NOT FOR CONSTRUCTION

CONTRACT DOCUMENTS

FOR

LINDA MAR PUMP STATION UPGRADE (C004B)

100% SPECIFICATIONS

September 14, 2021

FREYER & LAURETA, INC.
CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS

City of Pacifica
Contract Documents

LINDA MAR PUMP STATION UPGRADE (C004B)

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SECTION 00 00 10

NOTICE TO CONTRACTORS

LINDA MAR PUMP STATION UPGRADE (C004B)

A mandatory pre-bid conference for all bidders will be held at **10:00 am on Wednesday, September** 29 **2021** at the City of Pacifica Linda Mar Pump Station, located at 5300 Pacific Coast Highway.

BIDS shall be submitted electronically on or before **2:00 PM on** October 13, 2021 to the City's e-Procurement Portal:

https://secure.procurenow.com/portal/cityofpacifica

The City is accepting electronic bid submissions. Bidders shall create a FREE account with ProcureNow by signing up at https://secure.procurenow.com/signup

Once you have completed account registration, browse back to:

https://secure.procurenow.com/portal/cityofpacifica

click on "Submit Response" for this project, and follow the instructions to submit the electronic bid. The Documents will be available for download September 14,2021 any earlier downloads are for informational purposes only, not for bid, and do not constitute the issued for bid set.

Bids may be withdrawn through the City's e-Procurement Portal, the responding firm may "unsubmit" their proposal in ProcureNow. After withdrawing a previously submitted proposal, the responding firm may submit another proposal at any time up to the deadline for submitting proposals prior to the bid opening, but no bidder may withdraw his or her bid for a period of thirty (30) days after the opening thereof.

A Bidder's Package may be viewed in, and an electronic copy can be obtained on, the City's e-Procurement Portal whose address is listed above.

Bidders shall submit all inquiries regarding this bid via the City's e-Procurement Portal whose address is listed above. Please note the deadline for submitting inquiries. All answers to inquiries will be posted on the City's e-Procurement Portal. Bidders may also click "Follow" on this bid to receive an email notification when answers are posted. It is the responsibility of the bidder to check the website for answers to inquiries.

It is sole responsibility of the bidder to see that their bid is complete, all information requested has been submitted, and that their bid is submitted in the proper time. Any proposal submitted after the scheduled closing time will be rejected. All proposals submitted shall include a completed "Proposal", identifying unit costs.

Due to the COVID-19 pandemic, bid opening whose date and time are listed above will be conducted remotely via Zoom Meeting whose information will be included in ProcureNow.

Following the closure of the bid submittal period, bids will be publicly read for performing work as follows:

Furnishing all labor, materials, equipment, and performing all work necessary and incidental to the construction of the project known as **LINDA MAR PUMP STATION UPGRADE (C004B)** according to drawings and specifications as prepared by the City of Pacifica and according to the Contract Documents. In general, the project consists of the installation ~~two replacement pumps and drive shafts~~, temporary MCC, replacement MCC, and various other pump house upgrades to the Linda Mar pump station.

Bidding procedures are prescribed in the Contract Documents. This is a Public Works project. Bids shall be executed upon the bid forms provided, which are a part of the Contract Documents. Each bidder must submit with its bid security in one of the following forms: cash, cashier's check payable to the City, a certified check payable to the City, or a bid bond in the form included with the bid documents, executed by an admitted surety insurer, made payable to the City. The guaranty shall be in the amount of ten percent (10%) of the amount bid, and shall be forfeited should the bidder, if awarded the contract, fail to enter into the same, or fail to furnish in a timely manner the bonds and/or proof of insurance required under the Contract Documents.

Pursuant to Section 1770, et. seq. of the California Labor Code, the successful bidder and all subcontractors shall pay not less than the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations (DIR). Copies of such prevailing rate of per diem wages are on file at the Calera Creek Water Recycling Plant, 700 Coast Highway, Pacifica, California to view and will be made available to any interested party on request.

All bidders (including all subcontractors) must have a current Public Works Contractor (PWC) Registration with the California DIR at the time the bid is submitted. Failure to have a current PWC Registration with the California DIR render the bid non responsive.

Pursuant to Public Contract Code Section 22300, for monies earned by the Contractor and withheld by the City of Pacifica to ensure the performance of the Contract, the Contractor may, at its option, choose to substitute securities meeting the requirements of Public Contract Code Section 22300.

All bidders shall be licensed under the provisions of the Business and Professions Code to do the type of work contemplated in the project. In accordance with provisions of California Public Contract Code Section 3300, the City has determined that the Contractor shall possess a valid Class A, General Engineering Contractor license at the time that the bid is submitted. Failure to possess the specified license shall render the bid non-responsive.

Effective March 1, 2015, all prime contractors and sub-contractors must have a current registration with the Department of Industrial Relations at the time bids are

received and throughout the duration of the project. If a prime contractor is not registered at the time bids are received their bid will be deemed non responsive. If a sub-contractor is not registered at the time bids are received, they must be registered within 24 hours of the bid opening, otherwise their bid will be deemed non-responsive. In the case that a sub-contractor's bid is deemed non-responsive, the prime contractor shall substitute that subcontractor with a responsive and responsible registered subcontractor per Section 4107 of the Public Contract Code.

For more information please go to the DIR website at https://www.dir.ca.gov/Public-Works/PublicWorksLawsRegsDetDec.html. To register with Department of Industrial Relations please go to the following website: https://efiling.dir.ca.gov/PWCR/ActionServlet?action=displayPWCRegistrationForm.

Effective immediately, the prime contractor shall post job site notices prescribed by California Code of Regulations, Title 8 Section 16541 (d).

SB 854 Notice Requirements:

- ***No contractor or subcontractor may be listed on a bid proposal for a public works project (submitted on or after March 1, 2015) 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 (awarded on or after April 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.***
- ***This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.***

The successful bidder will be required to furnish a faithful performance bond in the amount equal to one hundred percent (100%) of the Contract Price, and a labor and materials bond in the amount equal to one hundred percent (100%) of the Contract Price.

The successful bidder will be required to obtain a business license from the City's Finance Department at 170 Santa Maria Avenue, Pacifica, CA 94044.

The City reserves the right to reject any or all bids; to make any awards or any rejections in what it alone considers to be in the best interest of the City, and waive any irregularities in the bids.

The contract will be awarded, if at all, to the responsible bidder that submits the lowest responsive bid.

The successful bidder must ensure that employees and applicants for employment are not discriminated against on the basis of age, color, race, national origin, ancestry, religion, sex, sexual preference, marital status, and shall comply with the Americans with Disabilities Act.

The Engineer's Estimate is $1,449,000

***** END OF SECTION *****

SECTION 00 01 00

INSTRUCTIONS TO BIDDERS

The work to be performed is described in the Contract Documents titled, **Linda Mar Pump Station Upgrade (C004B)**, dated **August 24, 2021** and prepared by **Freyer & Laureta,Inc.** for City of Pacifica (City).

All Bidders shall carefully examine the Contract Documents and satisfy themselves as to their sufficiency; and shall not at any time after the submission of the Bid dispute or complain that there is any misunderstanding in regard to the location, extent, nature or amount of work to be performed. The Bidder shall notify the City of all conflicts, errors or discrepancies in the Contract Documents. Intended Bidders are required to visit the site of the work and familiarize themselves with the existing conditions there as well as all other conditions relating to construction and labor under which the Work will be performed and affecting cost, progress or performance of the Work. The submitting of a Bid shall be considered an acknowledgement on the part of the Bidder of familiarity with conditions at the site of Work.

Bids for the Work shall be made on the forms contained in the Contract Documents as listed on the Bidder's Checklist at the end of this Section.

Proposals shall be made electronically via the City's e-Procurement Portal. **Note that the bid form included in the bid documents is for reference only, and does not replace the bidder's requirement to complete the bid form electronically**. All proposals shall provide all other information requested therein, and shall be signed by the bidder or an authorized representative, with their address.

Bidders must prepare and submit all required documents that make up their proposal via the City's e-Procurement Portal. Proposals may only be submitted via the City's e-Procurement Portal. No oral, telegraphic, or telephone (including facsimile) proposals or modifications will be considered.

The City reserves the right to postpone the date and time for receiving and/or opening of bids at any time prior to the date and time established in the Notice to Contractors. Postponement notices will be made via the City's e-Procurement Portal.

A prebid conference will be held at the time and place stipulated in Section 00 00 10, **NOTICE TO CONTRACTORS**. The conference will be conducted by the City and will be mandatory for all General Contractors. Bidders interested in bidding this Project, subcontractors, and other interested parties are advised to attend this conference. It is intended that a tour of the site of the Work will also be conducted at this time.

Addenda may be issued to all plan holders during the Bid period. Any and all Addenda issued shall become part of the Contract Documents and shall be fully considered by all Bidders during the formation of Bids. To receive addenda on the Project, bidder will need to go to the City's e-Procurement Portal and click "Follow" on the project. Ultimately, it is sole responsibility of each bidder to periodically check the City's e-Procurement Portal for any

addenda on the Project. Bidder shall have the opportunity to acknowledge addenda on the City's e-Procurement Portal. Failure to so acknowledge all addenda may result in the proposal being rejected as not responsive.

Deadline to submit any pre-bid questions about the project shall be October 6, 2021 **at 5:00PM.**

Immediately after the expiration of the time for submission of Bids, all Bids will be opened, read, and declared.

Electronic Bids shall be filed as noted above and shall include the completed documents indicated on the Bidder's Checklist at the end of this Section.

Bids to receive consideration shall be made in accordance with the following instructions:

a. Bids shall be made electronically via the City's e-Procurement Portal. **Note that the bid form is included in the bid documents for reference only, and does not replace the bidder's requirement to complete the bid form electronically**. The signature of all persons executing the Bid shall be in longhand writing. The completed form shall be submitted without interlineations, alterations, or erasures.

b. Except as otherwise indicated, all items shall be included in Bidder's proposal including all applicable federal, state, and local taxes.

c. Bids shall contain only the quotations for which the form is prepared. Alternative Bids will not be considered unless called for. No modifications will be considered.

d. In accordance with California Public Contract Code, Section 4100 et. seq., as amended, each Bidder shall submit with its Bid on the form provided in Section 00 04 30, **DESIGNATION OF SUBCONTRACTORS**, the name and address of each subcontractor, the portion of the work which each subcontractor will do and other information required therein. If the Contractor fails to name the subcontractors in its proposal, the Bidder shall be deemed to have agreed to perform such portion of the work itself and shall not be permitted to subcontract said portion of the work without previous written permission of the City.

e. Bidders shall submit Section 00 04 20, **CERTIFICATION OF BIDDER'S EXPERIENCE AND QUALIFICATIONS**, in accordance with the provisions herein and therein.

f. In the event Bidder identifies an electrical subcontractor for any of the following trades (Specialty Subcontractor) on the form provided in Section 00 04 30, **DESIGNATION OF SUBCONTRACTORS**, Bidders shall submit a Section 00 04 20C, **CERTIFICATION OF SUBCONTRACTOR'S EXPERIENCE AND QUALIFICATIONS**, for each Specialty Subcontractor. Bidders do not need to submit a Section 00 04 20C, **CERTIFICATION OF SUBCONTRACTOR'S EXPERIENCE AND QUALIFICATIONS**, for any subcontractor other than a Specialty Subcontractor, or for any trade identified below if Bidder will self-perform that trade:

- Electrical/Instrumental/Controls

g. Notwithstanding paragraphs d. and f. above, consistent with Public Contract Code Section 4104(a)(2)(A)), Bidders may, in their discretion, submit within 24 hours after the deadline established for receipt of Bids, (1) any information required in Section 00 04 30, **DESIGNATION OF SUBCONTRACTORS**, other than names and places of business, and (2) any Section 00 04 20C, **CERTIFICATION OF SUBCONTRACTOR'S EXPERIENCE AND QUALIFICATIONS**.

h. Bids may be withdrawn through the City's e-Procurement Portal, the responding firm may "unsubmit" their proposal in ProcureNow. After withdrawing a previously submitted proposal, the responding firm may submit another proposal at any time up to the deadline for submitting proposals prior to the bid opening, but no bidder may withdraw his or her bid for a period of thirty (30) days after the opening thereof except as provided for in Public Contract Code Section 5101 and 5103.

i. Bids shall be accompanied by an unconditional cashier's check from a responsible bank of an amount not less than ten (10) percent of the aggregate of the Bid payable to the order of the City, or by a Proposal Guaranty Bond for the said amount and so payable written by an admitted surety insurer. Said check or bond shall be a guarantee that the Bidder, if awarded the Work, will, within twenty (20) days after award: (1) enter into a Contract, (2) furnish a bond of faithful performance and a labor and material bond, and (3) furnish insurance policies. **Since this is an electronic bid, the top three apparent bidders shall be required to submit a hardcopy of the bid bond by 4:00PM the following Monday after the bid opening** addressed to:

Pacifica City Hall
c/o Nelson Schlater
170 Santa Maria Ave
Pacifica, CA 94044

In case of refusal or failure to enter into said Contract, the check or bond, as the case may be, shall be forfeited to the City, the proceeds therefrom being hereby agreed upon as liquidated damages to the said City on account of the delay in the execution of the Contract and required bonds and the performance of the Work thereunder, and the necessity of accepting a higher or less desirable Bid resulting from such failure or refusal to execute the Contract and the bonds as required. Upon the execution of the Contract and the approval on behalf of the City of the accompanying bonds and insurance policies, all cashier's checks and Proposal Guaranty Bonds that accompany Proposals and that have not heretofore been returned, will be returned, each to its maker. Award of the Contract will be made within forty-five (45) days after the opening of bids to the lowest responsive, responsible Bidder complying with these instructions, Section 00 00 10, **NOTICE TO CONTRACTORS**, and such other pertinent provisions of the Contract Documents as may apply. If award is made, it will be based on the lowest responsive, responsible Bid whose total Bid Amount, excluding alternates if specified but including additives if specified, yields the lowest total Contract Price. Selection of any or all alternates shall be at the sole discretion of the City. The City, however, reserves the right to reject any or all Bids, and to waive

any informality in Bids received.

j. Each Bidder shall be licensed in accordance with the provisions of the Contractor's License Law of California as stipulated in Section 00 00 10, **NOTICE TO CONTRACTORS**.

k. If the City has reason to believe that collusion exists among Bidders, the City will reject the Bids of the known participants in such collusion and may, at its option, require that all Bidders certify under penalty of perjury, that no collusion has occurred or exists. The City also, at its option, may reject all Bids received. In accordance with Public Contract Code Section 7106 the Contractor shall complete and file with its Proposal the Noncollusion Affidavit in Section 00 04 80, **NONCOLLUSION AFFIDAVIT**. Public Contract Code Section 7106 requires that the affidavit must be duly sworn.

l. The City requires that the Contractor conducts its operations in a manner to eliminate or reduce hazards and risks associated with the Contractor's activities, to prevent accidents and injuries, and to prevent property damages.

m. Not used.

City will determine Apparent Low Bidder as follows:

a. City will open each Bidders' bid at the time and place indicated in Section 0000 10, **NOTICE TO CONTRACTORS**, initially evaluate them for responsiveness, and determine an Apparent Low Bidder as specified herein and in Section 00 00 10, **NOTICE TO CONTRACTORS** and Section 00 03 00, **PROPOSAL**.

b. For the Apparent Low Bidder only, City will evaluate the Apparent Low Bidder and its subcontractors for responsiveness to the requirements of Section 00 04 20, **CERTIFICATION OF BIDDER'S EXPERIENCE AND QUALIFICATIONS**, and any Section 00 04 20C, **CERTIFICATION OF SUBCONTRACTOR'S EXPERIENCE AND QUALIFICATIONS** and for responsibility.

c. If Apparent Low Bidder is determined to be non-responsive or non-responsible, then City may proceed to the next Apparent Low Bidder's Bid pursuant to any procedures determined in its reasonable discretion, and proceed for all purposes as if this Apparent Low Bidder were the original Apparent Low Bidder.

City will evaluate Bids as follows:

a. Bids must be full, complete, clearly written and using the required forms. Bidders shall make any change in the Bid by crossing out the original entry, entering and initialing the new entry. Bidder's failure to submit all required Sections strictly as required entitles City to reject the Bid as non-responsive. All Bidders must submit Bids containing each of the fully executed Sections supplied in this Project Manual.

b. In evaluating Bids, City will consider Bidders' qualifications, whether or not the Bids comply with the prescribed requirements, unit prices, and other data, as may be requested prior to the Notice of Award.

c. City may conduct reasonable investigations and reference checks of Bidder and other persons and organizations as City deems necessary to assist in the evaluation of any Bid and to establish Bidder's responsibility, qualifications, financial ability, and capability to perform the Work in accordance with the Contract Documents to City's satisfaction within the prescribed time. Submission of a Bid constitutes Bidder's consent to the foregoing.

d. City shall have the right to consider information provided by sources other than Bidder. City shall also have the right to communicate directly with Bidder's surety regarding Bidder's bonds.

e. Discrepancies in the electronic bid form between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Since the City's e-Procurement System only reports numbers, there is no issue of discrepancies between written words and figures.

f. Bids shall be deemed to include the written responses of the Bidder to any questions or requests for information of City made as part of Bid evaluation process after submission of Bid.

City reserves the right to:

a. Reject any or all nonconforming, non-responsive, unbalanced, or conditional Bids;

b. Reject the Bid of any Bidder as non-responsive as a result of any error or omission in the Bid; and

c. Reject the Bid of any Bidder if City believes that it would not be in the best interest of Project to make an award to that Bidder, whether because the Bid is not responsive, the Bidder is unqualified or of doubtful financial ability, or fails to meet any other pertinent standard or criteria established by City.

g. For purposes of this Section, an "unbalanced Bid" is one having nominal process for some Bid items and enhanced prices for other Bid items.

h. City may retain Bid securities and Bid bonds of other than the Apparent Low Bidder for a period of ***90*** Days after award or full execution of the Contract, whichever first occurs.

i. City may waive any informalities or minor irregularities in the Bids.

j. City also reserves the right, in its discretion, to reject any or all Bids and to re-Bid the Project.

All questions regarding this Bid shall be addressed to:

Nelson Schlater, PE
Senior Engineer - Public Works – Wastewater
700 Coast Highway
Pacifica, California 94044
Email: nschlater@ci.pacifica.ca.us

Phone: (415) 722-8711

The following constitutes the Bidder's Checklist of completed Sections to be submitted with all Bids. All items are to be included in PDF submitted on ProcureNow unless otherwise indicated:

	Item	**Checked**
1.	Proposal (Section 00 03 00). Note that electronic bid schedule/bid form on ProcureNow is part of the Proposal and therefore the bid, by reference.	_____
2.	Proposal Guaranty Bond (Section 00 04 10) or Cashier's Check written to the City of Pacifica for ten (10) percent of the total amount of the Bid Proposal.	_____
3.	Certification of Bidder's Experience and Qualifications (Section 00 04 20)	_____
3a.	Certification of Subcontractor's Experience & Qualifications** (For Designated Subcontractors)(Section 00 04 20C)	_____
4.	Designation of Subcontractors (Section 00 04 30)***	_____
5.	Non-Collusion Affidavit (Section 00 04 80)	_____

** May be submitted up to 24 hours following the bid submission deadline.
*** Some information may be submitted up to 24 hours following the bid submission deadline.

Any bid protest relating to the award of the contract for the Project must be submitted in writing to City of Pacifica, Attn: City Clerk, 170 Santa Maria Avenue Pacifica, CA 94044. The protest must be received before close of business of the fifth business day following the posting of Section 00 05 05 (Notice of Intent to Award for Construction) at the City of Pacifica, Attn: City Clerk, 170 Santa Maria Avenue Pacifica, CA 94044. City will use reasonable efforts to deliver by email a copy of Notice of Intent to Award for Construction to all Bidders who submitted Bids no later than the Business Day after issuance, although any delay or failure to do so will not extend the Bid protest deadline described herein.

The initial protest document shall contain a complete statement of the basis for the protest. The protest shall refer to the specific portion(s) of the bid documents, which forms the basis for the protest. The protest shall include the name, address and telephone number of the person representing the protesting party.

The party filing the protest shall concurrently transmit a copy of the initial protest document and any attached documentation to all other parties who have a direct financial interest that may be adversely affected by the outcome of the protest. Such parties shall include all other bidders or proposers who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest. The documents shall be transmitted by e-mail, or overnight mail.

Only Bidders who the City otherwise determines are responsive and responsible are eligible to protest a Bid; protests from any other Bidder will not be considered. In order to determine whether a protesting Bidder is responsive and responsible, City may evaluate all information contained in any protesting Bidder's Bid, and conduct the same investigation and evaluation as City is entitled to take regarding an Apparent Low Bidder.

The procedure and time limits set forth in this paragraph are mandatory and are the Bidder's sole and exclusive remedy in the event of bid protest. Failure to comply with these procedures shall constitute a waiver of any right to further pursue the bid protest, including filing a Government Code claim or legal proceedings. A Bidder may not rely on a protest submitted by another Bidder, but must timely pursue its own protest.

***** END OF SECTION *****

SECTION 00 02 00

INFORMATION AVAILABLE TO BIDDERS

1.0 SUBSURFACE CONDITIONS

Not used.

2.0 RECORD DRAWINGS

Record Drawings of some previous projects, if any, are available for review with prior arrangements made with the City.

3.0 LIMITED RELIANCE

Bidders may rely upon the general accuracy of the “technical data” contained in reports and drawings identified above or otherwise made available to Bidders, but only insofar as they relate to subsurface conditions, provided Bidder has conducted the required inspection and discrepancies were not apparent.

The term “technical data” shall include actual reported depths, reported quantities, reported soil types, reported soil conditions, and reported material, equipment, or structures that were encountered during subsurface exploration. The term “technical data” does not include, and Bidders may not rely upon, any other data, interpretations, opinions or information shown or indicated in such reports or drawings that otherwise relate to subsurface conditions or described structures. The term “technical data” shall not include the location of underground facilities.

Bidders may not rely on the completeness of reports and drawings for the purposes of bidding or construction. Bidders are solely responsible for any interpretation or conclusion drawn from any “technical data” or any other data, interpretations, opinions, or information contained in supplied data.

Except as expressly set forth in this Section 00 02 01, **INFORMATION AVAILABLE TO** BIDDERS, City does not warrant, and makes no representation regarding, the accuracy or thoroughness of supplied reports and drawings.

Bidder represents and agrees that in submitting its Bid, it is not relying on any reports or drawings supplied by City, except as specifically set forth herein.

***** END OF SECTION *****

SECTION 00 03 00

PROPOSAL

(To Accompany Bid)

To:

City of Pacifica
170 Santa Maria Avenue
Pacifica, CA 94044

Name of Bidder _____

Business Address _____

The undersigned as Bidder declares that it has carefully examined the location of the proposed work, the Contract Documents, and the Plans and Specifications therein referred to, and the Bidder proposes and agrees if this Proposal is accepted, that it will contract with City of Pacifica to provide all labor, materials, necessary machinery, tools, apparatus, and other means of construction and services, and do all the Work specified in the Contract in the manner and time hereinafter set forth required for the construction of the Work involved in the improvements designated as:

Linda Mar Pump Station
Upgrade (C004B)

ADDENDUM RECEIPT: The receipt of the following Addenda to the Contract Documents is acknowledged. **Note that bidder will be also be required to acknowledge addenda in ProcureNow**:

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

The Bidder proposes and agrees to contract with City of Pacifica to perform all the above Work, including subsidiary obligations as defined in said Specifications for the following Bid Schedule:

BID SCHEDULE

(Provided for convenience – please enter values electronically in the City's e-Procurement System)

CITY OF PACIFICA

Base Bid Items

Bid Item	Quantity	Unit	Description	Unit Price	Extended Amount
(Note: See Section 01025-2.0 of General Requirements for Bid Item Descriptions.)					
1	1	Lump Sum	Mobilization/Demobilization	$	$
2	1	Lump Sum	Demolition	$	$
3	1	Lump Sum	Temporary Electrical	$	$
4	1	Lump Sum	Permanent/New Electrical	$	$
	Total Base Bid				$

Additive Bid Items

Bid Item	Quantity	Unit	Description	Unit Price	Extended Amount
(Note: See Section 01025-2.0 of General Requirements for Bid Item Descriptions.)					
1	1	Lump Sum	Mobilization/Demobilization for new pumps		
2	1	Lump Sum	New Pumps	$	$
3	1	Lump Sum	Installation of New Pumps	$	$
	Total Additive Bid				$

Total Bid Amount for Linda Mar Pump Station Upgrade (C004B) _____, the summation of Bid Items 1 through 4 ~~and Additive Bid Items 1 through 3~~.

In submitting its Bid, the undersigned Bidder understands and agrees to the following:

A) If award is made, it will be based on the lowest responsive, responsible Bid whose Total Bid Amount, excluding alternates, yields the lowest total Contract Price. Only one Contract will be awarded. No Bid Items (other than potentially alternates and additive bid items) will be excluded from the awarded Contract.

The undersigned has filled in all information required in this Bid Schedule and understands that failure to do so is grounds for rejecting the Bid by the City.

The City reserves the right to change, delete or add new work to the Contract as per the terms of the General Conditions of the Contract Documents.

The undersigned has checked carefully all the above figures and understands that the City will not be responsible for any errors or omissions on the part of the undersigned in making up this Proposal.

The undersigned understands that the City reserves the sole right to reject any or all Bids and to waive any informality in Bids received. Award will be made to the lowest responsible bidder as determined by the governing Commission of City.

This Proposal shall not be withdrawn within a period of thirty (30) days after the date set for the opening of bids.

Enclosed herewith is a (cashier's check, Proposal Guarantee Bond) for the sum of _____ dollars ($_____._), being not less than ten (10) percent of the total amount of this Proposal and the undersigned agrees that, in case of its default in executing the Contract and providing the necessary bonds and insurance after award and due notice thereof, the said check or bond and the money payable thereon shall become and remain the property of the City as liquidated damages without proof of loss within ten (10) days of notice of such default by the City. In the event Bidder provides the City with a Proposal Guaranty Bond, said Proposal Guaranty Bond shall be on the form provided in Section 00410, **PROPOSAL GUARANTY BOND**, and shall be issued by a corporate Surety authorized to conduct business in California. At its discretion, the City may request that a certified copy of the Certificate of City of the Surety issued by the Insurance Commissioner of the State of California be submitted by the Surety to the City. Likewise the City may also require the Surety to provide copies of its most recent annual statement and quarterly statement filed with the Department of Insurance pursuant to Article 10 (commencing with Section 900) of Chapter 1 of Part 2 of Division 1 of the California Insurance Code. The Bond and the corporate Surety will be reviewed and subject to the approval of City's legal counsel.

In accordance with the Contract Documents, the undersigned further agrees to plan and prosecute the Work of the Project with such diligence that said Work shall be commenced within ten (10) days after the date established in the Notice to Proceed and shall be completed within the time specified in Section 00800-1.1, TIME ALLOWED FOR COMPLETION.

The undersigned agrees, if awarded the Contract, that said Bidder and all of said Bidder's subcontractors, shall pay to all laborers, workers and mechanics employed in the execution of the Contract not less than the general prevailing rate of per diem wages and rates for overtime and legal holidays in the locality in which the Work is to be performed, as determined by the Director of Industrial Relations in accordance with California Labor Code Section 1770, which schedule shall be available for review at City's principal office.

The Project is a public work. Therefore, the prime contractor and all subcontractors for the Project must be registered with the California Department of Industrial Relations pursuant to the provisions of Labor Code Section 1725.5 in order to be qualified to bid on, be listed in a bid proposal, or engage in the performance of any work under the Contract for the Project. A bid shall not be accepted nor any contract or subcontract be entered into without proof of the contractor or subcontractor's current registrations to perform public work pursuant to Labor Code Section 1725.5. The undersigned Bidder hereby certifies that she/he/it, and all subcontractors listed in Section 00 04 30, **DESIGNATION OF SUBCONTRACTORS** are registered pursuant to that Section. The undersigned Bidder hereby further certifies that his/her/its Department of Industrial Relations registration number is listed below, and that all subcontractors' registration numbers are as indicated in Section 00 04 30, **DESIGNATION OF SUBCONTRACTORS**.

Pursuant to Labor Code Section 1771.4, the Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. The prime contractor shall post jobsite notices as prescribed by regulation and the prime contractor and each subcontractor shall furnish the records specified in Labor Code Section 1776 directly to the Labor Commissioner as specified in said Section 1771.4. Pursuant to Labor Code Section 1773.3, the City shall provide notice to the Department of Industrial Relations of the award of the contract for the Project within five days of the award.

The representations made herein, including the Bidder's licensing and registration information hereinafter furnished, are made under penalty of perjury. The undersigned understands that any bid not containing said licensing and registration information, or containing any information which is subsequently proven false, may be considered non-responsive, and may be rejected by City of Pacifica.

Contractor: _____
(Print or Type Contractor's Legal Name)

Signature: _____

Title: _____

Date: _____

Contractor's License No. _____

License Classification: _____

Expiration Date: _____

Registration No. _____

DIR Registration No. _____

Address _____

_____

Telephone Number: _____

Fax Number: _____

***** END OF SECTION *****

SECTION 00 04 10

PROPOSAL GUARANTY BOND
(To Accompany Bid)

KNOW ALL PERSONS BY THESE PRESENTS:

THAT_____, hereinafter called the Principal, and_____, hereinafter called the Surety, are jointly and severally held and firmly bound unto City of Pacifica, San Mateo County, California, a public entity, hereinafter called the City, each in the penal sum of ten (10) percent of the total amount of the Bid Proposal of the Principal for the work, this sum not to exceed _____ _____dollars of lawful money of the United States for the payment whereof unto the City, the Principal and Surety jointly and severally bind themselves forever firmly by these presents.

WHEREAS, the Principal is herewith submitting its offer for the fulfillment of City of Pacifica Contract for:

Linda Mar Pump Station Upgrade (C004B)

NOW, THEREFORE, the condition of this obligation is such that if the Principal is awarded the Contract, and if the Principal within the time specified in the Proposal for such Contract enters into, executes and delivers to the City an agreement in the form provided herein complete with evidences of insurance, and if the Principal within the time specified in the Proposal gives to the City the performance bond and payment bond on the form provided herein, then this obligation shall be void; otherwise, the Principal and Surety will pay unto the City the difference in money between the total amount of the Proposal of the Principal and the amount for which the City legally contracts with another party to fulfill the Contract if the latter amount be in excess of the former, but in no event shall the Surety's liability exceed the penal sum hereof.

AND IT IS HEREBY DECLARED AND AGREED that the Surety shall be liable under this obligation as Principal, and that nothing of any kind or nature whatsoever that will not discharge the Principal shall operate as a discharge or a release of liability of the Surety.

IT IS HEREBY FURTHER DECLARED AND AGREED that this obligation shall be binding upon and inure to the benefit of the Principal, the Surety and the City and their respective heirs, executors, administrators, successors and assigns.

CITY OF PACIFICA
LINDA MAR PUMP STATION UPGRADE (C004B)

SIGNED AND SEALED THIS _____DAY OF_____, 20____.

CONTRACTOR AS PRINCIPAL	SURETY
Company: (Corp. Seal)	Company: (Corp. Seal)
Signature:_____	Signature:_____
Name:_____	Name:_____
Title: _____	Title:_____

Surety shall have an AM Best rating of A:VII, or better.

***** END OF SECTION *****

SECTION 00 04 20

CERTIFICATION OF BIDDER'S EXPERIENCE AND QUALIFICATIONS

(To Accompany Bid)

The undersigned Bidder certifies that it is, at the time of bidding, and shall be, throughout the period of the Contract, licensed under the provisions of Chapter 9, Division 3, of the Business and Professions Code of the State of California, to do the type of work contemplated in the Contract Documents. Bidder shall further certify that it is skilled and regularly engaged in the general class and type of work called for in the Contract Documents.

The Bidder represents that it is competent, knowledgeable, and has special skills on the nature, extent, and inherent conditions of the work to be performed. Bidder further acknowledges that there are certain peculiar and inherent conditions existent in the construction of the particular facilities which may create, during the construction program, unusual or peculiar unsafe conditions hazardous to persons and property. Bidder expressly acknowledges that it is aware of such peculiar risks and that it has the skill and experience to foresee and to adopt protective measures to adequately and safely perform the construction work with respect to such hazards.

1.0 ESSENTIAL REQUIREMENTS FOR QUALIFICATION

Bidder will be immediately disqualified if the answer to questions 1 and 3 is "No".
Bidder will be immediately disqualified if the answer to any of questions 2 and 5 through 7 is "Yes".

In addition, the Bidder may be disqualified depending on the additional information provided based on responses required in 4 and 9 through 14. Bidder does not waive its rights and remedies, as provided by law, to appeal if disqualified due to the additional information provided.

1. Bidder possesses a valid and current California Contractor's License as required by Specification Section 00 00 10, **NOTICE TO CONTRACTORS**, for the Project for which it intends to submit a Bid.
   ☐ Yes ☐ No

2. Has your Contractor's license been revoked at any time in the last five (5) years?
   ☐ Yes ☐ No

3. Bidder will comply with and provide all insurance as defined in Section 00 08 00-3.0, **LIABILITY AND INSURANCE.**
   ☐ Yes ☐ No

4. Has a surety firm completed a Contract on your behalf, or paid for completion because your firm was default terminated by the project Owner within the last five (5) years?

☐ Yes ☐ No

If "Yes," explain on a separate signed page. Identify the year of the termination, the owner, the project, and the basis for the termination.

5. At the time of submitting this qualification form, is your firm ineligible to bid on or be awarded a public works contract, or perform as a subcontractor on a public works Contract, pursuant to either Labor Code Section 1777.1 or Labor Code Section 1777.7?
☐ Yes ☐ No

6. At any time during the last five (5) years, has your firm, or any of its owners or officers been convicted of a crime involving the awarding of a contract of a construction project, or the bidding or performance of a government contract?
☐ Yes ☐ No

7. Is your firm currently the debtor in a bankruptcy case?
☐ Yes ☐ No

If "Yes," please attach a copy of the bankruptcy petition, showing the case number, and the date on which the petition was filed.

8. Was your firm in bankruptcy at any time during the last five years? (This question refers only to a bankruptcy action that was not described in answer to question 7, above.)
☐ Yes ☐ No

If "Yes," please attach a copy of the bankruptcy petition, showing the case number and the date on which the petition was filed, and a copy of the Bankruptcy Court's discharge order, or of any other document that ended the case, if no discharge order was issued.

9. In the last five years has your firm, or any firm with which any of your company's owners, officers or partners was associated, been debarred, disqualified, removed or otherwise prevented from bidding on, or completing, any government agency or public works project for any reason?
NOTE: "Associated with" refers to another construction firm in which an owner, partner or officer of your firm held a similar position.
☐ Yes ☐ No
If "Yes," explain on a separate signed page. State whether the firm involved was the firm applying for pre-qualification here or another firm. Identify by name of the company, the name of the person within your firm who was associated with that company, the year of the event, the owner of the project, the project and the basis for the action.

10. In the last five years has your firm been denied an award of a public works contract based on a finding by a public agency that your company was not a responsible bidder?
☐ Yes ☐ No

If "Yes," explain on a separate signed page. Identify the year of the event, the owner, the project and the basis for the finding by the public agency.

11. Has CAL OSHA cited and assessed penalties against your firm for any "serious," "willful" or "repeat" violations of its safety or health regulations in the past five years?
NOTE: If you have filed an appeal of a citation, and the Occupational Safety and Health Appeals Board has not yet ruled on your appeal, you need not include information about it.
☐ Yes ☐ No
If "Yes," attach a separate signed page describing the citations, including information about the dates of the citations, the nature of the violation, the project on which the citation(s) was or were issued, the amount of penalty paid, if any. If the citation was appealed to the Occupational Safety and Health Appeals Board and a decision has been issued, state the case number and the date of the decision.

12. Has the federal Occupational Safety and Health Administration cited and assessed penalties against your firm in the past five years?
NOTE: If you have filed an appeal of a citation and the Appeals Board has not yet ruled on your appeal, or if there is a court appeal pending, you need not include information about the citation.
☐ Yes ☐ No
If "Yes," attach a separate signed page describing each citation.

13. Has there been more than one occasion during the last five years in which your firm was required to pay either back wages or penalties for your own firm's failure to comply with California's prevailing wage laws?
NOTE: This question refers only to your own firm's violation of prevailing wage laws, not to violations of the prevailing wage laws by a subcontractor.
☐ Yes ☐ No
If "Yes," attach a separate signed page or pages, describing the nature of each violation, identifying the name of the project, the date of its completion, the public agency for which it was constructed; the number of employees who were initially underpaid and the amount of back wages and penalties that you were required to pay.

14. During the last five years, has there been more than one occasion in which your own firm has been penalized or required to pay back wages for failure to comply with the federal Davis-Bacon prevailing wage requirements?
☐ Yes ☐ No
If "Yes," attach a separate signed page or pages describing the nature of the violation, identifying the name of the project, the date of its completion, the public agency for which it was constructed; the number of employees who were initially underpaid, the amount of back wages you were required to pay along with the amount of any penalty paid.

2.0 COMPANY EXPERIENCE

The Bidder has been engaged in the contracting business, under the present business name for_____years and has experience in work of a nature similar to this Project which extends over a period of_____years. (At least five (5) years of related experience is preferred).

The Bidder, as a Contractor, has never failed to satisfactorily complete a contract awarded to it, except as follows:

_____

_____

For the City to consider the Bidder properly experienced in work of similar nature to this Project, the Bidder must list at least one million dollars ($1,000,000) per project in construction volume on no more than five (5) individual projects completed within the last five (5) years at industrial, commercial, or public works facilities. The Bidder must list at least one project that is comparable in scope and construction value. Qualifying projects include work related to:

a. Wastewater pump stations
b. Wastewater electrical improvements

The Bidder can include project(s) currently under construction, but only the total amount paid by the Owner as of three (3) months prior to the bid date on uncompleted project(s) can be included in the construction volume for purposes of this certification.

Bidder also certifies that Bidder self-performed at least fifty percent (50%) of the Work on each of the projects listed below. The City considers this level of past self-performance demonstrates a benefit to a project in terms of better control of cost, schedule and safety.

The City reserves the right to exclude any projects listed below that do not demonstrate the Contractor's ability to perform the work associated with this Project. Further, the City reserves the right to accept a Bidder's qualifications that do not meet the experience requirements listed above.

If the Bidder is a Joint Venture of two or more companies, each participant in the Joint Venture shall meet this prior project experience requirement and provide project information for each Joint Venture participant in the format below.

1. Project Name:_____
Project Type:_____
Owner:_____
General Contractor for Project: _____
Subcontractor for Project (if applicable): _____
Dollar Amount of Bidder's Work: $ _____

Construction Time: _____ **Calendar Days**
Owner's Representative: _____
Owner's Telephone No. & Email: _____
Date of Substantial Completion: _____
Additional Information (Optional): _____

2. **Project Name:** _____
Project Type: _____
Owner: _____
General Contractor for Project: _____
Subcontractor for Project (if applicable): _____
Dollar Amount of Bidder's Work: $ _____
Construction Time: _____ **Calendar Days**
Owner's Representative: _____
Owner's Telephone No. & Email: _____
Date of Substantial Completion: _____
Additional Information (Optional): _____

3. **Project Name:** _____
Project Type: _____
Owner: _____
General Contractor for Project: _____
Subcontractor for Project (if applicable): _____
Dollar Amount of Bidder's Work: $ _____
Construction Time: _____ **Calendar Days**
Owner's Representative: _____
Owner's Telephone No. & Email: _____
Date of Substantial Completion: _____
Additional Information (Optional): _____

4. **Project Name:** _____
Project Type: _____
Owner: _____
General Contractor for Project: _____
Subcontractor for Project (if applicable): _____
Dollar Amount of Bidder's Work: $ _____
Construction Time: _____ **Calendar Days**
Owner's Representative: _____

Owner's Telephone No. & Email: _____
Date of Substantial Completion: _____
Additional Information (Optional): _____

5. Project Name: _____
Project Type: _____
Owner: _____
General Contractor for Project: _____
Subcontractor for Project (if applicable): _____
Dollar Amount of Bidder's Work: $ _____
Construction Time: _____ **Calendar Days**
Owner's Representative: _____
Owner's Telephone No. & Email: _____
Date of Substantial Completion: _____
Additional Information (Optional): _____

NOTE: Additional projects may be listed on separate sheets attached to the Bid.

3.0 SAFETY QUALIFICATION CRITERIA

The following information will be used to determine if the Bidder meets the minimum safety requirements for this Project:

1. To qualify to Bid and be awarded the Project, the Bidder's three year average Workers' Compensation Experience Modification Rate (EMR) must be less than or equal to 1.00 (100%). The Bidder shall list its EMR for the last three complete years based on the effective date of the rating (available from your insurance carrier).
2. If the Bidder's three-year average EMR is greater than 1.00 (100%), the Bidder's three-year average Recordable Incident Rate (RIR) must not be greater than 3.5 (350%) and three-year average Lost Time Incident Rate (LTIR) must not be greater than 1.10 (110%) to meet the minimum safety requirements for this Project;
3. If the Bidder only meets either the three-year average RIR or LTIR value, the Bidder shall be required to hire at no additional cost to the City a mutually acceptable safety consultant who will prepare a project specific safety plan, conduct random weekly inspections of the Bidder's activities to ensure conformance with the safety plan and prepare and submit a weekly report to the City summarizing the results of each inspection. The Bidder shall adhere to the safety plan. The Bidder's activities shall be adjusted immediately to address any issues resulting from the weekly safety inspection.

Bidders that cannot meet any of the three safety criteria above are not eligible to work for the City.

The Bidder shall list its Experience Modification Rate, Lost time Incident Rate, and Recordable Incident Rate for the last three complete years (available from your insurance carrier).

Year	EMR	RIR	LTIR
AVERAGE			

To verify the above information, the City will contact the Bidder's Workers' Compensation Insurance carrier. The Bidder shall authorize its carrier to release this information. Failure to release this information will result in the Bid being non-responsive and result in automatic disqualification of the Bid.

Workers' Compensation Insurance Company:_____
Contact Person for Insurance Company:_____
Telephone Number:_____

The undersigned hereby states that all representations regarding the Bidder's Experience and Qualifications are correct and true.

Signed this_____day of_____, 20_____.

Contractor: _____
(Print or Type Contractor's Legal Name)

Signature:_____

Contractor's License No.:_____

Expiration Date:_____

Address:_____

_____

Telephone Number: _____

Email Address:_____

*****END OF SECTION*****

SECTION 00 04 20C

CERTIFICATION OF BIDDER'S ELECTRICAL/INSTRUMENTAL/CONTROLS SUBCONTRACTOR'S EXPERIENCE AND QUALIFICATIONS

(To Accompany Bid)

The undersigned Bidder's Electrical/Instrumental/Controls Subcontractor certifies that it is, at the time of bidding, and shall be, throughout the period of the Contract, licensed under the provisions of Chapter 9, Division 3, of the Business and Professions Code of the State of California, to do the type of work contemplated in the Contract Documents. Bidder's Electrical/Instrumental/Controls Subcontractor shall further certify that it is skilled and regularly engaged in the general class and type of work called for in the Contract Documents.

