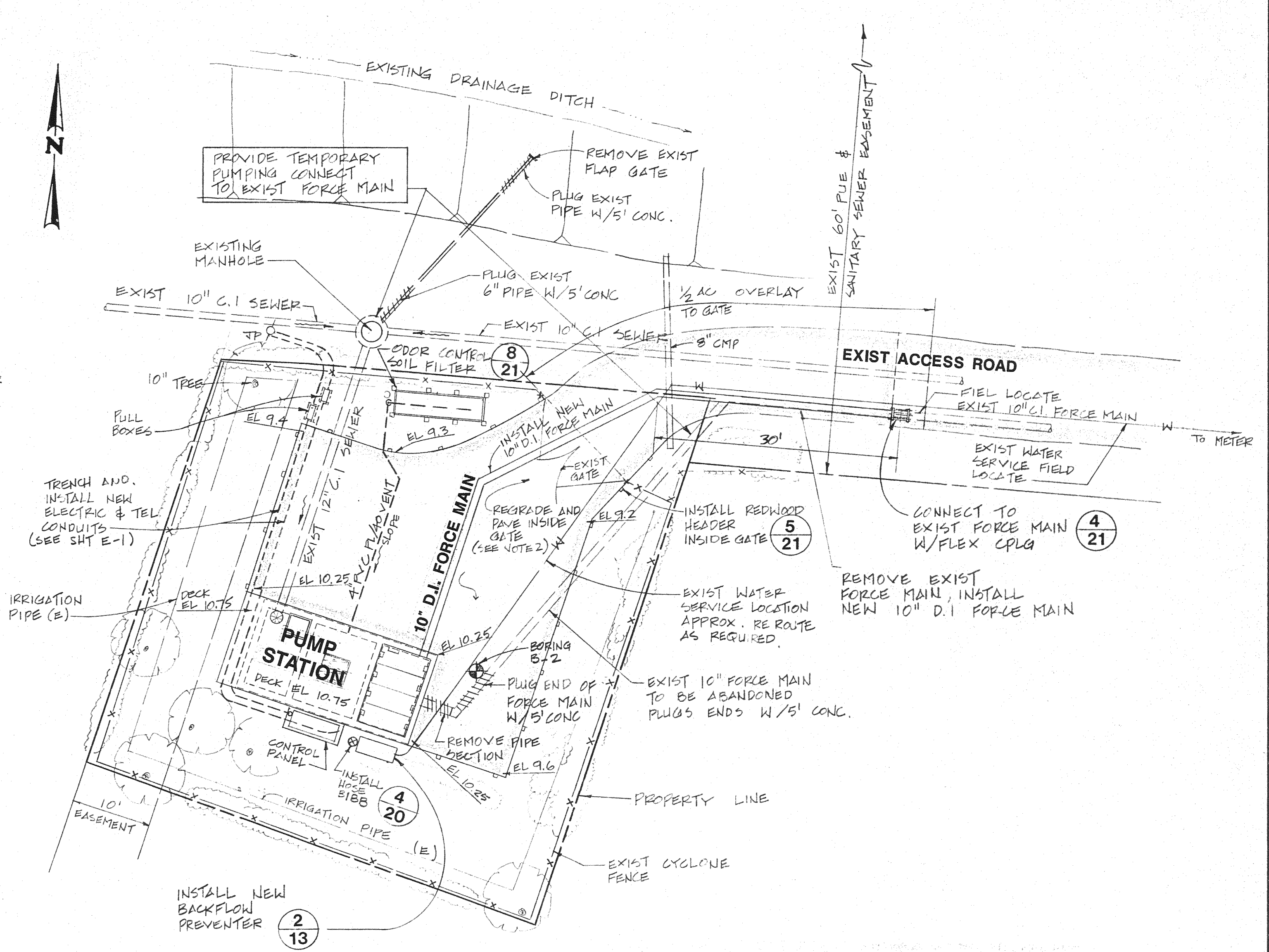
These as-built records drawings or corrected specifications have been prepared, in part, on the basis of information compiled and furnished by others. The Engineer will not be responsible for any errors or omissions which have been incorporated into this document as a result.

AS-BUILT
 3-28-90

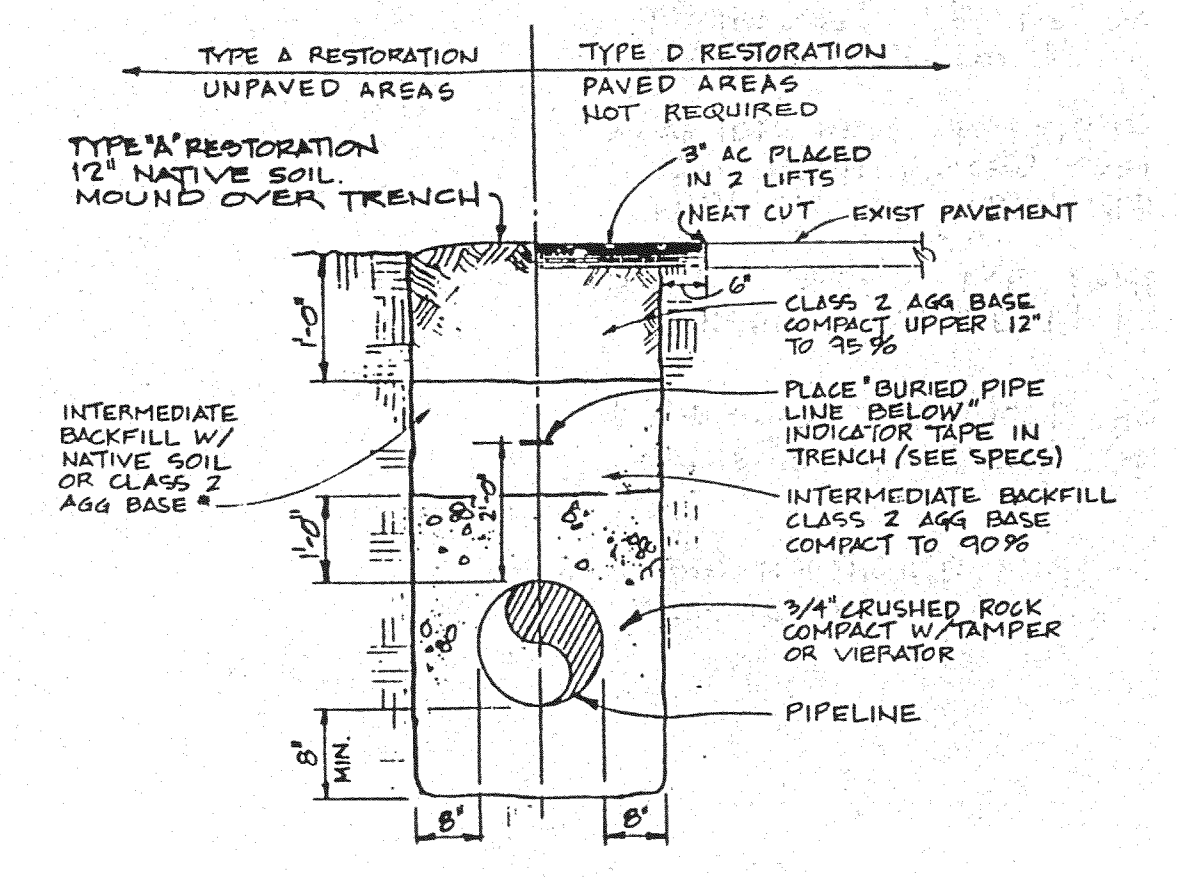
LAS GALLINAS VALLEY SANITARY DISTRICT Marin County, California	
SAN RAFAEL MEADOWS PUMP STATION IMPROVEMENTS	
SITE PLAN	
NUTE ENGINEERING SAN RAFAEL, CALIFORNIA	
Drawn by: PM, LE	Scale: 1"=10'
Des/Chkd by: WEN	Date: APRIL 1989



EXISTING CONDITION SITE PLAN
 SCALE: 1" = 10'



SITE PLAN
 SCALE: 1" = 10'



TRENCH DETAIL
 N.T.S.