The Bidder's Electrical/Instrumental/Controls Subcontractor represents that it is competent, knowledgeable, and has special skills on the nature, extent, and inherent conditions of the work to be performed. Bidder's Electrical/Instrumental/Controls Subcontractor further acknowledges that there are certain peculiar and inherent conditions existent in the construction of the particular facilities which may create, during the construction program, unusual or peculiar unsafe conditions hazardous to persons and property. Bidder's Electrical/Instrumental/Controls Subcontractor expressly acknowledges that it is aware of such peculiar risks and that it has the skill and experience to foresee and to adopt protective measures to adequately and safely perform the construction work with respect to such hazards.

1.0 ESSENTIAL REQUIREMENTS FOR QUALIFICATION

Bidder's Electrical/Instrumental/Controls Subcontractor will be immediately disqualified if the answer to questions 1 and 3 is "No". Bidder's Electrical/Instrumental/Controls Subcontractor will be immediately disqualified if the answer to any of questions 2 and 4 through 7 is "Yes".

In addition, the Bidder's Electrical/Instrumental/Controls Subcontractor may be disqualified depending on the additional information provided based on responses required in 4 and 9 through 14. Bidder does not waive its rights and remedies, as provided by law, to appeal if disqualified due to the additional information provided.

1. Bidder's Electrical/Instrumental/Controls Subcontractor possesses valid and current Contractor's License(s) (Classifications XXXX, etc.) as required for the Project for which it intends to submit a bid.
   ☐ Yes ☐ No

2. Has any of the Subcontractor's licenses listed above in Question No. 1 been revoked at any time in the last five (5) years?
   ☐ Yes ☐ No

3. Bidder's Electrical/Instrumental/Controls Subcontractor will comply with and provide all insurance as defined in Section 00800-3.0, **LIABILITY AND INSURANCE.**
☐ Yes ☐ No

4. Has a surety firm completed a Contract or subcontract on your behalf, or paid for completion because your firm was default terminated by the project Owner or prime contractor within the last five (5) years?
☐ Yes ☐ No

If "Yes," explain on a separate signed page. Identify the year of the termination, the owner, the project, and the basis for the termination.

5. At the time of submitting this qualification form, is your firm ineligible to bid on or be awarded a public works contract, or perform as a subcontractor on a public works contract, pursuant to either Labor Code Section 1777.1 or Labor Code Section 1777.7?
☐ Yes ☐ No

6. At any time during the last five (5) years, has your firm, or any of its owners or officers been convicted of a crime involving the awarding of a contract of a construction project, or the bidding or performance of a government contract?
☐ Yes ☐ No

7. Is your firm currently the debtor in a bankruptcy case?
☐ Yes ☐ No
If "Yes," please attach a copy of the bankruptcy petition, showing the case number, and the date on which the petition was filed.

8. Was your firm in bankruptcy at any time during the last five years? (This question refers only to a bankruptcy action that was not described in answer to question 7, above.)
☐ Yes ☐ No
If "Yes," please attach a copy of the bankruptcy petition, showing the case number and the date on which the petition was filed, and a copy of the Bankruptcy Court's discharge order, or of any other document that ended the case, if no discharge order was issued.

9. In the last five years has your firm, or any firm with which any of your company's owners, officers or partners was associated, been debarred, disqualified, removed or otherwise prevented from bidding on, or completing, any government agency or public works project for any reason?
NOTE: "Associated with" refers to another construction firm in which an owner, partner or officer of your firm held a similar position.
☐ Yes ☐ No
If "Yes," explain on a separate signed page. State whether the firm involved was the firm applying for pre-qualification here or another firm. Identify by name of the company, the name of the person within your firm who was associated with that

company, the year of the event, the owner of the project, the project and the basis for the action.

10. In the last five years has your firm been denied an award of a public works contract based on a finding by a public agency that your company was not a responsible bidder or subcontractor?
☐ Yes ☐ No
If "Yes," explain on a separate signed page. Identify the year of the event, the owner, the project and the basis for the finding by the public agency.

11. Has CAL OSHA cited and assessed penalties against your firm for any "serious," "willful" or "repeat" violations of its safety or health regulations in the past five years?
NOTE: If you have filed an appeal of a citation, and the Occupational Safety and Health Appeals Board has not yet ruled on your appeal, you need not include information about it.
☐ Yes ☐ No
If "Yes," attach a separate signed page describing the citations, including information about the dates of the citations, the nature of the violation, the project on which the citation(s) was or were issued, the amount of penalty paid, if any. If the citation was appealed to the Occupational Safety and Health Appeals Board and a decision has been issued, state the case number and the date of the decision.

12. Has the federal Occupational Safety and Health Administration cited and assessed penalties against your firm in the past five years?
NOTE: If you have filed an appeal of a citation and the Appeals Board has not yet ruled on your appeal, or if there is a court appeal pending, you need not include information about the citation.
☐ Yes ☐ No
If "Yes," attach a separate signed page describing each citation.

13. Has there been more than one occasion during the last five years in which your firm was required to pay either back wages or penalties for your own firm's failure to comply with California's prevailing wage laws?
NOTE: This question refers only to your own firm's violation of prevailing wage laws, not to violations of the prevailing wage laws by a subcontractor or your firm.
☐ Yes ☐ No
If "Yes," attach a separate signed page or pages, describing the nature of each violation, identifying the name of the project, the date of its completion, the public agency for which it was constructed; the number of employees who were initially underpaid and the amount of back wages and penalties that you were required to pay.

14. During the last five years, has there been more than one occasion in which your own firm has been penalized or required to pay back wages for failure to comply with the federal Davis-Bacon prevailing wage requirements?
☐ Yes ☐ No
If "Yes," attach a separate signed page or pages describing the nature of the violation, identifying the name of the project, the date of its completion, the public agency for which it was constructed; the number of employees who were initially

underpaid, the amount of back wages you were required to pay along with the amount of any penalty paid.

2.0 COMPANY EXPERIENCE

The Bidder's Electrical/Instrumental/Controls Subcontractor has been engaged in the contracting business, under the present business name for_____years and has experience in work of a nature similar to this Project which extends over a period of - _____ years. (At least five (5) years of related experience is preferred).

The Bidder's Electrical/Instrumental/Controls Subcontractor, as a Subcontractor, has never failed to satisfactorily complete a contract awarded to it, except as follows:

_____

_____

For the City to consider the Bidder's Electrical/Instrumental/Controls Subcontractor properly experienced in work of similar nature to this project, the Bidder's Electrical/Instrumental/Controls Subcontractor must list at least five hundred thousand dollars ($500,000) per project in construction volume on no more than five (5) individual projects completed within the last five (5) years at industrial, commercial, or public works facilities. The Bidder must list at least one project that is comparable in scope and construction value.Qualifying projects include work related to:

a. Wastewater pump stations
b. Wastewater treatment plants

The Bidder's Electrical/Instrumental/Controls Subcontractor can include project(s) currently under construction, but only the total amount paid by the Owner as of three (3) months prior to the bid date on uncompleted project(s) can be included in the construction volume for purposes of this certification.

The City reserves the right to exclude any projects listed below that do not demonstrate the Contractor's ability to perform the work associated with this Project. Further, the City reserves the right to accept a Bidder's qualifications that do not meet the experience requirements listed above.

If the Bidder's Electrical/Instrumental/Controls Subcontractor is a Joint Venture of two or more companies, each participant in the Joint Venture shall meet this prior project experience requirement and provide project information for each Joint Venture participant in the format below.

1. Project Name:_____
Project Type:_____
Owner: _____

General Contractor for Project: _____
Subcontractor for Project (if applicable): _____
Dollar Amount of Bidder's Electrical/Instrumental/Controls Subcontractor's Work: $ _____
Construction Time: _____ **Calendar Days**
Owner's Representative: _____
Owner's Telephone No. & Email: _____
Date of Substantial Completion: _____
Additional Information (Optional): _____

2. **Project Name:** _____
Project Type: _____
Owner: _____
General Contractor for Project: _____
Subcontractor for Project (if applicable): _____
Dollar Amount of Bidder's Electrical/Instrumental/Controls Subcontractor's Work: $ _____
Construction Time: _____ **Calendar Days**
Owner's Representative: _____
Owner's Telephone No. & Email: _____
Date of Substantial Completion: _____
Additional Information (Optional): _____

3. **Project Name:** _____
Project Type: _____
Owner: _____
Subcontractor for Project (if applicable): _____
Subcontractor for Project: _____
Dollar Amount of Bidder's Electrical/Instrumental/Controls Subcontractor's Work: $ _____
Construction Time: _____ **Calendar Days**
Owner's Representative: _____
Owner's Telephone No. & Email: _____
Date of Substantial Completion: _____
Additional Information (Optional): _____

4. **Project Name:** _____
Project Type: _____
Owner: _____
General Contractor for Project: _____
Subcontractor for Project (if applicable): _____
Dollar Amount of Bidder's Electrical/Instrumental/Controls Subcontractor's Work: $ _____
Construction Time: _____ **Calendar Days**
Owner's Representative: _____
Owner's Telephone No. & Email: _____
Date of Substantial Completion: _____
Additional Information (Optional): _____

5. **Project Name:** _____
Project Type: _____
Owner: _____
General Contractor for Project: _____
Subcontractor for Project (if applicable): _____
Dollar Amount of Bidder's Electrical/Instrumental/Controls Subcontractor's Work: $ _____
Construction Time: _____ **Calendar Days**
Owner's Representative: _____
Owner's Telephone No. & Email: _____
Date of Substantial Completion: _____
Additional Information (Optional): _____

NOTE: Additional projects may be listed on separate sheets attached to the Bid.

3.0 SAFETY QUALIFICATION CRITERIA

The following information will be used to determine if the Bidder's Electrical/Instrumental/Controls Subcontractor meets the minimum safety requirements for this Project:

1. To qualify to Bid and be awarded the Project, the Bidder's Electrical/Instrumental/Controls Subcontractor three year average Workers' Compensation Experience Modification Rate (EMR) must not be less than or equal to 1.00 (100%). The Bidder's Electrical/Instrumental/Controls Subcontractor shall list its EMR for the last three complete years based on the effective date of the rating (available from your insurance carrier).
2. If the Bidder's Electrical/Instrumental/Controls Subcontractor three-year average EMR is greater than 1.00 (100%), the Bidder's Electrical/Instrumental/Controls

Subcontractor three-year average Recordable Incident Rate (RIR) must not be greater than 3.5 (350%) and three-year average Lost Time Incident Rate (LTIR) must not be greater than 1.1 (110%) to meet the minimum safety requirements for this Project;

3. If the Bidder's Electrical/Instrumental/Controls Subcontractor only meets either the three-year average RIR or LTIR value, the Bidder's Electrical/Instrumental/Controls Subcontractor shall be required to hire at no additional cost to the City a mutually acceptable safety consultant who will prepare a project specific safety plan, conduct random weekly inspections of the Bidder's Electrical/Instrumental/Controls Subcontractor's activities to ensure conformance with the safety plan and prepare and submit a weekly report to the City summarizing the results of each inspection. The Bidder's Electrical/Instrumental/Controls Subcontractor shall adhere to the safety plan. The Bidder's Electrical/Instrumental/Controls Subcontractor's activities shall be adjusted immediately to address any issues resulting from the weekly safety inspection.

If the Bidder's Electrical/Instrumental/Controls Subcontractor cannot meet any of the three safety criteria above, then they are not eligible to work for the City.

The Bidder's Electrical/Instrumental/Controls Subcontractor shall list its Experience Modification Rate, Lost Time Incident Rate, and Recordable Incident Rate for the last three complete years (available from your insurance carrier).

Year	EMR	RIR	LTIR
AVERAGE			

To verify the above information, the City will contact the Bidder's Electrical/Instrumental/Controls Subcontractor Workers' Compensation Insurance carrier. The Bidder's Electrical/Instrumental/Controls Subcontractor shall authorize its carrier to release this information. Failure to release this information will result in the Bid being non-responsive and result in automatic disqualification of the Bid.

Workers' Compensation Insurance Company:_____

Contact Person for Insurance Company:_____

Telephone Number:_____

The undersigned hereby states that all representations regarding the Bidder's Electrical/Instrumental/Controls Subcontractor's Experience and Qualifications are correct and true.

Signed this_____day of_____, 20____.

Subcontractor: _____
(Print or Type Contractor's Legal Name)

Signature:_____

Address: _____

_____

Telephone Number: _____

Email Address:_____

*****END OF SECTION*****

SECTION 00 04 30

DESIGNATION OF SUBCONTRACTORS

(To Accompany Bid)

The Contractor shall set forth below (a) the name and the location of the place of business of each subcontractor who will perform Work or labor, fabricate a portion of the work or improvement according to detailed drawings in the Project plans, or render service to the Contractor in or about the construction of the Work in an amount in excess of one-half of one (1/2) percent of the Contractor's total Bid; (b) the portion of the work which will be done by each such subcontractor; (c) the subcontractor license number; and (d) the subcontractor Department of Industrial Relations registration number. If the Contractor fails to specify a subcontractor for any portion of the Work as above stated, the Contractor agrees to perform that work itself. In accordance with California Public Contract Code, Section 4100 et.seq, as amended, the following is submitted concerning subcontractors:

Subcontractor Name and Location of Place of Business:	**Description of work to be performed:**	**Subcontractor License #:**	**DIR Registration:**

*****END OF SECTION *****

SECTION 00 04 80

NONCOLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER, NOTARIZED AND SUBMITTED WITH BID
(To Accompany Bid)

State of California)
) ss.
County of_____)

The undersigned declares:

I am the_____of _____, the party making the foregoing bid. The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose. Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder. I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on_____[date], at _____[city], _[state]."

_____ _____
Signature of Authorized Representative Type/Print Name of Bidder

_____
Type/Print Representative's Name

_____ _____
Type/Print Title Date

(Certificate of Acknowledgment to be executed by Notary on following page)

Name of Bidder_____

CERTIFICATE OF ACKNOWLEDGEMENT

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

State of California } ss
}
County of }

On_____before me _____,

a Notary Public, personally appeared _____
Name(s) of Signer(s)

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

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

WITNESS my hand and official seal.

_____
Signature of Notary

Place Notary Seal Above

***** END OF SECTION *****

SECTION 00 05 00

AGREEMENT FOR THE CONSTRUCTION OF

Linda Mar Pump Station Upgrade (C004B)

THIS AGREEMENT, made and entered into in duplicate originals this____day of_____, 20___, between City of Pacifica, a public agency ("City"), and_____ _____("Contractor").

W I T N E S S E T H:

1. That for and in consideration of the payments and agreements to be made and performed by City and under the conditions contained in the two bonds submitted herewith, Contractor agrees with City, at Contractor's cost and expense, to do all the work and furnish all the labor, equipment and materials necessary to construct and complete in good workmanlike and substantial manner the Project entitled **Linda Mar Pump Station Upgrade (C004B)** ("Project") in strict conformity with the Contract Documents (collectively defined in Section 01 10 90-2.0), which Contract Documents in their entirety are incorporated herein by reference.

2. In consideration of the mutual covenants and agreements herein contained and to be performed, Contractor hereby agrees to complete the Work of the Project in accordance with the terms and conditions as provided for in Section 00 03 00, **PROPOSAL**, and other appropriate provisions set forth in the Contract Documents for the lump sum price of _____ _____Dollars, ($_____). Payments shall be made to Contractor in accordance with the provisions of the Contract Documents.

3. City hereby employs Contractor to provide the labor, equipment and materials and to construct, install and complete the Project in accordance with the Contract Documents for the aforesaid prices and agrees to pay the same at the time, in the manner and upon the terms and conditions above set forth. The parties hereto, for themselves, their heirs, executors, administrators, successors and assigns, do hereby agree to fully perform their respective covenants and agreements herein contained.

4. In the event of any conflict between the terms of the Contract Documents and the provisions of Contractor's written bid, the Contract Documents, including the provisions of this Agreement, which is a component of the Contract Documents, shall control and nothing herein contained shall be considered as an acceptance of any such conflicting provision.

5. Contractor and any Subcontractor performing or contracting any Work of the Project shall comply with all applicable provisions of the California Labor Code for all workers, laborers and mechanics of all crafts, classifications or types, including, but not limited to the following:

(a) Sections 1810 to 1815, inclusive, of the California Labor Code relating to working hours. Contractor shall, as a penalty to City, forfeit the sum of twenty-five

dollars ($25.00) for each worker employed in the execution of the Contract by Contractor or by any Subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week, unless such worker receives compensation for all hours worked in excess of eight (8) hours at not less than one and one half (1-1/2) times the basic rate of pay, or other applicable rate.

(b) The Project is a "public work" as defined in California Labor Code Division 2, Part 7 Chapter 1 (commencing with Section 1720) to which Labor Code Section 1771 applies and shall be performed by Contractor as such. Pursuant to the provision of California Labor Code Sections 1770 et seq., Contractor and any Subcontractor shall pay not less than the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations. Pursuant to the provisions of California Labor Code Section 1773.2, Contractor is hereby advised that copies of the prevailing rate of per diem wages and a general prevailing rate for holidays, Saturdays and Sundays and overtime work in the locality in which the work is to be performed for each craft, classification, or type of worker required to execute the Contract, are on file in the office of City, which copies shall be made available to any interested party on request. Contractor shall post a copy of said prevailing rate of per diem wages at each job site.

(c) Contractor shall comply with the provisions of Section 1775 of the California Labor Code and shall, as a penalty to City, forfeit up to two hundred dollars ($200) for each calendar day, or portion thereof, for each worker paid less than the prevailing rate of per diem wages for each craft, classification, or type of worker needed to execute the Contract. The Labor Commissioner pursuant to Labor Code Section 1775 shall determine the final amount of the forfeiture. Contractor shall pay each worker an amount equal to the difference between the prevailing wage rates and the amount paid a worker for each calendar day or portion thereof for which a worker was paid less than the prevailing wage rate.

(d) Pursuant to the provisions of Section 1776 of the California Labor Code, Contractor and each subcontractor shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker or other employee employed by Contractor for the Project. Said payroll shall be certified and shall be available for inspection at all reasonable hours at the principal office of Contractor on the following basis:

(1) A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request.

(2) A certified copy of all payroll records above-listed shall be made available for inspection or furnished upon request to City, the Division of Labor Standards Enforcement and the Division of Apprenticeship Standards of the Department of Industrial Relations.

(3) A certified copy of all payroll records above-listed shall be made available upon request by the public for inspection or for copies thereof;

provided, however, that a request by the public shall be made through either City, the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to subparagraph 5(d)(2) herein, the requesting party shall, prior to being provided the records, reimburse the costs of preparation by Contractor, subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal offices of Contractor.

The certified payroll records shall be on forms provided by the California Division of Labor Standards Enforcement or shall contain the same information as the forms provided by the Division.

Contractor shall file a certified copy of the records above-listed with the entity that requested the records within ten (10) days after receipt of a written request. Any copy of records made available for inspection as copied and furnished upon request to the public or any public agency by City, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of Contractor shall not be marked or obliterated. Contractor shall inform City of the location of the records above-listed including the street address, city and county, and shall, within five (5) working days, provide a notice of change of location and address. Contractor shall have ten (10) days in which to comply subsequent to receipt of written notice specifying in what respects Contractor must comply with this Paragraph 5(d). If Contractor fails to comply within the ten (10) day period, Contractor, as a penalty to the State of California or City, shall forfeit one hundred dollars ($100.00) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the California Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due. Responsibility for compliance with this Paragraph 5(d) lies with Contractor.

With each application for payment, Contractor shall also deliver certified payrolls to City as set forth above in this Section 00 05 00, **AGREEMENT**, and concurrently therewith (but in no event less frequently than monthly) directly to the Labor Commissioner in the format prescribed by the Labor Commissioner.

(e) Contractor and any Subcontractors shall, when they employ any person in any apprenticeable craft or trade, apply to the joint apprenticeship committee administering the apprenticeship standards of the craft or trade in the area of the construction site for a certificate approving Contractor or Subcontractor under the apprenticeship standards for the employment and training of apprentices in the area or industry affected; and shall comply with all other requirements of Section 1777.5 of the California Labor Code. The responsibility of compliance with California Labor Code Section 1777.5 during the performance of this contract rests with Contractor. Pursuant to California Labor Code Section 1777.7, in the event Contractor willfully

fails to comply with the provisions of California Labor Code Section 1777.5, Contractor shall be denied the right to bid on any public works contract for up to three (3) years from the date noncompliance is determined and shall be assessed civil penalties.

(f) In accordance with the provisions of Article 5, Chapter 1, Part 7, Division 2 (commencing with 1860), and Chapter 4, Part 1, Division 4 (commencing with 3700) of the California Labor Code, Contractor is required to secure the payment of compensation to its employees and for that purpose obtain and keep in effect adequate Workers' Compensation Insurance. If Contractor, in the sole discretion of City satisfies City of the responsibility and capacity under the applicable Workers' Compensation laws, to act as self-insurer, Contractor may so act, and in such case, the insurance required by this Paragraph need not be provided.

Contractor is advised of the provisions of Section 3700 of the California Labor Code, which requires every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code.

Before the Agreement between City and Contractor is entered into, Contractor shall submit written evidence that Contractor has obtained for the period of the Contract full Workers' Compensation Insurance coverage for all persons whom they employ or may employ in carrying out the Work of the Project. This insurance shall comply with the requirements of the most current and applicable state Workers' Compensation Insurance laws. Contractor shall also submit written evidence that each Subcontractor has obtained for the period of the Contract full Workers' Compensation Insurance coverage for all persons whom they employ or may employ in carrying out the Work of the Project prior to the commencement of any work by the Subcontractor(s).

In accordance with the provisions of Section 1861 of the California Labor Code, Contractor hereby certifies to City as true the following statement:

> "I am aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this Contract."

(g) In accordance with the provisions of Section 1727 of the California Labor Code, before making payment to Contractor of money due under this contract City shall withhold and retain therefrom sufficient funds to satisfy any civil wage and penalty assessment issued by the Labor Commissioner under Chapter 1, Part 7, Division 2 of the California Labor Code (commencing with 1720). If City has not retained sufficient money under the contract to satisfy a civil wage and penalty assessment based on a Subcontractor's violations, Contractor shall, upon the request of the Labor Commissioner, withhold sufficient money due the Subcontractor under the Contract to satisfy the assessment and transfer the money

to City. These amounts shall not be disbursed by City until receipt of a final order that is no longer subject to judicial review.

(h) The Project is a "public work" as defined in Labor Code Section 1720. Therefore, Contractor and all subcontractors for the Project must be registered with the California Department of Industrial Relations pursuant to the provisions of Labor Code Section 1725.5 in order to be qualified to bid on, be listed in a bid proposal, or engage in the performance of any work under the Contract for the Project. A bid shall not be accepted nor any contract or subcontract be entered into without proof of the contractor or subcontractor's current registration to perform public work pursuant to Labor Code Section 1725.5. Contractor hereby certifies that Contractor is registered pursuant to that Section.

Pursuant to Labor Code Section 1771.4, the Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. Contractor shall post jobsite notices as prescribed by regulation and each subcontractor shall furnish the records specified in Labor Code Section 1776 directly to the Labor Commissioner as specified in said Section 1771.4. Pursuant to Labor Code Section 1773.3, the City shall provide notice to the Department of Industrial Relations of the award of the contract for the Project within five days of the award.

6. Contractor shall provide Automobile Liability Insurance for all owned, non-owned and hired automobiles, trucks, trailers or other vehicles to be employed by Contractor on the Project and such other insurance coverage expressly required for the Project as set forth in Section 00 08 00-3.0, LIABILITY AND INSURANCE.

7. Contractor shall diligently prosecute performance of the Work of the Project so that it shall be substantially completed within the time specified in Section 00 08 00-1.1, TIME ALLOWED FOR COMPLETION.

8. In addition to such other guarantees as may be provided in other provisions of the Contract Documents, Contractor hereby expressly guarantees for one (1) full year from the date of Acceptance of the Project by City to repair or replace any defects of the Work performed hereunder or in the Project resulting from the use of inferior or defective materials, equipment or workmanship. If, within said period, any repairs or replacements in connection with the Project are, in the opinion of City, rendered necessary as the result of the use of inferior or defective materials, equipment or workmanship, Contractor agrees, upon receipt of notice from City, and without expense to City, promptly to repair or replace such material or workmanship and correct any and all defects therein. If Contractor, after such notice, fails to proceed promptly to comply with the terms of this guarantee, City may perform the work necessary to effectuate such correction and recover the cost thereof from Contractor or its sureties.

In special circumstances where a particular item of work or equipment is placed in continuous service before Substantial Completion of the Project, the guarantee period for that item may start to run from an earlier date agreed upon by Contractor and City on or before the item is placed in continuous service.

All other special guarantees which may be applicable to specific parts of the Project shall be considered as additional guarantees and shall not reduce or limit the guarantee under this Paragraph during the life of such guarantee.

9. Contractor shall provide, upon execution of this Agreement, a good and sufficient corporate surety bond in the penal sum of one hundred (100) percent of amount bid, which bond shall be on the form provided by City in Section 00 06 10, **BOND OF FAITHFUL PERFORMANCE**, and be conditioned upon the faithful performance of all Work required to be performed by Contractor hereunder. The surety on said bond shall be liable for any and all penalties and obligations which may be incurred by Contractor under this Agreement. The bond shall be issued by a corporate Surety approved by City's counsel. The corporate Surety shall be authorized to conduct business in California and shall have an AM Best rating of A:VII or better. At its discretion, City may require that a certified copy of the Certificate of City of the insurer issued by the Insurance Commissioner of the State of California be submitted by the Surety to City. At its discretion, City may also require the insurer to provide copies of its most recent annual and quarterly statements filed with the Department of Insurance pursuant to Article 10 (commencing with Section 900) of Chapter 1 of Part 2 of Division 1 of the California Insurance Code.

10. In addition to the bond required under Paragraph 9, Contractor shall furnish a good and sufficient corporate surety bond in the penal sum of one hundred (100) percent of amount of the Bid, which bond shall be on the form provided by City in Section 00 06 20, **PAYMENT BOND**, and conform strictly with the provisions of Chapter 5 (commencing with Section 9550), Part 6, Title 3, of the Civil Code of the State of California, and all amendments thereto. The bond shall be issued by a corporate Surety approved by City's counsel. The Surety shall be authorized to conduct business in California and shall have an AM Best rating of A:VII or better. At its discretion, City may request that a certified copy of the Certificate of City of the insurer issued by the Insurance Commissioner of the State of California be submitted by the Surety to City. At its discretion, City may also require the insurer to provide copies of its most recent annual and quarterly statements filed with the Department of Insurance pursuant to Article 10 (commencing with Section 900) of Chapter 1 of Part 2 of Division 1 of the Insurance Code.

11. Contractor may substitute securities for the amounts retained by City to ensure performance of the work in accordance with the provisions of Section 22300 of the Public Contract Code. A form is provided at Section 00 06 30, ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION.

12. Contractor covenants that Contractor is licensed and registered in accordance with the provisions of the Contractors' License Law of California and Labor Code Section 1725.5, respectively, as provided in Section 00 00 10, **NOTICE TO CONTRACTORS**.

13. Contractor shall be provided the period of time specified in the Contract Documents under Section 01 13 40-7.2, SUBSTITUTIONS, for submission of data substantiating a request for a substitution of "an equal" item.

14. City shall assume the responsibility for the timely removal, relocation, or protection of existing main or trunkline utility facilities located on the work site, if such utilities are not identified in the Contract Documents. City shall compensate Contractor for the costs of locating, repairing damage not caused by Contractor for failure to exercise reasonable care

and removing or relocating such utility facilities not indicated in the Contract Documents with reasonable accuracy, and for equipment on the Project necessarily idled during such work. Contractor shall not be assessed liquidated damages for delay in completion of the Project when such delay was caused by the failure of City or the owner of the utility to remove or relocate such utility facilities.

Nothing herein contained shall be deemed to require City to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the work site can be inferred from the presence of other visible facilities, such as buildings, meter and junction boxes on or adjacent to the work site or similar appurtenances associated with such utilities; provided, however, nothing herein shall relieve City from identifying main or trunklines in the Contract Documents.

Nothing herein shall preclude City from pursuing any appropriate remedy against the utility for delays which are the responsibility of the utility. Nothing herein shall be construed to relieve the utility from any obligation as required whether by law or by contract to pay the cost of removal or relocation of existing utility facilities.

If Contractor, while performing the work of the Project discovers utility facilities not identified by City in the Contract Documents, Contractor shall immediately notify City and the apparent owner of the utility in writing.

A public utility which is identified as the owner of a utility shall have the sole discretion to perform repairs or relocation work or permit Contractor to do such repairs or relocation work at a reasonable price.

15. As required by Section 6705 of the California Labor Code and in addition thereto, whenever Work under the Contract involves the excavation of any trench or trenches five (5) feet or more in depth, Contractor shall submit, in advance of excavation, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during excavation. If such plan varies from the shoring system standards established by the Construction Safety Orders of the Division of Industrial Safety in Title 8, Subchapter 4, Article 6, California Code of Regulations, the plan shall be prepared by a registered civil or structural engineer employed by Contractor, and all costs therefor shall be deemed to be included in Contractor’s accepted bid for the Project. Nothing in this Section shall be deemed to allow the use of a shoring, sloping, or other protective system less effective than that required by the Construction Safety Orders. Nothing in this section shall be construed to impose tort liability on City, the Design Consultant, Owner’s Representative or any of their agents, consultants, or employees. City’s review of Contractor’s excavation plan is only for observation of general conformance to the California Construction Safety Orders and shall not be deemed approval or guarantee of Contractor's plan.

Prior to commencing any excavation, Contractor shall designate in writing to the Owner’s Representative Contractor’s “competent person(s)” with City and responsibilities designated in the Construction Safety Orders.

16. In accordance with Section 7104 of the Public Contract Code, whenever any work involves digging trenches or other excavations that extend deeper than four (4) feet below

the surface, the provisions of Section 00 07 00-7.2, DIFFERING SITE CONDITIONS, shall apply.

17. In accordance with Section 7103.5 of the Public Contract Code, Contractor and Subcontractors shall conform to the following requirements: Contractor or its Subcontractor(s) offer(s) and agree(s) to assign to City all rights, title, and interest in and to all causes of action it/they may have under Section 4 of the Clayton Act (15 U.S.C. § 15) or under the Cartwright Act (Chapter 2 [commencing with § 16700] of Part 2 of Division 7 of the Business and Professions Code) arising from purchases of goods, materials or services pursuant to this Contract or the subcontract(s). Such assignment shall be made and become effective at the time City tenders final payment to Contractor, without further acknowledgement by the parties.

18. In accordance with Section 4552 of the Government Code, Contractor shall conform to the following requirements: Contractor shall assign to City all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. § 15) or under the Cartwright Act (Chapter 2 [commencing with § 16700] of Part 2 of Division 7 of the Business and Professions Code), arising from purchase of goods, materials, or services by Contractor for sale to City pursuant to the Bid. Such assignment shall be made and become effective at the time City tenders final payment to Contractor.

19. Pursuant to Public Contract Code Section 7100, acceptance by Contractor of an undisputed payment made under the terms of the Contract shall operate as, and shall be, a release to City and City's duly authorized agents from all claims of or liability to Contractor arising by virtue of the Contract related to those amounts. Disputed claims in stated amounts may be specifically excluded by Contractor from the operation of the release.

20. In accordance with California Business and Professions Code Section 7030, Contractor is required by law to be licensed and regulated by the Contractor's State License Board which has jurisdiction to investigate complaints against contractors if a complaint regarding a patent act or omission is filed within four (4) years of the date of the alleged violation. A complaint regarding a latent act or omission pertaining to structural defects must be filed within ten (10) years of the date of the alleged violation. Any questions concerning Contractor may be referred to the Contractors State License Board, Intake and Mediation Center, P.O. Box 269116, Sacramento CA 95826-9116.

IN WITNESS WHEREOF, the parties hereto have executed this agreement this _____day of_____, 20_____.

CONTRACTOR

_____
(Type or print Contractor's Name)

Signed By:_____
(Type or print Name)

Title:_____
(Type or print Title)

City of Pacifica

By:_____
Kevin Woodhouse, City Manager

ATTEST:

By:_____
Sarah Coffey, City Clerk

APPROVED AS TO FORM:

By:_____
Michelle Marchetta Kenyon, City Attorney

***** END OF SECTION *****

SECTION 00 05 05

NOTICE OF INTENT TO AWARD FOR CONSTRUCTION

DATE POSTED: **[Insert Date]**

PROJECT TITLE: **Linda Mar Pump Station Upgrade (C004B)**

_____, the_____ of

the City of Pacifica intends to recommend to its **City Council** the award of the above-referenced

Project to_____.
(Name of Contractor)

OWNER: CITY OF PACIFICA

By: _____

_____
(Print name)

Title: _____

Date: _____

***** END OF SECTION *****

SECTION 00 05 30

RELEASE OF ANY AND ALL CLAIMS

This Release of Claims ("Release"), made and entered into this___day of_____, 20____,

by_____("Contractor"), whose place of business is at

_____.
Street City State Zip

in favor of the City of Pacifica ("City").

RECITALS

1. City and Contractor entered into the **Linda Mar Pump Station Upgrade (C004B)** in the City of Pacifica, County of San Mateo, State of California.

2. The Work under **Linda Mar Pump Station Upgrade (C004B)** has been completed.

AGREEMENT

NOW THEREFORE, Contractor agrees with City as follows:

1. Contractor will not be assessed liquidated damages except as detailed below:

Original Contract Amount	$ _____
Final Contract Amount	$ _____
Payments to Date	$ _____
Liquidated Damages	$ _____
Final Progress Payment Due Contractor	$ _____
Final Retention Release Due Contractor	$ _____

2. Subject to the provisions of this Release, City shall forthwith pay to Contractor the sum of $_____ (in words), $_____(in numbers) Dollars under the **Linda Mar Pump Station Upgrade (C004B)**, less any amounts withheld under the Contract or represented by any Notice to Withhold Funds on file with City as of the date of such payment.

3. Contractor acknowledges and hereby agrees that there are no unresolved or outstanding claims in dispute against City arising from the performance of work under the **Linda Mar Pump Station Upgrade (C004B)**, except for the claims described in Paragraph 4, and continuing obligations described in Paragraph 6, below. It is the intention of the Contractor in executing this Release that this Release shall be effective as a full, final and general release of all claims, demands, actions, causes of action, obligations, costs,

expenses, damages, losses and liabilities of Contractor against City of Pacifica, North Coast County Water District, the Design Consultant, and the Owner's Representative and each of its officials, officers, partners, employees, agents and volunteers except for the Disputed Claims set forth in Paragraph 4, and continuing obligations described in Paragraph 6, below.

4. The following claims are disputed (hereinafter, the "Disputed Claims") and are specifically excluded from the operation of this Release:

Claim No.	Date Submitted	Description of Claim	Amount of Claim

[Insert information, including attachment if necessary]

5. Consistent with California Public Contract Code Section 7100, Contractor hereby agrees that, in consideration of the payment set forth in Paragraph 4 above, Contractor hereby releases and forever discharges City of Pacifica, North Coast County Water District, the Design Consultant, and the Owner's Representative and each of its officials, officers, partners, employees, agents and volunteers from any and all liability, claims, demands, actions or causes of action of whatever kind or nature arising out of, or in any way concerned with, the Work under the Contract.

6. Guarantees and warranties for the Work, and any other continuing obligation of Contractor, shall remain in full force and effect as specified in the Contract Documents.

7. Contractor shall immediately defend, indemnify and hold harmless City of Pacifica, North Coast County Water District, the Design Consultant, and the Owner's Representative and each of its officials, officers, partners, employees, agents and volunteers from any and all claims, demands, actions, causes of action, obligations, costs, expenses, damages, losses and liabilities that may be asserted against them by any of Contractor's suppliers and/or subcontractors of any tier and/or any suppliers to them for any and all labor, materials, supplies and equipment used, or contemplated to be used in the performance of Linda Mar Pump Station Upgrade (C004B), except for the Disputed Claims set forth in Paragraph 6, above.

8. Contractor hereby waives the provisions of California Civil Code, Section 1542, which provides as follows:

> A general release does not extend to claims which the creditor does not know or suspect to exist in his favor at the time of executing the release, which if known by him, must have materially affected his settlement with the debtor.

9. The provisions of this Release are contractual in nature and not mere recitals and shall be considered independent and severable. If any such provision or any part thereof shall be at any time held invalid in whole or in part under any federal, state, city, municipal or other law, ruling or regulations, then such provision, or part thereof shall remain in force and effect only to the extent permitted by law, and the remaining provisions of this Release shall also remain in full force and effect and shall be enforceable.

10. Contractor represents and warrants that it is the true and lawful owner of all claims and

other matters released pursuant to this Agreement and Release, and that it has full right, title and authority to enter into this instrument. Contractor represents and warrants that it has been represented by counsel of its own choosing in connection with this Agreement and Release.

11. All rights of City shall survive completion of the Work or termination of Contract, and execution of this Release.

*** * * CAUTION: THIS IS A RELEASE - READ BEFORE EXECUTING * * ***

CONTRACTOR SIGNATURE:

Type/Print Name of Contractor	Signature of Authorized Representative
	Type/Print Representative's Name
Date	Type/Print Title of Representative

*****END OF SECTION*****

SECTION 00 06 10

BOND OF FAITHFUL PERFORMANCE

THIS BOND OF FAITHFUL PERFORMANCE ("Bond") is dated ***[Month, Day]***, 202_ is in the amount of ***[Insert Amount]*** (**Penal Sum**), which is 100% of the Contract Sum and is entered into by and between the parties listed below to ensure the faithful performance of the Contract identified below. This Bond consists of this page and the Bond Terms and Conditions, Paragraphs 1 through 14 attached to this page. Any singular reference to ***[Insert name of Contractor]*** ("Contractor"), ***[Insert name of Surety]*** ("Surety"), **CITY OF PACIFICA** ("City"), or other party shall be considered plural where applicable.

CONTRACTOR:	**SURETY:**
[Insert name of Contractor]	***[Insert name of Surety]***
Address	Principal Place of Business
City/State/Zip	City/State/Zip
CONSTRUCTION CONTRACT:	Agreement for the **Linda Mar Pump Station Upgrade (C004B)**
CONTRACTOR AS PRINCIPAL	**SURETY**
Company: (Corp. Seal)	Company: (Corp. Seal)
Signature:_____	Signature: _____
Name:_____	Name: _____
Title: _____	Title: _____

Surety shall have an AM Best rating of A:VII, or better.

BOND TERMS AND CONDITIONS

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to City and the State of California for the complete and proper performance of the Construction Contract, which is incorporated herein by reference.
2. If Contractor completely and properly performs all of its obligations under the Construction Contract, Surety and Contractor shall have no obligation under this Bond.
3. If there is no City Default, Surety's obligation under this Bond shall arise after:
   - 3.1 City provides Surety with written notice that City has declared a Contractor Default under the Construction Contract pursuant to the terms of the Construction Contract; and
   - 3.2 City has agreed to pay the Balance of the Contract Sum:
     - 3.2.1 To Surety in accordance with the terms of this Bond and the Construction Contract; or
     - 3.2.2 To a Contractor selected to perform the Construction Contract in accordance with the terms of this Bond and the Construction Contract.
4. When City has satisfied the conditions of Paragraph 3 above, Surety shall promptly (within 40 Days) and at Surety's expense elect to take one of the following actions:
   - 4.1 Arrange for Contractor, with consent of City, to perform and complete the Construction Contract (but City may withhold consent, in which case the Surety must elect an option described in Paragraphs 4.2, 4.3 or 4.4 below); or
   - 4.2 Undertake to perform and complete the Construction Contract itself, through its agents or through independent contractors or Construction entities; provided, that Surety may not select Contractor as its agent or independent contractor or Contractor without City's consent; or
   - 4.3 Undertake to perform and complete the Construction Contract by obtaining bids from qualified contractors or Construction entities acceptable to City for a contract for performance and completion of the Construction Contract and, upon determination by City of the lowest responsive and responsible Bidder, arrange for a contract to be prepared for execution by City and the contractor or Contractor selected with City's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract; and, if Surety's obligations defined in Paragraph 6 below, exceed the Balance of the Contract Sum, then Surety shall pay to City the amount of such excess; or
   - 4.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor or Contractor, and with reasonable promptness under the circumstances and, after investigation and consultation with City, determine in good faith its monetary obligation to City under Paragraph 6 below, for the performance and completion of the Construction Contract and, as soon as practicable after the amount is determined, tender payment therefor to City with full explanation of the payment's calculation. If City accepts Surety's tender under this Paragraph 4.4, City may still hold Surety liable for future damages then unknown or unliquidated resulting from the Contractor Default, as agreed by City and Surety at the time of tender. If City disputes the amount of Surety's tender under this Paragraph 4.4, City may exercise all remedies available to it at law to enforce Surety's liability under Paragraphs 6 and 7 below.
5. At all times City shall be entitled to enforce any remedy available to City at law or under the Construction Contract including, without limitation, and by way of example only,

rights to perform work, protect Work, mitigate damages, advance critical Work to mitigate schedule delay, and coordinate Work with other consultants or contractors.

6. If Surety elects to act under Paragraphs 4.1, 4.2 or 4.3 above, within the time period provided in Paragraph 4, above, and complies with its obligations under this Bond, Surety's obligations under this Bond are commensurate with Contractor's Construction Contract obligations. Surety's obligations include, but are not limited to:
   6.1 Contractor's obligations to complete the Construction Contract and correct defective work;
   6.2 Contractor's obligations to pay liquidated damages; and
   6.3 To the extent otherwise required of Contractor under the Construction Contract, Contractor's obligations to pay additional legal, design professional, and other costs not included within liquidated damages resulting from Contractor Default (but excluding attorney's fees incurred to enforce this Bond).
7. If Surety does not elect to act under Paragraphs 4.1, 4.2, 4.3, or 4.4, above, within the time period provided in Paragraph 4, above, or comply with its obligations under this Bond, then Surety shall be deemed to be in default on this Bond ten Days after receipt of an additional written notice from City to Surety demanding that Surety perform its obligations under this Bond. Such Surety default shall be independent of the Contractor Default. To the extent Surety's independent default causes City to suffer damages including, but not limited to, delay damages, which are different from, or in addition to (but not duplicative of) damages which City is entitled to receive under the Construction Contract, Surety shall also be liable for such damages. In the event any Surety obligation following its independent default is inconsistent or conflicts with California Civil Code Section 2809, or any other law which either prohibits, restricts, limits or modifies in any way any obligation of a surety which is larger in amount or in any other respect more burdensome than that of the principal, Surety hereby waives the provisions of such laws to that extent.
8. If Surety elects to act under Paragraphs 4.1, 4.3 or 4.4 above, within the time period provided in Paragraph 4, above, and complies with all obligations under this Bond, Surety's monetary obligation under this Bond is limited to the Penal Sum.
9. No right of action shall accrue on this Bond to any person or entity other than City or its successors or assigns.
10. Surety hereby waives notice of any change, alteration or addition to the Construction Contract or to related subcontracts, design agreements, purchase orders and other obligations, including changes of time, and of any City action in accordance with Paragraph 5 above. Surety consents to all terms of the Construction Contract, including provisions on changes to the Contract. No extension of time, change, alteration, modification, deletion, or addition to the Contract Documents, or of the Work (including services) required thereunder, or any City action in accordance with Paragraph 5 above shall release or exonerate Surety on this Bond or in any way affect the obligations of Surety on this Bond, unless such action is an City Default.
11. Any proceeding, legal or equitable, under this Bond shall be instituted in any court of competent jurisdiction where a proceeding is pending between City and Contractor regarding the Construction Contract, or in the Superior Court of the County of San Mateo, California, or in a court of competent jurisdiction in the location in which the Work is located. Communications from City to Surety under Paragraph 3.1 above shall be deemed to include the necessary agreements under Paragraph 3.2 above unless expressly stated otherwise.
12. All notices to Surety or Contractor shall be mailed or delivered (at the address set forth on the signature page of this Bond), and all notices to City shall be mailed or delivered

as provided in Section 00 05 00, **AGREEMENT**. Actual receipt of notice by Surety, City or Contractor, however accomplished, shall be sufficient compliance as of the date received at the foregoing addresses.