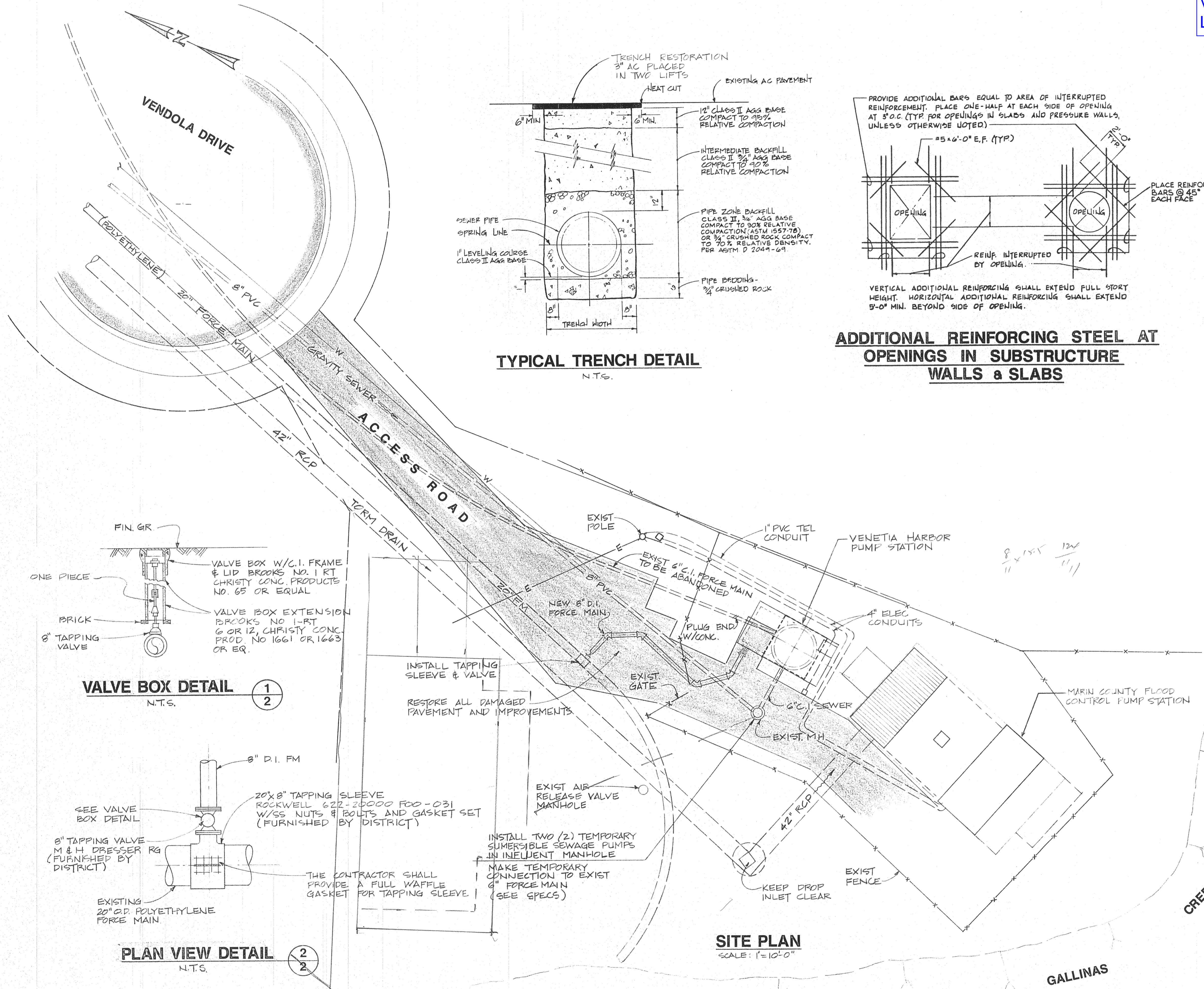
TEMPORARY PUMPING NOTES (SEE SPECS)

1. THE CONTRACTOR SHALL INSTALL TEMPORARY PUMPS IN EXISTING MANHOLE AND CONNECT TO EXISTING FORCE MAIN WHILE PUMP STATION IS OUT OF SERVICE.
2. DURING TIE-INS, WHEN PUMPING IS NOT IN OPERATION OR WHEN EXISTING FORCE MAIN IS CUT, THE CONTRACTOR SHALL PROVIDE TANK TRUCKS TO PUMP OUT SEWAGE AND CONTAIN ANY SPILLS. (SEE SPECS)
3. DISCHARGE OF RAW SEWAGE TO WATER COURSES IS STRICTLY PROHIBITED.

NOTES

1. THE NORTHGATE PUMP STATION IS WITHIN THE CITY OF SAN RAFAEL.
2. INSIDE EXISTING GATE, REMOVE EXISTING AC, SCARIFY, REGRADE AREA TO BE PAVED, INSTALL NEW REDWOOD HEADER AND PLACE 3" AC IN TWO (2) LIFTS OVER 8" CLASS 2 AGGREGATE BASE COMPACTED TO 95%.
3. THE CONTRACTOR SHALL SAVE AS MUCH OF THE EXISTING LANDSCAPING AS POSSIBLE.

LAS GALLINAS VALLEY SANITARY DISTRICT Marin County, California		
PUMP STATION IMPROVEMENTS		
NORTHGATE PUMP STATION SITE PLANS AND DETAILS		
NUTE ENGINEERING SAN RAFAEL, CALIFORNIA		
Drawn by: [Signature]	Job No.: 5786	Scale: AS SHOWN
Checked by: WEN	5786PS-1\	Date: JUNE 1992



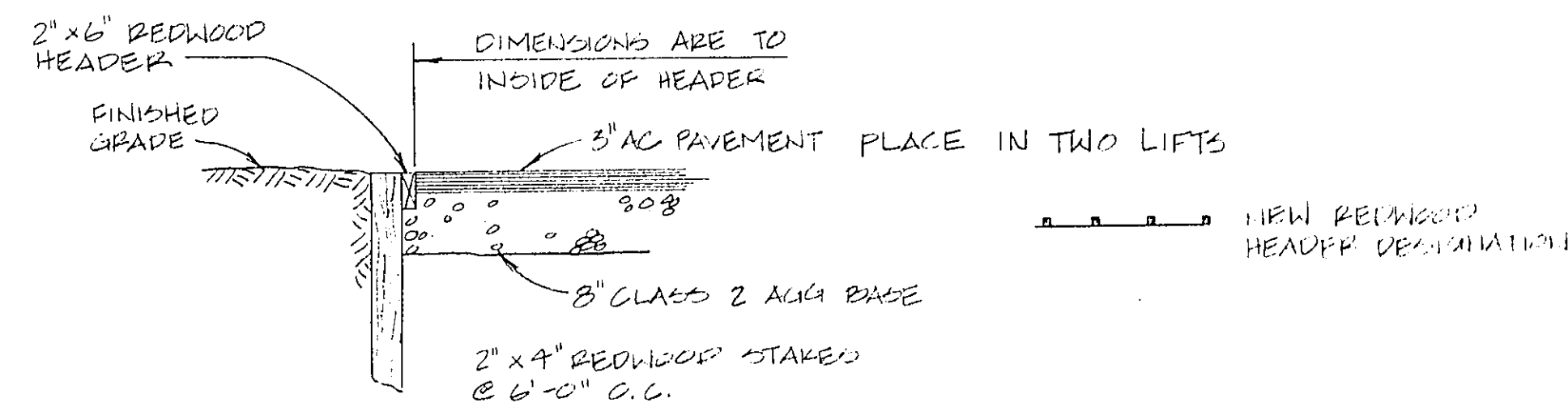
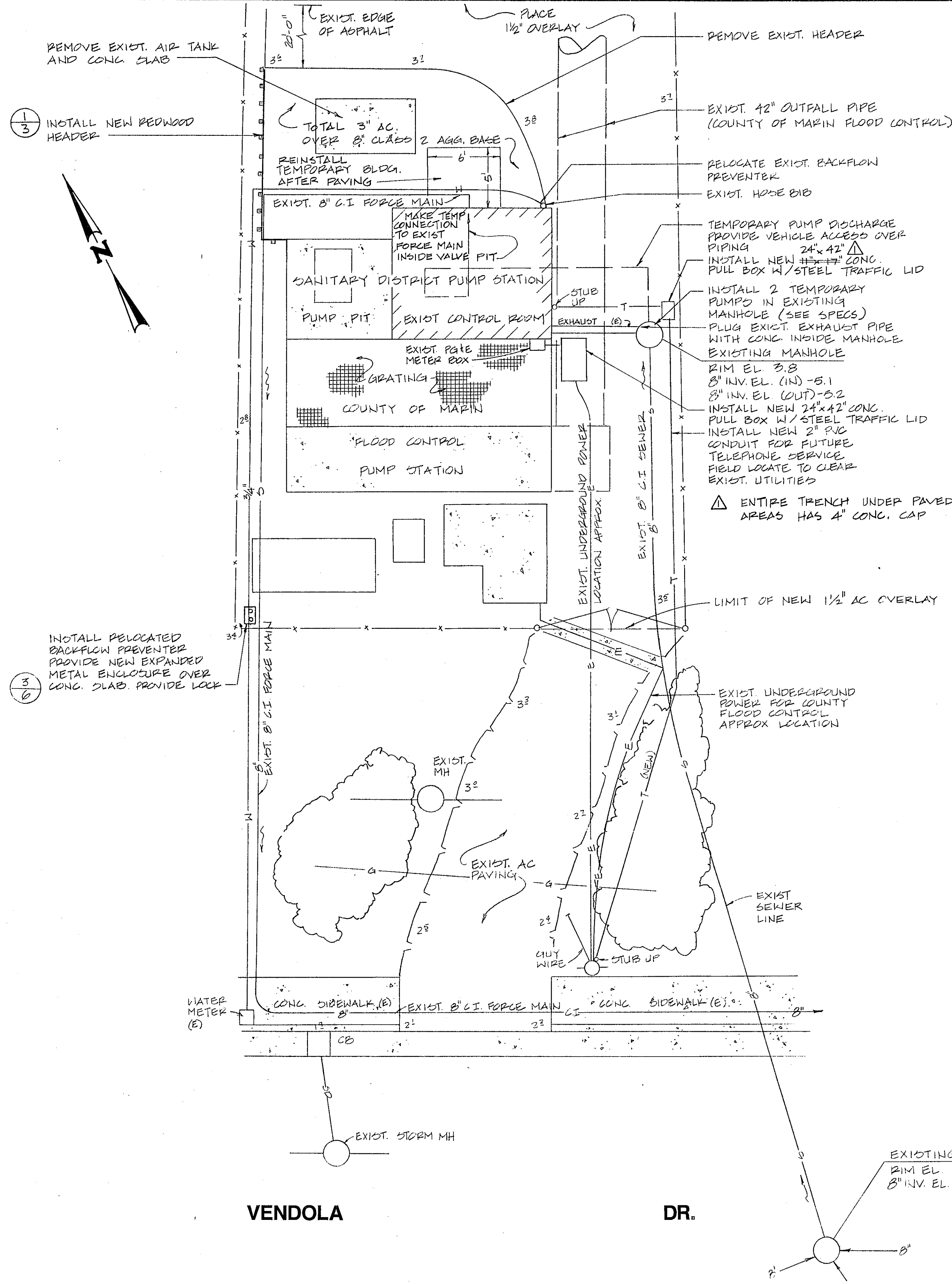
NOTES

1. THE CONTRACTOR SHALL PROVIDE TEMPORARY PUMPING AROUND PUMP STATION DURING CONSTRUCTION AND SHALL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF ALL TEMPORARY PUMPING FACILITIES.
2. A 2" X 12" REDWOOD PLANK IS PLACED OVER THE EXISTING 20" O.D. POLYETHYLENE FM. THE CONTRACTOR SHALL RESTORE THE PLANKING AFTER INSTALLING THE TAPPING SLEEVE.
3. ALL BOLTS AND NUTS INSTALLED BELOW GRADE AND IN THE WET WELL SHALL BE TYPE 316 STAINLESS STEEL. ALL METAL PIPING AND ACCESSORIES INSTALLED BELOW GRADE SHALL BE PROTECTED FROM CORROSION BY APPLYING 2 COATS OF TAPECOAT P.E. TAPE, 35 MIL MINIMUM. THE CONTRACTOR SHALL PROVIDE ACCESS FOR MAINTENANCE VEHICLES TO THE COUNTY FLOOD CONTROL DRAINAGE PUMP STATION AT ALL TIMES.
4. SLEEVE SHALL SUIT EXISTING CRANE. CONTRACTOR SHALL FIELD MEASURE CRANE'S MAST AT DISTRICT'S TREATMENT PLANT TO DETERMINE REQUIRED SLEEVE DIMENSIONS.
5. CONTRACTOR MAY USE AREA OUTSIDE FENCE FOR STORAGE AS LONG AS IT IS TEMPORARILY FENCED.
6. THE CONTRACTOR SHALL POTHOLE ALL UTILITIES PRIOR TO ANY EXCAVATION OR TRENCHING.

JAN 14 1988

NUTE ENGINEERING

LAS GALLINAS VALLEY SANITARY DISTRICT Marin County, California	
VENETIA HARBOR PUMPING STATION IMPROVEMENTS	
SITE PLAN	
NUTE ENGINEERING SAN RAFAEL, CALIFORNIA	
Drawn by: LE	Scale: AS SHOWN
Des/Chkd by: WEN	Date: JANUARY 1988



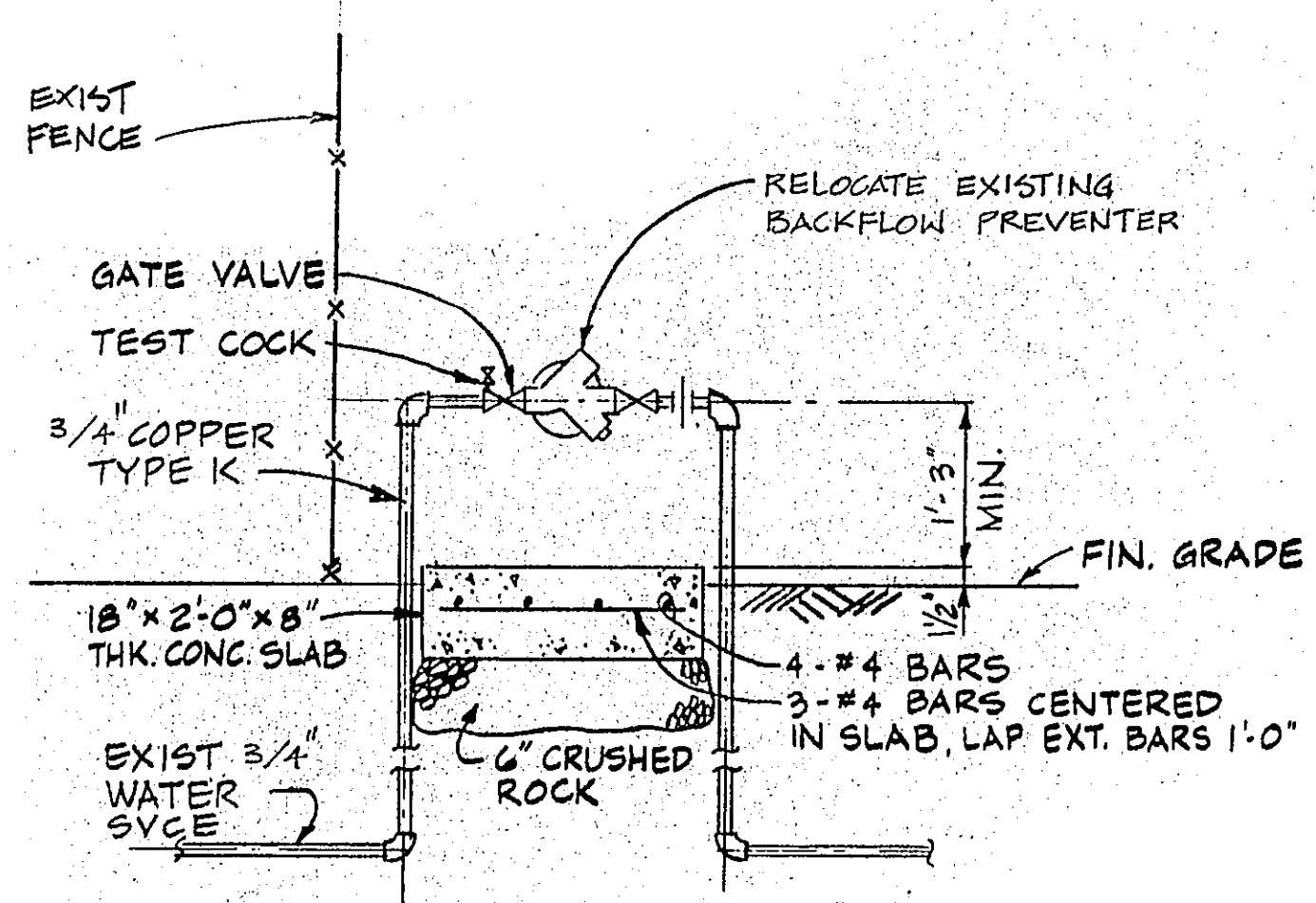
TYPICAL PAVEMENT AND HEADER SECTION
SCALE: 1/2" = 1'-0"

- NOTES:
1. THE COUNTY OF MARIN MUST BE ALLOWED ACCESS TO THE FLOOD CONTROL PUMP STATION AT ALL TIMES.
 2. PROVIDE TEMPORARY SEWAGE PUMPING DURING CONSTRUCTION (SEE SPEC)
 3. THE FENCED AREA BEHIND PUMP STATION MAY BE USED AS A CONTRACTOR STORAGE AREA
 4. THE CONTRACTOR SHALL COVER EXISTING GRATING OVER FLOOD CONTROL PUMP PIT TO PREVENT DEBRIS FROM FALLING IN ANY DEBRIS WHICH FALLS IN SHALL BE CLEANED OUT