13. Any provision in this Bond conflicting with any statutory or regulatory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein.

14. Definitions

14.1 "Balance of the Contract Sum" The total amount payable by City to Contractor pursuant to the terms of the Construction Contract after all proper adjustments have been made under the Construction Contract, for example, deductions for progress payments made, and increases/decreases for approved modifications to the Construction Contract**.**

14.2 "City Default" Material failure of City, which has neither been remedied nor waived, to pay Contractor progress payments due under the Construction Contract or to perform other material terms of the Construction Contract, if such failure is the cause of the asserted Contractor Default and is sufficient to justify Contractor termination of the Construction Contract.

14.3 "Construction Contract" The agreement between City and Contractor identified on the signature page of this Bond, including all Contract Documents and changes thereto.

14.4 "Contractor Default" Material failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Construction Contract, limited to "material breach" or any other condition allowing a termination for cause as provided in Section 00 07 00, **GENERAL CONDITIONS SPECIFICATIONS**.

***** END OF SECTION *****

SECTION 00 06 20

PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS: that, WHEREAS, the Commission of City of Pacifica, a public entity located in San Mateo County, State of California ("City"), has awarded to _____

_____

hereinafter designated as "Principal, a Contract for construction of:

Linda Mar Pump Station Upgrade (C004B)

WHEREAS, the Principal is required to furnish a bond in connection with said Contract, providing that if said Principal, or any of it or its subcontractors, shall fail to pay for any materials, provisions, or other supplies or teams used in, upon, for or about the performance of the Work contracted to be done, or for any work or labor thereon of any kind, the Surety of this bond will pay the same to the extent hereinafter set forth:

NOW, THEREFORE, we, the Principal and_____, as Surety, are held and firmly bound unto City of Pacifica in the penal sum _____Dollars, ($_____), lawful money of the United States of America, being not less than one hundred (100) percent of the Contract Amount, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if said Principal, his/her or its heirs, executors, administrators, successors, transferees or assigns approved by City or its subcontractors shall fail to pay any of the persons named in California Civil Code Section 9100, or amounts due under the State of California Unemployment Insurance Code with respect to work or labor performed under the Contract, or for any amounts required to be deducted, withheld, and paid over to the State of California Employment Development Department from the wages of employees of Principal and subcontractors pursuant to Section 13020 of the State of California Unemployment Insurance Code with respect to such work and labor, then said Surety will pay the same in or to any amount not exceeding the amount herein above set forth, plus reasonable attorney's fees, otherwise the above obligation shall become and be null and void.

This bond shall inure to the benefit of any of the persons named in California Civil Code Section 9100, as to give a right of action to such persons or their assigns in any suit brought upon this bond. The intent of this bond is to comply with the California Mechanic's Lien Law.

And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed thereunder, or the Specifications accompanying the same shall in any wise affect its obligations on this bond; and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract, or to the Work, or to the Contract Documents.

Surety's obligations hereunder are independent of the obligations of any other surety for the payment of claims of laborers, mechanics, material suppliers, and other persons in connection with Contract; and suit may be brought against Surety and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing City's rights against the other.

Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below.

IN WITNESS WHEREOF, the above bounded parties have executed this instrument under their seals this____ day of_____20__, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACTOR AS PRINCIPAL	SURETY
Company: (Corp. Seal)	Company: (Corp. Seal)
_____	_____
Signature	Signature
_____	_____
Name	Name
_____	_____
Title	Title
_____	_____
Street Address	Street Address
_____	_____
City, State, Zip Code	City, State, Zip Code

Surety shall have an AM Best rating of A:VII, or better.

***** END OF SECTION *****

SECTION 00 06 30

**ESCROW AGREEMENT FOR
SECURITY DEPOSITS IN LIEU OF RETENTION**

Linda Mar Pump Station Upgrade (C004B)

This Escrow Agreement is made and entered into by and between; City of Pacifica, whose address is 170 Santa Maria Avenue Pacifica, CA 94044; hereinafter called "Owner", and _____

whose address is _____

hereinafter called "Contractor", and_____

whose address is _____

hereinafter called "Escrow Agent".

For the consideration hereinafter set forth, the Owner, Contractor, and Escrow Agent agree as follows:

1. Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities which meet the requirements set forth in said Section 22300, with Escrow Agent, as a substitute for retention earnings required to be withheld by Owner pursuant to the Construction Contract entered into between Owner and Contractor for _____
in the amount of $_____
_____
dated _____(hereinafter referred to as the "Contract"). Alternatively, on written request of the Contractor, the Owner shall make payments of the retention earnings directly to the Escrow Agent. When Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agent shall notify the Owner within ten (10) days of the deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between the Owner and Contractor. Securities shall be held in the name of Owner, and shall designate the Contractor as the beneficial Owner.

2. Owner shall make progress payments to Contractor for such funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that the Escrow Agent holds securities in the form and amount specified above.

3. When the Owner makes payment of retentions earned directly to the Escrow Agent the Escrow Agent shall hold them for the benefit of the Contractor until such time as the escrow created under this Contract is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the Owner pays the Escrow Agent directly.

4. Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account, and all expenses of the Owner. These expenses and payment terms shall be determined by the Owner, Contractor, and Escrow Agent.

5. The interest earned on the securities or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the Owner.

6. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from Owner to the Escrow Agent that Owner consents to the withdrawal of the amount sought to be withdrawn by Contractor.

7. The Owner shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven (7) days written notice to the Escrow Agent from the Owner of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the Owner.

8. Upon receipt of written notification from the Owner certifying that the Contract is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payments of fees and charges.

9. Escrow Agent shall rely on the written notifications from the Owner and the Contractor pursuant to Sections (5) to (8), inclusive, of this Agreement, and Owner and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.

10. The names of the persons who are authorized to give written notice or to receive written notice on behalf of the Owner and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

On Behalf of Owner:	On Behalf of Contractor:
Title	Title
Name	Name
Signature	Signature
Address	Address

On Behalf of Escrow Agent:

Title

Name

Signature

Address

At the time the Escrow Account is opened, Owner and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement by their proper officers on the date first set forth above.

Owner:	Contractor:
_____	_____
Title	Title
_____	_____
Name	Name
_____	_____
Signature	Signature

*****END OF SECTION*****

SECTION 00 06 50

COMMERCIAL GENERAL LIABILITY INSURANCE ENDORSEMENT

INSURER: ISO FORM CG 20 10 11 85: (MODIFIED)
POLICY NUMBER: COMMERCIAL GENERAL LIABILITY

THIS ENDORSEMENT CHANGES THE POLICY, PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED — OWNERS, LESSEES OR CONTRACTORS (FORM B)

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART.

SCHEDULE. The City of Pacifica, its governing Commission, officers, employees, agents and consultants including, without limitation, the Design Consultant, Owner's Representative and said consultants' respective officers, partners, employees and agents and their respective governing bodies, officers, employees and agents.

WHO IS AN INSURED. (Section II) is amended to include as Insureds the persons or organizations set forth in the Schedule, but only with regard to damages and defense of claims arising from: (a) activities performed by or on behalf of the Insureds, (b) products and completed operations of the Insured, or (c) premises owned, leased or used by the Insured.

Modifications to ISO form CG 20 10 11 85:

1. The insured scheduled above includes the Insured's officers, officials, partners, employees agents and consultants.

2. This insurance shall be primary as respects the Insureds described in the schedule above, or if excess, shall stand in an unbroken chain of coverage excess of the Insureds' scheduled underlying primary coverage. In either event, any other insurance maintained by the Insureds scheduled above shall be in excess of this insurance and shall not be called upon to contribute with it.

3. CONTRIBUTION NOT REQUIRED. As respects: (a) work performed by the Named Insured for or on behalf of the City; or (b) products sold by the Named Insured to the City; or (c) premises leased by the Named Insured from the City, the insurance afforded by this policy shall be primary insurance as respects the Insureds set forth in the above Schedule; or stand in an unbroken chain of coverage excess of the said Insureds' scheduled underlying primary coverage. In either event, any other insurance maintained by the Insureds set forth in the above Schedule shall be excess of this insurance and shall not contribute with it.

4. The insurance afforded by this policy shall not be canceled except after thirty (30) days' prior written notice by certified mail return receipt requested has been given to the Entity.

5. SEVERABILITY OF INTEREST. The insurance afforded by this policy applies separately to each Insured who is seeking coverage or against whom a claim is made or a suit is brought, except with respect to the Company's limit of liability.

6. PROVISIONS REGARDING THE INSUREDS' DUTIES AFTER ACCIDENT OR LOSS. Any failure to comply with reporting provisions of the policy shall not affect coverage provided to the Insureds listed in the above Schedule.

7. Coverage shall not extend to any indemnity coverage for the active negligence of the Insureds listed in the above Schedule in any case where an agreement to indemnify the said Insureds would be invalid under Subdivision (b) of Section 2782 of the California Civil Code.

_____
Signature-Authorized Representative

_____

_____
Address

_____
Telephone Number

CG 20 10 11 85 Insurance Services Office, Inc. Form (Modified)
Note: ORGANIZATION or ENTITY on this form shall refer to CITY OF PACIFICA (CITY).

*****END OF SECTION*****

SECTION 00 06 51

AUTOMOBILE LIABILITY INSURANCE ENDORSEMENT

<table>
<tr><td colspan="3">AUTOMOBILE LIABILITY SPECIAL ENDORSEMENT
FOR_____ (Entity)</td><td colspan="3">SUBMIT IN DUPLICATE</td></tr>
<tr><td></td><td colspan="2"></td><td>ENDORSEMENT NO.</td><td>ISSUE DATE (MM/DD/YY</td></tr>
<tr><td>PRODUCER

Telephone</td><td colspan="4">POLICY INFORMATION:
Insurance Company:
Policy No.:
Policy Period: (from) (to)
LOSS ADJUSTMENT EXPENSE □ Included in Limits
□ In Addition to Limits</td></tr>
<tr><td></td><td colspan="4">□ Deductible · Self-Insured Retention
(check which) of $ _____</td></tr>
<tr><td>NAMED INSURED</td><td colspan="4">APPLICABILITY. This insurance pertains to the operation and/or tenancy of the named insured under all written agreements and permits in force with the Entity unless checked here □ in which case only the following specific agreements and permits with the Entity are covered:
CITY AGREEMENTS/PERMITS</td></tr>
<tr><td>TYPE OF INSURANCE</td><td colspan="4">OTHER PROVISIONS</td></tr>
<tr><td>☐ COMMERCIAL AUTO P OLICY
☐ BUS INES S AUTO POLICY
☐ OTHER</td><td colspan="4"></td></tr>
<tr><td>LIMITS OF LIABILITY</td><td colspan="4">CLAIMS: Underwriter’s representative for claims pursuant to this insurance.
Name: _____
Address:_____
Telephone: ( )</td></tr>
<tr><td>$_____ per accident, for bodily injury and property damage</td><td colspan="4"></td></tr>
<tr><td colspan="5">In consideration of the premium charge and notwithstanding any inconsistent statement in the policy to which this endorsement is attached or any endorsement now or hereafter attached thereto, it is agreed as follows:
1. INSURED. The City, the Design Consultant, the Owner’s Representative, and each of their officials, officers, partners, employees, agents and volunteers are included as additional insureds with regard to damages and defense of claims arising from ownership, operation, maintenance, use, loading or unloading of any auto owned, leased, hired or borrowed by the Named Insured, regardless of whether liability is attributable to the Named Insured or a combination of the Named Insured and the City, the Design Consultant and the Owner’s Representative and each of its officials, officers, partners, employees, agents and volunteers.
2. CONTRIBUTION NOT REQUIRED. As respects work performed by the Named Insured for or on behalf of the City, the insurance afforded by this policy shall: (a) be primary insurance as respects the City, the Design Consultant and the Owner’s Representative and each of their officials, officers, partners, employees, agents and volunteers; or (b) stand in an unbroken chain of coverage excess of the Named Insured's primary coverage. In either event, any other insurance maintained by the City, the Design Consultant and the Owner’s Representative and each of their officials, officers,</td></tr>
</table>

partners, employees, agents and volunteers shall be excess of this insurance and shall not contribute with it.

3. CANCELLATION NOTICE. The insurance afforded by this policy shall not be suspended, voided, cancelled, reduced in coverage or in limits except after thirty (30) days prior written notice by Certified Return Receipt Requested has been given to the District. Such notice shall be addressed as shown in the heading of this endorsement.

4. SCOPE OF COVERAGE. This policy affords coverage at least as broad as:
   (1) If primary, Insurance Services Office Form Number CA0001 (Ed. 1/87), Code 1 ("any auto"); or
   (2) If excess, affords coverage which is at least as broad as the primary insurance forms referenced in the preceding Section (1).

5. SEVERABILITY OF INTEREST. The insurance afforded by this policy applies separately to each insured who is seeking coverage or against whom a claim is made or a suit is brought, except with respect to the Company's limit of liability.

6. PROVISIONS REGARDING THE INSURED'S DUTIES AFTER ACCIDENT OR LOSS. Any failure to comply with reporting provisions of the policy shall not affect coverage provided to the City, the Design Consultant and the Owner's Representative and each of their officials, officers, partners, employees, agents and volunteers.

Except as stated above, nothing herein shall beheld to waive, alter or extend any of the limits conditions, agreements or exclusions of the policy to which this endorsement is attached.

ENDORSEMENT HOLDER	
ENTITY City of Pacifica, the Design Consultant, the Owner's Representative, and each of their officials, officers, partners, employees, agents and volunteers.	**AUTHORIZED REPRESENTATIVE** ☐ Broker/Agent ☐ Underwriter ☐____ I,_____(print/type name), warrant that I have authority to bind the above-mentioned insurance company, and by my signature hereon do so bind this company to this endorsement. Signature_____ (*original signature required)* Telephone: ( ) Date Signed _____

Note: ORGANIZATION or ENTITY on this form shall refer to CITY OF PACIFICA (CITY)

*****END OF SECTION*****

SECTION 00 07 00

GENERAL CONDITIONS SPECIFICATIONS

1.0 GENERAL

1.1 CONTRACT AGREEMENT

A Bidder to whom award is made shall execute a written Agreement and required supplementary documents and submit them to City within twenty (20) days after the Notice of Award has been received at the address given in Section 00 03 00, **PROPOSAL**. The Agreement shall be in the form provided in Section 00 05 00, **AGREEMENT**.

If the lowest responsible Bidder to whom award is made fails to enter into the Contract, as herein provided, the Proposal Guarantee will become the property of City, and an award may be made to the next lowest responsible Bidder, and such Bidder shall fulfill every stipulation embraced herein as if it were the party to whom the first award was made. A corporation to which an award is made will be required, before the Contract is finally executed, to furnish evidence of its corporate existence and evidence that the officer signing the Contract and bonds for the corporation is duly authorized to do so in the form of an acknowledgment attached to the Agreement with the corporation seal affixed thereto.

If any part of the work to be done under this Contract is subcontracted, the subcontract shall be in writing and shall provide that all work to be performed thereunder shall be performed in accordance with the terms of the Agreement. Certified copies of any or all subcontracts will be furnished to the City upon request. The subcontracting of any or all of the Work to be done shall in no way relieve Contractor of any part of its responsibility under the Contract.

Contractor shall not assign, transfer, convey, or otherwise dispose of the Contract, or its right, title, or interest therein, or its power to execute such Contract, to any other person, firm, or corporation without prior consent in writing of City.

1.2 WRITTEN NOTICE AND SERVICE THEREOF

Any notice to any party relative to any part of this Contract shall be in writing and considered delivered and the service thereof completed, when said notice is posted, by certified or registered mail, to said party at its last given address, or delivered in person to the said party or its authorized representative of the work.

1.3 RIGHTS OF ACTION

No right of action shall accrue upon or by reason of this Contract to or for the use or benefit of anyone other than the parties to this Contract. The parties to this Contract are Contractor and City.

1.4 PLANS AND SPECIFICATIONS

Specifications shall include the Instructions to Bidders, General Conditions, Supplementary General Conditions, General Requirements, Technical Specifications, and Supplements, Bulletins of Instructions, Addenda and Clarifications thereto.

Contractor shall keep on the work site a copy of the Specifications and Drawings and shall at all times give the Owner's Representative access thereto. Any Drawings included in the Specifications shall be regarded as part thereof and of the Contract. Anything mentioned in these Specifications and not shown on the Drawings, or shown on the Drawings and not mentioned in these Specifications, shall be of like effect as though shown or mentioned in both. The Owner's Representative will furnish from time to time such detail drawings, plans, profiles, and information as it may consider necessary for Contractor's guidance. Unless otherwise provided in the Contract Documents, it shall be the duty of Contractor to see that all provisions are complied with in detail irrespective of the inspections given the work during its progress by the authorized official or its representatives. Any failure on the part of Contractor to observe the Contract Documents will be sufficient cause for the rejection of the Work at any time before its Acceptance.

Wherever Military Specifications (MIL), ANSI, ASTM, AASHTO, AISC, AWS, AWWA, Federal Specifications (FS), Manufacturer's Standardization Society (MSS), or other specifications are referred to in these Specifications without designation of year, the reference is to the current or revised specification effective at the time of receiving proposals.

In all cases where reference is made to the requirements of such organizations as American Society for Testing and Materials, copies of the requirements referred to are on file with the Owner's Representative or the Design Consultant and may be seen at their offices. Neither the Owner's Representative nor the Design Consultant may have a complete set of all the requirements referenced at their individual office; however, between the Owner's Representative and the Design Consultant all referenced requirements may be reviewed.

Wherever in these Specifications reference is made to the "Standard Specifications" or the "California Standard Specifications," reference shall be made to Specifications entitled "State of California, Department of Transportation, Standard Specifications," latest version at the time of the bid opening, unless otherwise noted, and which is incorporated herein and made a part hereof by reference. Where the terms "State" or the "Owner's Representative" are used in the Standard Specifications they shall be considered as meaning the "City" or the "Owner's Representative" as defined in Section 01 10 90-2.0, DEFINITIONS OF WORDS AND TERMS. Paragraphs of the California Standard Specifications on Measurement and Payment shall not apply.

1.5 APPLICABILITY OF ALL PARAGRAPHS OF SPECIFICATIONS

The Technical Specifications are presented in paragraphs for convenience. However, this presentation does not necessarily delineate trades or limits of responsibility. All paragraphs of the Specifications and Plans are interdependent and applicable to the Project as a whole.

Thus requirements of such Paragraphs as "General Equipment and Mechanical Requirements" for example, apply as applicable to "Pumps", etc.

The Specifications and all notes on the Drawings are directed to Contractor and all work shall be performed by Contractor even though phrases such as "Contractor shall" or "shall be done by Contractor" are omitted. Where terms such as "approved," "acceptable," "favorably reviewed," "review," "selected," "directed," "equivalent," "equal," or "satisfactory" are used, it shall mean by or to the Owner's Representative and/or Design Consultant.

1.6 DISCREPANCIES AND OMISSIONS

Any discrepancies or omissions found in the Contract Documents and site conditions, or any inconsistencies or ambiguities in the Drawings or Specifications, shall be immediately reported to the Owner's Representative, in writing. The Owner's Representative will clarify the discrepancies, omissions or ambiguities in writing. Work done by Contractor after the discovery of such discrepancies, inconsistencies or ambiguities shall be done at Contractor's risk.

In resolving inconsistencies among two or more sections of the Contract Documents, precedence shall be given in the following order:

1. Addenda, Supplemental Agreements and Change Orders, the one dated later having precedence over another dated earlier.

2. Agreement (Section 00 05 00)

3. Permits

4. Supplementary General Conditions (Section 00 08 00)

5. Instructions to Bidders (Section 00 01 00)

6. General Conditions (Section 00 07 00)

7. General Requirements (Section 01 00 00-01 99 99)

8. Technical Specifications (Section 00 20 00 and all others following)

9. Drawings

10. Typical Details

11. Reference/Standard Specifications

12. Reference/Standard Plans

13. Appendices

Figure dimensions on Drawings shall govern over scale dimensions, and detailed Drawings shall govern over general Drawings.

1.7 BONDS

The successful Bidder shall, at the time of signing the Contract, furnish surety bonds executed by a Surety authorized to conduct business in California and be made payable to the "City of Pacifica".

The payment bond shall be in an amount equal to one hundred (100) percent of the Contract Amount and shall be for payment of just claims for materials, equipment, labor and subcontractors employed by Contractor thereon.

The performance bond shall be in an amount equal to one hundred (100) percent of the Contract Amount and shall be for the faithful performance of the Contract, and for the fulfillment of such other requirements as may be provided by Law. The performance bond shall remain in effect to guarantee the repair and replacement of defective equipment, materials, and workmanship, and payment of damages sustained by City on account of such defects, throughout all warranty and guarantee periods required by Contract Documents.

Attorneys-in-fact, who sign bid bonds or contract bonds, must file with each bond a notarized and effectively dated copy of their power of attorney.

The Surety company shall familiarize itself with all of the conditions and provisions of this Contract, and it waives the right of special notification of any change or modification of this Contract or of extension of time, or of decreased or increased work, or of the cancellation of the Contract, or of any other act or acts by City or its authorized agents under the terms of this Contract; and failure to so notify the aforesaid Surety companies of changes shall not relieve the Surety companies of their obligations under this Contract.

1.8 PENALTY FOR COLLUSION

If, at any time, it is found that the person, firm, or corporation to whom the Contract has been awarded has, in presenting any bid or bids, colluded with any other party or parties,

then the Contract shall be null and void, and Contractor and its sureties shall be liable for loss or damage which City may suffer thereby, and City may advertise for new bids for said Work.

1.9 RIGHTS AND REMEDIES

The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to, and not a limitation of, any duties, obligations, rights, and remedies otherwise imposed or available by law.

No action or failure to act by City, the Design Consultant, or the Owner's Representative shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

2.0 ADMINISTRATION

2.1 OWNER'S REPRESENTATIVE

In all matters relating to acceptability of construction, materials, equipment, or methods, matters relating to execution and progress of work, percentage of completion, interpretation of Contract Documents and delays, the Owner's Representative shall within a reasonable time, render a decision of such a matter, such decision shall be final and conclusive.

2.2 OBLIGATIONS OF CITY CONSULTANTS

Notwithstanding any provision of Contract Documents which assigns rights or responsibilities to Owner's Representative, Design Consultant, or any other City representative, consultant or advisor, City reserves the right, in its sole discretion, to perform any such right or responsibility itself, or to assign such right or responsibility to any other City representative, consultant or advisor.

3.0 OWNER

3.1 RIGHT TO OPERATE UNSATISFACTORY EQUIPMENT

If, after installation, the operation or use of the facilities or equipment to be furnished under this Contract proves to be unsatisfactory to the Owner's Representative, City shall have the right to operate and use such facilities until they can, without damage to City, be taken out of service for correction or replacement. Such period of use of the defective facilities, pending correction or replacement, shall in no way decrease the guarantee period required for the acceptable corrected or replaced items of materials or equipment.

3.2 BENEFICIAL USE

As a condition to partial payments made hereunder, City shall have the right to make beneficial use of completed portions of the Work prior to total project completion without prejudice to completion and final Acceptance of the total project.

3.3 RESPONSIBILITY OF CITY

City shall not be held responsible for the care or protection of any material or parts of the Work prior to the final Acceptance, except as expressly provided in these Contract Documents.

4.0 CONTRACTOR

4.1 STATUS OF CONTRACTOR

Contractor is and shall be an independent Contractor in the performance of this Contract and shall have complete charge of persons engaged in performance of the Work.

Contractor shall perform the work in accordance with its own methods, subject to compliance with the requirements of the Contract.

Subcontractors will not be recognized as having a direct relationship with City. The persons engaged in the work, including employees of subcontractors and suppliers, will be considered employees of Contractor and their work shall be subject to the provisions of the Contract Documents. References in the Contract Documents to actions required of subcontractors, manufacturers, suppliers, or any person other than Contractor, City or the Owner's Representative shall be interpreted as requiring that Contractor shall require such subcontractor, manufacturer, supplier or person to perform the specified action.

Contractor shall not employ any subcontractors that are not properly licensed and registered in accordance with State law. Prior to commencement of any work by a subcontractor, Contractor shall submit verification to the Owner's Representative that the subcontractor is properly licensed and registered for the work it will perform.

The removal and/or substitution of any subcontractor listed in Section 00 04 30, **DESIGNATION OF SUBCONTRACTORS**, shall be made by Contractor and City as provided for in Public Contract Code Section 4100 et.seq.

4.2 SUPERINTENDENCE

Contractor shall designate in writing, before starting work, an authorized representative who shall correspond with the Owner's Representative and to act for Contractor. Said authorized representative shall be present at the work site at all times while work is actually in progress on the Contract; and during periods when work is suspended, arrangements acceptable to the Owner's Representative shall be made for any emergency work that may be required. When Contractor consists of two (2) or more persons, firms, partnerships, or corporations functioning on a joint venture basis, said Contractor shall designate in writing to the Owner's Representative, the name of their authorized representative who shall have supreme command of work from the City to direct the Work and to whom orders will be given by the Owner's Representative, to be received and obeyed by Contractor. Contractor's authorized representative, or designated alternate(s), shall be fluent and proficient in the English language in order to understand, receive, and carry out oral and written communications or instruction relating to all job functions and responsibilities. Information shall include the representative's name, street address, town, and telephone number, and the mailing address if different from the street address.

Contractor shall give its personal attention to and shall supervise the Work to the end that it shall at all reasonable times be prosecuted faithfully; and when the authorized representative is not personally present on the Work, the representative shall at all reasonable times be represented by a competent superintendent or foreman who shall receive and obey all instructions or orders given under this Contract, and who shall have full City to supply materials, tools, and labor without delay, and who shall be the legally appointed representative of Contractor. Contractor shall be liable for the faithful observation of any instructions delivered to Contractor or to its authorized representative.

4.3 LANDS AND RIGHTS OF WAY

With the approval of the Owner's Representative, Contractor may use portions of City's site for storage of construction equipment, materials and field offices. City will not accept any responsibility for damage or loss of Contractor's equipment or materials stored on any project related site caused by vandalism, nature, or otherwise, suffered by Contractor. Protection of all construction equipment, stores, and supplies shall be the sole responsibility of Contractor. Where additional work space is desired by Contractor, it shall be Contractor's sole responsibility and expense to obtain such a space for its use.

4.4 PERMITS AND FEES

Unless specifically stated to be provided by City, Contractor shall apply for, obtain, and comply with all the terms, conditions and requirements attached to all permits, bonds and licenses required by local, state, or federal agencies to perform work, construct, erect, test and startup of any equipment or facility for this Contract. Where operating permits are required, Contractor shall apply for and obtain such operating permits in the name of City and provide the permit in an appropriate frame or file holder when City accepts the equipment or facility for beneficial use. Contractor shall give all notices necessary and incidental to the due and lawful prosecution of the Work.

Any permits, bonds, licenses and fees therefore required for the performance of work under this Contract and not specifically mentioned herein as having been obtained and paid by City shall be included in Contractor's Bid Price.

Contractor shall apply for and obtain in its name the necessary building, plumbing and electrical permits and shall be responsible for satisfying all code requirements, calling for inspections, and obtaining final approvals. Contractor shall notify the Owner's Representative of the need and the readiness of all required inspections. All inspections are to be coordinated with the Owner's Representative. Contractor shall comply with all construction conditions stipulated in the permits. Contractor shall include in its proposal the fees for any permits required.

Contractor shall apply for and obtain all safety permits for excavations, tunneling, trenches, construction (building structure, scaffolding, or falsework) and demolition required by CAL/OSHA.

4.5 COMPLIANCE WITH LAWS

Contractor shall keep itself and its subcontractors fully informed of all existing and future legislated State and Federal Laws and City and County ordinances and regulations which in any manner affect those engaged or employed in the Work, or the materials and equipment used in the Work, or which in any way affect the conduct of the Work, and all such orders and decrees of bodies or tribunals having any jurisdiction or City over the same. If any discrepancy or inconsistency is discovered in the Drawings, Specifications, or in any other

part of this Contract, in relation to any such law, ordinance, regulation, order or decree, Contractor shall forthwith report the same to the Owner's Representative in writing. Contractor shall at all times observe and comply with all such existing and future laws, ordinances, regulations, orders and decrees; and shall protect and indemnify City, the Owner's Representative, the Design Consultant, and all of their officers, agents, and servants against any claim or liability arising from or based upon the violation of any such law, ordinance, regulation, order, or decree, whether by Contractor itself or by its employees. Particular attention is called to the following:

4.5.1 Eight Hour Day Limitation - In accordance with the provisions of Division 2, Part 7, Chapter 1, Article 3 of the Labor Code, State of California, and in particular Sections 1810 to 1815 inclusive, thereof, eight (8) hours labor shall constitute a day's work and no laborer, worker, or mechanic in the employ of said Contractor, or any subcontractor doing or contracting to do any part of the work contemplated by this Contract, shall be required or permitted to work more than eight (8) hours in any one (1) calendar day, and forty (40) hours in any one (1) calendar week, unless such worker receives compensation for all hours worked in excess of eight (8) hours at not less than one and one half (1-1/2) times the basic rate of pay. However, if the prevailing wage determination requires a higher rate of pay for overtime than is required under said Section 1815, then the overtime rate must be paid, as specified in California Code of Regulations Title 8, Group 3, Section 16200(a)(3)(F). Contractor and each subcontractor shall also keep an accurate record showing the names and actual hours worked of all workers employed by them in connection with the work contemplated by this contract, which record shall be open at all reasonable hours for the inspection of City or its officers or agents and by the Division of Labor Standards Enforcement of the Department of Industrial Relations, their deputies or agents; and it is hereby further agreed that said Contractor shall forfeit as a penalty to City, the sum of Twenty-Five and No/100 Dollars ($25.00) for each laborer, worker or mechanic employed in the execution of this Contract by Contractor or by any subcontractor for each calendar day during which such laborer, worker or mechanic is required or permitted to labor more than eight (8) hours in any one (1) calendar day and forty (40) hours in one calendar week in violation of this stipulation.

4.5.2 Apprentices - City shall, within five (5) days of the Award of Contract, send a copy of the Award to the Division of Apprenticeship Standards. City shall within five (5) days of a finding of any discrepancy regarding the ratio of apprentices to journeymen pursuant to the certificated fixed number of apprentices to journeyman, notify the Division of Apprenticeship Standards.

In accordance with the provision of California Labor Code Section 1777.7, if Contractor willfully fails to comply with the provisions of Section 1777.5 of said Code, Contractor shall be denied the right to bid on any public works Contract for a period of up to one (1) year for the first violation and up to three (3) years for each subsequent violation from the date the determination of non-compliance is made by the Administrator of Apprenticeship; and forfeit as a civil penalty up to the sum of three hundred dollars ($300.00) for each full calendar day of non-compliance. Notwithstanding the provisions of Section 1727 of the California Labor Code, upon receipt of a determination that a civil penalty has been imposed, City shall

withhold from Contract progress payments then due or to become due the amount of such penalty. Any funds withheld by City pursuant to Section 1777.7 shall be deposited in the general funds of City.

4.5.3 Receipt of Workers' Wages, Fee for Registering or Placing Persons In Public Works - Attention is directed to the provisions of sections 1778 and 1779 of the California Labor Code, which read as follows:

> "Section 1778. Every person, who individually or as a representative of an awarding or public body or officer, or as a contractor or subcontractor doing public work, or agent or officer thereof, who takes, receives or conspires with another to take or receive, for its own use or the use of any other person any portion of the wages of any workman or working subcontractor, in connection with services rendered upon any public work is guilty of a felony."
>
> "Section 1779. Any person or agent or officer thereof who charges, collects, or attempts to charge or collect, directly or indirectly, a fee or valuable consideration for registering any person for public work, or for giving information as to where such employment may be procured, or for placing, assisting in placing, or attempting to place, any person in public work, whether the person is to work directly for the state, or any political subdivision or for a contractor or subcontractor doing public work is guilty of a misdemeanor."

4.5.4 Labor Discrimination. Attention is directed to Section 1735 of the Labor Code, which reads as follows:

> "A contractor shall not discriminate in the employment of persons upon public works on any basis listed in subdivision (a) of Section 12940 of the Government Code, as those bases are defined in Sections 12926 and 12926.1 of the Government Code, except as otherwise provided in Section 12940 of the Government Code. Every contractor for public works who violates this section is subject to all the penalties imposed for a violation of this chapter."

4.5.5 Workers' Compensation Insurance - The provisions of Section 00 08 00-3.1, INSURANCE, shall be considered as repeated herein.

4.5.6 Lateral and Subjacent Supports - Attention is directed to Section 832 of the Civil Code of the State of California relating to lateral and subjacent supports, and wherever structures or improvements adjacent to the excavation may be damaged by such excavation, Contractor shall comply with this law. As provided in Labor Code Section 6707, a separate Bid Item is provided for costs of shoring and bracing of excavations five (5) feet or more in depth.

4.5.7 Safety Standards - Contractor shall comply with provisions of the Safety and Health Regulations of Construction, promulgated by the Secretary of Labor under Section 107 of the Contract Work Hours and Safety Standards Act (40 USC 327 et seq.) as set forth in Title

29 of the C.F.R., CAL/OSHA, and the regulations issued thereunder. Compliance shall be Contractor's sole responsibility, and neither City, the Owner's Representative nor the Design Consultant shall have any liability for non-compliance. See Section 00 07 00-4.7, SAFETY, for additional safety requirements.

4.5.8 Registration - The Project is a public work. Therefore, Contractor and all subcontractors for the Project must be registered with the California Department of Industrial Relations pursuant to the provisions of Labor Code Section 1725.5 in order to be qualified to bid on, be listed in a bid proposal, or engage in the performance of any work under the Contract for the Project. A bid shall not be accepted nor any contract or subcontract be entered into without proof of the contractor or subcontractor's current registration to perform public work pursuant to Labor Code Section 1725.5.

Pursuant to Labor Code Section 1771.4, the Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. Contractor shall post jobsite notices as prescribed by regulation and Contractor and each subcontractor shall furnish the records specified in Labor Code Section 1776 directly to the Labor Commissioner as specified in said Section 1771.4. Pursuant to Labor Code Section 1773.3, the City shall provide notice to the Department of Industrial Relations of the award of this contract within five days of the award.

Contractor and each subcontractor shall keep accurate payroll records, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the Project in accordance with Labor Code Section 1776. Reference is hereby made to that Section for the full particulars thereof and Contractor hereby agrees to comply therewith.

4.6 COMPLIANCE WITH ENVIRONMENTAL LAWS

During construction, Contractor shall comply with all pertinent requirements of Federal, State, and local environmental laws and regulations, including, but not limited to, the Federal Clean Air Act, State and local air pollution and noise ordinances, construction site erosion control regulations, and, if applicable, shoreline construction requirements.

4.7 SAFETY

4.7.1 Contractor's Safety Responsibility - Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the Work. This requirement shall apply continuously and not be limited to normal working hours. Safety provisions shall conform to U.S. Department of Labor (OSHA), the California Occupational Safety and Health Act, and all other applicable Federal, State, County, and local laws, ordinances, codes, the requirements set forth below, and any regulations that may be detailed in other parts of these Contract Documents. Where any of these are in conflict, the more stringent requirement shall be followed.

No provision of the Contract Documents shall act to make City, the Owner's Representative or any other party than Contractor responsible for safety. As provided for in Section 00 08 00 - 3.1.5, Indemnification, Contractor shall indemnify, defend and hold harmless City, Owner's Representative, or other authorized representatives of City, from and against any and all actions, damages, fines, suits, and losses arising from Contractor's failure to meet all safety requirements and/or provide a safe work site.

If death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to both the Owner's Representative and City. In addition, Contractor shall furnish the Owner's Representative with a copy of the Employer's Report of Injury immediately following any incident requiring the filing of said report during the prosecution of the Work under this Contract. Contractor shall also furnish the Owner's Representative with a copy of the Employer's Report of Injury involving any subcontractors on this Project. Contractor shall make all reports as are, or may be, required by any City having jurisdiction, and permit all safety inspections of the work being performed under this Contract. City reserves the right to jointly participate in the investigative process with Contractor or conduct its own independent investigation.

If a claim is made by anyone against Contractor or any subcontractor on account of any accident, Contractor shall promptly report the facts in writing to the Owner's Representative, giving full details of the claim.

4.7.2 Safety Program - Contractor shall establish, implement, and maintain a written Injury and Illness Prevention Program as required by Cal/OSHA Title 8, Section 1509. Before beginning the Work Contractor shall prepare and submit to the Owner's Representative a Contractor Safety Program that provides for the implementation of all of Contractor's safety responsibilities in connection with the Work at the site and the coordination of that program and its associated procedures and precautions with safety programs, precautions and procedures of each of its subcontractors and other prime Contractors performing work at the site. Contractor shall be solely responsible for initiating, maintaining, monitoring, coordinating, and supervising all safety programs, precautions, and procedures in connection with the Work and for coordinating its programs, precautions, and procedures of the other prime contractors and subcontractors performing the Work at the site. The Safety Program should contain all the necessary elements for Contractor to administer its program on site. At a minimum, this written Safety Program shall address the elements required by Cal/OSHA Title 8, Section 1509.

Contractor's compliance with requirements for safety and/or the Owner's Representative's review of Contractor's Safety Program shall not relieve or decrease the liability of Contractor for safety. The Owner's Representative's review of Contractor's Safety Program is only to determine if the above listed elements are included in the program.

4.7.3 Safety Supervisor - Contractor shall appoint an employee as Safety Supervisor who is qualified and authorized to supervise and enforce compliance with the Safety Program. Contractor shall notify the Owner's Representative in writing prior to the commencement of

work of the name of the person who will act as Contractor's Safety Supervisor and furnish the Safety Supervisor's resume to the Owner's Representative.

Contractor will, through and with its Safety Supervisor, ensure that all of its employees and its subcontractors of any tier, fully comply with the Project Safety Policies. The Safety Supervisor shall be a full-time employee of Contractor whose responsibility shall be for supervising compliance with applicable safety requirements on the work site and for developing and implementing safety training classes for all job personnel. City shall have the authority over Contractor to require removal of Contractor's Safety Supervisor if the representative is judged to be improperly or inadequately performing the duties; however, this City shall not in any way affect Contractor's sole responsibility for performing this work safely, nor shall it impose any obligation upon City to ensure Contractor performs its work safely.

4.7.4 Safety and Protection - Contractor shall take all necessary protection to prevent damage, injury, and loss to:

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

Contractor shall comply with all applicable laws and regulations of any public body having jurisdiction for the safety of persons or property or to protect them 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 of underground facilities and utility owners when prosecution of the Work may affect them and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All injury or loss to any property caused, directly or indirectly, in whole or in part, by Contractor, any subcontractor, supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by Contractor.

4.7.5 Excavation Safety - In accordance with the provisions of Section 6705 of the Labor Code, Contractor shall submit, in advance of excavation five (5) feet or more in depth, detailed plans showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from hazard of caving ground during such excavation. For all such excavations requiring submittal, plans shall be prepared and signed by a registered civil or structural engineer employed by Contractor, and all costs therefor shall be included in the price named in the Contract for completion of the work as set forth in the Contract Documents. The registered civil or structural engineer shall review the available Site boring logs and incorporate calculations that include, but are not limited to: base stability and toe embedment. Additionally, the registered civil or structural engineer must provide a detailed

sequence for both the installation and removal of the shoring, if shoring is required. Nothing in this Section shall be deemed to allow the use of shoring, bracing, sloping, or other protective system less effective than that required by the Construction Safety Orders. Nothing in the Section shall be construed to impose a tort liability on City, the Design Consultant, the Owner's Representative, nor any of their agents, consultants, or employees. City's review of Contractor's excavation plan is only for general conformance to the Construction Safety Orders.

Prior to commencing any excavation, Contractor shall designate in writing to the Owner's Representative the "competent person(s)" with the City and responsibilities designated in the Construction Safety Orders.

4.7.6 Safety Emergencies - In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, Contractor, without special instruction or authorization from the Owner's Representative, is obligated to act to prevent threatened damage, injury or loss. Contractor shall give the Owner's Representative prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby.

4.7.7 Safety Violations - Should Contractor fail to correct an unsafe condition, the Owner's Representative shall immediately notify City of Contractor's failure to correct the unsafe condition. City shall then notify Contractor through the Owner's Representative that the unsafe condition must be corrected or the work in question will be stopped in accordance with Section 00700-6.6, SUSPENSION OF WORK until the condition is corrected to the satisfaction of City. No extension of time or additional compensation will be granted as a result of any stop order so issued. The notification and suspension of such work or the failure to provide such notification and suspension by the Owner's Representative and City shall not relieve Contractor of its sole responsibility and liability for safety.

City shall have the authority over Contractor to require the removal from the Project of any worker and the foreman and/or superintendent in responsible charge of the work where safety violations occur.

4.7.8 Equipment Safety Provisions - The completed Work shall include all necessary permanent safety devices, such as machinery guards and similar ordinary safety items, required by the State and Federal (OSHA) industrial authorities and applicable local and national codes. Further, any features of the Work, including City-selected equipment, subject to such safety regulations shall be fabricated, furnished, and installed in compliance with these requirements. All equipment furnished shall be grounded and provided with guards and protection as required by safety codes. Where vapor-tight or explosion-proof electrical installation is required by safety codes, this shall be provided. Contractors and manufacturers of equipment shall be held responsible for compliance with the requirements included herein. Contractor shall notify all equipment suppliers and subcontractors of the provisions of this paragraph.

4.7.9 Confined Spaces - Notwithstanding any classifications relative to the Tunnel Safety Orders, work within confined spaces of this Project is subject to the definitions and applicable provisions of Section 5156 et seq., Title 8, California Code of Regulations.

4.8 PROVISIONS FOR HANDLING EMERGENCIES

It is possible that emergencies may arise during the progress of the Work which may require special treatment or make advisable extra shifts of labor forces to continue the Work for sixteen (16) or even twenty-four (24) hours per day. These emergencies may be caused by damage or possible damage to nearby existing structures or property by reason of the Work under construction, or by storm, accidents, or leakage. Contractor shall be prepared in case of such emergencies to make all necessary repairs and shall promptly execute such work when required by the Owner's Representative. The determinations made by the Owner's Representative for handling emergencies shall be final and conclusive upon the parties. Upon start of the Work, Contractor shall provide means for immediate emergency notification of Contractor's designated representative and designated emergency alternates.

4.9 NIGHT, WEEKEND AND HOLIDAY WORK

Contractor may be required to prosecute the Work at night, weekends or holidays if, at any time, the Owner's Representative shall deem it necessary for the progress of the Work, or if emergencies arise, and Contractor shall promptly comply with any such requirements made in writing by the Owner's Representative. To the extent otherwise permitted by law, contractor will also be permitted to work at night, weekends or holidays if it shall satisfy the Owner's Representative of the need therefor, in order to maintain the required progress or protect the Work from the elements. When required, ordered, or permitted to work at night, weekends, or holidays, Contractor shall provide sufficient and satisfactory lighting and other facilities therefor. For night, weekend or holiday work, if any be performed, Contractor shall receive no extra payment, but compensation shall be considered as having been included in the price stipulated for the Work.

4.10 COOPERATION WITH OTHER CONTRACTORS

This Paragraph shall serve as notice to Contractor that City may let other contracts for other work at or near the site of this work. Contractor shall afford other contractors reasonable opportunity for the delivery and storage of their materials and the execution of their work, and shall properly connect and coordinate its work with theirs.

Should construction be under way by other forces or by other contractors within or adjacent to the limits of the Work or in the vicinity of the work to be done under this Contract, Contractor shall so conduct its operations as to interfere to the least possible extent with the work of such other forces or contractors. Any difference or conflicts which may arise between Contractor and any other forces or contractors, creating delays or hindrance to each other, shall be adjusted as determined by the Owner's Representative.

4.11 MULTI-EMPLOYER WORK SITES

On multi-employer work sites where more than one employer is responsible for safety, each of the employers is required to notify the other employers of any hazards and to guard against exposing their own employees as well as all other employees on the site.

5.0 CONTROL OF WORK AND MATERIAL

5.1 STANDARD PRODUCTS

Unless otherwise indicated in these Specifications, or favorably reviewed by the Owner's Representative, materials and equipment for the construction work shall be essentially the standard product of a manufacturer regularly engaged in the production of such materials and equipment or materials and equipment of comparable character. All equipment and material shall be new, except that steel sheet piling and steel bracing may be either new or used, but must be in good condition.

5.2 METHODS AND APPLIANCES

The methods and appliances adopted by Contractor shall be such as will, in the opinion of the Owner's Representative, secure a satisfactory quality of work and will enable Contractor to complete the Work in the time agreed upon. If at any time the methods and appliances appear inadequate, the Owner's Representative may order Contractor to improve their character or efficiency, and Contractor shall conform to such order; failure of the Owner's Representative to order such improvement of methods of efficiency will not relieve Contractor from its obligation to perform satisfactory work and to finish it in the time agreed upon.

5.3 CHARACTER OF WORKERS

None but competent superintendents, forepersons and workers shall be employed on the Work. Contractor shall remove from the Work any person who commits trespass, possesses firearms or other weaponry, is under the influence or is in the possession of alcohol or other illegal drugs/controlled substances, or is, in the opinion of Contractor or Owner's Representative, disorderly, dangerous, insubordinate, incompetent, or otherwise objectionable. Such discharge shall not be the basis of any claim for compensation or damages against the Owner's Representative, City, or any of its officers or representatives.

5.4 MATERIALS AND WORKMANSHIP

All materials must be of the specified quality and equal to approved samples, if samples have been submitted. All Work shall be done and completed in a thoroughly workmanlike manner, notwithstanding any omission from these Specifications, or the Drawings, and it shall be the duty of Contractor to call the Owner's Representative's attention to apparent errors or omissions and request instructions before proceeding with the Work. The Owner's Representative may, by appropriate instructions correct errors and supply omitted information, which instructions shall be as binding upon Contractor as though contained in

the original Specifications or Drawings. All materials and equipment shall be new unless otherwise specified.

All defective work or materials shall be promptly removed from the premises by Contractor, whether in place or not, and shall be replaced or renewed in such manner as the Owner's Representative may direct. All materials and workmanship of whatever description shall be subjected to the inspection of, and rejection by, the Owner's Representative if not in conformance with the Specifications. The decision of the Owner's Representative is final and conclusive upon the parties.

Any defective material or workmanship, or any unsatisfactory or imperfect work which may be discovered before the final Acceptance of the Work or within one (1) year thereafter, shall be corrected immediately on the requirement of the Owner's Representative, without extra charge, notwithstanding that it may have been overlooked in previous inspections and estimates. Alternatively, City may proceed as provided in Section 01 17 40, **WARRANTIES AND BONDS**, at Contractor's expense. Failure to inspect work shall not relieve Contractor from any obligation to perform sound and reliable work as herein described.

6.0 PROGRESS OF THE WORK

6.1 COMMENCEMENT OF WORK

Within thirty (30) calendar days after receipt of the required bonds and evidences of insurance and the executed Agreement from Contractor, written Notice to Proceed will be given by City to Contractor. Notwithstanding other provisions of the Contract, Contractor shall not be obligated to perform work, and City shall not be obligated to accept or pay for work performed by Contractor, prior to Notice to Proceed. Contractor shall provide the required Contract bonds and evidences of insurance prior to commencing work at the site.
Contractor shall commence the Work covered by this Contract within ten (10) days after the date established in the Notice to Proceed for the commencement of Contract Time. Contractor shall give the Owner's Representative written notice not less than two (2) working days in advance of the actual date on which the Work will be started. Contractor shall be entirely responsible for any delay in the Work which may be caused by its failure to give such notice.

6.2 CONTRACT TIME

Time shall be of the essence in the performance of this Contract. Contractor shall prosecute the Work so that the various portions of the Project shall be complete and ready for use within the time specified in Section 00 08 00-1.1, TIME ALLOWED FOR COMPLETION. It is expressly understood and agreed by and between Contractor and City that the Contract Time for completion of the Work described herein is a reasonable time taking into consideration the average climatic and economic conditions and other factors prevailing in the locality and the nature of the Work. Contractor is hereby advised that Contractor's Bid is to be based on the entire Contract Time and Contractor shall include its field and home office overhead costs in the Bid for the entire Contract Time.

6.3 DELAYS

6.3.1 Notice of Delays - When Contractor foresees a delay in the prosecution of the Work and, in any event, immediately upon the occurrence of a delay, Contractor shall notify the Owner's Representative in writing of the probability of the occurrence and the estimated extent of the delay, and its cause. Contractor shall take immediate steps to prevent, if possible the occurrence or continuance of the delay. Contractor agrees that no claim shall be made for delays which are not called to the attention of the Owner's Representative at the time of their occurrence.

6.3.2 Non-excusable Delays - Non-excusable delays in the prosecution of the Work shall include delays which could have been avoided by the exercise of care, prudence, foresight, and diligence on the part of Contractor or its subcontractors, at any tier level, or suppliers.

6.3.3 Excusable Delays - Excusable delays in the prosecution or completion of the Work shall include delays which result from causes beyond the control of Contractor and City and which could not have been avoided by the exercise of care, prudence, foresight, and diligence on the part of Contractor or its subcontractors, at any tier level, or suppliers.

6.3.3.1 Abnormal Delays - Delays caused by acts of God (other than inclement weather), fire, floods, tidal waves, earthquakes, strikes, labor disputes, freight embargoes, and shortages of materials shall be considered as excusable delays insofar as they prevent Contractor from proceeding with at least seventy-five (75) percent of the normal labor and equipment force for at least five (5) hours per day toward completion of the current critical activity item(s) on the latest favorably reviewed Construction Schedule, and Contractor could not have avoided the consequence of the event or circumstance through exercise of reasonable care.

6.3.3.2 Weather Delays - Should inclement weather conditions or the conditions resulting from weather prevent Contractor from proceeding with seventy-five (75) percent of the normal labor and equipment force engaged in the current critical activity item for a period of at least five (5) hours per day toward completion of such operation or operations, and the crew is dismissed as a result thereof, it shall be a weather delay day. Contractor may be granted a time extension pursuant to Section 00 07 00-6.4.2.c, Weather Delays.

6.3.3.3 Material Shortages - Upon the submission of satisfactory proof to the Owner's Representative by Contractor, shortages of material may be acceptable as grounds for granting a time extension. In order that such proof may be satisfactory and acceptable to the Owner's Representative, it must be demonstrated by Contractor that Contractor has made every effort to obtain such materials from all known sources within reasonable reach of the proposed Work. Only the physical shortage of material, caused by unusual and unavoidable circumstances, will be considered under these provisions as a cause for extension of time, and no consideration will be given to any claim that material could not be obtained at a reasonable, practical, or economical cost or price, unless it is shown to the satisfaction of the Owner's Representative that such material could have been obtained only

at exorbitant prices entirely out of line with current rates, taking into account the quantities involved and usual practices in obtaining such quantities, and Contractor could not reasonably have anticipated or avoided the consequences of the circumstances causing the shortage. A time extension for shortage of material will not be considered for material ordered or delivered late or whose availability is affected by virtue of the mishandling of procurement. The above provisions apply equally to equipment to be installed in the Work.

6.3.4 Compensable Delays - Compensable delays in the prosecution or completion of the Work shall include delays that occur through no fault of Contractor and prevent Contractor from proceeding with at least seventy-five (75) percent of the normal labor and equipment force for at least five (5) hours per day toward completion of the current critical activity item(s) on the latest favorably reviewed Construction Schedule due to the following cause(s):

a. Delays due solely to the actions and/or inactions of City.

b. Delays due to differing site conditions as defined in Section 00 07 00-7.2, DIFFERING SITE CONDITIONS.

c. Delays due to other Contractors employed by City who interfere with Contractor's prosecution of the Work as defined above for reasons other than Contractor's failure to comply with its obligations under Sections 00700-4.10, COOPERATION WITH OTHER CONTRACTORS.

6.3.5 Concurrent Delays - Concurrent delays are those delay periods when the prosecution of the Work is delayed during the same period of time due to causes from a combination of the delays defined in Sections 00 07 00-6.3.2, Non-Excusable Delays, 00 07 00-6.3.3, Excusable Delays, or 00 07 00-6.3.4, Compensable Delays. During such concurrent delay periods, time extensions will be granted in accordance with Section 00 07 00-6.4, TIME EXTENSIONS; however, Contractor shall not be compensated for its overhead costs as defined in Section 00 07 00-6.4.3, Indirect Overhead, and City shall not assess its actual costs as defined in Section 00 07 00-6.4.1, Non-excusable Delays.

6.4 TIME EXTENSIONS

6.4.1 Non-excusable Delays - City may grant an extension of time for non-excusable delays if City deems it is in its best interest. If City grants an extension of time for non-excusable delays, Contractor agrees to pay City's actual costs, including charges for engineering, inspection and administration incurred during the extension.

6.4.2 Excusable or Compensable Delays - If Contractor is delayed in the performance of its work as defined in Sections 00 07 00-6.3.3, Excusable Delays, or 00 07 00-6.3.4, Compensable Delays, then the Contract completion date may be extended by City for such time that, in City's and Owner's Representative's determination, Contractor's completion date will be delayed, provided that Contractor strictly fulfills the following:

a. Contractor shall provide notification, in accordance with Paragraph 00 07 00-6.3.1, Notice of Delays, and submit in writing a request for an extension of time tothe Owner's Representative stating at a minimum the probable cause of the delay and the number of days being requested. The time extension request shall be submitted in accordance with the requirements of Section 01 13 10-6.0, TIME IMPACT ANALYSES.

b. If requested by the Owner's Representative, Contractor shall promptly provide sufficient information to the Owner's Representative to assess the cause or effect of the alleged delay, or to determine if other concurrent delays affected the work.

c. Weather Delays. Contractor will be granted a non-compensable time extension for weather caused delays, pursuant to Section 00 07 00-6.3.3.2, Weather Delays, over and above the allowance provided in Section 00 08 00-1.3, WEATHER DAYS. No time extensions for weather delays will be granted until the total number of weather days exceeds this allowance.

Should Contractor fail to fulfill any of the foregoing, which are conditions precedent to the right to receive a time extension, Contractor waives the right to receive a time extension.

During such extension of time, neither extra compensation for engineering, inspection and administration nor damages for delay will be charged to Contractor. It is understood and agreed by Contractor and City that time extensions due to excusable or compensable delays will be granted only if such delays involve controlling operations which would prevent completion of the whole Work within the specified Contract Time.

Should Contractor fail to complete the Work within the time specified in the Contract, as extended in accordance with this clause if appropriate, Contractor shall pay to City liquidated damages in accordance with Section 00 07 00-6.5, LIQUIDATED DAMAGES.

6.4.3 Indirect Overhead - Contractor shall be reimbursed for indirect overhead expenses for periods of time when the Work is delayed as defined in Section 00 07 00-6.3.4, Compensable Delays. However, no reimbursement for indirect overhead expenses shall be made for compensable delays which occur during a concurrent delay as defined in Section 00 70 00-6.3.5, Concurrent Delays. If it is mutually agreed that the allowable markups provided for in Section 01 10 35, **MODIFICATION PROCEDURES**, do not provide equitable compensation for Contractor's indirect overhead expenses then the adjustments provided for under this Section shall be applied and the change order markups in Section 01 10 35 reduced to reflect this compensation. As a condition precedent to any reimbursement, Contractor must fulfill all conditions as provided in Section 00 07 00-6.4.2, Excusable or Compensable Delays. No additional markup for indirect overhead or profit shall be provided for such indirect overhead expenses.

Payment to Contractor for indirect overhead expenses will be made only if the extended Contract period granted for the compensable delay(s) is required to complete the Work

following the depletion of the original Contract Time and any time extensions granted other than compensable time extensions.
6.4.3.1 Indirect Field Overhead - For those allowable delay periods as defined in Section 00 70 00-6.4.3, Indirect Overhead, Contractor shall be reimbursed for its indirect field overhead expenses based on:

a. Actual invoice costs for all on-site field offices and temporary utilities as described in Section 01 15 60-12.0, **OFFICE OF CONTRACTOR AT SITE** and Section 01 15 10, **TEMPORARY UTILITIES**.
b. Actual payroll labor costs as described in Section 01 10 35-3.0, **FORCE ACCOUNT PAYMENT**, for field office staff.
c. Fair rental values acceptable to the Owner's Representative as described in Section 01 10 35-3.0, **FORCE ACCOUNT PAYMENT** for construction equipment idled due to the delay.

6.4.3.2 Indirect Home Office Overhead - For those allowable delay periods as defined in Section 00 07 00-6.4.3, Indirect Overhead, Contractor shall be reimbursed for its home office overhead expenses based on the following formula:

$$\frac{\text{Original Contract Amount (\$)}}{\text{Contract Period (Days)}} \times (0.03) = \text{Daily Home Office Overhead (\$/Day)}$$

As it is impractical to determine the actual home office overhead expenses, such reimbursement shall be mutually agreed between City and Contractor to encompass full payment for any home office overhead expenses for such periods of time for Contractor and all subcontractors. Contractor agrees to indemnify, defend and hold City harmless for any indirect home office overhead claims from its subcontractors.

6.5 LIQUIDATED DAMAGES

It is agreed by the parties to the Contract that time is of the essence in the completion of this Work, and that in case all the Work called for under the Contract is not completed before or upon the expiration of the time limit as set forth in these Contract Documents, as modified by extensions of time granted by City, damage will be sustained by City. As it is impracticable to determine the actual delay damage; it is, therefore, agreed that Contractor shall pay liquidated damages to City in the amount set forth in Section 00 08 00-1.2, DAMAGES FOR DELAYS, per day for each and every day's delay beyond the time prescribed to complete the Work. Contractor agrees to pay such liquidated damages and in case the same are not paid, agrees that City may deduct the amount thereof from any monies due or that may become due Contractor under the Contract.

6.6 SUSPENSION OF WORK

6.6.1 If Contractor fails to correct defective work as required by Section 00 07 00-5.4, MATERIALS AND WORKMANSHIP, or fails to carry out the Work in accordance with the Contract Documents or any other applicable rules and regulations, City, by a written

order of City's representative or signed personally by an agent specifically so empowered by City, in writing, may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated. City's concurrence that the condition or cause has been eliminated will be provided to Contractor in writing. This right of City to stop the Work shall not give rise to any duty on the part of City to exercise this right for the benefit of Contractor or any other person or entity. All delays in the Work occasioned by such stoppage shall not relieve Contractor of any duty to perform the Work or serve to extend the time for its completion. Any and all necessary corrective work done in order to comply with the Contract Documents shall be performed at no cost to City.

6.6.2 In the event that a suspension of Work is ordered, as provided in this paragraph, Contractor, at its expense, shall perform all work necessary to provide a safe, smooth, and unobstructed passageway through construction for use by public, pedestrian, and vehicular traffic, during the period of such use by suspension. Should Contractor fail to perform the Work as specified, City may perform such Work and the cost thereof may be deducted from monies due Contractor under the Contract.

6.6.3 City shall also have Contractor to suspend the Work wholly or in part, for such period as City may deem necessary, due to unsuitable weather, or to such other conditions as are considered unfavorable for the suitable prosecution of the Work. Such temporary suspension of the Work will be considered justification for time extensions to the Contract in an amount equal to the period of such suspension if such suspended work includes the current critical activity on the latest favorably reviewed progress schedule. Contractor as directed by City shall provide the provisions as stipulated in Section 00 07 00-6.6.2, Suspension of Work above. Such additional work shall be compensated as provided for in Section 00 07 10-7.0, **CHANGES IN THE WORK**.

6.7 FAILURE TO PERFORM PROPERLY

If Contractor should neglect to prosecute the Work properly or fail to perform any provision of the Contract, City, after five (5) days written notice to Contractor, may without prejudice to any other remedy City may have, make good such deficiencies and deduct the cost from the payment then or thereafter due to Contractor. Contractor shall notify the Owner's Representative in writing immediately any time the Work falls fourteen (14) days behind the time schedule submitted by Contractor under the provisions of Section 01 13 10, **CONSTRUCTION SCHEDULES**.

6.7.1 CORRECTION OF NON-CONFORMING WORK

A. The Owner's Representative shall have the sole and unfettered authority to disapprove or reject Non-conforming Work. Upon receipt of written notification thereof from the Owner's Representative, Non-conforming Work shall be removed from the Site and replaced promptly by Contractor with Work that conforms to the Contract Documents, regardless of when the Non-conformance is determined. The Contractor shall pay all claims, costs, losses, and damages, including the Owner's Representative expenses at the labor rates included in the contracts between the

Owner's Representative and the Owner's Representative testing and inspection services, of removal and replacement including but not limited to all costs of repair or replacement of work of others.

B. Failure or neglect on the part of the Owner's Representative or any of its authorized agents or representatives to condemn or reject Non-conforming Work or defective materials shall not be construed:
    a. To imply acceptance of such Non-conforming Work materials; or
    b. As barring the Owner's Representative at any subsequent time from the recovery of money needed to build a new all portions of such Non-conforming Work; or
    c. To relieve Contractor from the responsibility of correcting Non-conforming Work or materials.

C. If the Contractor fails to correct Non-conforming Work or proceed with corrections within 5 days of the date of written notification from the Owner's Representative, the Owner's Representative may correct the Non-conforming Work or may remove it and store the salvageable materials or equipment at the Contractor's expense. If the Contractor does not pay the costs of such removal and storage within 7 days after written notice, the Owner's Representative may sell, auction, or discard such materials and equipment. The Owner's Representative will credit the Contractor's account for the excess proceeds of such sale, if any. The Owner's Representative will deduct from the Contractor's account the costs of damages to the Work, rectifying the Non-conforming Work, removing and storing such salvage materials and equipment, and discarding the materials and equipment, if any. If the proceeds fail to cover said costs and damages, the Contract Sum shall be reduced by the deficit. If the current Contract unpaid balance and retention is insufficient to cover such amount, The Contractor shall reimburse the Owner's Representative.

6.8 RIGHT TO TERMINATE CONTRACT

If at any time Contractor is determined to be in material breach of the Contract, notice thereof in writing will be served upon Contractor and its sureties, and should Contractor neglect or refuse to provide means for a satisfactory compliance with the Contract, as directed by the Owner's Representative, within the time specified in such notice, City or City's Representative in such case shall have the City to terminate the operation of the Contract for cause.

Upon such termination, Contractor shall discontinue the Work, or such parts of it as City may designate. Upon such termination, Contractor's control shall terminate and thereupon City or its fully authorized representative may take possession of all or any part of Contractor's materials, tools, equipment, and appliances upon the premises and use the same for the purposes of completing the Work and hire such force and buy or rent such additional machinery, tools, appliances, and equipment, and buy such additional materials and supplies at Contractor's expense as may be necessary for the proper conduct of the Work and for the completion thereof; or City may employ other parties to carry the Contract to completion, employ the necessary workers, substitute other machinery or materials and purchase the materials contracted for, in such manner as City may deem proper; or City

may annul and cancel the Contract and relet the Work or any part thereof. Any excess of cost arising therefrom over and above the Contract Price will be charged against Contractor and its sureties, who will be liable therefore.

In the event of such termination, all monies due Contractor or retained under the terms of this Contract shall be held by City; however, such holdings will not release Contractor or its sureties from liability for failure to fulfill the Contract. Any excess cost over and above the Contract amount incurred by City arising from the termination of the operations of the Contract and the completion of the Work by City as above provided shall be paid for by any available funds held by City. Contractor will be so credited with any surplus remaining after all just claims for such completion have been paid.

In addition to City's rights under this section, if at any time before completion of the Work under the Contract, it shall be determined by City that it is in the best interests of City to discontinue the Work or terminate the Contract, or if the Work shall be stopped by an injunction of a court of competent jurisdiction or by order of any competent City, City may, upon ten (10) days written notice to Contractor, discontinue the Work and terminate the Contract. Upon service of such notice of termination, Contractor shall discontinue the Work in such manner, sequence, and at such times as the Owner's Representative may direct. Contractor shall have no claim for damages for such discontinuance or termination, nor any claim for anticipated profits on the work thus dispensed with, nor any other claim except for the work actually performed up to the time of discontinuance, including any extra work ordered by the Owner's Representative to be done, nor for any claim for liquidated damages.

7.0 **CHANGES IN THE WORK**

7.1 CHANGE ORDERS

7.1.1 Without invalidating the Contract and without notice to sureties or insurers, City through the Owner's Representative, may at any time or from time to time, order additions, deletions, or revisions in the Work; these will be authorized by Field Directive, Field Order, or Change Order. A Change Order will not be issued for a Field Directive unless the Owner's Representative concurs with an appeal by Contractor that such Field Directive is a change in the scope of the Contract. Contractor shall comply promptly with the requirements for all Change Orders, Field Orders, or Field Directives. The work involved in Change Orders shall be executed under the applicable conditions and requirements of the Contract Documents. If any Field Order causes an increase or decrease in the Contract Amount or an extension or shortening of the Contract Time, an equitable adjustment will be made by issuing a Change Order. If Contractor accepts a Change Order that does not include a time extension, Contractor waives any claim for additional time for the work covered by that Change Order. Additional or extra work performed by Contractor without written authorization of a Field Order or Change Order will not entitle Contractor to an increase in the Contract Amount or an extension of the Contract Time.

7.1.2 Extra work shall be that work not shown or detailed on the Contract Drawings and not specified. Such work shall be governed by all applicable provisions of the Contract Documents. In giving instructions, the Owner's Representative shall have City to make minor changes in the Work, not involving extra cost, and not inconsistent with the purposes of the Work; but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order by City through the Owner's Representative, and no claim for an addition to the total amount of the Contract shall be valid unless so ordered.

7.1.3 In case any change increases or decreases the work shown, Contractor shall be paid for the work actually done at a mutually agreed upon adjustment to the Contract Price, based upon the provisions of Section 01 10 35 - **MODIFICATION PROCEDURES**.

7.1.4 If Contractor refuses to accept a Change Order, City may issue it unilaterally. Contractor shall comply with the requirements of the Change Order. City shall provide for an equitable adjustment to the Contract, and compensate Contractor accordingly. If Contractor does not agree that the adjustment is equitable, it may submit a claim in accordance with Section 00 07 00-7.3.2, Claims.

7.2 DIFFERING SITE CONDITIONS

Pursuant to Public Contract Code Section 7104, Contractor shall promptly, and before such conditions are disturbed, notify the Owner's Representative in writing, of any:

a. Material that Contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.

b. Subsurface or latent physical conditions at the site differing from those indicated.

c. Unknown physical conditions at the site of any unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

City shall promptly, investigate the conditions, and if it finds that the conditions do materially differ, or do involve hazardous waste, and cause a decrease or increase in Contractor's cost of, or the time required for, performance of any part of the Work City shall cause to be issued a change order under the procedures provided in Section 00 07 00-7.1, CHANGE ORDERS.

In the event that a dispute arises between City and Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in Contractor's cost of, or time required for, performance of any part of the Work, Contractor shall not be excused from any scheduled completion date provided for by the Contract, but shall proceed with all work to be performed under the Contract. Contractor shall retain any

and all rights provided either by Contract or by law which pertain to the resolution of disputes and protests between the contracting parties, Section 00 07 00-7.3, RESOLUTION OF DISPUTES.

No claim of Contractor under this clause shall be allowed unless Contractor has given the notice required.

7.3 RESOLUTION OF DISPUTES

7.3.1 Contract Interpretation by the Owner's Representative - Questions regarding the meaning and intent of the Contract Documents shall be referred in writing by Contractor to the Owner's Representative. Where practical, the Owner's Representative shall respond to Contractor in writing with a decision within ten (10) days of receipt of the request.

7.3.2 Claims

7.3.2.1 Notice - If Contractor disagrees with the Owner's Representative's decision in Section 00 07 00-7.3.1, Contract Interpretation by the Owner's Representative, or in any case where Contractor deems additional compensation or a time extension to the Contract period is due Contractor for work or materials not covered in the Contract or which the Owner's Representative has not recognized as extra work, Contractor shall notify the Owner's Representative, in writing, of its intention to make claim. Claims pertaining to decisions provided in Section 00 07 00-7.3.1 or such other determinations by the Owner's Representative shall be filed in writing to the Owner's Representative within five (5) days of receipt of such decision. All other claims notices for extra work shall be filed in writing to the Owner's Representative prior to the commencement of such work. Written notice shall use the words "Notice of Potential Claim". Such Notice of Potential Claim shall state the circumstances and the reasons for the claim, but need not state the amount.

Additionally, no claim for additional compensation or extension of time for a delay will be considered unless the provisions of Sections 00 07 00-6.3, DELAYS, and 6.4, TIME EXTENSIONS, are complied with. No claim filed after the date of final payment will be considered.

It is agreed that unless notice is properly given, Contractor shall not recover costs incurred by it as a result of the alleged extra work, changed work or other situation which had proper notice been given would have given rise to a right for additional compensation. Contractor should understand that timely notice of potential claim is of great importance to the Owner's Representative and City, and is not merely a formality. Such notice allows City to consider preventative action, to monitor Contractor's increased costs resulting from the situation, to marshal facts, and to plan its affairs. Such notice by Contractor, and the fact that the Owner's Representative has kept account of the cost as aforesaid, shall not in any way be construed as proving the validity of the claim.

7.3.2.2 Records of Disputed Work - In proceeding with a disputed portion of the Work, Contractor shall keep accurate records of its costs and shall make available, to the Owner's

Representative, a daily summary of the hours and classification of equipment and labor utilized on the disputed work, as well as a summary of any materials or any specialized services which are used. Such information shall be submitted to the Owner's Representative on a monthly basis, receipt of which shall not be construed as an authorization for or acceptance of the disputed work.

7.3.2.3 Submission of Claim Costs - Within thirty (30) days after the last cost of work for which Contractor contends it is due additional compensation is incurred, but if costs are incurred over a span of more than thirty (30) days, then within fifteen (15) days after the thirtieth day and every month thereafter, Contractor shall submit to the Owner's Representative as best Contractor is able its costs incurred for the claimed matter. Claims shall be made in itemized detail and should the Owner's Representative be dissatisfied with format or detail of presentation, upon request for more or different information, Contractor will promptly comply, to the satisfaction of the Owner's Representative. If the additional costs are in any respect not knowable with certainty, they shall be estimated as best can be done. In case the claim is found to be just, it shall be allowed and paid for as provided in Section 01 10 35, **MODIFICATION PROCEDURES**.

7.3.2.4 Claim Meetings - From time to time the Owner's Representative may call a special meeting to discuss outstanding claims should it deem this of possible help. Contractor shall cooperate and attend prepared to discuss its claims, making available the personnel necessary for resolution, and all documents which may reasonably be requested by the Owner's Representative.

7.3.3 Resolution of Claims

Pursuant to California Public Contract Code Section 9204, and subject and in addition to the change order, claim and dispute resolution procedures and requirements provided in these Contract Documents, all Contractor, Subcontractor and sub-subcontractor claims for (1) time extensions, (2) payments for additional work, and (3) payments for disputed amounts, are subject to the claims resolution process as summarized below:

a. Contractor may submit claims that shall be supported by reasonable documentation.

b. City shall review Contractor's claim and issue a written statement within 45 days identifying the disputed and undisputed claim amounts. The parties may mutually agree to extend the time for City's written statement. City may have up to three days following its governing board's publicly noticed meeting after the 45 day period or expiration of the extension to issue its written statement.

c. City shall pay undisputed amounts within 60 days of the City's written statement.

d. If Contractor disputes City's written response or City fails to respond to Contractor's claim, Contractor may demand in writing an informal meet and confer settlement conference, which the City shall schedule within 30 days.

e. City shall provide a written statement of remaining items in dispute within 10 business days of the meet and confer settlement conference and pay undisputed amounts within 60 days of issuing the written statement.

f. The parties shall submit to nonbinding mediation the issues remaining in dispute as Contractor identifies in writing. The parties shall mutually agree to a mediator within 10 business days thereafter. Mediation may be waived with the consent of both parties. Unless City and Contractor otherwise agree, this mediation excuses any obligation to mediate after litigation has commenced under Public Contract Code Section 20104.4.

g. City's failure to respond to the Contractor's claims within the required time periods or otherwise meet the time requirements provided herein shall result in the claim being deemed denied in its entirety.

Subcontractors and sub-subcontractors may submit a claim, supported by reasonable documentation, to Contractor for submission to the City. Within 45 days of receiving the subcontractor's written claim, Contractor shall notify the subcontractor in writing whether Contractor presented the claim to the City or if not presented, the reasons for not having done so.

In addition, subject to California Public Contract Code Section 9204,claims pertaining to this Agreement for three hundred and seventy-five thousand dollars ($375,000) or less which cannot be resolved between the parties shall be resolved pursuant to the provisions of Public Contract Code commencing at Section 20104.

Said Code sections provide in part that:

Under the law (starting at Cal. Pub. Cont. Code Section 20104.2) construction claims of three hundred and seventy-five thousand (375,000) dollars or less on local agency public construction contracts must be in writing and include the documents necessary to substantiate the claim. Claims must be filed on or before the date of final payment.

City must respond in writing to any written claim of three hundred seventy-five thousand (375,000) dollars or less within sixty (60) days (or, in the case of claims of less than fifty thousand (50,000) dollars, within forty-five (45) days of receipt of claim, or may request, in writing, within thirty (30) days of receipt of the claim, additional documentation supporting the claim or relating to defenses to the claim City may have against the claimant.

If additional information is thereafter required, it shall be requested and provided, pursuant to Public Contract Code Section 20104.2, upon mutual agreement of City and the claimant.

City's written response to the claim, as further documented, shall be submitted to the claimant within thirty (30) days (or, for claims of less than fifty thousand (50,000) dollars, within fifteen (15) days) after receipt of the further documentation, or within a period of time

no greater than that taken by the claimant in producing the additional information or requested documentation, whichever is greater.

If the claimant disputes City's written response (or if City fails to respond within the time periods prescribed above) the claimant may notify City, in writing, within fifteen (15) days of receipt of City's response or within fifteen (15) days of City's failure to respond within the times prescribed, respectively, and demand an informal settlement conference. City must then schedule a settlement conference within thirty (30) days.

Following the settlement conference, if the claim or any portion remains in dispute, the claimant may file a claim as required by the claims statute commencing at Cal. Gov. Code Section 910. The time within which a Government Code claim must be filed is tolled from the time the claimant submits the Public Contract Code claim until the time when the claim is denied.

If a civil action is filed to resolve the claim, then between thirty (30) and sixty (60) days after the filing of responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by the parties. The parties are given fifteen (15) days to select a disinterested third person as mediator. Mediation must commence within thirty (30) days of submittal and conclude within fifteen (15) days of commencement unless the time is extended for good cause by the court.

If the matter remains in dispute, the case must be submitted to judicial arbitration pursuant to procedures set forth in the Code of Civil Procedure commencing at Section 1141.10. Discovery is permitted consistent with the rules pertaining to judicial arbitration.

Arbitrators shall, when possible, be experienced in construction law.

A party who appeals an arbitration award and does not obtain a more favorable judgment shall pay the attorneys' fees on appeal of the other party. City must pay interest at the legal rate on any arbitration award or judgment, commencing on the date when suit was filed. Except as otherwise provided in the Contract, City must pay the undisputed portions of any claims.

Should either party to this Contract bring legal action against the other, the case shall be handled by a court of competent jurisdiction in San Mateo County, California.

8.0 **PAYMENT**

8.1 BASIS OF PAYMENT

8.1.1 General - Contractor shall accept the compensation, as herein provided, as full payment for furnishing all labor, materials, tools, equipment, and incidentals necessary to the completed Work and for performing all work contemplated and embraced under the Contract; also for loss or damage arising from the nature of the Work, or from the action of

the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the Work, also for all expenses incurred in consequence of the suspension or discontinuance of the Work as herein specified; and for completing the Work according to Plans and Specifications. Neither the payment of any estimate nor of any retained percentage shall relieve Contractor of any obligation to make good any defective work or material.

No compensation will be made in case of loss of anticipated profits. Increased or decreased work involving supplemental agreements will be paid for as provided in such agreements.

Full compensation for conforming to all of the provisions of the Contract Documents shall be considered as included in the prices paid for the various items of work of the Contract Documents and no additional compensation will be allowed therefor.

8.1.2 Payment for Patents and Patent Infringement - All fees or claims for any patented invention, article, or arrangement that may be used or in any manner connected with the performance of the Work or any part thereof shall be included in the Contract Price for doing the Work, and Contractor and its sureties shall defend, protect, and hold City, the Owner's Representative, and Design Consultants, together with all their officers, agents, and employees harmless against liability of any nature or kind for any and all costs, legal expenses, and damages made for such fees or claims and against any and all suits and claims brought or made by the holder of any invention or patent, or on account of any patented or unpatented invention, process, article, or appliance manufactured for or used in the performance of the Contract, including its use by City, unless otherwise specifically stipulated in the Contract. Before final payment is made on the Contract, Contractor shall furnish an affidavit to City regarding patent rights for the Project. The affidavit shall state that all fees and payments due as a result of the work incorporated into the Project or methods utilized during construction have been paid in full. Contractor shall certify in the affidavit that no other fees or claims exist for work in this Project.

8.1.3 Payment of Taxes - Contractor shall pay and shall assume exclusive liability for all taxes levied or assessed on or in connection with its performance of this Contract, whether before or after Acceptance of the Work, including, but not limited to, State and local sales and use taxes, Federal and State payroll taxes or assessments, and excise taxes. All costs in connection therewith shall be included in the total amount of the Contract Price.

8.2 PARTIAL PAYMENTS

8.2.1 General - In consideration of the faithful performance of the Work prosecuted in accordance with the provisions of these Specifications and the Contract, City will pay Contractor for all such work installed on the basis of unit prices and/or percentage completion of lump sum Bid Items. Amounts earned for lump sum work on the basis of percentage completion or quantities of work completed will be based on accepted Cost Breakdown (Section 01 10 25, **MEASUREMENT AND PAYMENT**).

Payments will be made by City to Contractor on estimates duly certified and approved by the Owner's Representative, based on the value of equipment installed and tested, labor and materials incorporated into said permanent Work by Contractor during the preceding month, and acceptable materials and equipment on hand (materials and equipment furnished and delivered to the site by Contractor and not yet incorporated into the Work accompanied by an approved invoice). Payments will not be made for temporary construction unless specifically provided for in the Contract Documents.

Partial payments will be made monthly based on work accomplished as of a day mutually agreed to by City and Contractor. Contractor shall submit its estimate of the work completed during the prior month and the work completed to date in a format corresponding to the accepted cost breakdown. Additionally, Contractor shall submit a detailed statement of Contractor's request for payment of acceptable materials and equipment on hand in compliance with Section 00 07 00-8.2.2, Partial Payments - Inclusion of Materials on Hand.

Upon receipt of Contractor's requests for payment, City shall act in accordance with the following:

a. The Owner's Representative shall review the submitted estimates, as soon as practicable after receipt for the purpose of determining that the estimates are a proper request for payment, and shall prepare a certified estimate of the total amount of work done and acceptable materials and equipment on hand.

b. Any request for payment determined not to be a proper payment request suitable for payment shall be returned to Contractor as soon as practicable, but not later than seven (7) days after receipt. A request for payment returned pursuant to this paragraph shall be accompanied by a document setting forth in writing the reasons why the request for payment is not proper.

c. The number of days available to City to make a payment without incurring interest pursuant to this section shall be reduced by the number of days by which City exceeds the seven (7) day return requirement set forth in subdivision (b) above.

If requested, Contractor shall provide such additional data as may be reasonably required to support the partial payment request. The Owner's Representative will be available to meet to discuss the partial payment request prior to its resubmittal(s). When Contractor's estimate of amount earned conforms with the Owner's Representative's evaluation, the Owner's Representative will calculate the amount due Contractor, prepare the progress payment request for signature by Contractor, and submit the recommended progress payment request for City's approval and processing. Payment will be made by City to Contractor in accordance with City's normal accounts payable procedures; City shall retain amounts in accordance with Section 00 07 00-8.3, RIGHT TO WITHHOLD AMOUNTS.

No such estimate or payment shall be required to be made, when in the judgment of the Owner's Representative, the Work is not proceeding in accordance with the provisions of the

Contract, or when in the Owner's Representative's judgment the total value of the Work done since the last estimate amounts to less than One Thousand Dollars ($1,000.00).

Before any progress payment or final payment is due or made, Contractor shall submit satisfactory evidence that Contractor is not delinquent in payments to employees, Subcontractors, suppliers, or creditors for labor and materials incorporated into Work. This specifically includes, without limitation, conditional lien release forms for the current progress payment and unconditional release forms for past progress payments. This also includes copies of certified payroll from contractor and subcontractors for the current payment period.

Subject to the provisions of this Section, City shall pay Contractor within thirty (30) days after receipt of undisputed and properly submitted requests for payment from Contractor. In accordance with Public Contract Code Section 20104.50, if City fails to pay an undisputed request for payment within the allotted thirty (30) days, City shall pay interest to Contractor equivalent to the legal rate set forth in subdivision (a) of Section 685.010 of the Code of Civil Procedure.

8.2.2 Partial Payments - Inclusion of Materials on Hand - Materials, as used herein, shall be considered to be those items which are fabricated and manufactured material and equipment. Only those materials for which Contractor can transfer clear title to City will be qualified for partial payment. Contractor may request payment of seventy-five (75) percent of the actual net cost of these materials. The request for partial payment will be subject to retention as provided elsewhere in the Contract Documents.

To receive partial payment for materials and equipment not incorporated in the Work, it shall be necessary for Contractor to submit to the Owner's Representative a list of such materials, at least seven (7) days prior to submitting the monthly estimate of amount earned for work completed. At the Owner's Representative's sole discretion, it will approve items for which partial payment is to be made subject to the following:

a. Equipment and materials will only be eligible if given conditional or final acceptance by the Design Consultant and are in apparent compliance with favorably reviewed shop drawings.

b. Only equipment or materials which have received favorable review of shop drawings will qualify.

c. Eligible equipment or materials must be delivered and properly stored, protected, and maintained in a manner favorably reviewed by the Owner's Representative, at the job site or at a bonded warehouse, which shall be acceptable to the City, in the vicinity of the Work.

d. Contractor's actual net cost for the materials must be supported by paid invoices of suppliers, or other documentation requested by the Owner's Representative.

e. Materials or equipment delivered to the Site less than thirty (30) days prior to their scheduled incorporation in the Work shall not qualify.

f. Final payment shall be made only for materials actually incorporated in the Work and, upon Acceptance of the Work, all materials remaining for which advance payments had been made shall revert to Contractor, unless otherwise agreed, and partial payments made for these items shall be deducted from the final payment for the Work.

g. Partial payments for materials and equipment on hand shall not be deemed to be final payment for the material nor relieve Contractor of its obligations under the Contract.

h. Partial payments for materials and equipment on hand shall be subject to retention in accordance with Section 00 07 00-8.3, RIGHT TO WITHHOLD AMOUNTS.

8.2.3 Effect of Payment – Payment will be made by City based on the Owner's Representative's observations at the site and the data comprising the progress payment request. Payment will not be a representation that City has:

a. made exhaustive or continuous on-site inspections to check the quality or quantity of work;

b. reviewed construction means, methods, techniques, sequences or procedures;

c. reviewed copies of requisitions received from subcontractors and material suppliers and other data requested by City to substantiate Contractor's right to payment;

d. made examination to ascertain how or for what purpose Contractor has used money previously paid on account of the Contract Amount; or

e. accepted all or part of the Work.

8.3 RIGHT TO WITHHOLD AMOUNTS

8.3.1 Retention - City will deduct from the partial payment and retain as part security, five (5) percent of the amount earned until the final payment in accordance with Public Contract Code Section 7201 unless otherwise specified in Section 00 08 00-1.6, RETENTION WITHHOLDING. Public Contract Code Section 7201 sunsets on January 1, 2018.

8.3.2 Other Withholds - In addition to the amount which City may otherwise retain under the Contract, City may withhold a sufficient amount or amounts of any payment or payments otherwise due Contractor, as in its judgment may be necessary to cover:

a. For defective work not remedied.

b. A reasonable doubt that the Contract can be completed for the balance then unpaid.

c. Damage to another contractor or third party, or to property.

d. Failure of Contractor to maintain current Record Drawings.

e. Cost of insurance arranged by City due to cancellation or reduction of Contractor's insurance.

f. Failure to submit, revise, resubmit or otherwise conform to the requirements herein for preparing and maintaining a Construction Schedule.

g. Failure to make proper submissions, as specified herein.

h. Payments due City from Contractor.

i. Reduction of Contract Amount because of modifications.

j. Contractor's neglect or unsatisfactory prosecution of the Work including failure to clean up.

k. Provisions of law that enable or require City to withhold such payments in whole or in part.

When the above reasons for withhold amounts are removed, payment will be made to Contractor for amount withheld because of them.

City may also retain up to 5% of any payment application until Contractor submits all required schedules and submittals.

City in its discretion may apply any withheld amount or amounts to the payment of valid claims. In so doing, City shall be deemed the agent of Contractor, and any payment so made by City shall be considered as a payment made under the Contract by City to Contractor and City shall not be liable to Contractor for such payment made in good faith. Such payments may be made without prior judicial determination of the claim or claims. City will render to Contractor a proper accounting of such funds disbursed in behalf of Contractor.