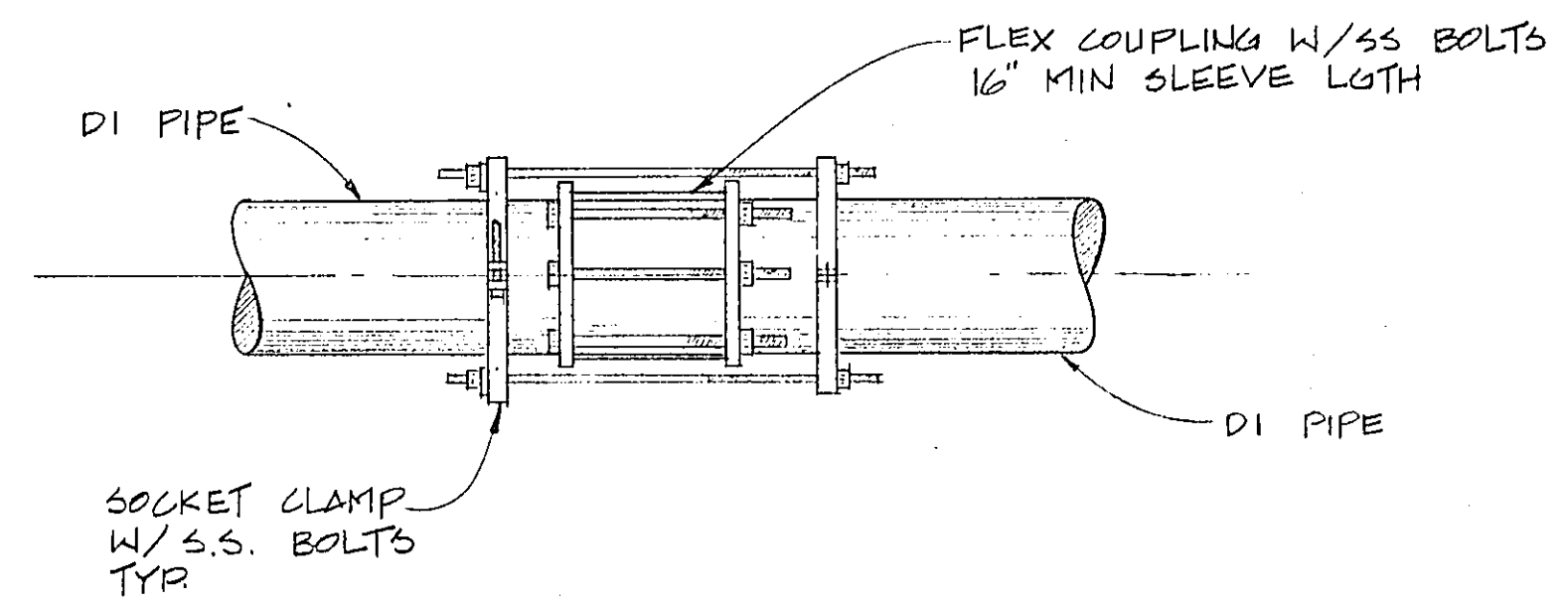
These details were prepared by the Engineer on the basis of information compiled and furnished by others. The Engineer will not be responsible for any errors or omissions which may have been incorporated into this drawing as a result.

3 OF 16

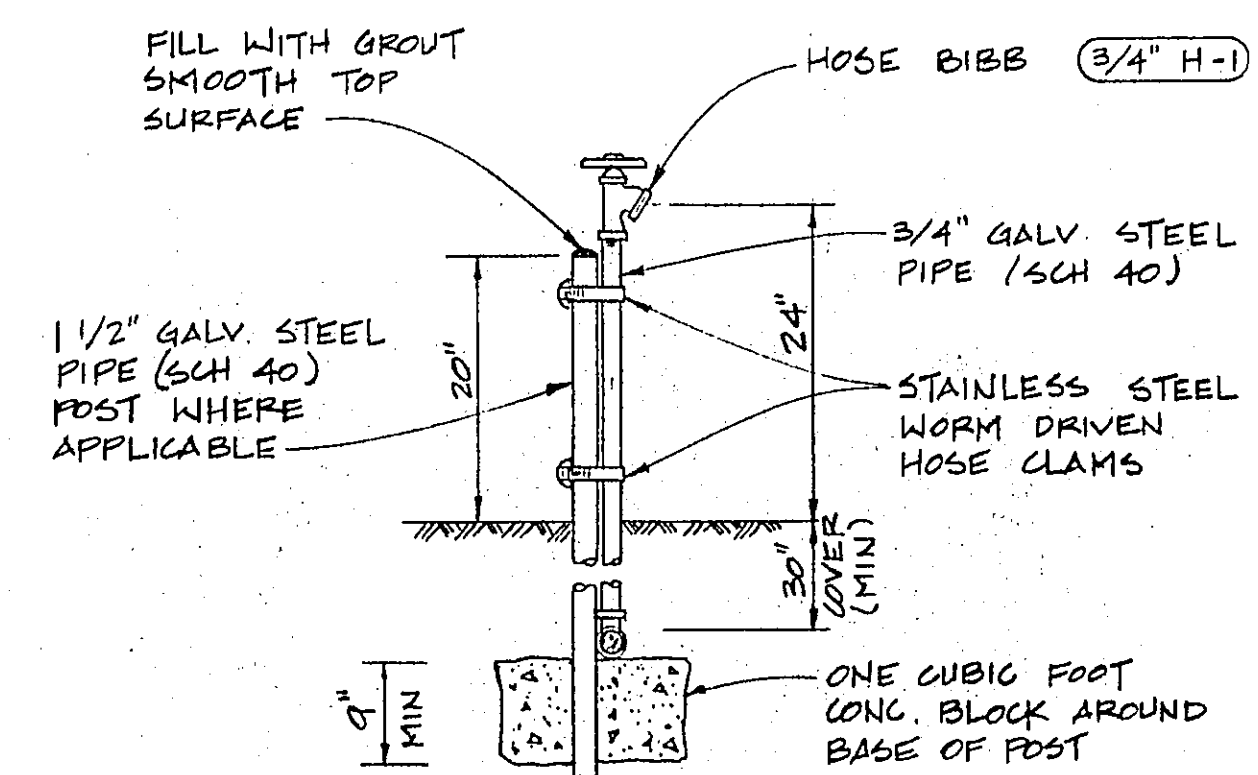
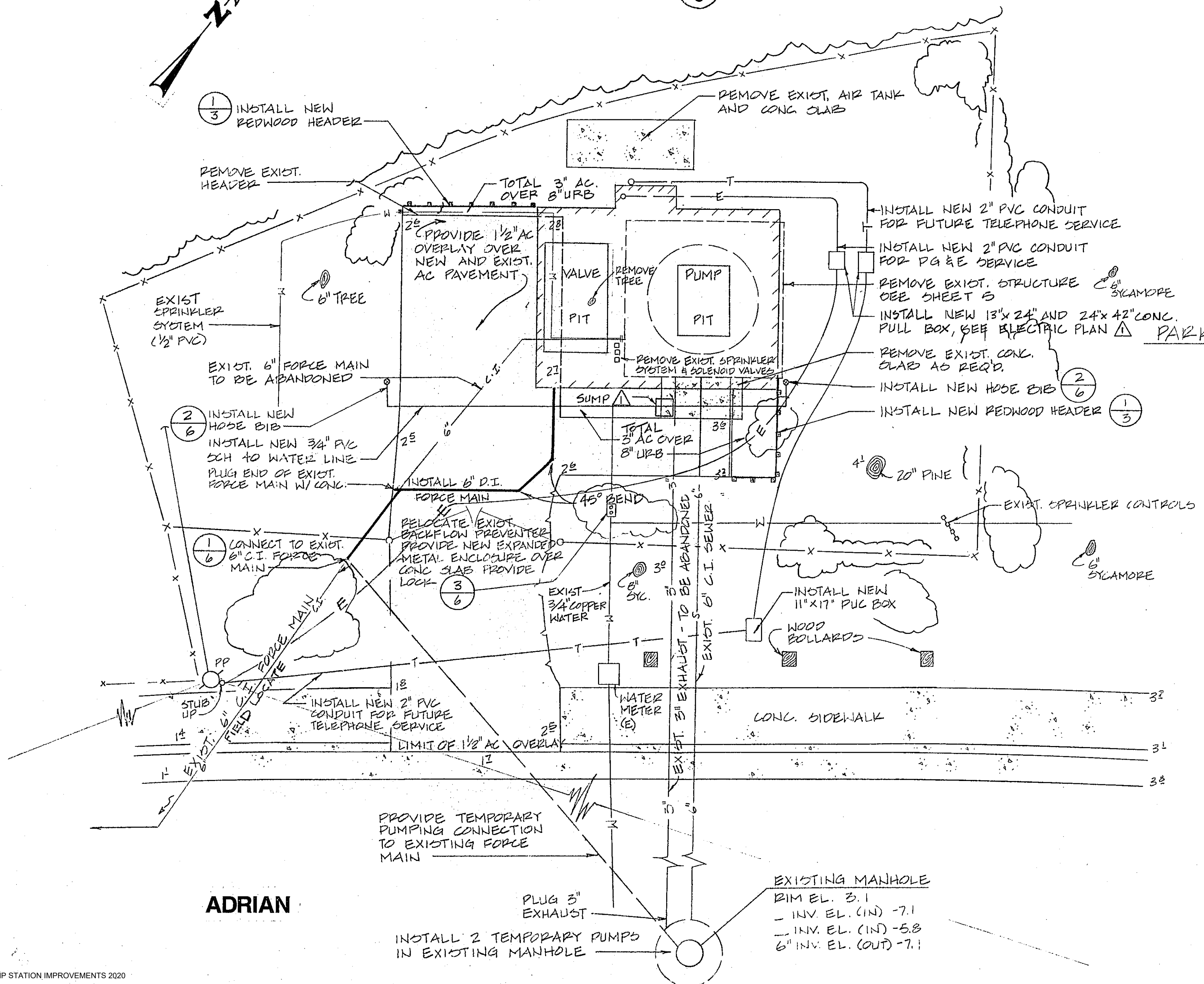
AS BUILT	DEC-90
LAS GALLINAS VALLEY SANITARY DISTRICT Marin County, California	
GALLINAS VILLAGE PUMP STATION IMPROVEMENTS	
HAWTHORNE PUMP STATION SITE PLAN AND DETAILS	
NUTE ENGINEERING SAN RAFAEL, CALIFORNIA	
Drawn by: AJM	Job No.: 5575
Checked by: WEN	5575TB
Scale: 1" = 5'-0"	Date: 3/8/90