8.4 SECURITY SUBSTITUTION FOR WITHHOLDS

Pursuant to Public Contract Code Section 22300 (the provisions of which are hereby incorporated herein by reference), Contractor may substitute securities for any moneys withheld by City as retention under Sections 00 07 00-8.2, PARTIAL PAYMENTS, or 00 07 00-8.7, FINAL INSPECTION AND PAYMENT, to ensure performance under the contract; however, substitution of securities shall not be allowed hereunder if financing for this Contract has been provided by the Farmers Home Administration of the United States

Department of Agriculture pursuant to the Consolidated Farm and Rural Development Act (7 U.S.C. Sec. 1921 et seq.), or where federal regulations or policies, or both, do not allow the substitution of securities. At the request and expense of Contractor, securities equivalent to the amount withheld shall be deposited with City, or with a state or federally chartered bank in California as the escrow agent, who shall then pay those moneys to Contractor. Upon satisfactory completion of the Contract, the securities shall be returned to Contractor.

Alternatively, upon request of Contractor City shall make payment of retentions earned directly to the escrow agent at the expense of Contractor. Also at the expense of Contractor, Contractor may direct the investment of the payments into securities and Contractor shall receive the interest earned on the investments upon the same terms provided for in this section for securities deposited by Contractor. Upon satisfactory completion of the Contract, Contractor shall receive from the escrow agent all securities, interest, and payments received by the escrow agent from City, pursuant to the terms of this section.

Securities eligible for investment include those listed in Section 16430 of the Government Code, bank or savings and loan certificates of deposit, interest-bearing demand deposit accounts, standby letters of credit that are secured by securities listed in Section 16430 of the Government Code or that contain terms and conditions that provide assurances of financial integrity substantially equivalent to that of securities listed in said Section 16430, or any other security of like financial integrity mutually agreed to by Contractor and City. City reserves the right to determine the acceptability of eligible securities proposed by Contractor for substitution of moneys withheld as retention. Contractor shall be the beneficial owner of any securities substituted for moneys withheld and shall receive any interest thereon.

If Contractor elects to receive interest on moneys withheld in retention by City, Contractor shall, at the request of any subcontractor, make that option available to the subcontractor regarding any moneys withheld in retention by Contractor from the subcontractor. If Contractor elects to receive interest on any moneys withheld in retention by City, then the subcontractor shall receive the identical rate of interest received by Contractor on any retention moneys withheld from the subcontractor by Contractor, less any actual pro rata costs associated with administering and calculating that interest. In the event that the interest rate is a fluctuating rate, the rate for the subcontractor shall be determined by calculating the interest rate paid during the time that retentions were withheld from the subcontractor. If Contractor elects to substitute securities in exchange for the release of moneys held in retention by Contractor.

The provisions of the immediately preceding paragraph shall apply only to those subcontractors performing more than five (5) percent of Contractor’s total bid. Contractor shall not require any subcontractor to waive any provision of this section pertaining to the rights of subcontractors.

The escrow agreement used hereunder shall be null, void, and unenforceable unless it is substantially similar to the form included in Public Contract Code 22300 which is reproduced

in Section 00630, ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION.

Specific securities proposed for investment shall be submitted to City for determination of acceptability. Standby letters of credit are not eligible for investment.

8.5 WARRANTY OF TITLE

No material, supplies, or equipment for the Work under this Contract shall be purchased subject to any chattel mortgage, security agreement, or under a conditional sale or other agreement by which an interest therein or any part thereof is retained by the seller or supplier. Contractor warrants good title to all material, supplies, and equipment installed or incorporated in the work and agrees upon completion of all work to deliver the premises, together with all improvements and appurtenances constructed or placed thereon by Contractor, to City free from any claim, liens, security interest, or charges. Contractor further agrees that neither Contractor nor any person, firm, or corporation furnishing any materials or labor for any work covered by this Contract shall have any right to a lien upon the premises or any improvement or appurtenances thereon, provided that this shall not preclude Contractor from installing metering devices and other equipment of utility companies or of municipalities, the title of which is commonly retained by the utility company or the municipality. In the event of the installation of any such metering device or equipment, Contractor shall advise City as to the legal owner thereof.

Nothing contained in this Paragraph, however, shall defeat or impair the right of such persons furnishing materials or labor under any bond given by Contractor for their protection or any rights under any law permitting such persons to look to funds due Contractor in the hands of City. The provisions of this Paragraph shall be inserted in all subcontracts and material contracts, and notice of its provisions shall be given to all persons furnishing materials for the Work when no formal Contract is entered into for such materials.

8.6 SUBSTANTIAL COMPLETION

When Contractor considers that the Work is substantially complete, Contractor shall notify the Owner's Representative in writing. Upon receipt of the notification, the Owner's Representative, City and/or their authorized representatives will make inspection, to determine if the Work is sufficiently complete in accordance with the Contract Documents so City can occupy or utilize the Work for its intended use. If items are found which prevent such use or occupancy, the Owner's Representative shall notify Contractor in writing of such items by issuing a Corrective Work Item List.

Upon the completion of the items listed on the Corrective Work Item List, Contractor shall so notify the Owner's Representative in writing. The Owner's Representative shall inspect the Work to determine its acceptability for Substantial Completion and for determination of other items which do not meet the terms of the Contract. Upon verification that the Work is substantially complete the Owner's Representative shall issue a Certificate of Substantial Completion and a Punch List. The Certificate shall establish the date of Substantial Completion and the responsibilities of City and Contractor for security, maintenance, heat,

utilities, damage to the Work and insurance, commencement of warranties required by the Contract Documents, and shall fix the time, not to exceed sixty (60) days, within which Contractor shall finish all items on the Punch List accompanying the Certificate. When the preceding provisions have been approved by both City and Contractor, they shall sign the Certificate to acknowledge their written acceptance of the responsibilities assigned to them in such Certificate. By such acknowledgement, Contractor agrees to pay City's actual costs including, but not limited to, charges for engineering, inspection and administration incurred due to the failure to complete the Punch List within the time period provided in the Certificate of Substantial Completion.

8.7 FINAL INSPECTION AND PAYMENT

Following completion of the items listed on the Punch List by Contractor, the Owner's Representative shall notify City that the Work has been completed in accordance with the Contract. Final determination of the acceptability of the Work shall be made by City. After completion of the Work, but prior to its Acceptance by City, the last partial payment will be made to Contractor in accordance with Section 00 07 00-8.2, PARTIAL PAYMENTS.

After receipt of the last partial payment, but prior to Acceptance of the Work by City, Contractor shall submit fully executed Section 00 05 30, **RELEASE OF ANY AND ALL CLAIMS**, to the Owner's Representative's satisfaction. Pursuant to California Public Contract Code Section 7100, signifying that acceptance of the final payment described below shall operate as and shall be, a release to City, the Owner's Representative, the Design Consultant, and their duly authorized agents, from all claim of and/or liability to the Contract arising by virtue of the Contract related to those amounts. Disputed Contract claims in stated amounts previously filed as provided in Section 00 07 00-7.3.2, Claims, may be specifically excluded by Contractor from the operation of the release.

Following receipt of all required submittals and the Owner's Representative's written statement that construction is complete and recommendation that City accept the Project, City will take formal action on Acceptance.

Within ten (10) days of the Acceptance by City of the completed Work embraced in the Contract, City will cause to be recorded in the office of the County Recorder a Notice of Completion. The final payment shall not be due and payable until the expiration of thirty-five (35) days from the date of recordation of the Notice of Completion and no later than sixty (60) days from the date of Acceptance by the City of the completed Work.

City will pay Contractor in lawful money such sums of money as may be due Contractor including all sums retained but excluding such sums as have previously been paid Contractor and as may be needed to cover outstanding stop notices. This payment will constitute the final payment to Contractor under this Contract.

In the event of a dispute between City and Contractor, City may, in accordance with the Public Contract Code Section 7107, withhold from the final payment an amount of 150 percent of the disputed amount.

9.0 EXISTING UTILITIES

9.1 PUBLIC SERVICE UTILITIES

In the event it is necessary to remove public service utilities, aboveground or underground, of any character, or any portion thereof, the owner thereof, or the agents or superintendents, upon proper application by Contractor, shall be notified to remove same within specified time, and Contractor shall not interfere with said structures until the time specified in said notice shall have expired.

Right is reserved to municipal corporations, City and County authorities, and public service utilities to enter upon any public road or plant site for the purpose of making necessary repairs and changes. Contractor's attention is directed to the requirements of Government Code Section 4216.2 for obtaining an inquiry identification number prior to excavation in any public street or right-of-way and Section 4216.2 (a)(2) which provides: “When the excavation is proposed within 10 feet of a high priority subsurface installation, the operator of the high priority subsurface installation shall notify the excavator of the existence of the high priority subsurface installation prior to the legal excavation start date and time, as such date and time are authorized pursuant to paragraph (1) of subdivision (a) of 4216.2. The excavator and the operator or its representative shall conduct an onsite meeting at a mutually-agreed-on time to determine actions or activities required to verify the location of the high priority subsurface installation prior to start time.”

A “High Priority Subsurface Installation” is defined in Section 4216 (e) as “high-pressure natural gas pipelines with normal operating pressures greater than 415kPA gauge (60psig) or greater than six inches nominal pipe diameter, petroleum pipelines, pressurized sewage pipelines, high-voltage electric supply lines, conductors, or cables that have a potential to ground of greater than or equal to 60kv, or hazardous materials pipelines that are potentially hazardous to workers or the public if damaged.”

A “Subsurface Installation” is defined in Section 4216 (l) as “any underground pipeline, conduit, duct, wire, or other structure, except non-pressurized sewer lines, non-pressurized storm drains, or other non-pressurized drain lines.”

9.2 EXISTING FACILITIES

9.2.1 General - The location of known existing utilities and pipelines are shown on the Drawings in their approximate locations. Some of the locations may include multiple conduits. Contractor shall exercise care in avoiding damage to those facilities involved and Contractor will be held responsible for their repair if damaged.

The Contractor shall perform a pre-construction survey of all existing structures within and around work area. The existing structures shall be protected in place and restored to existing or new condition before construction.

Contractor shall exercise care in maintaining those pipes and facilities required for the continuing operation of the existing facilities until such time as they can be abandoned. There is no guarantee that all utilities or obstructions are shown or that the locations indicated are accurate. Utilities are piping, conduits, wire, cable, poles, ducts, manholes, pull boxes and the like, located at the Project sites.

Contractor shall exercise extreme caution in working in the area adjacent to the existing sewerage facilities. It is essential that all the existing facilities be maintained in service until the new work is ready for full time operation and is placed in service.

9.2.2 Notice - Pursuant to Government Code Section 4216 Contractor shall contact the appropriate regional notification center at least two (2) working days before performing any excavation. Contractor shall request the utility owners to mark or otherwise indicate the location of their service.

Upon being notified by the operator of the high priority subsurface installation that the excavation is proposed within ten (10) feet of a high priority subsurface installation, Contractor shall meet onsite with the operator or its representative at a mutually-agreed-on time to determine actions or activities required to verify the location of the high priority subsurface installations prior to start time.

9.2.3 Excavation - The Owner's Representative shall be given notice prior to the commencing of potholing. As soon as the utility survey is completed, potholing shall commence to determine the actual location of the pipe, duct, or conduit. Contractor shall uncover all piping and conduits, to a point one (1) foot below the pipe, where crossings, interferences, or connections are shown on the Drawings, prior to trenching or excavating for any pipe or structures, to determine actual elevations. New pipelines shall be laid to such grade as to clear all existing facilities which are to remain in service for any period subsequent to the construction of the run of pipe involved. If Contractor does not expose all required utilities, Contractor shall not be entitled to additional compensation for work necessary to avoid interferences nor for repair to damaged utilities. Excavations around underground electrical ducts and conduits and gas lines shall be performed using extreme caution to prevent injury or damage to workmen and to the utilities.

9.2.4 Interferences - If interferences occur at locations other than those indicated in the Drawings and Specifications with reasonable accuracy, Contractor shall notify the Owner's Representative in writing, and a method for correcting said interferences will be supplied by the Owner's Representative. In accordance with Government Code Section 4215 payment for the cost of locating said interferences, repairing damages not due to the failure of Contractor to exercise reasonable care, removing or relocating affected facilities to correct interferences, and for equipment on the Project necessarily idled during such work, will be in accordance with the provisions of Section 00 07 00-7.0, **CHANGES IN THE WORK**. Contractor shall not be assessed liquidated damages for delay in completion of the Project, if such delay is caused by said interference. Nothing herein shall be deemed to require City to indicate the presence of such utilities on the site of construction as can be inferred from the presence of other visible facilities on or adjacent to the site. Nothing herein shall relieve

City from identifying main or trunk lines in the Drawings or Specifications. City shall have the sole discretion to perform repairs or relocation work or permit Contractor to do such repairs or relocation work at a reasonable price.

9.2.5 Protection - Care shall be exercised by Contractor to prevent damage to adjacent existing facilities and public or private works; where equipment will pass over these obstructions, suitable planking shall be placed. If high priority subsurface installations are damaged and the operator cannot be contacted, Contractor shall call 911 emergency services.

***** END OF SECTION *****

SECTION 00 08 00

SUPPLEMENTARY GENERAL CONDITIONS

1.0 MODIFICATIONS TO THE GENERAL CONDITIONS

1.1 TIME ALLOWED FOR COMPLETION

In accordance with the provisions of Section 00 07 00-6.2, CONTRACT TIME, Substantial Completion of this Project shall be completed within three hundred and sixty (360) consecutive days from the date established in the Notice to Proceed for the commencement of Contract Time.

1.2 DAMAGES FOR DELAYS

In accordance with the provisions of Section 00 07 00-6.5, LIQUIDATED DAMAGES, for the period of time that any portion of the Work remains unfinished after the time fixed for Substantial Completion in the Contract Documents, as modified by extensions of time granted by the City, it is understood and agreed by the Contractor and the City that the Contractor shall pay the City five thousand dollars ($5,000) per day liquidated damages.

1.3 WEATHER DAYS

In accordance with the provisions of Paragraph 00 07 00-6.4.2.c, **Weather Delays, an allowance of zero (0) working days of weather caused delay have been included in the time allowed for completion.** This allowance includes both weather days due to inclement weather conditions and the conditions resulting from weather in accordance with Paragraph 00 07 00-6.3.3.2, Weather Delays. This allowance does not constitute a warranty by the City and all weather days in excess of this allowance that may result in a time extension will be considered an excusable and non-compensable delay.

1.4 PLANS & SPECIFICATIONS

The Contractor may obtain from the City hard copies of the Plans and Specifications or electronic copy as specified in Section 00 00 10 NOTICE TO CONTRACTORS. The Contractor is to specify the plan sizes after Notice of Award. Additional sets of the Plans and Specifications may be procured at cost of printing and binding.

1.5 SUBSTANTIAL COMPLETION

Substantial completion of the Project as required by Section 00 07 00-8.6, SUBSTANTIAL COMPLETION, requires that the following portions of the Work must be operational and ready for the City's continuous use as intended:

1. All Electrical Systems updated/modified
2. All pumps and control panels

The following items of Work must be fully tested and functional for Project Substantial Completion to be attained:

Completion of items on the Corrective Work Item List as described in Section 00 07 00-8.6, SUBSTANTIAL COMPLETION.

All health and safety systems are complete, fully tested and operational.

All mechanical equipment is installed, fully tested and operational in normal and automatic modes.

All alarms are fully functional, tested and demonstrated to properly associate locally, remotely and of the SCADA system.

Training has been completed for all electrical, mechanical and instrumentation systems.

All instruments, local and remote, are fully tested and functional. All interlocked functions between equipment items are tested and documented.

Portions of the Work not essential to the system operation, which can be completed without interruption of system operations, may be completed after Substantial Completion, and may include the following items:

Final Site Clean-Up

Final Building Clean-Up

Completion of the Punch List prepared by the Owner's Representative in accordance with Section 00 07 00-8.6, SUBSTANTIAL COMPLETION.

2.0 STATE REVOLVING FUND LOAN PROGRAM (NOT USED)

3.0 LIABILITY AND INSURANCE

3.1 INSURANCE

The Contractor shall not commence any Work until it obtains, at its own expense, all required insurance as described in Specification Section 00 04 70-2 and Specification Section 00 08 00-3.1.1, 3.1.2, and 3.1.3. Such insurance shall have the approval of the City as to limit, form, and amount. The Contractor shall not permit any subcontractor to

commence Work on this Project until the same insurance requirements have been complied with by such subcontractor. The Contractor shall furnish the City with original certificates and amendatory endorsements evidencing coverage required by this Section. All certificates and endorsements are to be received and approved by the City before Work commences.

Any deductibles or self-insured retentions must be declared to and approved by the City. At the option of the City, either: (1) The insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the below-listed Additional Insureds or (2) the Contractor shall provide a financial guarantee satisfactory to the City guaranteeing payment of losses and related investigations, claim administration and defense expenses.

Companies writing the insurance under this article shall be licensed to do business in the State of California or be permitted to do business under the Surplus Line Law of the State of California.

Contractors shall include all costs for insurance in their Bids.

Nothing contained in these insurance requirements is to be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from its operations under this Contract. Coverage required hereunder shall operate as Primary insurance.

Each insurance policy required by this Section shall be endorsed to state that coverage shall not be canceled or reduced in amount by either party, except after thirty (30) days' prior written notice to the City by certified mail, return receipt requested.

The Contractor shall take out, pay for, and maintain throughout the duration of this Contract the following insurance coverage.

3.1.1 Commercial General Liability, Automobile Liability and Employer's Liability Insurance

- This insurance shall protect the Contractor from claims for bodily injury and property damage which may arise because of the nature of the work or from operations under this Contract. The Commercial General Liability Insurance shall be maintained for five (5) years after final completion and shall provide coverage on an occurrence basis.

a. Additional Insureds - This policy of insurance shall name the City of Pacifica (City), each of its officials, officers, employees, agents and volunteers; the Design Consultant, the Owner's Representative and each of their officials, officers, partners, employees, agents and volunteers as additional insureds with respect to liability arising out of automobiles owned, leased, hired or borrowed by or on behalf of the Contractor; and with respect to liability arising out of work or operations performed by or on behalf of the Contractor, including materials, parts or equipment furnished in connection with such work or operations. This policy shall provide coverage to each of the said additional insureds with respect to said Work. Both bodily injury and property damage insurance must be on an occurrence basis, and said policy shall provide that the coverage afforded thereby shall be primary coverage to the full limit of liability stated in the declarations, and if the named insureds have other insurance against the loss covered by said policy, that other insurance shall be excess insurance only. Any insurance or self-insurance maintained by the City, its officers, officials, employees, agents and volunteers shall be excess of the Contractor's insurance and shall not contribute with it.

b. Scope of Coverage – The policy shall provide coverage at least as broad as:
    1. Insurance Services Office Commercial General Liability coverage (occurrence Form CG 00 01 or Insurance Services Office Form (CG 00 09 11 88 Owners and Contractors Protective Liability Coverage Form – Coverage for Operations of Designated Contractor); and
    2. Insurance Services Office Form Number CA 0001 covering Auto Liability, Code 1 (any auto).

c. Amount of Coverage - The bodily injury and property damage liability of the Commercial General Liability insurance shall provide coverage in the following limits of liability: $5,000,000 on account of any one occurrence with an annual general aggregate limit of not less than $10,000,000, and $10,000,000 products and completed operations aggregate, combined single limit. The Automobile Liability insurance policy shall provide minimum limits of $1,000,000 per accident arising out of the ownership, maintenance, or use of any owned or non-owned vehicles.

d. Subcontractors - The bodily injury and property damage liability insurance shall not be deemed to require the Contractor to have its subcontractors named as insureds in the Contractor's policy, but the policy shall protect the Contractor from contingent liability which may arise from operations of its subcontractors.

e. Included Coverage - The above Commercial General Liability insurance shall also include the following coverages:

Premises – Operations

Operation of Automobiles - Owned and Non-owned

Owner's/Independent Contractors and Contractors Protective – Subcontractors to the Contractor

Products - Completed Operations

Personal Injury - False Arrest, Libel, Wrongful Eviction, etc.

Broad Form Property Damage, Including, to the Maximum Extent Possible, Coverage for the Assumption of Liability Pursuant to Completed Operations

Separation of Insureds/Cross-Liability Provision

Duty to Defend all Insureds

Deletion of any Limitation on Coverage for Bodily Injury or Property Damage Arising out of Subsidence or Soil or Earth Movement

A provision that the annual general aggregate and the products and completed operations annual aggregate shall apply separately to each project for which Contractor provides services away from premises owned by or rented to Contractor.

XCU - Explosion, Collapse, Underground Damage.

Blanket Contractual Liability including the Indemnification Agreement as herein stated.

f. Umbrella Policy - At the option of the Contractor, primary limits may be less than required, with an Umbrella Policy providing the additional limits needed. This form of insurance will be acceptable provided that the Primary and Umbrella Policies both provide the insurance coverages herein required, including all additional insured requirements. The umbrella policy shall be provided on a “following form” basis, with coverage at least as broad as provided on the underlying Commercial General Liability insurance.

g. Employer’s Liability - The policy shall provide for $1,000,000 per accident for bodily injury or disease.

h. Waiver of Subrogation - Evidence of coverage shall be accompanied by an endorsement from the insurer agreeing to waive all rights of subrogation against the

City, its elected or appointed officials, the Design Consultant, the Owner's Representative and their agents, consultants and employees which might arise by reason of any payment under the policy in connection with the work performed by the Contractor.

i. Deductibles – The policies required above shall comply with the following deductibles:

1. Commercial General Liability Insurance, including all required coverages, shall be a maximum of $25,000.

2. Automobile Liability Insurance, including all required coverages, shall be a maximum of $1,000.

3. Employer's Liability Insurance, including all required coverages, shall not have a deductible.

3.1.2 Workers' Compensation Insurance - In accordance with the provisions of Section 3700 of the Labor Code of the State of California, the Contractor is required to secure the payment of compensation to its employees and for that purpose obtain and keep in effect adequate Workers' Compensation Insurance. If the Contractor, in the sole discretion of the City, satisfies the City of the responsibility and capacity under the applicable Workers' Compensation Laws, if any, to act as self-insurer, the Contractor may so act, and in such case, the insurance required by this paragraph need not be provided.

The Contractor is advised of the provisions of Section 3700 of the Labor Code, which require every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that code, and shall comply with such provisions and have Employers' Liability limits of $1,000,000 per accident before commencing the performance of the work of this Contract.

Before the Agreement between the City and the Contractor is entered into, the Contractor shall submit written evidence that the Contractor and all subcontractors have obtained for the period of the Contract full Workers' Compensation Insurance coverage for all persons whom they employ or may employ in carrying out the Work under this Contract. Such evidence of coverage shall be accompanied by an endorsement from the insurer agreeing to waive all rights of subrogation against the City, its elected or appointed officials, the Design Consultant, the Owner's Representative and their partners, agents, consultants, employees and volunteers which might arise by reason of any payment under the policy in connection with the work performed by the Contractor. This insurance shall be in accordance with the requirements of the most current and applicable California State Workers' Compensation Insurance Laws.

3.1.3 Builder's Risk, Property Installation Floater, and Contractor's Pollution Legal Liability and Asbestos Pollution Liability Insurance Coverages Required

a. Builder's Risk Insurance - Builder's Risk Insurance, in an amount equal to one hundred (100) percent of the Contract Price, shall be obtained, paid for, and maintained by the Contractor and shall cover, but shall not be limited to, fire, lightning, windstorm, hail, explosion, riot, riot attending a strike, civil commotion, smoke damage, damage by aircraft or vehicles, vandalism and malicious mischief, theft, collapse, flood, and earthquake. This insurance shall name the City, the Design Consultant, the Owner's Representative and each of their officials, officers, partners, employees, agents and volunteers as additional insureds, and shall include coverage, but not by way of limitation, for all damages of loss to the work and to appurtenances, to materials and equipment to be used on the project while the same are in transit, stored on or off the project site, to construction plant and temporary structures.

The City shall be named as loss payee and the insurer shall waive all rights of subrogation against the City.

Coverage for "Acts of God" in excess of five (5) percent of the Contract Amount is subject to separate coverage and is required only if listed as a separate bid item in Section 01 10 25-2.0, **DESCRIPTION OF BID ITEMS**. (Public Contracts Code 7105).

Builder's Risk Insurance may have a deductible clause not to exceed the following limits:

(1) Flood and earthquake deductible shall not exceed five (5) percent of the value at risk at the time of the loss.

(2) All other perils: $25,000

The Contractor shall be responsible for paying any and all deductible costs.

The policy shall provide the City the right to occupy the premises without termination of the policy until acceptance of the project.

b. Property Installation Floater - Property Installation Floater Insurance policy in an amount equal to one hundred (100) percent of the Contract Price, shall be obtained, paid for, and maintained by the Contractor for all projects that provide for the improvement, remodel, modification, alteration, conversion or adjustment to existing buildings, structures, processes, machinery or equipment. The Property Installation Floater shall provide property damage coverage for any building, structure, machinery or equipment damaged, impaired, broken or destroyed during the performance of the Work, including during transit, installation and testing at the City's site. The City shall be named as loss payee and the insurer shall waive all rights of subrogation against the City. The deductible clause shall not exceed $25,000.

c. Contractor's Pollution Legal Liability - A Contractor's Pollution Legal Liability policy shall provide for $1,000,000 coverage for each occurrence and a $2,000,000 policy

aggregate for the Contractor's Pollution Legal Liability arising out of the Contractor's obligation on the project. Insurance shall be maintained for five (5) years after final completion and shall provide coverage on an occurrence basis. The policy shall not contain lead-based paint or mold exclusion and the definition of "Pollution" shall include microbial matter including mold. The City shall be named as loss payee and the insurer shall waive all rights of subrogation against the City. The deductible clause shall not exceed $25,000.

d. Asbestos Pollution Liability - An Asbestos Pollution Liability policy shall provide for $1,000,000 coverage for each occurrence and a $2,000,000 policy aggregate for the Asbestos Pollution Liability arising out of the Contractor's obligation on the project. Insurance shall be maintained for five (5) years after final completion and shall provide coverage on an occurrence basis. The City shall be named as loss payee and the insurer shall waive all rights of subrogation against the City. The deductible clause shall not exceed $25,000.

3.1.4 Professional Liability Insurance - the following provisions apply to any licensed professional engaged by Contractor to perform portions of the Work ("Professional"). Each Professional shall maintain the following insurance, unless otherwise specified in Contract Documents:

a. Professional Liability Insurance, insuring against professional errors and omissions arising from Professional's Work on the Project, in an amount not less than [$1,000,000] per claim combined single limit for each occurrence. If Professional cannot provide an occurrence policy, Professional shall provide insurance covering claims made as a result of performance of Work on this Project and shall maintain such insurance in effect for not less than two years following Final Completion of the Project. The retroactive date on the policy must pre-date the commencement of furnishing services on the Project.

b. Professional shall satisfy all other provisions of this Liability and Insurance Section relating to that insurance, including without limitation providing required insurance certificates (containing the required endorsements) before commencing its Work on the Project.

3.1.5 Proof of Coverage – Before the Notice to Proceed with the Work under this Contract is issued, the Contractor shall furnish the City with certificate(s) evidencing issuance of all insurance mentioned herein, copies of the policy declaration or information page(s) and endorsements. The certificate(s) and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The endorsements are to be on forms as included in Section 00 06 50, **COMMERCIAL GENERAL LIABILITY INSURANCE ENDORSEMENT**, and Section 00 06 51, **AUTO LIABILITY INSURANCE ENDORSEMENT**, or equivalent endorsement forms acceptable to the City. The certificate(s), policy declaration or information page(s), and endorsements are to be received and approved by the City before Work commences. Such certificates of insurance shall provide that the insurance policy shall not be cancelable, be subject to nonrenewable, or otherwise be subject to material modification, except with thirty (30) days

prior written notice to the City and Contractor. Contractor shall also provide certificate(s) evidencing renewals of all insurance required herein, at least ten (10) days prior to the expiration date of any such insurance.

Any deductibles or self-insured retentions must be declared to and approved by the City. At the option of the City, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the City, the Design Consultant and the Owner's Representative and their officers, officials, employees and agents; or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

In the event of the breach of any provision of this paragraph, or in the event of any notices received which indicates any required insurance coverage will be diminished or canceled, City, at its option, may, notwithstanding any other provisions of this Agreement to the contrary, immediately declare a material breach of this Agreement and suspend all further Work pursuant to this Agreement.

3.1.6 Indemnification – To the fullest extent permitted by Law, the Contractor shall indemnify, defend and hold harmless City of Pacifica, its City Council, officers, employees, agents and consultants including, without limitation, the Design Consultant and Owner's Representative, and said consultants' respective officers, partners, employees and agents (collectively, "Indemnitees") from and against all liability, claims, damages, losses, liabilities and expenses of every kind, nature and description including, without limitation, claims and fines of regulatory agencies and attorney's fees and consultant's fees, directly or indirectly arising out of, connected with, or resulting from performance of the Work, failure to perform the Work, or condition of the Work that is caused in whole or part by any act or omission of Contractor, Subcontractors, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, resulting from any cause whatsoever except their sole negligence, willful misconduct, or active negligence.

With respect to third-party claims against Contractor, Contractor waives any and all rights to any type of express or implied indemnity including, without limitation, costs of defense, against City and each of the other Indemnitees. City shall provide timely notice to Contractor of any third-party claim relating to the Contract Documents, in accordance with Public Contract Code Section 9201.

The Contractor's duty to indemnify and save harmless shall include the duty to defend as set forth in California Civil Code Section 2778; provided, that nothing herein contained shall be construed to require Contractor to indemnify the Indemnitees against any responsibility or liability in contravention of California Civil Code Section 2782. The duty to defend and indemnify hereunder is not limited by the insurance coverage required under the Contract Documents and is separate and apart from such coverage.

3.1.7 Injury or Illness Reports – The Contractor shall furnish the Owner's Representative with a copy of the Employer's Report of Injury immediately following any incident requiring the filing of said report during the prosecution of the Work under this Contract. The Contractor shall also furnish the Owner's Representative with a copy of the Employer's Report of Injury involving any subcontractor on this Project.

3.1.8 Notification of Insurance Companies – The Contractor shall advise all insurance companies to familiarize themselves with all of the conditions and provisions of this Contract, and they shall waive the right of special notification of any change or modification of this Contract or of extension of time, or of decreased or increased Work, or of the cancellation of the Contract, or of any other act or acts by the City or its authorized employees and agents, under the terms of this Contract, and failure to so notify the aforesaid insurance companies of changes shall in no way relieve the insurance companies of their obligation under this Contract.

3.2 INSURANCE DURING GUARANTEE PERIOD

For all Work the Contractor or its Subcontractors perform during the guarantee period, public liability and property damage insurance shall remain in force and be maintained for five (5) years after City's Acceptance of the Project.

4.0 SPECIFIC PROJECT REQUIREMENTS

4.1 NOT USED

4.2 NOT USED

4.3 PROJECT LIAISON

The Owner's Representative will be the primary contact throughout the course of construction for the general public, especially residents, businesses, and property owners in the Project area. However, the Contractor shall provide an individual to act as a representative of the Contractor in communications with the general public in the Project area regarding day-to-day issues that may arise. This representative will be called the "Project Liaison" and shall keep the Owner's Representative informed of any issues that may arise with the general public. The Project Liaison may be an employee of the Contractor provided the employee is not a supervisor or superintendent, the employee meets the Project Liaison criteria delineated herein, and the primary function of the employee is to serve the role of the Project Liaison as delineated herein.

The Project Liaison shall be onsite each work day of the Contract for a minimum of two (2) hours during normal working hours and shall be available during all Project working hours for contact by residents, businesses, and property owners in the Project area, the City and the Owner's Representative throughout the duration of the Project. At all times the Project Liaison shall be onsite within one (1) hour after being contacted by the Owner's Representative until acceptance of the Project.

The person serving as the Project Liaison shall not be changed without prior written approval of the Owner's Representative. The Project Liaison must have a positive, cooperative, and constructive attitude and the knowledge and disposition needed to handle construction-related questions and many public contacts. Should the Project Liaison act in a manner which the Owner's Representative considers to be incompetent, nonresponsive, disorderly, or improper, the Project Liaison shall be immediately removed from the position

of Project Liaison and replaced at the request of the Owner's Representative.

The Project Liaison shall coordinate with the Owner's Representative to develop a program for notifying residents, businesses, and property owners in the Project area of construction activities that have the potential to impact the residents, business, and property owners. Once the notification program has been favorably reviewed by the Owner's Representative, the Project Liaison shall be in charge of executing the program. Notices shall include, but not be limited to, those delineated in Section 01 10 60-5.0, **MITIGATION MEASURES**. The program shall be prepared, submitted and favorably reviewed within twenty-one (21) days after issuance of the Notice to Proceed.

The Project Liaison shall also cooperate with the City in the publishing of a monthly Project newsletter during the length of the Project by providing content for the newsletter in MSWord that identifies work progress and items of work which will affect businesses, residents, property owners and the general public in the Project area. The format of the content for the newsletter shall be favorably reviewed by the Owner's Representative prior to each publication. The content for the newsletter shall be submitted to the Owner's Representative monthly on a schedule determined by the City commencing one (1) week after issuance of the Notice to Proceed and continuing until Acceptance of the Project.

In addition, the Project Liaison shall participate in a community meeting, scheduled and led by the Owner's Representative, to inform businesses, residents and property owners about the Project and his/her presence at this meeting is compulsory. The meeting shall be held at least one (1) week prior to the start of construction or as directed by the City and notification shall be delivered to all affected businesses, residents and property owners by the City at least seven (7) days prior to the meeting.

4.4 CONTAMINATED MATERIALS

Contaminants are not anticipated to be encountered during field activities. Field personnel will minimize potential exposure to any unknown chemical hazards by (1) avoiding direct contact with soil and groundwater, (2) performing air monitoring to determine the necessary level of personal protective equipment, and (3) avoiding generation of dust. Ingestion particulate matter containing chemicals is another general exposure route.

The Contractor shall provide a Health and Safety Plan and trained personnel in compliance with current health and safety regulations, including OSHA 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response.

5.0 WAGE RATE REQUIREMENTS

5.1 PREVAILING WAGES

Pursuant to the statutes of the State of California, the Director of Industrial Relations has ascertained and determined the general prevailing rate of per diem wages, and rates for overtime and legal holidays, in the locality in which this work is to be performed for each craft or type of worker or mechanic needed to execute the Contract. The prevailing rates so determined are available for inspection at the City office and form a part of the Contract

5.2 TRAVEL AND SUBSISTENCE

As required by Section 1773.1 of the California Labor Code, the Contractor shall pay travel and subsistence payments to each worker needed to execute the Work, as such travel and subsistence payments are defined in the applicable collective bargaining agreements filed in accordance with that Section.

5.3 PENALTY

Unless a greater amount is specified within the Contract Documents, the Contractor shall forfeit as penalty to the City twenty-five dollars ($25) for each calendar day, or portion thereof, for each worker paid less than the stipulated prevailing rates for any Work done under the Contract by the Contractor or by any subcontractor under the Contractor, in violation of the provisions of the Labor Code and, in particular, Section 1770 to Section 1871 thereof, inclusive.

***** END OF SECTION *****

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01 10 10

SUMMARY OF WORK

1.0 WORK TO BE DONE

Construction of the Linda Mar Pump Station Upgrade shall include the follow:

- Mobilization/ demobilization of the existing parking lot
- Traffic control
- Electrical System and Gas Engine Control Panel Improvements
- Pump and pump shaft replacements
- Controls
- Additional appurtenant work

2.0 CONSTRUCTION PROCEDURE AND SEQUENCE

2.1 GENERAL

The Work under this Contract shall be conducted in a manner which will minimize shutdowns, roadway closures, or traffic obstructions caused by the construction. Shutdowns causing damage to adjacent public and private property shall not be permitted and any damage resulting shall be the sole responsibility of the Contractor.

2.2 SYSTEM OUTAGE REQUESTS

2.2.1 General –Changes to existing sanitary sewer lines or any new connections thereto must be scheduled to provide the least possible interference or interruptions of flow to the Linda Mar Pump Station. Prior to any shutdown or flow diversion, all materials, fittings, supports, equipment and tools shall be on the site and all necessary labor scheduled prior to starting any connection work. This may require backup equipment to be available on-site prior to the start of the shutdown in case of equipment breakdown. The Contractor shall notify the Owner's Representative and the Calera's Wastewater Treatment Plant's Director or Assistant Superintendent in writing at least 72 hours [three (3) regular work-week days] in advance of any required shutdown by submitting a System Outage Request (SOR) form

which will be reviewed for acceptance by the City. The 72 hours of notification (in advance of any required shutdown) does not include Saturday, Sunday, or Holidays. If a Contractor is requiring a Monday shutdown, the SOR must be submitted by end of day the prior Tuesday.

The SOR shall be coordinated with the Owner's Representative and construction schedule and shall meet the Contractor's planned length of time required to complete said operation. In general, the SOR plan shall include:

a. A detailed description of the planned work during the shutdown.
b. A specific time schedule for each major work activity coordinated with the required operations of the utility owner.
c. Detailed lists of materials, equipment, tools, personnel, etc. (including standby material, equipment, tools, personnel, etc. should the primary material, equipment, tools, personnel, etc. become unavailable) necessary to successfully execute the planned work.
d. A contingency plan that shall be initiated in the event that temporary facilities fail or it becomes apparent that the time constraints described in the approved SOR cannot be met. The contingency plan shall conform to all specified outage requirements.

All costs for preparing and implementing both the outage and contingency plans shall be borne by the Contractor.

Each shutdown duration shall be specifically authorized by the City or be as indicated in the Contract Documents. Shutdown of existing facilities will be performed by City personnel or by Contractor only under City personnel's supervision.

2.2.2 Utility Service Shutdowns - Planned utility service shutdowns to any unit of the Project shall be accomplished during periods of minimum use. In some cases this will require night or weekend work (with the consent of Owner's Representative) and these costs shall be included in the Contract Price. The Contractor shall program its work so that service will be restored in the minimum possible time, and shall cooperate with the City in reducing shutdowns of the utility system to a minimum.

No utility shall be disconnected without prior written approval from the utility owner and Owner's Representative. When it is necessary to disconnect a utility, the Contractor shall give not less than 72 hours' notice to the utility owner and to the Owner's Representative for its approval of the Contractor's proposed schedule.

2.2.3 Conveyance System Shutdowns – NOT USED

2.2.4 Limited Shutdown Periods - NOT USED

2.3 Bioassay Testing Schedule - NOT USED

2.4 WORK SEQUENCE ACTIVITIES AND CONSTRAINTS

A. The following work sequence is a suggested approach for the Contractor's information and consideration. The Contractor is responsible for determining the overall Project work sequence and may propose a work sequence which differs from the proposed work sequence provided herein. Any alternate work sequence approach or modification to the suggested work sequence specified herein shall be submitted by the Contractor to the City for review and acceptance prior to commencing with work in any area.

B. The suggested work sequence specified herein does not include all work required by the Contract Documents. The suggested work sequence only includes aspects of the Work which require sequential planning with other aspects of the Work and careful planning based upon station shutdown constraints. All other elements of the Work which are not included in the suggested work sequence may be performed as determined by the Contractor's overall construction schedule.

C. Suggested Work Sequence: Each work element listed below is sequentially numbered with the intention that a preceding work element be successfully completed prior to work commencing on the next sequential work element:

1. Complete successful factory witness testing for new motor control center MCC-LMPS and new programmable logic controller PLC-LMPS.

2. Procure the following new equipment to the Project site:
   a. ~~Both new sewage pumps and associated connection driveline accessories to the Project site, ready for installation.~~
   b. New temporary motor control center MCC-TEMP.
   c. New permanent motor control center MCC-LMPS.
   d. New programmable logic controller panel PLC-LMPS.
   e. Four (4) new circuit breakers to be installed within existing main switchboard.
   f. New electronic trip unit for installation in existing main switchboard circuit breaker.

3. Install new MCC-TEMP at location indicated on the Drawings.

4. Install new overhead cable tray and overhead wireways.

5. Successfully complete pre-energization testing on the following equipment:
   a. Four (4) new circuit breakers to be installed within existing main switchboard (witnessed field bench testing).
   b. New temporary motor control center MCC-TEMP including testing of new circuit breakers and lighting contactor provided with MCC-TEMP.

c. New motor control center MCC-LMPS including testing of each new plug-in compartment circuit breakers, motor starter compartment, lighting panelboard and lighting panelboard transformer.

The following (6) steps shall be performed within a maximum allowed 8-hour shutdown of the pump station. City shall operate existing diesel engine-driven pump during shutdown period:

6. City shall de-energize the pump station by opening the existing main switchboard main circuit breaker and disabling the existing on-site standby generator.

7. Install four (4) new circuit breakers within the existing main switchboard.

8. Replace existing circuit breaker electronic trip unit with new electronic trip unit.

9. Disconnect existing Drainage Pump Station main feeder from existing motor control center, disconnect and remove portion of existing feeder conduit, re-route existing conductors within new overhead cable tray and connect to new main switchboard feeder circuit breaker.

10. Provide temporary main feeder conductors from existing main switchboard to MCC-TEMP. Once installed, terminate temporary conductors at both existing main switchboard and at MCC-TEMP.

11. City shall re-energize the pump station by closing the Main Switchboard main circuit breaker, enable operation of the existing on-site standby generator and return the station back to normal operation.

12. Energize new MCC-TEMP to ensure proper operation. New MCC-TEMP shall be de-energized as required by the Contractor for performance of work described in subsequent steps.
13. Temporarily install new MCC-LMPS plug-in compartments in new MCC-TEMP as indicated on the Drawings.
14. For each existing electrical load supplied from the existing motor control center, provide temporary field conductors from new MCC-TEMP to each individual electrical load field location. Temporary conductors shall be terminated at new MCC-TEMP location.
15. City shall take each electrical load supplied from the existing motor control center out of service, one load at a time, for Contractor temporary disconnection of the existing load field conductors and connection of the temporary field conductors originating from new MCC-TEMP. Once an existing electrical load is connected to new MCC-TEMP, is re-energized, and returned to normal operation, the next electrical load supplied from the existing motor control center shall be taken out of service by the City for Contractor connection to the new MCC-TEMP. This process shall continue until all existing electrical loads have been temporarily moved over from the existing motor control center to new MCC-TEMP.

16. Provide portion of new raceway system for new Sewage Pump No.1 VFD. Installation shall be provided to the greatest extent possible without disruption of Sewage Pump No.1 operation.
17. City shall take existing Sewage Pump No.1 temporarily out of service.
18. Disconnect and remove existing Sewage Pump No.1 and Sewage Pump No.1 VFD main feeder conductors and all associated raceways.
19. Provide new Sewage Pump No.1 and all associated raceways for new VFD main feeder conductors.

The following (6) steps shall be performed within a maximum allowed 8-hour shutdown of the pump station. City shall operate existing diesel engine-driven pump during shutdown period:

20. City shall de-energize the pump station by opening the Main Switchboard main circuit breaker and disabling the existing on-site standby generator.
21. Finalize raceway installation for Sewage Pump No.1 VFD main supply feeder.
22. Install new Sewage Pump No.1 main feeder conductors from existing Main Switchboard to new Sewage Pump No.1 VFD.
23. Successfully megger test new Sewage Pump No.1 VFD main supply conductors.
24. Terminate new Sewage Pump No.1 main supply conductors at existing Main Switchboard and at new Sewage Pump No.1 VFD.
25. City shall re-energize the pump station by closing the Main Switchboard main circuit breaker, enable operation of the existing on-site standby generator and return the station back to normal operation.