BACKFLOW PREVENTER (3/6)
 N.T.S.



FORCE MAIN CONNECTION (1/6)
 N.T.S.



HOSE BIBB (2/6)
 N.T.S.

NOTE:
 FOR WALL MOUNTED HOSE BIBB USE 2 - SS CLAMPS BOLTED TO WALL W/ EXPANSION ANCHORS

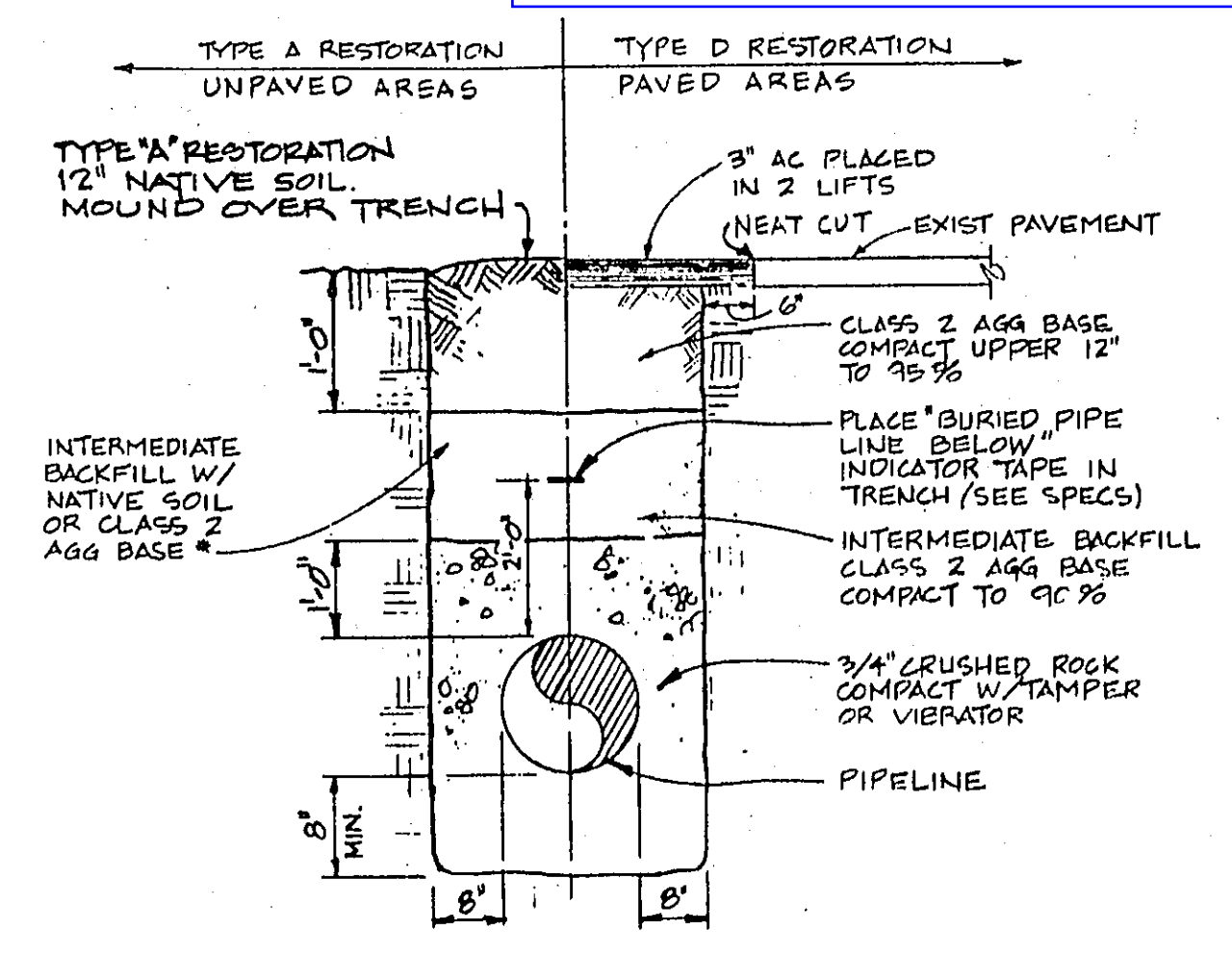
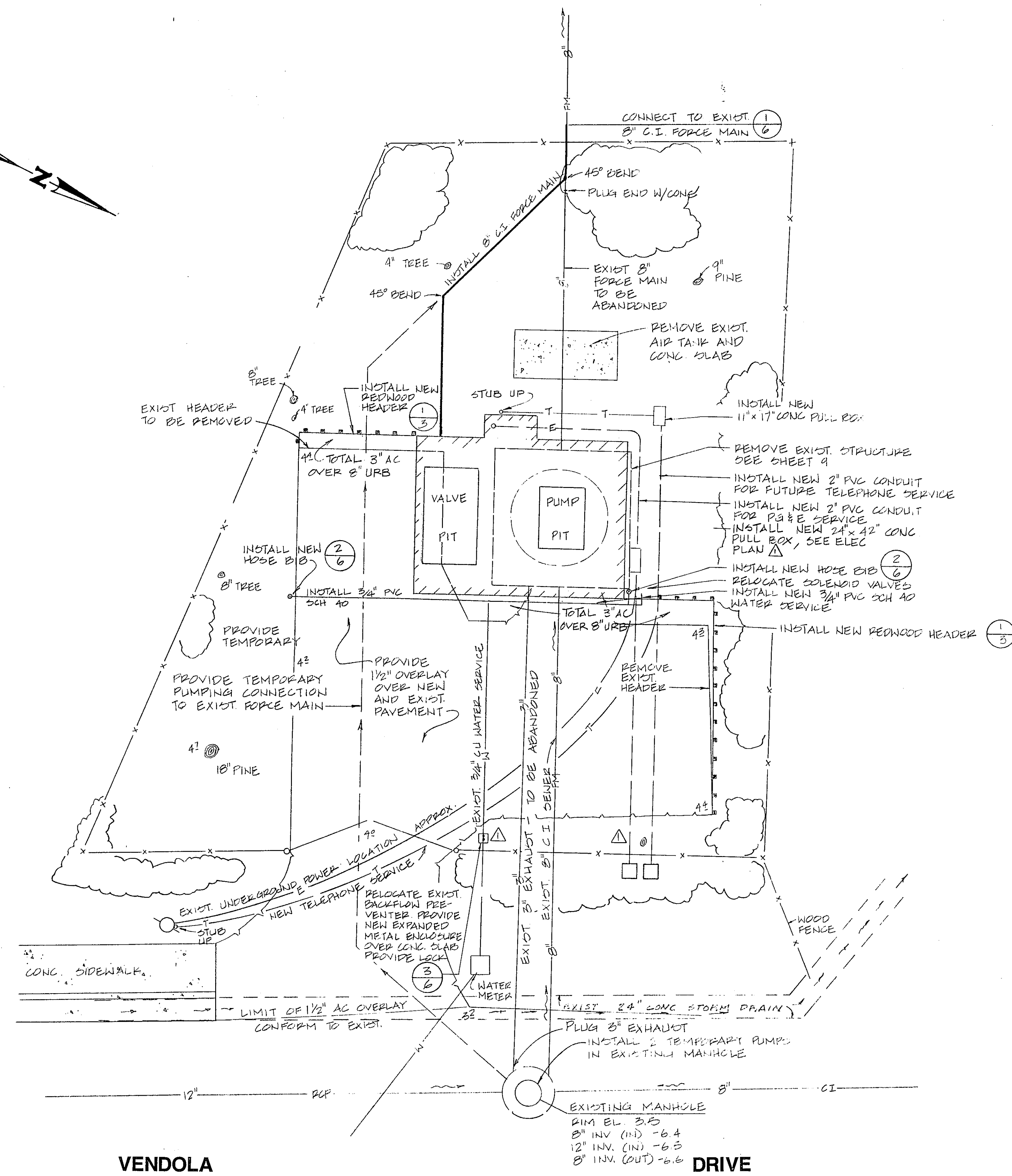
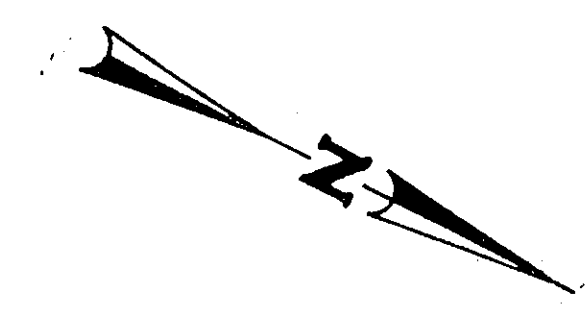
NOTES:
 1. PROVIDE TEMPORARY SEWAGE PUMPING DURING CONSTRUCTION (SEE SPECS)
 2. THE CONTRACTOR SHALL TAKE PRECAUTIONS SO AS NOT TO DISTURB EXIST. LANDSCAPING INSIDE AND OUTSIDE FENCE. ONLY THOSE TREES AND SHRUBS DIRECTLY IN WAY OF WORK MAY BE REMOVE