26. Start-up and commission new Sewage Pump No.1. Once commissioned, place new Sewage Pump No.1 into normal operation, temporarily controlled via the existing station control system.

27. Provide portion of new raceway system for new Sewage Pump No.2 VFD. Installation shall be provided to the greatest extent possible without disruption of Sewage Pump No.2 operation.
28. City shall take existing Sewage Pump No.2 temporarily out of service.
29. Disconnect and remove existing Sewage Pump No.2 and Sewage Pump No.2 VFD main feeder conductors and all associated raceways.
30. Provide new Sewage Pump No.2 and all associated raceways for new VFD main feeder conductors.

The following (6) steps shall be performed within a maximum allowed 8-hour shutdown of the pump station. City shall operate existing diesel engine-driven pump during shutdown period:

31. City shall de-energize the pump station by opening the Main Switchboard main circuit breaker and disabling the existing on-site standby generator.
32. Finalize raceway installation for Sewage Pump No.2 VFD main supply feeder.
33. Install new Sewage Pump No.2 main feeder conductors from existing Main Switchboard to new Sewage Pump No.2 VFD.

34. Successfully megger test new Sewage Pump No.2 VFD main supply conductors.
35. Terminate new Sewage Pump No.2 main supply conductors at existing Main Switchboard and at new Sewage Pump No.2 VFD.
36. City shall re-energize the pump station by closing the Main Switchboard main circuit breaker, enable operation of the existing on-site standby generator and return the station back to normal operation.

37. Start-up and commission new Sewage Pump No.2. Once commissioned, place new Sewage Pump No.2 into normal operation, temporarily controlled via the existing station control system.

38. City to request a PG&E service outage for the pump station.

The following (8) steps shall be performed within a maximum allowed 8-hour shutdown of the pump station. City shall operate existing diesel engine-driven pump during shutdown period:

39. City shall de-energize the pump station by opening the Main Switchboard main circuit breaker and disabling the existing on-site standby generator.
40. PG&E to de-energize the electrical service to the pump station.
41. Disconnect and remove existing motor control center main supply conductors and associated existing connections at the existing “Original Main Switchboard” equipment.
42. Remove existing Main Switchboard 800A electronic trip unit and replace with new 400A electronic trip unit.
43. Disconnect and remove the existing “Original Main Switchboard” and existing motor control center line-ups.
44. Provide new PG&E intermediate termination junction box to house the existing PG&E service intermediate terminations.
45. PG&E to return electrical service to the station.
46. City shall re-energize the pump station by closing the Main Switchboard main circuit breaker, enable operation of the existing on-site standby generator and return the station back to normal operation.

47. Install new motor control center MCC-LMPS and new programmable logic controller panel PLC-LMPS.
48. Provide portion of new raceway system for new motor control center MCC-LMPS main supply feeder. Installation shall be provided to the greatest extent possible without disruption of pump station operation.
49. Start-up, test, and commission new PLC-LMPS and make ready for normal system operation with pump station equipment.

The following (6) steps shall be performed within a maximum allowed 8-hour shutdown of the pump station. City shall operate existing diesel engine-driven pump during shutdown period:

50. City shall de-energize the pump station by opening the Main Switchboard main circuit breaker and disabling the existing on-site standby generator.

51. Finalize raceway installation for new motor control center MCC-LMPS main supply feeder.
52. Install new MCC-LMPS main feeder conductors from existing Main Switchboard to new motor control center MCC-LMPS.
53. Successfully megger test new MCC-LMPS main supply conductors.
54. Terminate new MCC-LMPS main supply conductors at existing Main Switchboard and at new MCC-LMPS.
55. City shall re-energize the pump station by closing the Main Switchboard main circuit breaker, enable operation of the existing on-site standby generator and return the station back to normal operation.

56. City shall take each electrical load temporarily supplied from new MCC-TEMP out of service, one load at a time, for disconnection and removal of the temporary load field conductors, relocation of new electrical load MCC plug-in compartments from MCC-TEMP to new MCC-LMPS and re-connection of the pump station loads to new MCC-LMPS, including new control circuit conductors from MCC-LMPS to new PLC-LMPS. Once an existing electrical load is connected to new MCC-LMPS and PLC-LMPS, is re-energized, successfully functionally tested, and returned to normal operation, the next electrical load temporarily supplied from MCC-TEMP shall be taken out of service by the City for connection to the new MCC-LMPS and PLC-LMPS. This process shall continue until all existing electrical loads have been moved over from MCC-TEMP to new motor control center MCC-LMPS.

The following (3) steps shall be performed within a maximum allowed 4-hour shutdown of the pump station. City shall operate existing diesel engine-driven pump during shutdown period:

57. City shall de-energize the pump station by opening the Main Switchboard main circuit breaker and disabling the existing on-site standby generator.
58. Disconnect and remove temporary MCC-TEMP main feeder.
59. City shall re-energize the pump station by closing the Main Switchboard main circuit breaker, enable operation of the existing on-site standby generator and return the station back to normal operation.

60. Disconnect and remove MCC-TEMP and all associated temporary conductors and installations.

61. Complete successful factory unwitnessed testing for new engine-driven control panel LCP-EDP.

62. Procure the following new equipment to the Project site:
    a. New engine-driven control panel LCP-EDP.
    b. New engine skid-mounted components.

63. Install new diesel engine-driven pump control panel LCP-EDP and all associated raceways and conductors connected to LCP-EDP, PLC-LMPS and existing engine skid terminal boxes and equipment.

64. City to install Contractor-provided engine skid-mounted new control devices and instrumentation.
65. Successfully start-up, test, and commission new diesel engine-driven pump control system.

3.0 ACCESS FOR OPERATING PERSONNEL

The Contractor's attention is drawn to the fact that during the course of the work of this Contract, the existing facilities will be used and maintained by City personnel. The Contractor shall coordinate its work in such a way as to interfere as little as possible with the routine work of existing facilities (City's Skatepark, the Community Center, and Crespi Parking Lot) except in direct pursuit of the work of this Contract and as favorably reviewed by the Owner's Representative. The Contractor shall provide safe access at all times to all existing facilities for operating personnel and equipment.

***** END OF SECTION *****

SECTION 01 10 25

MEASUREMENT AND PAYMENT

1.0 MEASUREMENT AND PAYMENT

Bid Items shall be lump sums or unit prices as indicated, complete and paid for on the basis of percentage of completion, or quantities of work performed as specified herein and in accordance with Section 01 10 25-3.0, CONTRACTOR'S COST BREAKDOWN.

2.0 DESCRIPTION OF BID ITEMS

A. GENERAL

Bid Item(s) 1-4 and Additive Bid Item(s) 1-2 are presented to indicate major categories of the work for purposes of comparative bid analyses and payment breakdown for monthly progress payments. Bid Items are not intended to be exclusive descriptions of work categories and the Contractor shall determine and include in its pricing all materials, labor, and equipment necessary to complete each Bid Item (work phase) as shown and specified.

B. BASE BID ITEMS

BID ITEM 1 – Mobilization/ Demobilization

The contract lump sum price paid for Mobilization/ demobilization shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved for mobilization including obtaining all bonds, insurance, and permits, moving on to the site, moving off of the site; removing, storing and rebuilding fences and protective barriers; construction signage, notification of residents, and all other incidental work required for mobilization and demobilization. The lump sum price for Mobilization/Demobilization shall not exceed 5 percent of the total bid price, not including the lump sum price for Mobilization/Demobilization.

BID ITEM 2 – Demolition

The contract lump sum price paid for Demolition, of existing facility appurtenances to be replaced as shown on the contract drawings and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals needed to complete the demolition.

BID ITEM 3 – Temporary Electrical

The contract lump sum paid for temporary electrical components shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, for all the work involved in the installation of temporary electrical components including construction of temporary Motor Control Center and appurtenances as shown on the contract drawings.

BID ITEM 4 – Permanent/New Electrical

The contract lump sum price paid for the permanent electrical components shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, for all the work involved in the installation of permanent electrical components including the construction of the Motor Control Center, design build of the platform, new engine driven control panel, and all other work determined by the Contractor required to meet the Contract Documents requirements to provide a complete and operable system.

C. ADDITIVE BID ITEMS

ADDITIVE BID ITEM 1 – Mobilization/ Demobilization

The contract lump sum price paid for Mobilization/ demobilization shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved for mobilization including obtaining all bonds, insurance, and permits, moving on to the site, moving off of the site; removing, storing and rebuilding fences and protective barriers; construction signage, notification of residents, and all other incidental work required for mobilization and demobilization to install the new pumps. The lump sum price for Mobilization/Demobilization shall not exceed 5 percent of the additive bid price, not including the lump sum price for Mobilization/Demobilization.

ADDITIVE BID ITEM 2 – New Pumps

The contract lump sum price paid for the new pumps shall include full compensation for materials and all the work involved in procuring new pumps and all other work determined by the Contractor required to meet the Contract Documents requirements to provide a complete and operable system.

ADDITIVE BID ITEM 3 – Installation of New Pumps

The contract lump sum price paid for installation of new pumps shall include full compensation for furnishing all labor, tools, equipment, and incidentals, for all work involved in the installation of new pumps and all other work determined by the Contractor required to meet the contract documents requirements to provide a complete and operable system.

3.0 CONTRACTOR'S COST BREAKDOWN

For work to be performed for a lump sum amount, the Contractor shall submit a cost breakdown to the Owner's Representative prior to the first payment and within ten (10) days after Notice to Proceed. The cost breakdown, as agreed upon by the Contractor and the Owner's Representative, shall be used for preparing future estimates for partial payments to the Contractor, and shall list the major items of work with a cost fairly apportioned to each item. Mobilization, overhead, bond, insurance, other general costs and profit shall be prorated to each item so that the total of the prices for all items equal the lump sum price. At the discretion of the Owner's Representative, mobilization, bond and insurance costs may be provided for separately if accompanied by invoices to verify actual expenses. The cost breakdown shall not be considered in determining payment or credit for additional or deleted work.

The cost breakdown shall be generally in the same format as the Contract Specifications divisions and subdivisions, with major items of work listed individually. The cost breakdown shall be by area, structure, or other logical division of work. The cost breakdown for architectural, structural, mechanical, and electrical work shall include separate items for identifiable portions of the structures. The cost breakdown shall include separate allowances for any testing and startup work required. Measurable approximate quantities of work performed by the Contractor or its subcontractors shall be provided. For quantities that are the sum total of several individual quantities, backup summaries shall be provided which list the individual descriptions and quantities. These summaries then will be used to determine the quantities of work in place in subsequent partial payment requests.

The above is a statement of the intent of the Contract Documents to provide an appropriate level of detail, acceptable to the Owner's Representative, to allow a fair and reasonable estimate to be made of the value of work installed. The detail of the cost breakdown must be sufficient to provide timely processing of the monthly partial payment request.

The cost breakdown will be subject to the approval of the Owner's Representative, and upon request, the Contractor shall substantiate the cost for any or all items and provide additional level of detail, including quantities of work. The cost breakdown shall be sufficiently detailed to permit its use by the Owner's Representative as one of the bases for evaluating requests for payments. The Owner's Representative shall be the sole judge of the adequacy of the cost breakdown.

***** END OF SECTION *****

SECTION 01 10 35

MODIFICATION PROCEDURES

1.0 CHANGES IN CONTRACT PRICE

Whenever corrections, alterations, or modifications of the Work under this Contract are ordered by the Owner's Representative and approved by the City and increase the amount of work to be done, such added work shall be known as extra work; and when such corrections, alterations, or modifications decrease the amount of work to be done, such subtracted work shall be known as work omitted.

The difference in cost of the Work affected by such change will be added to or deducted from the amount of said Contract Price, as the case may be, by a fair and reasonable valuation, which shall be determined in one or more of the following ways as directed by the Owner's Representative:

a. Where applicable, by unit prices accepted by the City and stated in the Contract Documents;

b. By unit prices subsequently fixed by agreement between the parties;

c. By an acceptable lump sum proposal from the Contractor; or

d. By Force Account (as described in Paragraph 01 10 35-3.0, **FORCE ACCOUNT PAYMENT**), when directed in writing and administered by the City through its agents or representatives.

When required by the Owner's Representative, the Contractor shall submit, in the form prescribed by the Owner's Representative, an itemized breakdown with supporting data of the quantities and prices used in computing the value of any change that may be ordered.

The Owner's Representative will review the Contractor's proposal for the change and negotiate an equitable adjustment with the Contractor. After there is an agreement the Owner's Representative will prepare and process the Change Order and make a recommendation for action by the City. All Change Orders must be approved by the City in writing before the work can be authorized and the Change Order executed.

The prices agreed upon and any agreed upon adjustment in Contract Time shall be incorporated in the written Change Order issued by the City, which shall be written so as to indicate an acceptance on the part of the Contractor as evidenced by its signature. By signature of the Change Order, the Contractor acknowledges that the adjustments to cost and time contained in the Change Order are in full satisfaction and accord, payment in full,

and so waives any right to claim any further cost and time impacts at any time during and after completion of the Contract for the changes encompassed by the Change Order.

All cost and pricing data submitted by the Contractor with respect to any change, prospective or executed, or any claim for extra compensation shall be a true, complete, accurate and current representation of actual cost and pricing of the work. The Owner's Representative may require a formal certification as to cost and pricing data submitted by the Contractor.

The Owner's Representative and the City shall have access, upon reasonable notice during normal business hours, to any books, documents, accounting records, papers, project correspondence, project files, scheduling information and other relevant records of the Contractor and all subcontractors directly or indirectly pertinent to the Work, original as well as changes and claimed extra work, and the Contract for the purpose of making audit, examination, excerpts and transcriptions and in order to verify or evaluate any changes, prospective or executed, or any claim for which compensation has been requested or Notice of Potential Claim has been tendered.

Such books, documents, and other records mentioned above shall include, but are not limited to all those reasonably necessary to determine the accurate amount of direct and indirect costs, job site, and delay and impact costs, however characterized, and shall include the original Bid and all documents related to the Bid and its preparation, as well as, the as-planned Construction Schedule and all related documents.

Such access shall include the right to examine and audit such records and make excerpts, transcriptions, and photocopies at the City's cost.

2.0 NEGOTIATED CHANGE ORDERS

2.1 GENERAL

Under the methods described in Section 01 10 35-1.0b and 1.0c above, the Contractor shall submit substantiating documentation with an itemized breakdown of Contractor and subcontractor direct costs, including labor, material, equipment rentals, and approved services, pertaining to such ordered work in the form and detail acceptable to the Owner's Representative. The direct costs shall include only the payroll cost for workers and foremen, including wages, fringe benefits as established by negotiated labor agreements or prevailing wages, Workers' Compensation and labor insurance, and labor taxes as established by law. No other fixed labor burdens will be considered, unless approved in writing by the Owner's Representative; the cost of materials used and equipment delivered and installed in such work as substantiated by appropriate documents; the cost of construction machinery and equipment based on fair rental or ownership values acceptable to the Owner's Representative as described in Paragraph 01 10 35-3.0, **FORCE ACCOUNT PAYMENT**; and the cost of incidentals directly related to such work. The direct costs shall not include any labor or office costs pertaining to the Contractor's managers or superintendents, its

office and engineering staff and office facilities, or anyone not directly employed on such work, nor the cost of small tools as all such indirect costs form a part of the Contractor's indirect overhead expense as defined in Specification Section 00 07 00-6.4.3, Indirect Overhead.

2.2 MARKUPS

Under the method described in Section 01 10 35-1.0b and 1.0c the maximum percentage which will be allowed for the Contractor's indirect field overhead expenses, indirect home office expenses, and Contractor's profit and risk will be:

a. For work by its own organization, the Contractor may add the following percentages:

1. Direct Labor	15 percent
2. Materials	15 percent
3. Equipment (owned or rented)	15 percent

b. For all such work done by subcontractors, such subcontractor may add the same percentages as the Contractor as listed in Section 01 10 35-2.2a above to its actual net increase in direct costs for indirect field overhead expenses, indirect home office overhead expenses, and subcontractor's profit and risk and the Contractor may add up to ten (10) percent of the subcontractor's total for its indirect field overhead expenses, indirect home office expenses, and Contractor's profit and risk.

c. For all such work done by subtier-subcontractors, such sub-subcontractors may add the same percentages as the Contractor as listed in Section 01 10 35-2.2a above to its actual net increase in direct costs for indirect field overhead expenses, indirect home office overhead expenses, and sub-subcontractor's profit and risk, and the subcontractor may add up to ten (10) percent of the sub-subcontractor's total for its indirect field overhead expenses, indirect home office expenses, and subcontractor's profit and risk. The Contractor may add up to five (5) percent of the subcontractor's total for its indirect field overhead expenses, indirect home office expenses, and Contractor's profit and risk. Under no circumstance may Contractor receive more than one markup, directly or indirectly, for any specific labor, material or equipment cost.

d. To the total of the actual costs and fees allowed hereinunder, not more than two (2) percent shall be added for additional bond and insurance other than labor insurance. The compensable percentage for additional bonds and insurance shall be based on the Contractor's, subcontractor's and all subtier-subcontractor's actual costs, as substantiated through documentation submitted to the Owner's Representative.

The above fixed fees represent the maximum limits which will be allowed, and they include but are not limited to the Contractor's, subcontractor's, and all sub-subcontractor's indirect field overhead expenses, indirect home office overhead expenses profit and risk. The above fixed fees also include all other costs for cost proposal preparation, schedule analysis and preparation, operation and maintenance manual documentation, record documents and change order administration.

When both additions and credits are involved in any one change, the above fixed fees shall be figured on the basis of the net increase, if any, for each area of work, i.e. direct labor, materials, equipment, and subcontractors. To the resulting net increase the amount allowed under Section 01 10 35-2.2d shall be added for additional bond and insurance other than labor insurance. The amount of credit to be allowed by the Contractor to the City for any such change which results in a net decrease in cost, if any, for each area of work, that is direct labor, material, equipment, and subcontractors, will be the amount of the actual net decrease and a credit of a minimum of five (5) percent markup as a deduction for profit and a maximum credit of two (2) percent for the reduction in bond and insurance. The Contractor shall not claim for anticipated profits on work that may be omitted.

3.0 FORCE ACCOUNT PAYMENT

3.1 GENERAL

If either the amount of work or payment for a Change Order cannot be determined or agreed upon beforehand, the City may direct by written Change Order or Field Order that the work be done on a force account basis. The term "force account" shall be understood to mean that payment for the work will be done on a time and expense basis, that is, on an accounting of the Contractor's forces, materials, equipment, and other items of cost as required and used to do the work. For the work performed, payment will be made for the documented actual cost as specified in Section 01 10 35-2.1, GENERAL.

3.2 MARKUPS

Under the method described in Section 01 10 35-1.0d the maximum percentage which will be allowed for the Contractor's indirect field overhead expenses, indirect home office expenses, and Contractor's profit and risk will be:

a. For work by its own organization, the Contractor may add the following percentages:

1. Direct Labor	15 percent
2. Materials	15 percent
3. Equipment (owned or rented)	15 percent

b. For all such work done by subcontractors, such subcontractor may add the same percentages as the Contractor as listed in Section 01 10 35-3.2a above to its actual net increase in direct costs for indirect field overhead expenses, indirect home office

overhead expenses, and subcontractor's profit and risk and the Contractor may add up to five (5) percent of the subcontractor's total for its indirect field overhead expenses, indirect home office expenses, and Contractor's profit and risk.

c. For all such work done by subtier-subcontractors, such sub-subcontractors may add the same percentages as the Contractor as listed in Section 01 10 35-3.2a above to its actual net increase in direct costs for indirect field overhead expenses, indirect home office overhead expenses, and sub-subcontractor's profit and risk, and the subcontractor may add up to five (5) percent of the sub-subcontractor's total for its indirect field overhead expenses, indirect home office expenses, and subcontractor's profit and risk. The Contractor may add up to five (5) percent of the subcontractor's total for its indirect field overhead expenses, indirect home office expenses, and Contractor's profit and risk. Under no circumstance may Contractor receive more than one markup, directly or indirectly, for any specific labor, material or equipment cost.

d. To the total of the actual costs and fees allowed hereinunder, not more than two (2) percent shall be added for additional bond and insurance other than labor insurance. The compensable percentage for additional bonds and insurance shall be based on the Contractor's, subcontractors and all subtier-subcontractor's actual costs, as substantiated through documentation submitted to the Owner's Representative.

The above fixed fees represent the maximum limits which will be allowed, and they include but are not limited to the Contractor's, subcontractor's, and all sub-subcontractor's indirect field overhead expenses, indirect home office overhead expenses profit and risk. The above fixed fees also include all other costs for cost proposal preparation, schedule analysis and preparation, operation and maintenance manual documentation, record documents and change order administration.

The City reserves the right to furnish such materials and equipment as it deems expedient, and the Contractor shall have no claim for profit or added fees on the cost of such materials and equipment.

Rental or equivalent rental equipment cost will be allowed for only those days or hours during which the equipment is in actual use. Payment shall be based on actual rental and transportation invoices but shall not exceed the rental rates listed for such equipment in the State of California Department of Transportation publication entitled "Labor Surcharge and Equipment Rental Rates" which is in effect on the date upon which the work is performed. Owner-operated equipment rates shall not exceed the rates in the aforesaid Rental Rate publication plus the labor costs as provided in Section 01 10 35-2.1, GENERAL. The rental cost allowed for equipment will, in all cases, be understood to cover all fuel, supplies, repairs, ownership, and incidental costs and no further allowances will be made for those items, unless specific written agreement to that effect is made.

Prior to the commencement of force account work, the Contractor shall notify the Owner's

Representative of its intent to begin work. Labor, equipment and materials furnished on force account work shall be recorded daily by the Contractor upon report sheets furnished by the Owner's Representative to the Contractor. The reports, if found to be correct, shall be signed by both the Contractor and Owner's Representative, or inspector, and a copy of which shall be furnished to the Owner's Representative no later than the working day following the performance of said work. The daily report sheet shall thereafter be considered the true record of force account work provided. If the Owner's Representative, or inspector, do not agree with the labor, equipment and/or materials listed on the Contractor's daily force account report, the Contractor and Owner's Representative, or inspector, shall sign-off on the items on which they are in agreement. The Owner's Representative shall then review the items of disagreement and will advise the Contractor, in writing, of its determination. If the Contractor disagrees with this determination, it shall have the right to file a claim notice as provided in Paragraph 00 07 00-7.3.2.1, Notice.

The Contractor shall maintain its records in such a manner as to provide a clear distinction between the direct costs of work paid for on a force account basis and the costs of other operations.

To receive partial payments and final payment for force account work, the Contractor shall submit, in a manner approved by the Owner's Representative, detailed and complete documented verification of the Contractor's and any of its subcontractors' actual costs involved in the force account pursuant to the pertinent Change Order or Field Order. Such costs shall be submitted within thirty (30) days after said work has been performed. No payments will be made for work billed and submitted to the Owner's Representative after the thirty (30) day period has expired.

The force account invoice shall itemize the materials used and shall cover the direct costs of labor and the charges for equipment rental, whether furnished by the Contractor, subcontractor, or other forces. The invoice shall be in a form acceptable to the Owner's Representative and shall provide names or identifications and classifications of workers, the hourly rate of pay and hours worked, and also the size, type, and identification number of equipment and hours operated. Material charges shall be substantiated by valid copies of vendor's invoices.

When both additions and credits are involved in any one change, the above fixed fees shall be figured on the basis of the net increase, if any, for each area of work, i.e. direct labor, materials, equipment, and subcontractors. To the resulting net increase the amount allowed under Section 01 10 35-3.2d shall be added for additional bond and insurance other than labor insurance. The amount of credit to be allowed by the Contractor to the City for any such change which results in a net decrease in cost, if any, for each area of work, that is direct labor, material, equipment, and subcontractors will be the amount of the actual net decrease and a credit of a minimum of five (5) percent markup as a deduction for profit and a maximum credit of two (2) percent for the reduction in bond and insurance. The Contractor shall not claim for anticipated profits on work that may be omitted.

4.0 UNIT PRICE ADJUSTMENTS

4.1 INCREASED OR DECREASED QUANTITIES

The unit prices as stated in the Bid Schedule and as negotiated in Change Orders shall apply to one hundred (100) percent of the quantity indicated to be estimated quantity for the bid item, plus or minus twenty-five (25) percent unless otherwise specified in Section 01 10 25, **MEASUREMENT AND PAYMENT**.

Increases or decreases in the quantity of a Contract item of work will be determined by comparing the total pay quantity of such item of work with the Bid Schedule therefor.

If the total pay quantity of any item of work required under the Contract varies from the Bid Schedule therefor by 25 percent or less, payment will be made for the quantity of work of said item performed at the Contract unit price therefor, unless eligible for adjustment pursuant to Section 01 10 35-4.2, CHANGES IN CHARACTER OF WORK.

If the total pay quantity of any item of work required under the Contract varies from the Bid Schedule therefor by more than 25 percent, in the absence of an executed Contract Change Order specifying the compensation to be paid, the compensation payable to the Contractor will be determined in accordance with Sections 01 10 35-4.1A, 01 10 35-4.1B and 01 10 35-4.1C, as the case may be.

A. INCREASES OF MORE THAN 25 PERCENT

Should the total pay quantity of any item of work required under the Contract exceed the Bid Schedule therefor by more than 25 percent, the work in excess of 125 percent of such Bid Schedule quantity and not covered by an executed Contract Change Order specifying the compensation to be paid therefor will be paid for by adjusting the Contract unit price, as hereinafter provided, or at the option of the Owner's Representative, payment for the work involved in such excess will be made on the basis of force account as provided in Section 01 10 35-3.0, **FORCE ACCOUNT PAYMENT**.

Such adjustment of the Contract unit price will be the difference between the Contract unit price and the actual unit cost, which will be determined as hereinafter provided, of the total pay quantity of the item. If the costs applicable to such item of work include fixed costs, such fixed costs will be deemed to have been recovered by the Contractor by the payments made for 125 percent of the Bid Schedule of the quantity for such item, and in computing the actual unit cost, such fixed costs will be excluded. Subject to the above provisions, such actual unit costs will be excluded. Subject to the above provisions, such actual unit cost will be determined by the Owner's Representative in the same manner as if the work were to be paid for on a force account basis as provided in Section 01 10 35-3.0, **FORCE ACCOUNT PAYMENT**; or such adjustment will be as agreed to by the Contractor and the

Owner's Representative.

When the compensation payable for the number of units of an item of work performed in excess of 125 percent of the Bid Schedule is less than $5,000 at the applicable Contract unit price, the Owner's Representative reserves the right to make no adjustment in said price if he so elects, except that an adjustment will be made if requested in writing by the Contractor.

B. DECREASES OF MORE THAN 25 PERCENT

Should the total pay quantity of any item of work required under the Contract be less than 75 percent of the Bid Schedule therefor, an adjustment in compensation pursuant to this Section will not be made unless the Contractor so requests in writing. If the Contractor so requests, the quantity of said item performed, unless covered by an executed Contract Change Order specifying the compensation payable therefor, will be paid for by adjusting the Contract unit price as hereinafter provided, or at the option of the Owner's Representative, payment for the quantity of the work of such item performed will be made on the basis of force account as provided in Section 01 10 35-3.0, **FORCE ACCOUNT PAYMENT**, provided however, that in no case shall the payment for such work be less than that which would be made at the Contract unit price.

Such adjustment of the Contract unit price will be the difference between the Contract unit price and the actual unit cost, which will be determined as hereinafter provided, of the total pay quantity of the item, including fixed costs. Such actual unit cost will be determined by the Owner's Representative in the same manner as if the work were to be paid for on a force account basis as provided in Section 01 10 35-3.0, **FORCE ACCOUNT PAYMENT**; or such adjustment will be as agreed to by the Contractor and the Owner's Representative.

The payment for the total pay quantity of such item of work will in no case exceed the payment which would be made for the performance of 75 percent of the Bid Schedule of the quantity for such item at the original Contract unit price.

C. ELIMINATED ITEMS

Should any Contract item of the work be eliminated in its entirety, in the absence of an executed Contract Change Order covering such elimination, payment will be made to the Contractor for actual costs incurred in connection with such eliminated Contract item if incurred prior to the date of notification in writing by the Owner's Representative of such elimination.

If acceptable material is ordered by the Contractor for the eliminated item prior to the date of notification of such elimination by the Owner's Representative, and if orders

for such material cannot be canceled, it will be paid for at the actual cost to the Contractor. In such case, the material paid for shall become the property of the City and the actual cost of any further handling will be paid for. If the material is returnable to the vendor and if the Owner's Representative so directs, the material shall be returned and the Contractor will be paid for the actual cost of charges made by the vendor for returning the material. The actual cost of handling returned material will be paid for.

The actual costs or charges to be paid by the City to the Contractor as provided in this Section 01 10 35-4.1C, ELIMINATED ITEMS, will be computed in the same manner as if the work were to be paid for on a force account basis as provided in Section 01 10 35-3.0, **FORCE ACCOUNT PAYMENT**.

4.2 CHANGES IN CHARACTER OF WORK

If an ordered change in the plans or specifications materially changes the character of the work of a Contract item from that on which the Contractor based his Bid price, and if the change increases or decreases the actual unit cost of such changed item as compared to the actual or estimated actual unit cost of performing the work of said item in accordance with the plans and specifications originally applicable thereto, in the absence of an executed Contract Change Order specifying the compensation payable, an adjustment in compensation therefor will be made in accordance with the following.

The basis of such adjustment in compensation will be the difference between the actual unit cost to perform the work of said item or portion thereof involved in the change as originally planned and the actual unit cost of performing the work of said item or portion thereof involved in the change, as changed. Actual unit costs will be determined by the Owner's Representative in the same manner as if the work were to be paid for on a force account basis as provided in Section 01 10 35-3.0, **FORCE ACCOUNT PAYMENT**; or such adjustment will be as agreed to by the Contractor and the Owner's Representative. Any such adjustment will apply only to the portion of the work of said item actually changed in character. At the option of the Owner's Representative, the work of said item or portion of item which is changed in character will be paid for by force account as provided in Section 01 10 35-3.0, **FORCE ACCOUNT PAYMENT**.

If the compensation for an item of work is adjusted under this Section 01 10 35-4.2, CHANGES IN CHARACTER OF WORK, the costs recognized in determining such adjustment shall be excluded from consideration in making an adjustment for such item of work under the provisions in Section 01 10 35-4.1, INCREASED OR DECREASED QUANTITIES.

5.0 TIME EXTENSIONS FOR CHANGE ORDERS

If the Contractor requests a time extension for the extra work necessitated by a proposed

Change Order, the request must comply with the applicable requirements of Paragraph 01 13 10-6.0, **TIME IMPACT ANALYSES**.

6.0 NOT USED

*****END OF SECTION*****

SECTION 01 10 50

FIELD ENGINEERING

1.0 DATUM

Elevation datum for this project is based on the Project Bench Mark as noted on the Drawings. All connections shall be installed based on actual elevations of existing structures to which connections are made.

2.0 LINES AND GRADES

The Contractor shall lay out all work, including structures and pipelines, and shall be responsible for any errors resulting therefrom. In all questions arising as to proper location of lines and grades, the Owner's Representative's decision will be final.

As part of the Bid Price for the construction of the improvements, the Contractor shall provide and be responsible for the layout of all work. The Contractor shall provide all necessary surveys, field staking, and positioning for the construction of all components at the proper alignment, elevations, grades, and positions, as indicated on the Drawings and as required for the proper operation and function. The Contractor shall stake its work limits.

The Contractor's layout shall be based on existing structures, survey control and bench marks established by the City.

The Contractor shall supply such labor as required, at no extra charge, to aid and assist the Owner's Representative in checking location and grades of the work as set by the Contractor if the Owner's Representative desires to perform this checking. This shall include moving materials and equipment located between monuments and the construction work.

***** END OF SECTION *****

SECTION 01 10 60

REGULATORY REQUIREMENTS AND PERMITS

1.0 APPLICABLE CODES

See Technical Specifications for Applicable Codes.

2.0 FEES AND PERMITS

Obtain and pay for all permit, license, and inspection fees necessary to complete installation in accordance with the requirements of the local, state and federal governing jurisdictions. Pay for re-inspections due to Contractor's negligence to complete required work and/or installation or coordinate with other trades to complete installation for final acceptance and testing.

Contractor shall obtain all required Caltrans, traffic control, and local trucking permits. Contractor is responsible for all fees and permits for discharge of water into the utility systems and all other fees and charges required by public agencies to perform the work. Building Permits are not required.

3.0 STORM WATER POLLUTION PREVENTION PLAN

3.1 REGULATORY REQUIREMENTS

A. Construction activities are regulated under the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbances Activities (State Water Resources Control Board [SWRCB] Order No. 2009-0009-DWQ, NPDES Permit No. CAS000002, and subsequent amendments (including without limitation SWRCB Orders No. 2010-0014-DWQ and No. 2012-0006-DWG), generally referred to as the General Permit [GP]). For this Project, the San Francisco Bay Regional Water Quality Control Board (RWQCB) enforces the General Permit. Coverage under a General Permit requires the submission to the SWRCB of the Permit Registration Documents (PRDs) and receipt from the SWRCB of a Waste Discharge Identification Number (WDID) for the Project. As the Project's Legally Responsible Party (LRP), the City will be responsible for submitting the Notice of Intent (NOI) and PRDs to the SWRCB applying for coverage under the General Permit. Site disturbance, mobilization, or construction activities shall not start until the Contractor is in receipt of the WDID Letter issued by the SWRCB. The Contractor's Qualified Storm Water Pollution Prevention Plan (SWPPP) Developer (QSD) shall be responsible for preparing a SWPPP that is in compliance with the requirements of the General Permit for review and approval

by the Owner's Representative. The Contractor shall also act as the Projects Qualified SWPPP Practitioner (QSP) and shall be responsible for performing all inspections, sampling, and reporting as required by the General Permit. A formal evaluation has not been performed, but it is anticipated that the Project will be classified as a Risk Level 2 under the General Permit.

A copy of the General Permit is available on the SWRCB website:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

B. The Contractor shall comply with the SWRCB, RWQCB, County, City, and other local agency requirements regarding storm water management, inspection, and monitoring.

C. The Contractor shall comply with the following prohibitions and limitations, which are contained in the General Permit:

a. Storm water and non-storm water discharge prohibitions:

i. Discharge of materials other than storm water, which are not otherwise regulated by a NPDES permit, to a separate storm water sewer system or water of the nation are prohibited.

ii. Water discharge shall not cause or threaten to cause pollution, contamination (including sediment) or nuisance.

iii. Water discharge regulated by this General Permit shall not contain a hazardous substance equal to or in excess of a reportable quantity listed in 40 CFR Part 117 and 40 CFR Part 302.

iv. Discharge of toxic pollutants prohibited by the Clean Water Act Section 307(a).

b. Receiving Water Limitations:

i. Storm water and non-storm water discharges to any surface or groundwater shall not adversely impact human health or the environment.

ii. Storm water and authorized non-storm water discharges shall not contain pollutants in quantities that threaten to cause pollution or a public nuisance.

iii. Discharges located within the watershed of a CWA Section 303(d) impaired body shall limit the Total Maximum Daily Load (TMLD) to that approved by the U.S. EPA for "construction activities" or land disturbances.

iv. Water discharges shall not cause or contribute to a violation of any applicable water quality standards contained in the Statewide Water Quality Control Plan, California Toxics Rule, The National Toxics Rule, California Ocean Plan, Inland Surface Waters and Enclosed Bays and Estuaries Plan, or the applicable Regional Water Board's Basin Plan.

3.2 GENERAL

A. The City will be responsible to the SWRCB for causing the preparation of and compliance with the various management plans called for by the SWRCB. The Contractor is responsible for preparation of a SWPPP and for providing the detail planning and compliance activities insofar as they would potentially affect the Contractor's methods and means of performing the Work.

1. The Contractor's QSD SWPPP Developer shall be fully responsible for preparing the SWPPP to reflect the Contractor's specific activities on the Project. The Contractor is fully responsible for assuring that the SWPPP complies with the General Permit.
2. As the Project's QSP, the Contractor will implement the requirements of the SWPPP to reflect the SWRCB, the General Permit, and the Construction BMP Handbook Web-based portal developed by CASQA. The SWPPP and all Contractor activities shall be coordinated with other construction activities and SWPPPs at the site.

B. If a violation of the Permit is due to the Contractor's actions or inactions and a fine is assessed, the Contractor shall be responsible for the fine and all applicable remediation requirements.

3.3 NOT USED

3.4 CONTRACTOR RESPONSIBILITIES

A. The Contractor shall be responsible for meeting the requirements of the General Permit except as specifically noted otherwise within this Section.

B. Within fifteen (15) days of the Award of the Contract the Contractor shall submit the following PRDs that are to be used by the City to apply for the Project WDID. This information shall be submitted in electronic form suitable for the submittal to the SWRCB using the Storm Water Multiple Application Report Tracking System (SMARTS) website.

1. Risk Assessment evaluation using the methodology outlined in the General Permit.
2. SWPPP prepared by a Qualified SWPPP Developer (QSD)
3. Construction Site Monitoring Plan (CSMP), which is incorporated as

part of the SWPPP.

4. Rain Event Action Plan (REAP), if applicable. The REAP may be incorporated as part of the SWPPP.
5. Site Map (Provided detail information shall include but not necessarily limited to that recited in Attachment B, Section J of the General Permit). The Site Map may be included in the SWPPP.
6. Active Treatment System (ATS), if applicable
7. Names and 24-hour phone numbers for QSD, Qualified SWPPP Practitioners (QSPs), and other parties responsible for preparing, implementing, monitoring, inspecting and maintaining the SWPPP.

C. Prior to soil disturbing work the Contractor shall implement the measures of the SWPPP and be in receipt of the Project WDID. This is a prerequisite for coverage under the General Permit.

D. Before the start of construction activities, the Contractor shall provide training for project managers, supervisory personnel, and employees involved with water pollution control work. The training shall include:

1. Rules and regulations overview.
2. Implementation and maintenance procedures for:
   a. Temporary Soil Stabilization
   b. Temporary Sediment Control
   c. Tracking Control
   d. Wind Erosion Control

E. The Contractor's QSD and/or QSP shall update the PRDs including but not limited to the Risk Assessment, SWPPP, CSMP and Site Map for new or changed conditions or if initial documents were incomplete and submit to the City.

F. The Contractor shall furnish:

1. Routine inspection reports on Monday of each week [daily and weekly reports, REAPS (if applicable), storm event reports (the before, during and after inspections)].
2. Sampling Reports (pH, Turbidity, non-visible pollutants, etc.) within 48 hours of the storm event.
3. Numeric Action Levels (NAL) Exceedance Reports within 48 hours of the event.

G. The Contractor shall develop and submit the annual report to the City within ten (10) days of August 1 of each year for submittal to the SWRCB by the City. The content shall be complete and fully comply with the requirements of Section XVI of the General Permit. The Contractor's QSD shall prepare and

certify the report using the language of Section IV, Item J, Compliance Certification of the General Permit.

H. Prior to Final Completion the Contractor shall develop and submit an annual report to the Owner's Representative for the time frame between the Notice to Proceed or last previous annual report, and the Final Completion Date.

I. The Contractor shall provide evidence to the Owner's Representative with the submission of the SWPPP that the individual(s) responsible for the PRDs development including the SWPPP preparation is a QSD who has the certification or registration required by Section VII of the General Permit.

J. The Contractor shall provide evidence to the Owner's Representative that the individual(s) responsible for supervising the SWPPP implementation, monitoring and reporting as required by the General Permit is a QSD or a QSP who has the certification or registration required by Section VII of the General Permit.

The Contractor's QSD and QSP must meet the Certification and/or registration requirements of Section VII of the General Permit. Contractor shall provide evidence and demonstrate that his QSD and QSP are qualified to develop PRDs, SWPPP, etc. and supervise the implementation to the Owner's Representative.

K. The Contractor shall be responsible for implementing, monitoring, inspecting, and maintaining best management practices (BMPs) and other measures as detailed in the SWPPP, CSMP, REAP, Site Map, other applicable documents and the requirements of the General Permit. The work shall be supervised by the Contractor's QSD or QSP(s).

L. The Contractor shall be responsible for providing equipment, materials, and workers to implement SWPPP and complying with all the requirements of the General Permit as well as being available for rapid response to BMP failures and emergencies.

M. The entire plan together with the weekly reports and rain event reports shall be kept and maintained by the Contractor on the construction site during the duration of the Project. Reports shall be certified by the Contractor's QSD or QSP. Reports shall be submitted to the Owner's Representative no later than two (2) business days after actual inspection.

N. The Contractor shall be responsible for taking the proper actions to prevent storm water or non-storm water coming into contact with contaminants and sediments from migrating offsite or entering storm sewer drainage systems. The Contractor shall take immediate action if directed by the Owner's Representative or if the Contractor observes contaminants and/or sediments

entering the storm drainage system, to prevent further storm water from entering the system.

O. The Contractor shall update the SWPPP whenever there is a change in construction or operations which may affect the discharge of any pollutants from the construction site.

P. The SWPPP shall be amended by the Contractor's QSD if it is in violation of any conditions of the Construction General Permit or has not achieved the general objective of reducing pollutants in storm water or non-storm water discharges.

Q. All amendments shall be completed at no additional cost to the City.

R. All submittals of PRDs and other documents (storm event reports, REAPS, Annual Reports, NAL Exceedance Reports, etc.) by the Contractor to the City consist of the following and shall be certified. The Contractor's QSD shall certify to the City that the submitted documents are in compliance with the Construction General Permit. The certification shall use the language of Section IV, Item J-Compliance Certification, of the CGP:

1. Three (3) certified hardcopies
2. An electronic copy suitable for submittal to the SWRCB through the State Water Board's SMARTS website (PDF and MS Word formats when available)

S. The Contractor's responsibility for SWPPP Implementation shall continue throughout any temporary suspension of Work.

3.5 CITY RESPONSIBILITES

A. The City, designated as the Legally Responsible Person (LRP), will prepare and file the Notice of Intent (NOI) and Contractor determined Site Risk Assessment with the SWRCB and obtain the Project WDID. The City requires PRDs from the Contractor in an acceptable electronic format prior to filing the NOI.

B. NOT USED

C. The City will submit to the SMARTS website all documents including but not limited to the PRDs, storm event report(s), Annual Report(s), Notices of Violation. Contractor shall provide to the City the written (hard copy) and electronic copy (PDF and/or MS Word format).

D. The City will have LRP signatory responsibility for the SWPPP as defined in Section IV, Item I-Signatory Requirements of the General Permit.

E. The City will submit to the SWRCB an annual report(s) as developed by the Contractor and the associated fee.

F. In accordance with Section II.D of the General Permit, the City will submit to the SWRCB a Notice of Termination (NOT) upon completion of all construction activities.

4.0 MITIGATION MEASURES – NOT USED

5.0 PUBLIC SERVICES – NOT USED

***** END OF SECTION *****

SECTION 01 10 90

REFERENCES

1.0 CODES AND STANDARDS

Where local codes or standards are referred to in these Specifications, the Contractor may inspect such documents at the City or County office.