6
 OF
16

These as-built or record drawings (or corrected specifications) have been prepared, in part, on the basis of information compiled and furnished by others. The Engineer will not be responsible for any errors or omissions which have been incorporated into this document as a result.

AS BUILT	10-90
LAS GALLINAS VALLEY SANITARY DISTRICT Marin County, California	
GALLINAS VILLAGE PUMP STATION IMPROVEMENTS	
ADRIAN PUMP STATION SITE PLAN AND DETAILS	
NUTE ENGINEERING SAN RAFAEL, CALIFORNIA	
Drawn by: AJM	Job No.: 5575
Checked by: WEN	Scale: 1"=5'-0"
	Date: 3/8/90

McPhail Pump Station
 Location: Near 1590 Vendola Dr San Rafael



TYPICAL TRENCH SECTION
 N.T.S. 1/10

- NOTES:
1. PROVIDE TEMPORARY SEWAGE PUMPING DURING CONSTRUCTION (SEE SPECS)
 2. THE CONTRACTOR SHALL TAKE PRECAUTIONS SO AS NOT TO DISTURB EXIST. LANDSCAPING INSIDE AND OUTSIDE FENCE. ONLY THOSE TREES AND SHRUBS DIRECTLY IN WAY OF WORK MAY BE REMOVED

10
OF
16

AS BUILT	DEC-90
LAS GALLINAS VALLEY SANITARY DISTRICT Marin County, California	
GALLINAS VILLAGE PUMP STATION IMPROVEMENTS	
McPHAIL PUMP STATION SITE PLAN AND DETAILS	
NUTE ENGINEERING SAN RAFAEL, CALIFORNIA	
Drawn by: AJM	Job No.: 5575
Checked by: WEN	Date: 3/8/90

These as-built or record drawings (including specifications) have been prepared in accordance with the best of information, knowledge and belief of the Engineer. The Engineer will not be responsible for any errors or omissions which have been incorporated into this document as a result.

VENDOLA

DRIVE

ATTACHMENT 4 - CH Energy Proposal



**Las Gallinas Water Treatment- LED
Upgrade-Revised 7/15/20**

Frank Henry
frank@chenergysolutions.com

Executive Summary

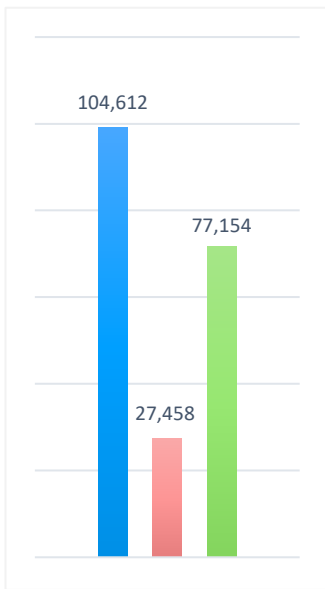
Project Costs

Total Project Cost	\$127,508
Sales Tax	\$2,963
Turnkey Project Cost	\$130,471

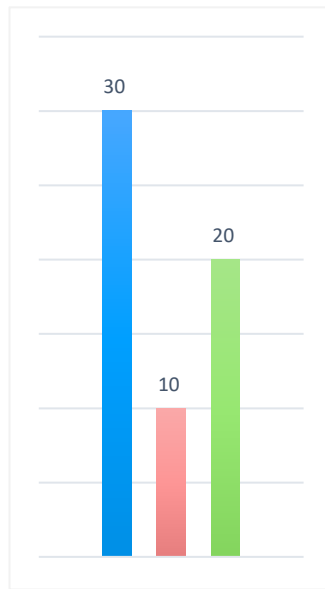
Financial Metrics

Payback Period (yrs.)	7.19
Avg. Annual Return	14%
10 Yr Operating Savings	\$169,179

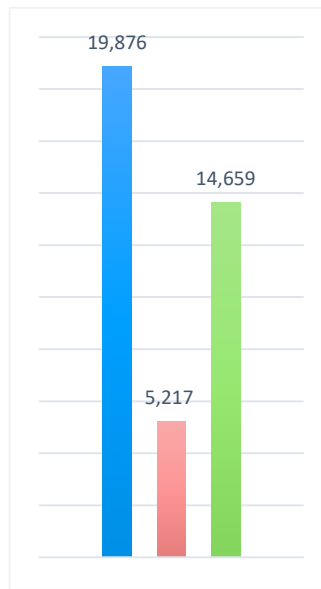
Usage (kWh)



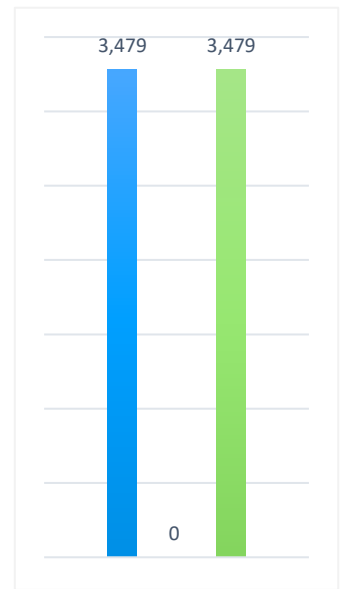
Demand (kW)



Energy Cost (\$)



Maintenance Cost (\$)



■ Current
 ■ Proposed
 ■ Savings

Impact of New Lighting

Energy Reduction	72%
Avg. Annual Maintenance Savings	100%
Avg. Annual Operating Savings	76%

Aggregate Operating Savings

Saving Area	Year 1	Year 5	Year 10
Energy	\$14,659	\$73,295	\$146,590
Maintenance	\$3,479	\$17,395	\$34,790
Total	\$18,138	\$90,690	\$181,380