2.0 DEFINITIONS OF WORDS AND TERMS

Where used in the Contract Documents, the following words and terms shall have the meanings indicated. The meanings shall be applicable to the singular, plural, masculine and feminine of the words and terms.

Acceptance. Formal action of the City in determining that the Contractor's work has been completed in accordance with the Contract and in notifying the Contractor in writing of the acceptability of the Work.

Acts of God. "Acts of God" shall include only the following occurrences or conditions and effects: earthquakes in excess of a magnitude of 3.5 on the Richter Scale and tidal waves.

Addenda. Supplemental written specifications or drawings issued prior to bid submittal which modify or interpret the project manual by addition, deletion, clarification, or corrections.

Agreement. The written document covering the performance of the Work as more fully described in the Contract Documents. Also referred to as the Contract.

City. The word “City” refers to City of Pacifica, the governing body of which is termed the “Council” or “City Council”.

Bid. Offer of a Bidder submitted on the prescribed form setting forth prices of the work to be performed. Also referred to as Proposal.

Bidder. Individual, partnership, corporation, or a combination thereof, including joint venturers offering a bid to perform the work.

Construction Schedule. A plan of construction progress conforming to the requirements of Specification Section 01 13 10, **CONSTRUCTION SCHEDULES**.

Contract Change Order. A written order to the Contractor, covering changes in the plans or quantities, or both, and establishing the basis of payment and time adjustments for the work affected by the changes. Also referred to as a Change Order.

Contract Documents. The words "Contract Documents" shall mean any or all of the following items, as applicable:

Division 0 – Bidding and Contract Requirements (00 00 10 and others following)
Division 1 – General Requirements (01 10 10 and others following)
Technical Specifications (02 00 00 and others following)
Plans
Addenda or Bulletins of Instruction, if any
Executed Change Orders, if any
Field Orders, if any
Notice to Proceed
Permits
Appendices

Each of these items is to be considered by reference as part of the Contract Documents, also referred to as Contract.

Contract Price. Also referred to as Contract Amount. The amount payable to the contractor under the terms and conditions of the Contract based on the price given on the bidding schedule, with adjustments made in accordance with the Contract. The base amount given in the bidding schedule shall be either a lump sum bid or the summation of the unit price bids multiplied by the estimated quantities set forth in the bid form.

Contract Time. Number of calendar days stated in the contract for the completion of the Work.

Contractor. The individual partnership, corporation, or combination thereof including joint venturers who enter into the Contract with the City for the performance of the Work. The term covers subcontractors, equipment and material suppliers, and their employees.

Contractor's Plant and Equipment. Equipment, material, supplies, and all other items, except labor, brought onto the site by the Contractor to carry out the Work, but not to be incorporated in the Work.

Conveyance System. The infrastructure of pipelines, pump stations and all appurtenances related to the conveyance of raw wastewater from the public collection systems of the City’s treatment plant.

Critical Path. The Critical Path is defined as the longest continuous path of activities in a network logic diagram with the least amount of float.

Days. The word "Days" shall mean calendar days, including legal holidays, Saturdays and Sundays, unless specifically noted otherwise.

Design Consultant. The term "Design Consultant" refers to the person or firm designated by the City to perform architectural and/or engineering functions on the Project. During construction certain functions will be performed at the direction of the Owner’s representative.

Direct. Action of the City or Owner’s representative by which the Contractor is ordered

to perform or refrain from performing work under the Contract.

Drawings. "Drawings" shall mean Plans.

Favorable Review. “Favorable Review” means that the person or entity acting on behalf of the City has reviewed a proposal or submittal and found it acceptable as to the aspects for which review was sought. “Favorable Review” does not imply any approval of deviations from the Contract Documents, which can only be made by formal field Directive, Field Order or Contract Change Order.

Field Directive. Written documentation of the actions of the City or Owner’s representative in directing the Contractor. Also referred to as a Directive.

Field Order. A written instruction given to the Contractor authorizing work that is a change to the scope of work carried out on a time and material basis.

Float. “Float” or "total float" is the difference between the early finish date and the late finish date of an activity.

Furnish. To deliver to the job site or other specified location any item, equipment or material.

General Conditions. Section 00 07 00, General Conditions Requirements, which form part of the Contract Documents representing the general clauses that establish how the Project shall be administered.

General Requirements. Division 1, General Requirements, which form part of the Contract Documents establishing special conditions or requirements peculiar to the work and supplementary to the General Conditions.

Herein. Refers to information presented in the Contract Documents.

Holidays. Legal holidays shall include the following holidays designated by the City: New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the day after Thanksgiving, and Christmas Day.

Install. Placing, erecting, or constructing complete in place any item, equipment, or material.

Lump Sum: Lump sum is a global/total price submittal to complete work in its entirety without a cost breakdown.

Notice of Award. Notice of Award shall mean the written notice issued by City to Contractor that the Contract was awarded by the Commission. The Notice of Award requires that the Contractor shall execute a written Agreement and required supplementary documents and submit them to the City within twenty (20) days after the Contractor’s receipt of the Notice of Award.

Notice to Proceed. Notice to Proceed shall mean the written notice issued by City to Contractor authorizing the Contractor to proceed with the Work and establishing the date

of commencement of the Contract Time. Notice to Proceed may or may not include separate dates establishing the date of commencement of the submittal process.

Owner. The word "Owner" means City of Pacifica.

Owner's Representative. The person designated, in writing, by the City to act as its representative at the construction site and to perform construction inspection services and administrative functions relating to this Contract. Initial contact by the Contractor with the City shall be through the Owner's Representative.

Paragraph. For reference or citation purposes, a paragraph shall refer to the paragraph, or paragraphs, called out by paragraph number and alphanumeric designator.

Person. The term, "Person" includes individuals, firms, companies, corporations, partnerships, joint ventures and any other form of a business entity.
Project. The work of construction to be performed under the provisions of the Contract.

Plans. "Plans" shall mean Drawings.

Provide. Furnish and install, complete in place.

Punch List. List of incomplete items of work and of items of work which are not in conformance with the Contract, prepared by the Owner's representative.

Shall. Refers to mandatory actions entered into by the Contractor or the City as a covenant with the other party to do or to perform the action. "Shall" is interchangeable with "will."

Shown. Refers to information presented on the drawings, with or without reference to the drawings.

Specify. Refers to information described, shown, noted or presented in any manner in any part of the Contract.

Subcontractor. A subcontractor is a person or entity who has a direct contract with the Contractor to perform any of the Work at the site. The term subcontractor means a subcontractor or subcontractor's authorized representative. The term subcontractor, does not include any separate contractor or any separate contractor's subcontractors.

Submittals. The information which is specified for submission to the Owner's representative in accordance with the Contract Documents.

Substantial Completion. Sufficient completion of the Project or the portion thereof to permit utilization of the Project or portion, not only that the work be sufficiently completed to permit utilization, but also that the City can effectively utilize the substantially completed work. Determination of substantial completion is solely at the discretion of the City. Substantial Completion does not mean complete in accordance with the Contract. Substantial Completion of all or any part of the Project does not entitle the Contractor to Acceptance under the Contract.

Substantial Completion Date. Date when the City puts into service, the Project, or that portion of the Project that has been determined to be substantially complete.

Sub-subcontractor. A sub-subcontractor is a person or entity who or which has a direct or indirect contract with a subcontractor to perform any of the Work at the site. The term sub-subcontractor means a sub-subcontractor or an authorized representative thereof, also sometimes referred to as subtier-subcontractor.

Supplementary General Conditions. Section 00 08 00, Supplementary General Conditions, which form part of the Contract Documents supplementing the General Conditions that establish how the Project shall be administered.

Supplier. Any Person who or which supplies materials or equipment for the Work, including that fabricated to a special design, including a Subcontractor or a Sub-Subcontractor.

Surety. The entity that joins with the Contractor in assuming liability for the faithful performance of the Work and for the payment of all obligations pertaining to the Work in accordance with the Contract Documents by issuing bonds or other financial guaranty required by the Contract Documents or by law.

Technical Specifications. Sections 020000 and all others following of the Contract Documents consisting of written descriptions of the technical features of materials, equipment, constructions systems, standards, and workmanship.

Unit Price: Construction contract in which the client or owner pays a fixed sum for each completed unit of work.

Will. Interchangeable with “Shall”.

Work. The labor, materials, equipment, supplies, services, and other items necessary for the execution, completion and fulfillment of the Contract.

Work Day. Any day except Saturday, Sunday, and legal holidays.

3.0 ABBREVIATIONS

Whenever the following terms are used, the intent and meaning shall be as follows:

Abbreviation	Stands For:
AASHTO	American Association of State and Highway and Transportation Officials
AAMA	Architectural Aluminum Manufacturers Association
ABMA	American Boiler Manufacturers Association
ACI	American Concrete Institute
ADC	Air Diffusion Council
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AMCA	Air Moving and Conditioning Association
ANSI	American National Standard Institute (formerly United States of America Standards Institute)
APA	American Plywood Association
API	American Petroleum Institute
AREA	American Railway Engineers Association
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Owner's representatives
ASME	American Society of Mechanical Engineers
ASTM	American Society of Testing and Materials
AWPA	American Wood-Preserver's Association
AWS	American Welding Society
AWWA	American Water Works Association
CAGI	Compressed Air and Gas Institute CAL/OSHA State of California Department of Industrial Relations, Division of Industrial Safety
CBM	Certified Ballast Manufacturers
CBR	California Bearing Ratio
CI	Chlorine Institute
CISPI	Cast Iron Soil Pipe Institute
CMAA	Crane Manufacturers Association of America
CPSC	Consumer Products Safety Commission
CRA	California Redwood Association
CRSI	Concrete Reinforcing Steel Institute
CSMP	Construction Site Monitoring Program
CTI	Cooling Tower Institute
DFPA	Douglas Fir Plywood Association
EIA	Electronic Industries Association
EPA	U.S. Environmental Protection Agency
ETL	Electronic Testing Laboratory
FM	Factory Mutual Insurance Company
FPS	Fluid Power Society
FS	Federal Specifications
GO 95	General Order No. 95, California Public Utilities Commission Rules

	for Overhead Electric Line Construction
HI	Hydraulic Institute
HMI	Hoist Manufacturers Institute
IAPMO	International Association of Plumbing and Mechanical Officials
IBR	Institute of Boiler and Radiator Manufacturers
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society
IPCE	International Power Cable Engineers Association
ISA	Instrument Society of America
ISO	International Organization for Standardization
NAAMM	National Association of Architectural Metal Manufacturers
NBS	National Bureau of Standards
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NOI	Notice of Intent
NSF	National Sanitation Foundation
NWMA	National Woodwork Manufacturers Association
OSHA	Occupational Safety and Health Act
PCMAC	Prestressed Concrete Manufacturers Association of California
QSD	Qualified SWPPP Developer
QSP	Qualified SWPPP Practitioner
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SMARTS	Sotrm Water Multiple Application and Report Tracking System
SSPC	Structural Steel Painting Council TCA Tile Council of America
SWPPP	Storm Water Pollution Prevention Plan
UBC	Uniform Building Code
UPC	Uniform Plumbing Code
UL	Underwriters Laboratories
WCLIB	West Coast Lumber Inspection Bureau
WIC	Woodwork Institute of California

***** END OF SECTION *****

SECTION 01 12 00

PROJECT MEETINGS

1.0 PRE-CONSTRUCTION CONFERENCE

Prior to the start of construction the Owner's Representative will conduct a pre-construction conference. At the conference the Owner's Representative will review the Contractor's proposed schedule of operations and the construction procedure and sequence requirements. Also discussed will be the Contractor's field organization, submittals, partial payments, change order procedures, safety requirements, permits and inspections, and other matters.

In order to properly facilitate Project communications and document control, all parties are required to include the Project CIP number on all correspondence, transmittals, submittals, RFIs, payment requests, change order requests and all other Project related information.

2.0 PROGRESS MEETINGS

The Owner's Representative shall schedule, arrange and conduct progress meetings. These meetings shall be conducted not more than once per week and shall be attended by the Contractor's superintendent and representatives of all subcontractors, utilities, and others that are active in the execution of the Work. The purpose of these meetings shall be to review the Contractor's three week schedule provided in accordance with 01 13 10-7.0, Weekly Activities Plan, resolve conflicts, and in general coordinate and expedite the execution of the Work.

The Owner's Representative shall prepare and distribute a Record of Discussions.

***** END OF SECTION *****

SECTION 01 13 10

CONSTRUCTION SCHEDULES

1.0 GENERAL

The Contractor shall provide a Construction Schedule which shall be subject to the favorable review of the Owner's Representative and the City.

2.0 NOT USED

3.0 CONSTRUCTION SCHEDULE

3.1 GENERAL

The Construction Schedule for this Project will also be referred to as the Critical Path Method (CPM) Schedule.

The Contractor shall designate, in writing, an authorized representative in its firm who will be responsible for the preparation, revising, and updating of the CPM Schedule. The Contractor's representative shall have direct project control and complete authority to act on behalf of the Contractor in fulfilling the construction scheduling requirements set forth herein, and such authority will not be interrupted throughout the duration of the Project. The requirements for the CPM Schedule are included to assure adequate planning and execution of the Work and to assist the Owner's Representative in appraising the reasonableness of the proposed schedule and evaluating progress of the Work.

Within seven (7) days from award of the Contract, the Contractor shall submit to the Owner's Representative demonstration of competence in the use of CPM Scheduling, including evidence of the use of CPM Scheduling on a project of similar value and complexity. In the event of the failure of the Contractor to satisfy the Owner's Representative of its CPM Scheduling competence, the Contractor will be required to employ a qualified CPM consultant who regularly performs these services and who in the opinion of the Owner's Representative possesses the qualifications required to perform CPM Scheduling for this Project.

Demonstration of competence in the use of CPM Scheduling shall be indicated by providing evidence to verify capability of using the Critical Path Method of construction scheduling by submitting: (1) The Contractor's or its CPM Consultant's experience in the application of CPM Scheduling techniques for at least two construction projects of similar size and complexity which were successfully controlled by the Contractor or its CPM consultant throughout their duration by means of CPM Scheduling and periodic systematic reviews of the CPM Schedules; (2) The Contractor's or its CPM consultant's experience with computer programs for production of CPM Schedules; and (3) Information regarding the Contractor's or its CPM consultant's computer facilities (either by possession or contractual access).

3.2 PRELIMINARY CONSTRUCTION SCHEDULE

3.2.1 Within ten (10) days after receipt of Notice to Proceed, the Contractor shall submit a Preliminary Construction Schedule using a time-scaled network logic diagram using the Precedence Diagramming Method format covering the following project phases and activities:

a. Procurement and Submittals, including shop drawings and fabrication and delivery of key and long lead time procurement activities.

   1. The Contractor's submittal information shall show intended submittal dates and shall be incorporated into the Baseline Schedule.

   2. The delivery information shall include realistic delivery dates for the procurement activities.

b. The activities planned for the first ninety (90) days in the execution of the Work.

c. The approach to scheduling the remaining activities or phases of the Work shall be represented by at least one (1) summary activity for each major phase or activity. The total duration of the summary activities shall equal the Contract Time.

d. Approximate duration for each summary activity representing the Contractor's best estimate for the work the summary activity represents.

3.2.2 The Preliminary Construction Schedule shall describe the activities to be accomplished and their dependency subject to all requirements under these Construction Schedule provisions, as appropriate. The Preliminary Construction Schedule will be used temporarily to record and monitor the progress of the Work until the Baseline Schedule specified hereinafter, has been completely developed and favorably reviewed. Recorded data on the Preliminary Construction Schedule shall be incorporated into the Baseline Schedule during the first schedule update.

3.2.3 The Owner’s Representative shall review the Preliminary Construction Schedule and provide any comments, its favorable review of the Preliminary Construction Schedule, or request a meeting to review the Preliminary Construction Schedule with the Contractor within ten (10) days of receipt of the schedule. If requested, the Contractor shall participate in a review and evaluation of the Preliminary Construction Schedule with the Owner’s Representative. Any revisions necessary as a result of this review shall be resubmitted for review by the Owner’s Representative within five (5) days.

3.3 BASELINE SCHEDULE

3.3.1 Baseline Schedule Submittal - The Contractor shall submit an acceptable Critical Path Method (CPM) Schedule to the Owner’s Representative within thirty (30) days after the

receipt of the Notice to Proceed. Subsequent revisions to the Baseline Schedule shall be submitted as set forth hereinafter.

The Contractor shall produce and provide time-scaled network logic diagrams. The network logic diagram shall be clear and legible. Critical activities shall be indicated in red color on both schedules.

The Owner's Representative shall review the Baseline Schedule and provide any comments, its favorable review of the Baseline Schedule, or request a meeting to review the Baseline Schedule with the Contractor within fifteen (15) days of receipt of the Baseline Schedule. If requested, the Contractor shall participate in a review and evaluation of the proposed network diagrams and analysis by the Owner's Representative. Any revisions necessary as a result of this review shall be resubmitted for review by the Owner's Representative within ten (10) days. The favorably reviewed Baseline Schedule shall then be the Construction Schedule to be used by the Contractor for planning, organizing, and directing the Work, and for reporting progress. If the Contractor thereafter desires to make significant changes in its method of operating and scheduling, the Contractor shall notify the Owner's Representative in writing stating the reasons for the change. Only one partial payment will be made prior to submission and favorable review of the Baseline Schedule.

To the extent that the favorably reviewed initial Baseline Schedule, or revisions thereto, indicate anything not jointly agreed upon, it shall be deemed to be not favorably reviewed by the Owner's Representative. Any omission of work from the detailed Baseline Schedule, otherwise required for Contract compliance, will not excuse the Contractor from completing such work within any applicable completion date.

3.3.2 Schedule Type - The CPM Schedule submitted under this Specification shall utilize a Critical Path Method (CPM) format using the Precedence Diagramming Method (PDM). The schedule shall indicate completion of the Project at the Contract completion date and shall incorporate the entire Project duration. As provided for in Section 00 07 00-6.2, CONTRACT TIME, the Contractor is required to base their Bid and the construction schedule on the entire Contract Time and include its field and home office overhead costs in the Bid for the entire Contract Time as defined in Section 00 08 00-1.1, TIME ALLOWED FOR COMPLETION.

The Critical Path is defined as the longest continuous path of activities in a network logic diagram with the least amount of float.

Contractor shall use Primavera scheduling software (SureTrak, Contractor, P3 or P6). The Contractor shall submit a properly formatted electronic file for the initial Baseline Schedule and all monthly updates with the network logic diagram and mathematical analyses.

The CPM Schedule shall not incorporate resource loading and leveling. The Contractor shall provide hard coded logic constraints as necessary to incorporate any resource requirements that may be applicable to the Project construction. The Contractor shall determine and allocate the proper resources to complete the Project by the specified Contract Completion date.

3.3.3 Network Logic Diagram - The diagrams shall show elements of the Project in detail and an entire project summary. Diagrams shall show the order and interdependence of activities and sequence in which the Work is to be accomplished as planned by the Contractor. The basic concept of a network analysis diagram shall be followed to show how the start of a given activity is dependent on the completion of preceding activities and its completion restricts the start of following activities. Network logic diagrams shall be time scaled.

The graphic network logic diagram shall include for each activity, the description, activity number, the estimated duration in workdays, and all activity relationship lines. The network logic diagram shall be drawn for the early start and early finish of all activities.

3.3.4 Reports

The following information shall be furnished as a minimum for each activity;

a. activity description and number
b. estimated duration of activities
c. earliest start date (by calendar date)
d. earliest finish date (by calendar date)
e. actual start date (by calendar date)
f. actual finish date (by calendar date)
g. latest start date (by calendar date)
h. latest finish date (by calendar date)
i. float
j. percentage of activity completed.
k. preceding and succeeding activities
l. activity constraints

The following shall be submitted:

a. Reports
    1. Activity Report: Sort report by Activity ID
    2. Total Float Report: Sort report by Total Float, Early Start, Activity ID
    3. Predecessor/Successor Report: Sort report by Activity ID

b. 11”x17” Color Time-Scaled Diagram: Breakdown by Work Area

The schedule reports shall include a calendar in workdays.

3.3.5 Durations - Durations shall be in working days and shall not exceed ten (10) workdays, except for submittal and delivery items. Where the duration of continuous work exceeds ten (10) workdays, work items in the Construction Schedule shall be subdivided by location, approximate stationing or other sub-element of the Work.

3.3.6 Network Activities - Detailed network activities shall include:

a. The submittal and approval of samples and equipment, fabrication of special material and equipment and their installation and testing.

b. The Critical Path shall be shown on all reports and on the graphic network logic diagram. The activities which constitute the Critical Path shall be identified.

c. Specified milestone events or other significant stages of completion as defined in Section 00 08 00-1.1, TIME ALLOWED FOR COMPLETION, and Section 01 10 10-2.0, WORK SEQUENCE AND CONSTRAINTS. System shutdown and tie-in dates must be identified and included on the schedule as milestones.

d. The lead time required for testing, inspection and other procedures required prior to acceptance of the Work.

e. The activity numbers shall be grouped by work area, trade and subcontractor to provide logical summary activities.

f. All activities of the City and the Owner's Representative that affect progress and required contract dates for completion of all parts of the Work. The selection and number of activities shall be subject to favorable review by the Owner's Representative.

3.4 FLOAT

"Total Float" or "Float" shall be defined as the difference between the early finish and late finish dates of an activity. An activity with zero float represents an activity on the "Critical Path" of Project completion.

On the Baseline Schedule, delineate the specified Contract duration and identify the planned completion of the Work as the final milestone. The time period between these two dates, if any, shall be considered Contract Float. Float in any activity, milestone completion date or Contract completion date shall be considered a resource available to both the City and the Contractor. Neither the City nor the Contractor has ownership of the Float. Float is for the benefit of the Project. Favorable review of the Contractor's Baseline Schedule, monthly updates or revised schedule, when based on less time than the maximum time allowed for the milestone(s) or Contract completion does not serve to change any Contract Time duration, nor serve as a waiver of the Contractor's nor the City's right to utilize the full amount of time specified in the Contract, unless so modified in a Contract Change Order.

If the Contractor's schedule is based on less time than the maximum time allowed for milestone(s) or Contract completion no compensation for indirect overhead expenses will be considered until the expiration of the entire time periods provided for in the Contract as adjusted by any time extensions granted other than compensable time extensions. In such case refer to Section 00 07 00-6.4.3, Indirect Overhead, for further provisions on the reimbursement of indirect overhead expenses.

4.0 WEATHER CONDITIONS

Seasonal weather conditions shall be considered in the planning and scheduling of work influenced by high or low ambient temperatures or precipitation to ensure the completion of the Work within the Contract Time. No time extensions will be granted for the Contractor's failure to take into account such weather conditions for the location of the Work and for the period of time in which the Work is to be accomplished.

The expected loss of working days specified in the Supplementary General Conditions, Section 00 08 00-1.3, WEATHER DAYS, shall be included in a separate identifiable critical activity labeled "Weather Days Allowance" to be included as the last critical activity of the Baseline Schedule. When weather days are experienced, and are approved as such by the Owner's Representative, the Contractor shall either:

a. Increase the duration of the current critical activity(ies) by the number of weather days experienced, or

b. Add a critical activity to the schedule to reflect the occurrence of the weather day(s).

The duration of the weather day allowance activity shall be reduced as weather days are experienced and included in the schedule. Any remaining weather days in the weather day allowance activity at the completion of the Project shall be considered as float and shall not be for the exclusive use or benefit of either the City or Contractor.

5.0 UPDATES

5.1 SUBMITTAL PERIOD

The Contractor shall submit at monthly intervals a report of the actual construction progress. Each monthly report shall cover a period of approximately thirty (30) days ending around the 30th of each month. The monthly reports shall be submitted within ten (10) days of the end of the reporting period, which shall be as agreed upon by the Owner's Representative and Contractor.

The Contractor shall submit time-scaled network logic diagrams. The network logic diagrams shall be clear and legible. Critical activities shall be indicated in red color. Progress bars shall be conspicuously identified by color other than red, black or white.

5.1.1 All Monthly Updates - All monthly updates shall include as a minimum:

a. Reports sorted as follows:

   1. Activity description and number
   2. Float
   3. Early Start
   4. Logic report of preceding and succeeding activities with all activity restraints indicated

b. Narrative Report - The report shall show the activities or portions of activities completed during the reporting period. The report shall state the percentage of the

work actually completed and scheduled, the remaining duration, and the progress along the Critical Path in terms of days ahead or behind the allowable dates as of the report date. Any changes made by the Contractor to the Baseline Schedule or prior schedule updates, including activity numbers and activity descriptions, shall be listed in a detailed report which describes the reason for each.

c. The Activity Numbers and Descriptions in the original submittal shall not be changed in the future submittals. New Activity Numbers and Descriptions may be added and Activity Numbers and Descriptions may be eliminated if the work intended to be included in the Activity has never been performed and is eliminated at a future date.

5.1.2 Delayed Schedule Updates - If, in the opinion of the Owner's Representative, the Project is behind schedule, the monthly report shall include a revised network diagram and/or tabular reports showing the Contractor's proposed revised schedule. The schedule shall be revised under the conditions defined in Section 01 13 10-5.3, SCHEDULE REVISIONS. An analysis of the effect that the delay has on progress along other paths shall also be included in the report. The Contractor shall also submit a narrative report with each updated analysis which shall include but not be limited to a description of current and anticipated problem areas, delaying factors and their impact, and an explanation of corrective actions taken or proposed.

5.2 SCHEDULE REVIEW

Once each month, on a date mutually agreed upon, but no later than seven (7) working days after the submittal of the monthly update specified herein, a jobsite meeting will be held to review the Construction Schedule, job progress and the monthly update, or the Owner's Representative will provide written comments on the monthly update.

5.3 SCHEDULE REVISIONS

The conditions under which the Owner's Representative will require revisions of the Construction Schedule include the following:

a. When delay in completion of any work item or sequence of work items results in an estimated extension of project completion by either twenty (20) working days or by five (5) percent of the remaining duration of time to complete the Contract, whichever is less.

b. When delays in submittals or deliveries make replanning or rescheduling of the Work necessary.

c. When the schedule does not represent actual prosecution and progress of the Work.

d. When any change to the sequence of activities, the completion date for major portions of the Work, or changes occur which affect the Critical Path.

e. When Contract modification necessitates schedule revision.

6.0 TIME IMPACT ANALYSES

6.1 GENERAL

When Change Orders are initiated, delays are experienced, or the Contractor desires to revise the schedule logic, the Contractor shall submit to the Owner's Representative a written Time Impact Analysis illustrating the influence of each change, delay, or Contractor request of the current Contract completion date.

6.1.1 Construction Schedule – Analysis

a. Each Time Impact Analysis shall include an analysis demonstrating how the Contractor proposes to incorporate the Change Order, delay, or Contractor request into the schedule.

b. The Time Impact Analysis shall demonstrate the time impact based on the date of occurrence of the change, delay or revision; the status of construction at that point in time; and the impact of all affected activities.

6.2 TIME EXTENSIONS

Activity time delays will not automatically mean that an extension of Contract Time is warranted or due the Contractor.

a. It is possible that an excusable delay or Contract modification will not affect existing critical activities or cause noncritical activities to become critical, i.e., a delay or modification may result in only absorbing a part of the available total float that may exist within an activity chain of the network, thereby not causing any effect on the Contract completion date or Contract Time.

b. The Contractor acknowledges and agrees that mitigation for delays due to changes, differing site conditions, and other causes will require revision of preferential sequences of the Work. Accordingly, to mitigate delays, the activities shall be resequenced prior to the Contractor proposing an updated schedule which supports a delay to the Project as a whole. When a delay to the Project as a whole can be avoided by revising preferential sequencing, and the Contractor chooses not to implement the revisions, the Contractor will be entitled to a time extension but is not entitled to compensation for indirect overhead for this extended duration.

c. Actual delays in activities which do not affect the Critical Path or which do not move the Contractor's planned completion date beyond a milestone or the Contract completion date will not be the basis for an adjustment to the Contract Time.

d. Extensions of time can be granted for a delayed or impacted activity only for the duration of the time adjustment which exceeds the total float for the schedule path wherein the activity is located. The adjustment is only applicable during the time the delay occurred or when the change is ordered.

6.3 SUBMITTAL REQUIREMENTS

Time Impact Analyses shall be submitted in triplicate and within fifteen (15) days after a delay occurs or with the Contractor's cost proposal in response to a notice of change from the Owner's Representative. In cases where the Contractor does not submit a Time Impact Analysis for a specific Change Order, delay, or other Contractor requested time extension within the specified period of time, then it is mutually agreed that the particular Change Order, delay, or Contractor request has no time impact on the Contract completion date and no time extension is required.

a. Approval or rejection of Time Impact Analyses by the Owner's Representative and the City will be made within fifteen (15) days after receipt of the Time Impact Analysis unless subsequent meetings and negotiations are necessary.

b. Upon approval, a copy of the Time Impact Analysis signed by the Owner's Representative will be returned to the Contractor.

c. Upon mutual agreement by both parties, schedule revisions illustrating the influence of Change Orders, delays, and/or Contractor requests will be incorporated into the next schedule update.

7.0 WEEKLY ACTIVITIES PLAN

On the last working day of every week the Contractor shall submit to the Owner's Representative the Contractor's Plan of Activities for the next three (3) weeks. The Plan of Activities shall describe the activity and location of the activity and include the activity number as provided in the Construction Schedule.

***** END OF SECTION *****

SECTION 01 13 40

SHOP DRAWINGS PRODUCT DATA AND SAMPLES

1.0 SUBMITTALS

1.1 NOT USED

1.2 HARDCOPY DOCUMENT MANAGEMENT

Where the Contractor is required by the Contract, or the Owner's Representative, to make hardcopy submittals, they shall be made to the Owner's Representative with a letter of transmittal. Unless specified otherwise in the Contract Documents (i.e., Section 01 12 10 **PROJECT CONTROL SYSTEM,** if used), the Contractor shall provide a sufficient number of copies of each submittal to allow for the distribution of at least one (1) copy to all parties needing a copy to carry out the provisions of the Specifications as well as three (3) copies to be retained by the Owner's Representative. When submittals are not favorably reviewed, the Owner's Representative will retain two (2) copies and will return all others to the Contractor including one (1) with review comments noted. Review copies of Construction Schedules and the Final Operation and Maintenance Manuals will not be returned to the Contractor. It shall be the Contractor's responsibility to copy and/or conform reviewed submittals in sufficient numbers for its files, subcontractors, and vendors. When submittals are not favorably reviewed, the Owner's Representative will retain two (2) copies and will return all others to the Contractor.

2.0 CONTRACTOR'S RESPONSIBILITIES

The Contractor shall submit, at its own expense, submittals and details of structural and reinforcing steel, equipment, material, electrical controls, architectural fabrications, pipe, pipe joints, special pipe sections, and other appurtenances as required in Contract Documents.

All submittals and supporting data, catalogs, schedules, etc., shall be submitted as the instruments of the Contractor, who shall be responsible for their accuracy and completeness and coordination. Such responsibility shall not be delegated in whole or part to subcontractors or suppliers. These submittals may be prepared by the Contractor, subcontractors, or suppliers, but the Contractor shall ascertain that submittals meet all of the requirements of the Contract Documents, while conforming to structural, space, and access conditions at the point of installation. Designation of work "by others", if shown in submittals, shall mean that the work will be the responsibility of the Contractor rather than the subcontractor or supplier who prepared the submittals. The Contractor shall insure that there is no conflict with other submittals and notify the Owner's Representative in each case where its submittal may affect the work of another contractor or the City. The Contractor shall insure coordination of submittals among the related crafts and subcontractors. The

Contractor accepts the responsibility and expense for additional costs and delays which may result for Work performed without favorably reviewed submittals.

Submittals shall be prepared in such form that data can be identified with the applicable Specification paragraph. The data shall clearly demonstrate compliance with the Contract Plans and Specifications and shall relate to the specific equipment to be furnished. Where manufacturer's standard drawings are employed, they shall be marked clearly to show what portion of the data is applicable to this project.

3.0 TRANSMITTAL PROCEDURES

3.1 TRANSMITTAL FORM

A separate transmittal form shall be used for each specific item, class of material, equipment, and items specified in separate, discrete sections, for which the submittal is required. Submittal documents common to more than one piece of equipment shall be identified with all the appropriate equipment numbers. Submittals for various items shall be made with a single form when the items taken together constitute a manufacturer's package or are so functionally related that expediency indicates checking or review of the group or package as a whole. The specification section to which the submittal is related shall be indicated on the transmittal form.

A unique number, sequentially assigned, shall be noted on the transmittal form accompanying each item submitted. Original submittal numbers shall have the following format: "XXX"; where "XXX" is the sequential number assigned by the Contractor. Resubmittals shall have the following format: "XXX-Y"; where "XXX" is the originally assigned submittal number and "Y" is a sequential letter assigned for resubmittals, i.e., A, B, or C being the 1st, 2nd, and 3rd resubmittals, respectively. Submittal 25B, for example, is the second resubmittal of submittal 25.

3.2 DEVIATIONS FROM THE CONTRACT

If the submittals show any deviations from the Contract requirements, the Contractor shall submit with the submittal submission a separate written description of such deviations and the reasons therefor. If the City accepts such deviation, the City shall issue an appropriate Contract Change Order, except that, if the deviation is minor, or does not involve a change in price or in time of performance, a Contract Change Order need not be issued. If any deviations from the Contract requirements are not noted on the submittal, the review of the shop drawing shall not constitute acceptance of such deviations.

3.3 SUBMITTAL COMPLETENESS

The Contractor shall review and check all submittals before submitting them to the Owner’s Representative. The Contractor shall certify on the transmittal letter and on each shop

drawing that they have been checked, are in compliance with the Plans and Specifications, and all deviations from the Contract requirements are noted.

If the Contractor submits an incomplete submittal, the submittal will be returned to the Contractor without review. A complete submittal shall contain sufficient data to demonstrate that the items comply with the Specifications, shall meet the minimum requirements for submissions cited in the Contract Documents, shall include materials and equipment data and seismic anchorage certifications where required, and shall include any necessary revisions required for equipment other than first named.

It is considered reasonable that the Contractor shall make a complete and acceptable submittal to the Owner's Representative at least by the second submission of data. The City reserves the right to deduct monies from payments due the Contractor to cover additional costs of review beyond the second submission.

3.4 SUBMITTAL PERIOD

All submittals shall be completed within forty-five (45) days after the date established in the Notice to Proceed by the City for the commencement of Contract Time or submittal process whichever is earlier, unless the Owner's Representative accepts an alternate schedule for submission of submittals proposed by the Contractor.

4.0 REVIEW PROCEDURE

Submittals or Request for Information (RFI) shall be submitted to the Owner's Representative for review and returned within thirty (30) days after receipt. Fourteen (14) calendar days shall be given for response to RFI's, unless additional time is needed on a case by case basis. Review of submittals has as its primary objective the completion for the City of a project in full conformance with the Contract Documents, unmarred by field corrections, and within the time provided. In addition to this primary objective, submittal review as a secondary objective will assist the Contractor in its procurement of equipment that will meet all requirements of the Contract Documents, will fit the structures detailed on the Plans, will be completed with respect to piping, electrical, and control connections, will have the proper functional characteristics, and will become an integral part of a complete operating facility.

After review of each of the Contractor's submissions, the material will be returned to the Contractor with actions defined as follows:

A. **NO EXCEPTIONS NOTED (RESUBMITTAL NOT REQUIRED) -** Accepted subject to its compatibility with future submissions and additional partial submissions for portions of the work not covered in this submission. Does not constitute approval or deletion of specified or required items not shown in the partial submission.

B. **MAKE CORRECTIONS NOTED (RESUBMITTAL NOT REQUIRED)** - Same as A, except that minor corrections as noted shall be made by the Contractor.

C. **MAKE CORRECTIONS NOTED (RESUBMIT)** - Rejected because of major inconsistencies or errors which shall be resolved or corrected by the Contractor prior to subsequent review by the Design Consultant.

D. **NOT ACCEPTABLE (RESUBMIT)** - Submitted material does not conform to Plans and Specifications in major respect., i.e.: wrong size, model, capacity, or material.

Items A and B above (no resubmittal required) are considered "favorable review". Items C and D above (correction and resubmittal required) are considered "unfavorable review".

It shall be the Contractor's responsibility to copy and/or conform reviewed submittals in sufficient numbers for its files, subcontractors, and vendors.

5.0 EFFECT OF REVIEW OF CONTRACTOR'S SUBMITTALS

Favorable review of submittals shall be obtained prior to the fabrication, delivery and construction of items requiring submittal review.

Favorable review of submittals does not constitute a Contract Change Order to the Contract requirements. The favorable review of all submittals by the Design Consultant or the City shall apply in general design only and shall in no way relieve the Contractor from responsibility for errors or omissions contained therein. Favorable review shall not relieve the Contractor of its obligation to meet safety requirements and all other requirements of laws, nor constitute a Contract Change Order. Favorable review will not constitute Acceptance by the City of any responsibility for the accuracy, coordination, and completeness of the submittals or the items of equipment represented on the submittals.

6.0 MATERIAL LIST

Within thirty-five (35) days after the date established in the Notice to Proceed for the commencement of Contract Time or submittal process whichever is earlier, the Contractor shall submit a List of Materials to the Owner’s Representative for favorable review, in sufficient quantity that the Owner’s Representative may retain three (3) sets. The List shall include all items of equipment and materials for mechanical, piping, electrical, heating and ventilating, equipment piping, and plumbing work; and the names of manufacturers with whom purchase orders have been placed. Items on the List shall be arranged in the same order as in these Specifications, and shall contain sufficient data to identify precisely the items of material and equipment the Contractor proposes to furnish. The List shall include the Specifications or Drawing references. After the submission is favorably reviewed and returned to the Contractor by the Owner’s Representative it shall become the basis for the submission of detailed manufacturer’s drawings, catalog cuts, curves, diagrams, schematics, data, and information on each separate item for review by the Owner’s

Representative. No work shall proceed on any item until it has been submitted and favorably reviewed.

7.0 MATERIAL AND EQUIPMENT SUBSTITUTIONS

7.1 GENERAL

In preparing the Contract Documents, the Design Consultant has named those products which to its knowledge meet the requirements of the Technical Specifications and are equivalent in construction, functional efficiency, and durability.

Wherever catalog numbers and specific brands or trade names preceded by "similar and equal" or followed by the designation "or equal" are used in conjunction with a designated material, product, thing, installation, or service mentioned in these Contract Documents, they are used to establish the standards of quality and utility required. The first-named manufacturer is the basis for the Project design and the use of alternative-named or unnamed manufacturer's products proposed by the Contractor may require modifications in the Project design and construction.

Where only one product has been named by brand, it is the only brand, trade name, or manufactured product known to the Design Consultant that meets the requirements of the Technical Specifications.

The City has made a determination that no substitution will be considered and that the following listed materials, products, equipment and/or services must be furnished as designated below in order to match others in use by the City or because a field test or experiment is being made to determine suitability for future use:

None

7.2 SUBSTITUTIONS

Substitutions which are equal in quality and utility to those specified will be permitted, subject to the following provisions. For this purpose, the Contractor shall submit to the Owner’s Representative within forty (40) days of the Notice of Award, a typewritten list containing a description of each proposed substitute item or material. Sufficient data, drawings, samples, literature, calculations, or other detailed information as will demonstrate to the Design Consultant that the proposed substitute is equal in quality and utility to the material specified shall be appended to this list. The Design Consultant will favorably review in writing such proposed substitutions as are, in its opinion, equal in design and quality in all respects to the items or materials specified including, without limitation, its dimensions, weights, service requirements, durability, functioning, and impact on contiguous construction elements, overall schedule and design. In the event that a substitute is favorably reviewed, fifty percent (50%) of all savings shall be credited to the City.

Failure of the Contractor to submit proposed substitutions for review in the manner described above and within the time prescribed shall be sufficient cause for rejection by the Owner's Representative of any substitutions otherwise proposed.

7.3 MODIFICATIONS AND COSTS

If alternative-named or substitutions are proposed by the Contractor and favorably reviewed by the Design Consultant, the Contractor is responsible for providing, at no additional cost to the City, any electrical, mechanical, structural, or other related changes or testing that may be required to accommodate or provide the particular material or equipment the Contractor desires to use. Any deviation from the Specifications or the Drawings resulting from the type of material or equipment to be used shall not be the basis for any "extra charges" above and in excess of the original Contract Bid Price of the work.

In addition the Contractor is responsible for all additional costs to the City, and its agents and representatives, for evaluation of data submitted by the Contractor for alternative named or substitutions and any redesign necessary. The City shall deduct said costs from the Contract monies due the Contractor.

8.0 SEISMIC DESIGN AND ANCHORAGE OF EQUIPMENT AND OTHER APPURTENANT FACILITIES

All pieces of electrical, mechanical, and instrumentation equipment and appurtenant facilities which are mounted or anchored shall be so designed and installed as to be in conformance to all requirements of the California Building Code for the edition adopted by the governing jurisdiction, both for vertical and lateral loading. This requirement applies, but is not limited to, such items as light fixtures, electrical and instrumentation panels, tanks, pumps, piping, pipe supports and hangers, conduits and supports, generators, motors, fans, ventilating ducts and equipment, and other similar equipment or facilities. All City equipment or facilities within these Specifications or on the Drawings shall be considered essential and shall be designed and anchored to resist seismic forces. Such equipment or facilities shall be functional during and after an earthquake. Anchorage or restraints shall be so designed as to resist the greater of the specified or code required forces acting in any direction. The design of the entire anchoring system, and the furnishing of any part of the anchoring system which must be integral with the equipment or facilities, shall be the responsibility of the manufacturer or supplier. The Contractor, working closely with the manufacturer or Supplier, shall be responsible for furnishing or installing any anchors or restraints which are independent of the equipment or facilities. Examples, but not limited to those noted, are anchor bolts, restraining curbs, walls, or angles and similar items.

Shop drawings for seismic anchorages listed in these specifications shall be submitted. Shop drawing submittals shall include calculations, details, and other amplifying data demonstrating conformance to the seismic requirements of this paragraph. Such calculations shall be prepared and signed by a Civil or Structural Engineer registered in the State of California.

Although calculations will not be required, manufacturers shall assure that equipment has been designed and constructed to safely transfer seismic induced loads through the equipment and to the anchorage systems without failure of equipment components.

*****END OF SECTION*****

SECTION 01 14 00

QUALITY CONTROL AND INSPECTION

1.0 TESTS

Additional requirements for tests are described in Section 01 16 60, **TESTING, ADJUSTING AND BALANCING OF SYSTEMS**, and the Plans and Specifications of these Contract Documents.

1.1 GENERAL

Testing and approval of work, as required by the Contract Documents, shall be performed only after timely notice of its readiness for inspection and testing and in the presence of the Owner's Representative or its authorized representative. After testing, the work shall be covered up only upon consent of the Owner's Representative.

The results of any tests made are for the information of the Owner's Representative. Regardless of any test results, the Contractor is solely responsible for the quality of workmanship and materials and for compliance with the requirements of the Drawings and Specifications.

Except as specifically required under detail materials specifications for shop testing and inspection, all tests of materials furnished by the Contractor where tests will be made by the Owner's Representative will be done in accordance with commonly recognized standards of national organizations. The Contractor shall furnish such samples of all materials as required by the Owner's Representative without charge. No material shall be used unless it has been favorably reviewed by the Owner's Representative.