Lighting Wattage Comparison

Exterior

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Chlorine Bldg	Vapor Tight/Light Emitting Diode/50.0W/1 Lamp	1	50.0	50	Aleo LED Lighting Part No: LLS-4HE-25/850 XE G3 Strip/4ft/5000K	1	25.0	25	1,000
Digester Exterior Front	Parking And Garage/Metal Halide/100.0W/1 Lamp	1	130.0	130	Aleo LED Lighting Part No: LPC-40/50K Canopy/5000K	1	40.0	40	4,380
Exterior Poles	Parking And Garage/Metal Halide/250.0W/1 Lamp	2	295.0	590	Lumec Part No: LEN6-80W48LED4K-T-4-240-NP Area Light/4000K	2	81.0	162	4,380
Headworks	Parking And Garage/Metal Halide/250.0W/1 Lamp	3	295.0	885	Hilumz Part No: LED Area Light Retrofit 60 Watt Area Light/Retrofit Kit/9.0"x2.7"x1.5"/5000K	3	60.0	180	4,380
Headworks	Vapor Tight/Incandescent/60.0W/1 Lamp	3	60.0	180	Hilumz Part No: LED Area Light Retrofit 30 Watt Area Light/Retrofit Kit/3.25" x 1.5" x 1.0"/5000K	3	30.0	90	4,380
Headworks	Wallpack/High Pressure Sodium/150.0W/1 Lamp	2	188.0	376	Aleo LED Lighting Part No: WPE-45/50K G2 Wallpack/5000K	2	45.0	90	4,380
Main Office Exterior	Decorative Outdoor/CFL Pin Base/26.0W/2 Lamp	6	52.0	312	SYLVANIA Part No: LEDRT56/R3A700ST/950 Downlight/5in/5000K	6	9.0	54	4,380
Main Office Exterior	Decorative Outdoor/CFL Screw In/26.0W/1 Lamp	1	26.0	26	Aleo LED Lighting Part No: WPM-15/50K Wallpack/5000K	1	15.0	15	4,380
Main Office Exterior	Decorative Outdoor/Metal Halide/150.0W/1 Lamp	2	185.0	370	Aleo LED Lighting Part No: ALS-70/50K-D XE G3 Area Light/5000K	2	70.0	140	4,380
Maintenance Shop Ext	Wallpack/High Pressure Sodium/150.0W/1 Lamp	5	188.0	940	Aleo LED Lighting Part No: WPE-45/50K G2 Wallpack/5000K	5	45.0	225	4,380
MCC3	Area Light/Metal Halide/400.0W/1 Lamp	1	460.0	460	Aleo LED Lighting Part No: ALS-150/50K-D XE G3 Area Light/5000K	1	150.0	150	4,380
MCC3	Strip/T8 Fluorescent/4 ft/32.0W/1 Lamp	4	32.0	128	Aleo LED Lighting Part No: LLS-4HE-25/850 XE G3 Strip/4ft/5000K	4	25.0	100	4,380
MCC9	Strip/T8 Fluorescent/4 ft/32.0W/2 Lamp	3	64.0	192					4,380
MCC9	Wallpack/High Pressure Sodium/150.0W/1 Lamp	1	188.0	188					4,380

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Pumping Station	Parking And Garage/Metal Halide/250.0W/1 Lamp	1	295.0	295	Aleo LED Lighting Part No: ALS-70/50K-D XE G3 Area Light/5000K	1	70.0	70	1,000
Reclamation Maint Shop	Area Light/Metal Halide/1000.0W/1 Lamp	2	1,080.0	2,160	Aleo LED Lighting Part No: AL-300/50K-D XE G3 Area Light/5000K	2	300.0	600	1,000
Reclamation Maint Shop	Strip/T12 Fluorescent/4 ft/40.0W/2 Lamp	3	75.0	225	Aleo LED Lighting Part No: LLS-4HE-25/850 XE G3 Strip/4ft/5000K	3	25.0	75	1,000
Reclamation Pump Station	Area Light/Metal Halide/1000.0W/1 Lamp	5	1,080.0	5,400	Aleo LED Lighting Part No: AL-300/50K-D XE G3 Area Light/5000K	5	300.0	1,500	1,000
Reclamation Pump Station	Strip/T12 Fluorescent/4 ft/40.0W/2 Lamp	2	75.0	150	Aleo LED Lighting Part No: LLS-4HE-25/850 XE G3 Strip/4ft/5000K	2	25.0	50	600
Top of Digester	Parking And Garage/Metal Halide/150.0W/1 Lamp	3	185.0	555	Hilumz Part No: DC50-5080-1D-H2 Area Light/Retrofit Kit/5000K	3	50.0	150	4,380
Truck Bays	New Lighting	0	0.0	0	Aleo LED Lighting Part No: LLS-4HE-25/850 XE G3 Strip/4ft/5000K	5	25.0	125	4,380
Truck Bays	New Lighting	0	0.0	0	Nicor Part No: XPL1A080U50GRD Strip/8ft/5000K	1	80.0	80	4,380
UV Awning	Strip/Light Emitting Diode/50.0W/1 Lamp	2	50.0	100	Aleo LED Lighting Part No: LLS-4HE-25/850 XE G3 Strip/4ft/5000K	2	25.0	50	4,380
Total			5,053.0	13,712			1,495.0	3,971	

Interior

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Digester Pump	Highbay/Metal Halide/250.0W/1 Lamp	9	295.0	2,655	Aleo LED Lighting Part No: LVX-4HE-38/850 XE G4 Vapor Tight/4ft/5000K	9	38.0	342	8,760
Headworks	Vapor Tight/T12 Fluorescent/4 ft/34.0W/2 Lamp	26	65.8	1,711	Aleo LED Lighting Part No: LVX-4HE-38/850 XE G4 Vapor Tight/4ft/5000K	26	38.0	988	1,100
Headworks	Vapor Tight/T8 Fluorescent/4 ft/32.0W/2 Lamp	21	64.0	1,344	Aleo LED Lighting Part No: LVX-4HE-38/850 XE G4 Vapor Tight/4ft/5000K	21	38.0	798	1,100
Lab	Troffer/T8 Fluorescent/4 ft/32.0W/4 Lamp	18	112.6	2,027	Aleo LED Lighting Part No: LTR-24VLE-22/840 XE G4-HD Troffer/Retrofit Kit/2x4ft/4000K	18	22.0	396	2,242
Lab	Troffer/T8 Fluorescent/4 ft/32.0W/4 Lamp	13	112.6	1,464	Aleo LED Lighting Part No: LTR-24VLE-22/840 XE G4-HD Troffer/Retrofit Kit/2x4ft/4000K	13	22.0	286	1,000
Main Conference Room	Troffer/T8 Fluorescent/4 ft/32.0W/2 Lamp	8	64.0	512	Aleo LED Lighting Part No: LTR-24VLE-22/840 XE G4-HD Troffer/Retrofit Kit/2x4ft/4000K	8	22.0	176	1,100
Main Office	Decorative Indoor/CFL Screw In/26.0W/2 Lamp	1	52.0	52	NaturaLED Part No: LED Decorative Indoor 12 Watt Decorative Indoor/4000K	1	12.0	12	2,242
Main Office	Troffer/T12U Fluorescent/40.0W/1 Lamp	4	34.0	136	Aleo LED Lighting Part No: LTR-22HE-30/840 XE G3 Troffer/Retrofit Kit/2x2ft/4000K	4	30.0	120	2,242

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Main Office	Troffer/T8 Fluorescent/4 ft/32.0W/2 Lamp	20	64.0	1,280	Aleo LED Lighting Part No: LTR-24VLE-22/840 XE G4-HD Troffer/Retrofit Kit/2x4ft/4000K	20	22.0	440	2,242
Main Office	Undercabinet/T8 Fluorescent/2 ft/17.0W/1 Lamp	1	17.0	17	Espen Part No: L24T8/850/8G-XT Tube/T8 Linear/5000K	1	8.0	8	2,242
Main Office	Undercabinet/T8 Fluorescent/4 ft/32.0W/1 Lamp	2	32.0	64	Espen Part No: L48T8/840/15G-XT Tube/T8 Linear/4000K	2	15.0	30	2,242
Main Office	Wrap/T12 Fluorescent/4 ft/34.0W/2 Lamp	7	65.8	461	Aleo LED Lighting Part No: LWA-4VLE-22/840 Wrap/4ft/4000K	7	22.0	154	2,242
Maintenance Shop	Strip/T12 Fluorescent/8 ft/75.0W/2 Lamp	2	141.5	283	Espen Part No: L48T8/840/12G-ID DE Tube/T8 Linear/4000K	8	12.0	96	2,242
Maintenance Shop	Troffer/T8 Fluorescent/4 ft/32.0W/2 Lamp	6	64.0	384	Aleo LED Lighting Part No: LTR-24VLE-22/840 XE G4-HD Troffer/Retrofit Kit/2x4ft/4000K	6	22.0	132	2,242
Maintenance Shop	Vapor Tight/T12 Fluorescent/4 ft/34.0W/2 Lamp	11	65.8	724	Aleo LED Lighting Part No: LVX-4HE-38/850 XE G4 Vapor Tight/4ft/5000K	11	38.0	418	2,242
O&M and Plant Mgrs Offices	Troffer/T12U Fluorescent/40.0W/1 Lamp	12	34.0	408	Aleo LED Lighting Part No: LTR-22HE-30/840 XE G3 Troffer/Retrofit Kit/2x2ft/4000K	12	30.0	360	2,242
O&M and Plant Mgrs Offices	Troffer/T8 Fluorescent/4 ft/32.0W/2 Lamp	2	64.0	128	Aleo LED Lighting Part No: LTR-24VLE-22/840 XE G4-HD Troffer/Retrofit Kit/2x4ft/4000K	2	22.0	44	2,242
Office Restrooms	Decorative Indoor/CFL Screw In/26.0W/2 Lamp	2	52.0	104	Green Creative Part No: 8A19DIM/840 A-Type/A19/4000K	4	8.0	32	2,242
Recycled Water Bldg Air Comp	Vapor Tight/Light Emitting Diode/50.0W/1 Lamp	57	50.0	2,850	Aleo LED Lighting Part No: LLS-4HE-25/850 XE G3 Strip/4ft/5000K	57	25.0	1,425	8,760
Total			1,450.1	16,603			446.0	6,257	

Pumping Stations

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Civic Ctr North	Area Light/Metal Halide/250.0W/1 Lamp	2	295.0	590	Aleo LED Lighting Part No: FL-50/50K-KNM Flood Light/5000K	2	50.0	100	1,095
Civic Ctr North	Strip/T12 Fluorescent/4 ft/34.0W/2 Lamp	5	65.8	329	Aleo LED Lighting Part No: LSR-4HE-26/840 XE G3 Strip/Retrofit Kit/4ft/4000K	5	23.0	115	1,095
Duckett	Area Light/Metal Halide/250.0W/1 Lamp	2	295.0	590	Hilumz Part No: LED Area Light Retrofit 60 Watt Area Light/Retrofit Kit/9.0"x2.7"x1.5"/5000K	2	60.0	120	4,000
Duckett	Strip/T12 Fluorescent/4 ft/34.0W/2 Lamp	5	65.8	329	Aleo LED Lighting Part No: LSR-4HE-26/840 XE G3 Strip/Retrofit Kit/4ft/4000K	5	23.0	115	4,000
Duckett	Wallpack/CFL Pin Base/38.0W/1 Lamp	1	38.0	38	Espen Part No: CLD18WH/850-ID CFL Series/PL/5000K	1	8.0	8	4,000

Space	Existing Fixture	Qty	Watts	Total Watts	Proposed Solution	Qty	Watts	Total Watts	Burn Hours
Duckett	Wallpack/High Pressure Sodium/150.0W/1 Lamp	2	188.0	376	Aleo LED Lighting Part No: WPE-45/50K G2 Wallpack/5000K	2	45.0	90	4,000
Hawthorne Pump Station	Decorative Outdoor/Metal Halide/150.0W/1 Lamp	1	185.0	185	Hilumz Part No: LED Area Light Retrofit 50 Watt Area Light/Retrofit Kit/3.25" x 1.5" x 1.0"/5000K	1	50.0	50	1,095
Hawthorne Pump Station	Downlight/Incandescent/100.0W/1 Lamp	3	100.0	300	NaturaLED Part No: LED9A19/81L/950 A-Type/A19/5000K	3	9.0	27	1,095
Industrial Park	Other/Incandescent /60.0W/1 Lamp	2	60.0	120	NaturaLED Part No: LED9A19/81L/950 A-Type/A19/5000K	2	9.0	18	1,095
Mulligan Pump Station	Vapor Tight/T8 Fluorescent/4 ft/32.0W/2 Lamp	2	64.0	128	Aleo LED Lighting Part No: LVX-4HE-38/850 XE G4 Vapor Tight/4ft/5000K	2	38.0	76	1,095
Total			1,356.6	2,985			315.0	719	

Controls Energy Comparison

Exterior

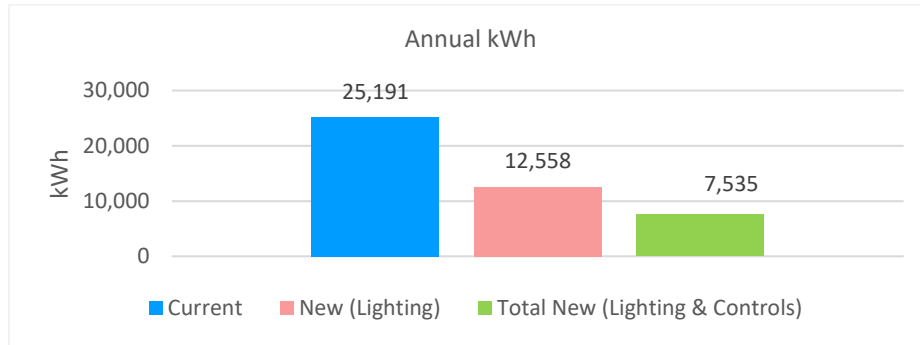
Space	Existing Fixture	Existing kWh	Proposed Solution	New kWh (Lighting)	Proposed Control	Reduction		Total New kWh
						Sched	Watt	
Reclamation Maint Shop	Strip/T12 Fluorescent/4 ft/40.0W/2 Lamp	225	Aleo LED Lighting Part No: LLS-4HE-25/850 XE G3 Strip/4ft/5000K	75	WallSenzr Part No: LDD-700SW Occupancy Sensor	40	0	45
Total		225		75				45

Interior

Space	Existing Fixture	Existing kWh	Proposed Solution	New kWh (Lighting)	Proposed Control	Reduction		Total New kWh
						Sched	Watt	
Recycled Water Bldg Air Comp	Vapor Tight/Light Emitting Diode/50.0W/1 Lamp	24,966	Aleo LED Lighting Part No: LLS-4HE-25/850 XE G3 Strip/4ft/5000K	12,483	Aleo Part No: OS Occupancy Sensor	40	0	7,490
Total		24,966		12,483				7,490

1. Proposed kWh (Lighting) is lighting usage and does not include controls savings
2. Total Proposed kWh is lighting usage that includes savings from controls

Annual Controls Energy Comparison



PG&E On Bill Financing:

Upon Completion of the lighting upgrade, PG&E will issue payment to GEL America in the amount of \$130,471.00. You will then repay the zero percent "loan" as a line item on your PG&E Bill.

Estimated Terms:

Project Cost for Measures	Customer Buy Down	Customer Total Loan Amount	Customer Avg Rate Per Kwh	Annual Kwh Savings	Estimated Annual Energy	Simple Payback in
\$130,471.00	\$0.00	\$130,471.00	\$0.19	77,154	\$14,659.00	8.90

Loan Term in Months	Interest Rate	Customer Fixed Loan	Estimated Monthly Energy	Monthly Cashflow During DBF Term
108	0%	\$1,210.25	\$1,221.58	\$11.33

Lifetime Savings

Avg Rated Life of Solution (Hours)	Avg Yearly Burn Hours	Expected Life of Solution (Years)	\$ Saved After DBF Paid (Energy + Maint)
78,125	3,950	20	\$195,840.50

Sample Image of Loan Payment Added to PG&E Bill

ENERGY STATEMENT		Account No:
www.pge.com/MyEnergy		Statement Date: 08/06/2013
		Due Date: 08/23/2013
Other Program and Service Charges		
Energy Efficiency Retrofit Loan Program		
Service Agreement ID: [REDACTED]		
Service Dates: 07/10/2013 - 08/09/2013		
Reference Number: [REDACTED]		
Loan Installment Due		\$1,001.18
Outstanding Balance:		16,018.82
Total Energy Efficiency Retrofit Loan Program Charges		\$1,001.18
Total Other Program and Service Charges		\$1001.18

Terms and Conditions

This is a turnkey project, which means CH Energy Solutions will be responsible for:

1. Removal and disposal of existing light fixtures
2. Supply and installation of new LED lighting
3. Facilitating project financing and utility rebates.
4. 7-year product warranty (interior fixtures)

REPAIRS: The Buyer agrees that CH Energy Solutions will not be liable for any paint or patch repairs following removal of existing fixtures and installation of new fixtures.

DELAYS: CH Energy Solutions will not be liable for any delay in the performance of orders or contracts, or in the delivery or shipment of goods, or for any damages suffered by Buyer due to such delay. Signed contracts or purchase orders may not be cancelled due to delay.

RIGHT OF POSSESSION: Until full and final payment is received by CH Energy Solutions, all merchandise delivered to Buyer shall remain the sole property of CH Energy Solutions. For credit reasons or because of Buyer's default, CH Energy Solutions may withhold shipments, in whole or in part, recall and retake goods in transit, and may repossess and remove all merchandise delivered to Buyer. Said merchandise shall not, through any connection to Buyer's property, be deemed a fixture or appurtenance to that property.

ELECTRICAL CONNECTIONS: Buyer is to furnish all primary electrical service required, all connections, switches and/or other controls, at Buyer's expense. Final connection will be completed at the time of installation if the circuit(s) is ready. If the connection is not yet available, a return visit to complete the connection will incur additional charges. CH Energy Solutions is entitled to payment upon completion of services and/or installation regardless of electrification or connection status. Payment will in no way be withheld or otherwise detained due to a lack of power or other connection. Post-installation visit(s) or inspections related to electrical connectivity will be conducted at the Buyer's specific request, and at the Buyer's expense.

IN WITNESS WHEREOF, the undersigned have caused this Agreement to be executed as of the day and year first above written.

Acceptance:

Signature

Printed Name

Date

Acceptance:

CH Energy Solutions

Signature

Printed Name

Date