Where such inspection and testing are to be conducted by an independent laboratory or agency, the sample or samples of materials to be tested shall be selected by such laboratory or agency, or the Owner's Representative, and not by the Contractor.

1.2 COSTS OF TESTING

1.2.1 The Contractor shall be responsible for, and shall pay for, all quality control and off-site tests of materials required, except laboratory work for soil testing and concrete testing during construction. Additionally, the Contractor is responsible for the hiring of a quality control testing laboratory and personnel at the Contractor's expense. The Owner's Representative shall have the right to witness all off-site tests and the Contractor shall furnish adequate notice of when tests will be made.

1.2.2 The Contractor shall be responsible for, and shall pay for, all source quality control and all on-site tests of materials required, except those tests specifically noted to be

performed and paid by the City. The Owner's Representative shall have the right to witness all on-site tests performed by the Contractor and the Contractor shall furnish adequate notice of when such tests shall be made.

1.2.3 When, in the opinion of the Owner's Representative, additional tests or inspections are required because of the manner in which the Contractor executes its work, such tests and inspections will be paid for by the City, but will be deducted from the Contract price. Examples of such additional tests and inspections are: tests of materials substituted for previously accepted materials, or substituted for specified materials, or retests made necessary by failure of material to comply with the requirements of the Contract Documents.

1.2.4 The City's approved Testing Agency will be responsible for performing QA testing as described in the Technical Specifications.

2.0 FURNISHING AND DISPOSAL OF TESTING WATER

Water for curing concrete shall be from source approved by the Owner's Representative and shall be furnished and disposed of by the Contractor.

All piping shall be pneumatically or hydraulically tested for tightness. Where water testing of piping is required, the Contractor shall furnish and dispose of the water which is required for testing of piping for tightness.

The Contractor shall dispose of all testing water without damage to property, and in accordance with applicable regulations.

3.0 INSPECTION

3.1 GENERAL

The Contractor shall provide safe access for the Owner's Representative and its inspectors to adequately inspect the quality of work and the conformance with the Contract Documents. The Contractor shall provide adequate lighting, ventilation, ladders and other protective facilities as may be necessary for the safe performance of inspections.

The Contractor shall submit samples or specimens of materials to be furnished or used in the Work as required by the Owner's Representative.

The Contractor shall furnish the Owner's Representative with all labor and facilities required for inspection such as excavation in compacted fill to take samples.

Whenever the Contractor varies the period during which work is carried out each day, the Contractor shall give due notice to the Owner's Representative so that proper inspection may be provided. Any work done in the absence of the Owner's Representative shall be subject to rejection.

Inspections, tests or favorable reviews by the Owner's Representative or others shall not relieve the Contractor from its obligations to perform the work in accordance with the requirements of the Contract Documents.

Records shall be available at all reasonable hours for inspection by other local or State Agencies to ascertain compliance with laws and regulations. Upon completion of the Work the Owner's Representative will conduct a final inspection as provided for in Section 00 07 00-8.7, FINAL INSPECTION AND PAYMENT.

3.2 WORK COVERED PRIOR TO INSPECTION AND/OR TESTING

Work requiring inspection and/or testing shall not be concealed or buried prior to the acceptance of such inspection or testing. Work covered without the favorable review or consent of the Owner's Representative shall, if required by the Owner's Representative, be uncovered for inspection and/or testing at the Contractor's expense.

3.3 WORK COVERED WITH PRIOR INSPECTION AND/OR TESTING

If the Owner's Representative considers it necessary or advisable that covered work which was favorably inspected and tested be uncovered for reinspection and/or retesting, the Contractor, at the Owner's Representative's request, will uncover, expose or otherwise make available for observation, inspection or testing, as the Owner's Representative may require, that portion of the work in question, furnishing all necessary labor, materials, tools and equipment. If it is found that such work is defective, the Contractor will bear all expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction. If, however, such work is not found to be defective the Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, testing and reconstruction and an appropriate Contract Change Order shall be issued for such additional work.

***** END OF SECTION *****

SECTION 01 15 10

TEMPORARY UTILITIES

1.0 CONTRACTOR'S TEMPORARY UTILITY SERVICES

The Contractor shall make its own arrangements for any utility services including but not limited to power, water, telephone and sanitation service the Contractor will require for its field office and operations during the life of this Project. All utility costs will be at the Contractor’s expense.

2.0 LIGHTING

The Contractor shall provide all necessary lighting. It shall provide lighting adequate to perform work under this Contract. Lighting equipment shall be suitable for the environment encountered.

3.0 SANITATION

The Contractor shall provide chemical toilets and other sanitary facilities required for its on-site employees and subcontractors, and the Owner’s Representative’s staff.

4.0 HEATING AND VENTILATION

The Contractor shall provide all means for heating and ventilating all work areas as may be required to protect the Work or to provide a safe environment for workers.

***** END OF SECTION *****

SECTION 01 15 60

TEMPORARY CONTROLS

1.0 SECURITY

A temporary continuous perimeter protection shall be provided. Contractor shall be solely responsible for site security seven days per week, 24 hours per day continuously through execution of the Work.

2.0 PROTECTION OF WORK, PROPERTY AND PERSONS

The Contractor shall be responsible for the care of all Work until its completion and final Acceptance; and the Contractor shall, at its own expense, replace damaged or lost material and repair damaged parts of the Work, or the same may be done by the City and the Contractor and its sureties shall be liable therefor. The Contractor shall make its own provisions for properly storing and protecting all material and equipment against theft, injury, or damage from any and all causes. Damaged material and equipment shall not be used in the Work. The Contractor shall take all risks from floods and casualties, or for delays from such causes. The Contractor may, however, be allowed a reasonable extension of time on account of such delays, subject to the conditions herein before specified. The Contractor shall remove from the vicinity of the completed Work all plant, buildings, rubbish, unused material, concrete forms, sheeting or equipment belonging to the Contractor or used under its discretion during construction; and in the event of the Contractor's failure to do so, the same may be removed by the City at the expense of the Contractor, and the Contractor and its sureties shall be liable therefor.

The Contractor shall adopt all practical means to minimize interference to traffic and inconvenience, discomfort, or damage. The Contractor shall protect against damage to structures crossing trenching or encountered in the Work and shall be responsible for any damage done to such structures, or damage therefrom. The Contractor shall support or replace, any such structures without delay and without any additional compensation, to the entire satisfaction of the Owner’s Representative. All obstructions to traffic shall be guarded by flagmen as required and by barriers and illuminated at night. The Contractor shall be responsible for all damage to persons and property directly or indirectly caused by its operations, and under all circumstances the Contractor shall comply with the regulations of the City or County, and the laws and regulations of the State of California, relative to safety of persons and property and the interruption of traffic and the convenience of the public within the respective jurisdiction, and the Contractor shall be solely responsible for any damages caused by failure to provide proper safety. The Contractor will be held responsible for and be required to make restitution, at its own expense, for all damage to persons or property caused by the Contractor or subcontractor, or the agents, or employees of either during the progress of the work and until its final Acceptance.

3.0 PUBLIC ACCESS

The design of the facilities included in this Project has been based on the concept that the structures are not accessible to and usable by the handicapped and the general public. Consequently, stairs, landings, platforms, railings, ladders, exits, and the like were designed to conform only to the requirements for industrial use by authorized persons.

4.0 ROADS

Roads subject to interference by the prosecution of the Work covered by this Contract shall be kept open. Affected roads shall be replaced to their original condition unless specifically shown otherwise on the Drawings.

Where full use of a road is required to be restricted, the Owner's Representative shall be notified and such signs and barricades shall be provided by the Contractor as necessary. Excavated dirt shall not be stored on roads, paths, or planted areas. Care shall be taken to protect improvements. Trenches excavated within or adjacent to roads shall be covered with trench plates during non-working hours.

5.0 DUST CONTROL

During the performance of all work under this Contract, the Contractor shall assume all responsibility for dust control and shall furnish all labor, equipment, and means required to carry out proper and efficient measures wherever and whenever dust control is necessary to prevent the Contractor's operations from producing dust and nuisance to persons and property. Any claims resulting from dust or nuisance shall be borne solely by the Contractor.

6.0 REMOVED MATERIALS

All concrete, paving, reinforcing steel, fencing materials, rock, soil, strippings, drill flush, excess grout, and other waste material and construction debris shall be removed from the site by the Contractor and disposed of in accordance with applicable federal, state and local regulations and laws.

7.0 CONSTRUCTION CLEANING

Throughout the period of construction the Contractor shall maintain the Work site; including work, storage, parking, and employee areas; free and clean of all rubbish and debris, and shall promptly remove from the site, all unused, removed and rejected materials, surplus earth, concrete, plaster, and debris. In particular the Contractor shall keep the site clean to maintain safe access and to avoid fire hazard. Contractor shall not store or place any materials or construction related equipment on adjacent property or otherwise impact adjacent property.

8.0 DRAINAGE CONTROL - NOT USED

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9.0 CONSTRUCTION PARKING CONTROL

Contractor parking within the project area shall only be allowed within the areas, if any, designated for such use by the City.

10.0 BARRICADES, FENCES, AND SITE SECURITY

The Contractor is responsible for providing and maintaining barricades and signage as are required by local laws and are necessary to prevent accidental falls through any unattended open hatches or trenches, or entrances into potentially hazardous work areas in the Contractor's work area.

Fences subject to interference shall be maintained by the Contractor during the Work. Affected fences shall be replaced to their original condition unless specifically shown otherwise on the Drawings.

Except as otherwise provided, the Contractor shall enclose the site of the Work with a fence adequate to protect the work area and temporary facilities against acts of theft, violence, or vandalism; and to prevent the public and animals from entering the work area and being potentially exposed to fall hazards during construction of the Equalization Basin. The Contractor shall ensure that the fall protection barriers are maintained around the perimeters of all areas with a potential fall hazard exceeding 7 ½ feet.

In the event all or a part of the site is to be permanently fenced, this permanent fence or a portion thereof may be built to serve for protection of the Work site, provided however, that any portions damaged or defaced shall be replaced prior to final acceptance.

Temporary openings in existing fences shall be protected to prevent intrusion by unauthorized persons. During night hours, weekends, holidays, and other times when no work is performed at the site, the Contractor shall provide temporary closures or guard service to protect such openings. Temporary openings shall be fenced when no longer necessary.

11.0 TREES AND SHRUBS

Except as noted on the Plans, the Contractor shall not remove trees or shrubs without authorization of the Owner’s Representative. Serious injuries to trees shall be avoided. No major roots shall be cut if, on the opinion of the Owner’s Representative, such cutting would

seriously injure or imperil the health of the trees.

12.0 OFFICE OF CONTRACTOR AT SITE

During the performance of this Contract, the Contractor shall maintain a suitable office at the site of the Work which shall be the headquarters of a representative authorized to receive drawings, instructions, or other communications or articles from the Owner's Representative or the City; and any such thing tendered to the said representative or delivered at the Contractor's office at the site of the Work in the representative's absence shall be deemed to have been received by the Contractor.

13.0 WORKING HOURS

Construction shall be allowed only between the hours of the following:

- Eight (8:00) a.m. and five (5:00) p.m. on weekdays
- When approved in advance by the City, construction may be extended to include weekends and holidays but shall be limited to the hours between nine (9:00) a.m. and six (6:00) p.m. on weekends and holidays, unless otherwise approved by the City in writing.

Any 24 hour workday requirements or emergency work must also be approved in advance by the City in writing and comply with all noise ordinances and regulations.

The Contractor shall be responsible for all Local permits, including but notlimited to, permit application, payment, and maintenance of all required permits and fees.

The Contractor shall be responsible for any inspection and additional administration costs incurred by the City, or its agents and representatives, for work by the Contractor outside the normal City working hours defined above on weekdays, or any work on weekends or holidays recognized by the City. Such costs shall be withheld from the succeeding monthly partial payment. Any work in Section 01 10 10, **SUMMARY OF WORK**, specifically required to be performed outside the normal working hours is excluded from the provisions of this paragraph.

Work activities requiring multiple shifts, shifts requiring extended hours or continuous operations, are also excluded from the provisions of this paragraph.

The Contractor shall notify the Owner's Representative at least 72 hours prior to any work outside the normal working hours defined above, on weekends or holidays.

14.0 OWNER'S REPRESENTATIVE'S OFFICE

Not used.

15.0 PROJECT SIGN

The Contractor shall provide and install project signs facing traffic at the entrance of facility, where directed by the City Representative, at the job site prior to the start of any work.

Each sign panel shall be 4 feet by 2 feet in size, and shall be 1/2 inch thick exterior grade plywood, good one side. All exposed wood shall be painted bright yellow. Lettering shall be in the colors specified by the City Representative.

The graphics and content of the sign will be provided by the City Representative at the pre-construction meeting.

The City Representative shall approve locations and mounting details of the project signs.

The Contractor shall maintain the signs in good condition for the duration of the Contract, and, if needed, shall promptly clean graffiti and other defacement from the project signs.

The Contractor shall remove project signs from the site as the Contractor's property at the completion of the Work.

***** END OF SECTION *****

SECTION 01 16 00

MATERIAL AND EQUIPMENT

1.0 SALVAGING AND STORAGE OF EQUIPMENT AND MATERIALS

In addition to any items identified in the Technical Specifications the following existing equipment, piping, materials, fittings and appurtenances which are removed and not reincorporated in the Work, shall be salvaged by the Contractor and shall remain the property of the City, and shall be delivered and stored by the Contractor at the location on the site designated by the Owner's Representative:

All metal materials suitable for salvage and recycling

NONE

All other existing equipment, piping, materials, fittings and appurtenances, junk, scrap materials, and all other items removed by the Contractor and not retained by the City, shall be removed by the Contractor from the site.

2.0 CONTRACTOR STORAGE AREAS

2.1 STORAGE ON CITY-OWNED PROPERTY

Use of portions of the City-owned area at the site for materials and equipment storage will be permitted upon approval by the Owner's Representative. The Contractor shall take all responsibility for storage of materials. No equipment for incorporation in the project may be stored in any area subject to flooding. Pre-approved staging areas on City-owned property, if any, are shown on the Drawings.

2.2 STORAGE ON PROPERTY NOT OWNED BY THE CITY

NOT USED

2.3 STORAGE ON PROPERTY PROCURED BY THE CONTRACTOR

Any agreement made between the Contractor and a private property owner, for the use of any part of the owner's property for storage and staging, shall provide that the City is exempted from any and all liability. The Contractor shall provide the City with written confirmation of compliance with this provision.

3.0 HAZARDOUS MATERIALS

All hazardous materials shall be stored and handled in strict accordance with the Safety Data Sheets for the products. Safety Data Sheets shall be submitted to the Owner's Representative prior to the delivery of materials to the Project. The storage and handling of

potential pollution causing and hazardous materials, including but not necessarily limited to, gasoline, oil and paint shall be in accordance with all local, state and federal requirements.

***** END OF SECTION *****

SECTION 01 16 60

STARTING, TESTING, ADJUSTING, AND BALANCING OF SYSTEMS

1.0 INITIAL START-UP AND OPERATION OF FACILITIES

During the construction of this Project, use of the newly constructed facilities, prior to Acceptance, may be necessary in order that the entire facility can be constructed. Initial lubrication of all equipment, and all lubrication and maintenance and such staff as required for test operation, shall be provided by the Contractor until the City assumes operation. The City will pay for electricity, chemicals, lubricant, and will supply operators after assuming operation. The Contractor shall train the City's personnel in the proper operation and control of the new facilities sufficiently in advance to allow a smooth transition to City operation. The Contractor shall also furnish all such mechanical and electrical workers as required to make adjustments and maintain the operating equipment until Acceptance. Maintenance of operating equipment shall include adjustments, replacements, and modifications as required. The Contractor shall initially lubricate all equipment and furnish the City with a lubricant schedule indicating the type of lubricant needed, amounts, and frequency of application. Use of facilities and/or equipment will in no way constitute Acceptance of the facilities and/or equipment being used. The Contractor shall notify the City at least thirty (30) days before any City furnished lubricants, fuel, chemicals, gas, or power will be required for the initial partial operating periods.

The cost of all labor, material, and equipment required to be furnished by the Contractor as part of the initial start-up operation shall be included in the Proposal.

The Contractor must provide all final operation and maintenance data prior to beneficial occupancy and prior to Acceptance as described in Section 01 17 30, **OPERATION AND MAINTENANCE DATA**.

2.0 START-UP AND TEST PROCEDURE

Refer to Section 01 14 00, **QUALITY CONTROL AND INSPECTION**, for general comments concerning testing. Additional requirements for Start-up and Test Procedure may be described in other Technical Paragraphs of the Specifications. Tests shall be performed to determine whether equipment will operate properly and is adjusted correctly for the work intended. Any corrective work or replacement shall be performed before Acceptance.

Testing procedures shall be submitted to the Owner's Representative at least thirty (30) days before the Contractor intends to implement such procedures. The testing procedures listed shall include a list of the equipment to be tested and the procedures which the Contractor proposes for testing and start-up of all equipment which will be operated individually and also in conjunction with other related equipment.

The manufacturer's factory-trained personnel, as required in the Technical Specifications,

shall be available during the testing procedures and shall perform such instructional procedures as are required for City personnel.

Testing and start-up procedures for the various equipment will include detailed check-out of all electrical, mechanical and instrumentation prior to actual equipment operations. Electrical circuits and control devices shall be considered in testing procedures and a specific step by step sequence shall be implemented to insure that the equipment is properly operational and adjusted prior to operation.

The Contractor shall assume all risk for failure during the testing procedure. The equipment shall be delivered in operating condition by the Contractor, and the Contractor shall repair any defects which may be present or may be caused by the testing procedure.

At the completion of testing each piece of mechanical, electrical or instrumentation equipment, a check-out form shall be supplied for each piece of equipment which can be subsequently used to insure that the check-out test is performed prior to subsequent equipment start-up.

If in the performance of the test it is determined that the equipment, in order to perform properly, requires replacement, adjustment, or modification, testing shall be repeated following such alteration, so that the testing procedures will relate to the equipment as finally delivered to the City.

3.0 TRAINING OF CITY PERSONNEL

Operation and maintenance training of City personnel shall be provided for mechanical, electrical, instrumentation and control equipment as listed in this section or elsewhere in the Contract Documents. These training services shall be conducted by the Manufacturer's Representative and shall emphasize theory of operations, startup instructions, emergency and normal shutdown instruction, lockout procedures, troubleshooting, preventative maintenance, and alarm and control logic.

The Contractor shall coordinate training periods with the City's and Manufacturer's Representatives, and shall submit a training schedule and training materials for each piece of equipment or system to the Owner's Representative for review and acceptance no later than ninety (90) days prior to planned training. Training shall not commence until acceptance of the schedule and training materials by the Owner's Representative. All training should occur on Wednesdays between the hours of 8am to 2pm. All training should occur on-site in a City provided conference room and/or in the field where demonstration of the newly installed equipment can occur. The City reserves the right to request multiple shifts or multiple days of training (or both) to ensure all of its operation and maintenance personnel receive training on the new equipment or system. All training shall be completed prior to beginning operational testing. The City shall have the right to record (both audio and visual) any and all training sessions.

The Contractor shall confirm each training session a minimum of three (3) working days prior to the scheduled time.

4.0 START-UP / OPERATIONAL TESTING

Contractor shall prepare startup and testing plan for the mechanical, electrical, and pump facilities as described in subsequent technical specifications for subject facilities.

Upon successful completion of operator training and testing, the Contractor shall startup the facilities and test operation and performance of the system for a duration proposed in the Contractor's startup and testing plan to demonstrate to the Owner's Representative's satisfaction that all equipment and systems required by these specifications will operate in the manner in which they are intended to perform. The City will provide Contractor-trained operating personnel for the duration of the operational test. Operational testing shall be conducted under the supervision and direction of the Contractor.

All defects in materials or workmanship, which appear during the operational test, shall be immediately corrected by the Contractor. In the event of a malfunction or deficiency that results in shutdown or partial operation of a system or process unit or results in performance that is less than that specified, the startup duration shall be repeated for that corresponding system or process unit and any other affected equipment so its proper operation and performance as required by the Contract Documents is demonstrated for a minimum of seven (7) continuous and trouble free days. If the operational test is interrupted through no fault of the Contractor, the test may resume at the earliest mutually agreeable time.

No unit process or part thereof shall be placed in service until it has successfully completed operational testing. The Contractor shall provide the appropriate construction trades and the services of authorized Manufacturer's Representatives for operations testing and as necessary, to correct faulty equipment operations. After completion of all startup/operational testing, the Contractor shall repaint, hose, scrub, clean up and return the Work area to a condition acceptable to the Owner's Representative.

***** END OF SECTION *****

SECTION 01 17 20

PROJECT RECORD DOCUMENTS

1.0 RECORD DOCUMENTS

A. Maintain at the Project site, available to the Owner and Owner's Representative, one (1) copy of the Contract Documents, shop drawings and other submittals, in good order.

1. Mark and record field changes and detailed information contained in submittals and change orders.
2. Record actual depths, horizontal and vertical location of underground pipes, duct banks and other buried utilities. Reference dimensions to permanent surface features.
3. Identify specific details of pipe connections, location of existing buried features located during excavation, and the final locations of piping, equipment, electrical conduits, manholes, and pull boxes.
4. Identify location of spare conduits including beginning, ending and routing through pull boxes, and manholes. Record spare conductors, including number and size, within spare conduits, and filled conduits.
5. Provide schedules, lists, layout drawings, and wiring diagrams.
6. Make annotations with erasable colored pencil conforming to the following color code:

Additions:	Red
Deletions:	Green
Comments	Blue
Dimensions:	Graphite

B. Maintain documents separate from those used for construction. Label documents "RECORD DOCUMENTS."

C. Record Documents shall be updated at least once each week and shall be available to the Owner's Representative for review. Keep documents current. Record required information at the time the material and equipment is installed and before permanently concealing.

D. Deliver Record Documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor prior to request for Final Payment.

E. Record documents shall be available for the Owner's Representative to review to ascertain that changes have been recorded.

F. Failure of the Contractor to keep current with the updating of the Record Documents shall be grounds for withholding monies from partial payment estimates as specified in Section 00 07 00-8.3.2, Other Withholds.

***** END OF SECTION *****

SECTION 01 17 30

OPERATION AND MAINTENANCE DATA

1.0 OPERATION AND MAINTENANCE

Prior to the delivery and installation of any item of machinery or equipment the Contractor shall submit the Operation and Maintenance Manual. The manual will be reviewed by the Owner's Representative for general content, and the Owner's Representative will advise the Contractor within seven (7) days of receipt if the manual is acceptable in general content for the delivery and installation of the equipment or machinery. No equipment or machinery shall be delivered or installed if the general content of the manual is found to be deficient. The final Operation and Maintenance Manuals must be submitted and favorably reviewed prior to Acceptance. Content of all submittals shall be provided in Microsoft Word (*.doc file format) and AutoCAD (*.dwg file format) electronic files. Drawings shall be provided in both Adobe Acrobat (*.pdf) and AutoCAD (*.dwg) file formats.

All submittals prior to favorable review of the Operation and Maintenance Manuals shall be in electronic format. Three (3) hard copies of the manuals shall be provided for review at the City's option.

After favorable review of the Operation and Maintenance Manuals, three (3) complete sets shall be provided to the City on a minimum of three (3) USB Thumb drives.

All manuals shall be bound and marked to indicate the specific equipment furnished for this project and shall include:

a. Start-up instructions
b. Assembly and disassembly instructions
c. Trouble shooting instructions
d. Lubrication instructions
e. Maintenance and reinstallation instructions
f. Parts identification
g. List of spare parts recommended to have on hand
h. Operator safety
i. Installation drawings

In addition, all operation and maintenance manuals for electrical equipment shall include:

j. Equipment ratings
k. Calibration curves and rating tables if appropriate

Operation and maintenance manuals for complex equipment shall also include:

l. Alternate specified operating modes

m. Normal shutdown instructions
n. Long term shutdown instructions

***** END OF SECTION *****

SECTION 01 17 40

WARRANTIES AND BONDS

1.0 GUARANTEE OF WORK

The Contractor shall guarantee the work done under this Contract against failures, leaks, and breaks or other unsatisfactory conditions due to defective equipment, materials, or workmanship for a period of two (2) years from the date of Acceptance of the entire Project as described in Section 01 10 10-1.0, **WORK TO BE DONE**. The two year guarantee period shall commence on the date of Acceptance of the entire Project. It is understood that partial or entire use or occupancy of the Work does not constitute Acceptance, but rather a benefit to the Contractor from the City to enable the Contractor to complete the work. Any repair work or replacement required, in the opinion of the Owner's Representative, shall be done immediately by the Contractor at its own expense. Should the Contractor fail to repair such failures, leaks, breaks, or other unsatisfactory conditions or to make replacement within five (5) days after written notice, it shall be lawful for the City to make such repairs and replacements and charge the contractor with the actual costs of such necessary labor and material.

Neither the Acceptance, the final recordation of Acceptance nor the final certificate of payment nor any provision of the Contract or partial or entire use or occupancy of the premises by the City shall constitute an Acceptance of work not done in accordance with the Contract or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall remedy any defects in the work and pay for any damage to other work resulting therefrom which shall appear within a period of two (2) years from the date of Acceptance of work. The City will give notice of observed defects with reasonable promptness.

The City is hereby authorized to make such repairs, if, within five (5) days after mailing of a notice in writing to the Contractor or its agent, the Contractor shall neglect to make or undertake with due diligence the aforesaid repairs; provided, however, that in the case of an emergency where in the opinion of the City delay would cause hazard to health or serious loss or damage, repairs may be made without notice being sent to the Contractor, and the Contractor shall pay the cost thereof.

If, after installation, the operation or use of the materials or equipment furnished under this Contract proves to be unsatisfactory to the Owner's Representative, the City shall have the right to operate and use such materials or equipment until it can, without damage to the City, be taken out of service for correction or replacement.

Such period of use of the defective materials or equipment pending correction or replacement shall in no way decrease the guarantee period required for the acceptable

corrected or replaced items of materials or equipment.

The Contractor is to comply with other provisions of the Contract Documents which provide for warranties and guarantee periods in excess of two (2) years. The provisions of this Section shall also apply to such warranties and guarantee periods.

Nothing in this Section shall be construed to limit, relieve or release the Contractor's, subcontractor's and equipment supplier's liability to the City for damages sustained as the result of latent defects in the equipment furnished caused by the negligence of the supplier's agents, employees or subcontractors. Stated in another manner, the warranty contained in this Section shall not amount to nor shall it be deemed to be a waiver by the City of any rights or remedies (or time limits in which to enforce such rights or remedies) it may have against the supplier of the equipment to be furnished under these Specifications for defective workmanship or defective materials under the laws of this State pertaining to acts of negligence.

***** END OF SECTION *****

SECTION 01 17 50

SPARE PARTS AND MAINTENANCE MATERIALS

1.0 RESPONSIBILITY FOR SPARE PARTS AND TOOLS

Where equipment, special repair tools, safety equipment, or other loose parts are specified to be furnished, they shall be stored by the Contractor until permanent building storage areas are complete, secure, and lockable. Each part shall be fully identified as to the manufacturer, part number, purpose, and associated item of equipment. The Contractor shall inventory such parts and transmit the inventory, in writing, to the Owner's Representative at an agreed-upon time prior to the final testing and start-up period. All safety-related items shall be provided prior to testing and or completion of the Work.

***** END OF SECTION *****

CITY OF PACIFICA
LINDA MAR PUMP STATION
UPGRADE PROJECT C004B

SECTION 02 40 10 – DEMOLITION
PART 1 GENERAL

1. SUMMARY

   A. Perform all planning, administration, execution, and cleaning necessary to safely demolish, remove and properly dispose of site features, structural, and concrete elements designated for removal on the project Drawings.
   B. Assume ownership of debris and unwanted materials; remove from the site and dispose of legally and in accordance with applicable Federal, State, and local requirements. Sale of removed items or materials onsite shall not be permitted.
   C. This Section includes (but is not necessarily limited to):
      i. Site preparation as described under Section 1.4 Site Preparation.
      ii. Demolition of existing concrete pads and platform as indicated on the Drawings
      iii. Removal of existing above grade and below grade utility piping, structures, and appurtenances as indicated on the Drawings.
      iv. Repair or replace new and existing improvements damaged during performance of the work.
      v. Protection of existing utilities and site features.
      vi. Field verification of existing utility locations prior to performance of work.
      vii. All work shall be performed in strict accordance to latest requirements of EPA, OSHA, and other applicable Federal, State, and local requirements.
   D. The Contractor is advised that work under this Section may be hazardous. The Contractor is to take all necessary precautions to ensure the safety of workers and property. If hazardous materials are uncovered or suspected, notify the Owner's Representative immediately.

2. SCOPE OF WORK

   A. Furnish all labor, materials, equipment and incidentals governed by this section necessary to perform demolition as specified herein and on the Drawings.

3. RELATED DOCUMENTS

   A. Drawings and general provisions of Contract, including General Conditions.
   B. Section 31 25 10 – Erosion Control.

4. REFERENCE STANDARDS

   A. City of Pacifica Municipal Code Title 7 Public Works, Chapter 2 Street, Sidewalk, and Easement Occupation, Openings and Excavations.
   B. 29 Code of Federal Regulations 1926

5. SITE PREPARATIONS

A. Site preparation shall consist of related work necessary to prepare the project site for construction operations before beginning site demolition.
B. Demolition activities shall not commence until temporary erosion, sedimentation, and dust control measures are in place.
C. Disposal: Dispose of remaining debris in a legal manner and in accordance with applicable Federal, State, and local requirements.
D. Shut off power to all lights and electrical junction boxes identified for removal prior to performing work. Typical lock out/tag out protocols shall be followed.

6. SUBMITTALS

A. Pre Job Submittals: At least four complete copies of the following Pre-Job Submittals shall be provided to the Owner's Representative, reviewed, and accepted as complete prior to starting any work at the site. The submittals shall be bound as a set, titled, indexed, and include a table of contents.
B. Proposed Methods and Operations: Provide the proposed methods and operations of demolition to Owner's Representative for review and approval prior to start of work. Include:
C. Pre-demolition engineering survey of existing structures in accordance with 29 CFR 1926.850.
D. Protections:
    i. Submit proposed barrier and protection systems to protect existing adjacent facilities during the work.
    ii. Submit proposed barrier and protection systems to ensure safe passage of persons and traffic around area of demolition.
    iii. Traffic Control Plan: Submit a Traffic Control Plan including routing of trucks, timing of trips, and destination (disposal sites).
    iv. Encroachment Permit: Obtain and submit an Encroachment Permit from the City of Pacifica for work within the City's right of way and City owned property.
    v. Quality Control and Quality Assurance Program: Contractor shall submit a comprehensive Quality Control and Quality Assurance Program for the demolition for the Owner's Representative review and approval. This program shall include special safety provisions to be implemented during demolition.
    vi. Photographs: Prepare and submit a photographic record of existing adjacent structures, within the limits of and adjacent to the work area, site improvements, and pavements within the site boundaries, and at approaches to the site boundaries.
    vii. Submit a site safety plan.
    viii. Noise monitoring documentation.

ix. Chain of Custodies for all disposed materials including weigh tickets and disposal documentation from disposal location.

7. WORKSITE CONDITIONS

A. Heat Stress: Contractor shall be aware of the hazards that may arise from operations performed in extreme heat. It is the Contractor's responsibility and duty to comply with all laws, rules and regulations (including Cal OSHA CCR Title 8 Section 3395 and other applicable Cal OSHA regulations) relating to the control of heat-related injuries.
B. Fire: Contractor shall be aware of the hazards that may arise from fire. It is the Contractor's responsibility and duty to comply with all laws, rules and regulations (including OSHA regulations) relating to fire and fire safety and to utilize non-flammable materials where possible.
C. Confined Spaces: Contractor shall be aware of the hazards that may arise from operations performed within confined spaces. It is the Contractor's responsibility and duty to comply with all laws, rules and regulations (including OSHA regulations) relating to identification, entry, and employee safety and work operations within confined spaces.
D. Lockout/Tagout: Contractor shall be aware of the hazards that may arise from hazardous energy including electrical circuits and the release of stored energy. It is the Contractor's responsibility and duty to comply with all laws, rules and regulations (including OSHA regulations) relating to the control of hazardous energy.
E. Condition of Site: Owner assumes no responsibility for actual condition of site to be demolished. Conditions existing at the time of bidding will be maintained by the Owner insofar as practicable.
F. Remove protections at completion of work.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

1. SITE IMPROVEMENTS

A. Contractor shall remove existing above- and at-grade features and pavements as indicated on the Drawings and necessary to facilitate excavation.
B. Contractor shall remove paving section to full depth as indicated on Drawings. Contractor shall neatly saw cut pavements where specified leaving a clean vertical face.

2. TRAFFIC

A. Conduct demolition operations and removal of debris in accordance with the Approved Traffic Control Plan and to ensure minimum interference with roads, streets, walks, and other adjacent occupied or operational facilities.
B. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from the City and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways as required by governing regulations.
C. Staging of haul trucks, equipment, and materials shall be within the boundaries of the worksite. Staging is not permitted on roadways and parking lots outside the worksite unless approved by the Owner's Representative and the City.

3. PROTECTIONS

A. Construct barriers and protection systems to ensure safe passage of persons around area of demolition as necessary. Conduct operations to prevent damage to adjacent buildings, structures, and other facilities, and injury to persons.
B. Protect air quality in existing adjacent buildings as necessary by protecting air intakes from dust and exhaust fumes.
C. Protect and maintain benchmarks and survey control points from disturbance during construction.
D. Protect live utilities and new utilities not yet activated and decommission abandoned utilities.
E. Protect existing site improvements including the adjacent landscaping, sidewalks, open space and parking lot.
F. Protect environmentally sensitive areas that are identified on the Drawings or surrounded by special fencing that has been placed by the City.

4. DAMAGES

A. Promptly repair damages caused to adjacent facilities by demolition operations to the satisfaction of the Owner's Representative, and at no cost to the Owner.
B. The Owner and the Owner's Representative shall be notified of any damage to adjacent facilities.
C. Repair procedures must be approved by the Owner's Representative.

5. UTILITY SERVICES

A. Maintain existing utilities indicated to remain in service and protect against damage during demolition operations.
B. Do not interrupt existing utilities serving adjacent sites or facilities, except when authorized in writing by the Owner's Representative. Provide temporary services during interruptions to existing utilities, as acceptable to the Owner's Representative.

6. POLLUTION CONTROLS

A. Use water sprinkling, temporary enclosures, and other suitable methods to limit atmospheric emissions of dust and dirt to lowest practical level. Comply with governing regulations pertaining to environmental protection.
B. Control use of water to avoid creating hazardous or objectionable conditions such as ice, flooding, ponding or pollution.
C. Prevent adjacent structures and improvements from being impacted by dust, dirt and debris caused by demolition operations. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations should they become impacted to the satisfaction of the Owner's Representative. Return adjacent areas to condition existing prior to start of work.
D. Comply with the Storm Water Pollution Prevention Plan (SWPPP) and the State Water Resources Control Board's 2009-0009-DWQ Construction General Permit (General Permit).

7. NOISE CONTROL

A. Comply with all Federal, State, and local regulations concerning noise.
B. Provide documentation that noise levels do not exceed Federal, State, and local regulations.

8. IF HAZARDOUS MATERIALS ARE ENCOUNTERED

A. If hazardous materials or materials suspected of being hazardous are discovered, stop work and notify the Owner's Representative immediately.
B. Burning of removed materials is not be permitted.
C. Store debris in suitable covered containers and remove from site when full.
D. Removal: Properly characterize and transport materials and dispose of them off-site in accordance with applicable Federal, State, and local requirements.

END OF SECTION 02 40 10

SECTION 03300 - CAST-IN-PLACE CONCRETE
PART 1 GENERAL

1. SUMMARY

A. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mix design, placement procedures, and finishes.
B. Included Work:
   i. All Concrete shall conform to this specification except where concrete items are specified by City Standard Specifications.
   ii. Related Sections include the following:
   iii. Drawings and general provisions of Contract, including General Conditions

2. DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume.

3. SUBMITTALS

A. Product Data: For each type of manufactured material and product indicated.
B. Design Mixes: For each concrete mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
   i. Indicate amounts of mix water to be withheld for later addition at Project site.
C. Steel Reinforcement Shop Drawings: Details of fabrication, bending, and placement, prepared according to ACI 315, "Details and Detailing of Concrete Reinforcement." Include material, grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement, and supports of concrete reinforcement. Include special reinforcement required for openings through concrete structures.
D. Formwork Shop Drawings shall be prepared by or under the supervision of a qualified Professional Engineer and shall detail fabrication, assembly, and support of formwork.
   i. Shoring and Reshoring: Indicate proposed schedule and sequence of stripping formwork, shoring removal, and installing and removing reshoring.
E. Welding Certificates: Copies of certificates for welding procedures and personnel.

F. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials.
G. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:
   i. Cementitious materials and aggregates.
   ii. Form materials and form-release agents.
   iii. Steel reinforcement and reinforcement accessories.
   iv. Admixtures.
   v. Curing materials.
   vi. Bonding agents.
   vii. Adhesives.
   viii. Vapor retarders.
   ix. Epoxy joint filler.
   x. Joint-filler strips.

4. QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
   i. Manufacturer must be certified according to the National Ready Mixed Concrete Association's Certification of Ready Mixed Concrete Production Facilities. Submit Certifications to Owner’s Agent
C. Testing Agency Qualifications: An independent testing agency, acceptable to the Owner, qualified according to ASTM C 1077 and ASTM E 329 to conduct the testing indicated, as documented according to ASTM E 548.
   i. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, each aggregate from one source, and each admixture from the same manufacturer.
E. Welding: Qualify procedures and personnel according to AWS D1.4, "Structural Welding Code--Reinforcing Steel."
F. ACI Publications: Comply with the following, unless more stringent provisions are indicated:
   i. ACI 301, "Specification for Structural Concrete."
   ii. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

5. DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle steel reinforcement to prevent bending and damage.
   i. Avoid damaging coatings on steel reinforcement.
   ii. Repair damaged epoxy coatings on steel reinforcement according to ASTM D 3963.

PART 2 PRODUCTS

1. FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
   i. Plywood, metal, or other approved panel materials.
   ii. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
      a. High-density overlay, Class 1, or better.
      b. Medium-density overlay, Class 1, or better, mill-release agent treated and edge sealed.
      c. Structural 1, B-B, or better, mill oiled and edge sealed.
      d. B-B (Concrete Form), Class 1, or better, mill oiled and edge sealed.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

C. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch (19 by 19 mm), minimum.

D. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
   i. Formulate form-release agent with rust inhibitor for steel form-facing materials.

E. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
   i. Furnish units that will leave no corrodible metal closer than 1 inch (25 mm) to the plane of the exposed concrete surface.
   ii. Furnish ties that, when removed, will leave holes not larger than 1 inch (25 mm) in diameter in concrete surface.
   iii. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2. STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615, Grade 60 (Grade 420), deformed.
B. Plain-Steel Welded Wire Fabric: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.
C. Deformed-Steel Welded Wire Fabric: ASTM A 497, flat sheet.

3. REINFORCEMENT ACCESSORIES

A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Manufacture bar supports according to (CRSI) "Manual of Standard Practice" from steel wire, plastic, or precast concrete or fiber-reinforced concrete of greater compressive strength than concrete, and as follows:
   i. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected or CRSI Class 2 stainless-steel bar supports.
   ii. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.
   iii. For zinc-coated reinforcement, use galvanized wire or dielectric-polymer-coated wire bar supports.
B. Joint Dowel Bars: Plain-steel bars, ASTM A 615, Grade 60 (Grade 420). Cut bars true to length with ends square and free of burrs.

C. Epoxy-Coated Joint Dowel Bars: ASTM A 775; with ASTM A 615, Grade 60 (Grade 420), plain-steel bars.

4. CONCRETE MATERIALS

A. Portland Cement: ASTM C 150, Type II
B. Normal-Weight Aggregate: ASTM C 33, uniformly graded, and as follows:
   i. Class: Moderate weathering region, but not less than 3M.
   ii. Combined Aggregate Gradation: Well graded from coarsest to finest with not more than 18 percent and not less than 8 percent retained on an individual sieve, except that less than 8 percent may be retained on coarsest sieve and on No. 50 (0.3-mm) sieve, and less than 8 percent may be retained on sieves finer than No. 50 (0.3 mm).
   iii. Aggregate: The Contractor shall substitute recycled concrete for a portion of the virgin aggregate in an amount no less than 15% of the total dry aggregate mass. The recycled concrete material shall meet or exceed the specified requirements. When recycled material is used for concrete base, exposed concrete applications, such as, sidewalk, curb, gutter, parking strip, pavement, and curb ramp, the Sodium Sulfate Soundness test (ASTM C88) is waived. Recycled concrete material will not be allowed in structural concrete or decorative concrete with an exposed aggregate finish."

C. Water: Potable and complying with ASTM C 94.

5. ADMIXTURES

A. General: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material and to be compatible with other admixtures and cementitious materials. Do not use admixtures containing calcium chloride.
B. Air-Entraining Admixture: ASTM C 260.
C. Water-Reducing Admixture: ASTM C 494, Type A.

6. CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) dry.
C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
D. Water: Potable.
E. Clear, Solvent-Borne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.

7. RELATED MATERIALS

A. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.
B. Reglets: Fabricate reglets of not less than 0.0217-inch thick galvanized steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.
C. Dovetail Anchor Slots: Hot-dip galvanized steel sheet, not less than 0.0336-inch thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.
D. Concrete Test Cylinders: The Contractor shall supply four (4) standard concrete test cylinders per 100 cubic yards or fraction thereof for every concrete pour.

8. CONCRETE MIXES

A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mix or field test data bases, as follows:
   i. Proportion normal-weight concrete according to ACI 211.1 and ACI 301.
B. Use a qualified independent testing agency for preparing and reporting proposed mix designs for the laboratory trial mix basis.

C. Proportion normal-weight concrete mix as follows:
   i. Compressive Strength (28 Days, psi):
      a. Other – Class 6-3000-3/4”
   ii. Maximum Slump: 4 inches.
D. Cementitious Materials, Exposed to Deicers: For concrete exposed to deicers, limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 requirements.
E. Cementitious Materials, General: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
   i. Fly Ash: 25 percent.
   ii. Combined Fly Ash and Pozzolan: 25 percent.
   iii. Ground Granulated Blast-Furnace Slag: 50 percent.
   iv. Combined Fly Ash or Pozzolan and Ground Granulated Blast-Furnace Slag: 50 percent portland cement minimum, with fly ash or pozzolan not exceeding 25 percent.
   v. Silica Fume: 10 percent.
   vi. Combined Fly Ash, Pozzolans, and Silica Fume: 35 percent with fly ash or pozzolans not exceeding 25 percent and silica fume not exceeding 10 percent.
   vii. Combined Fly Ash or Pozzolans, Ground Granulated Blast-Furnace Slag, and Silica Fume: 50 percent portland cement minimum, with fly ash or pozzolans not exceeding 25 percent and silica fume not exceeding 10 percent.
F. Maximum Water-Cementitious Materials Ratio, Moderate Sulfate Exposure: 0.50 for concrete subject to moderate sulfate exposure.
G. Air Content, General: Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content stated below.
H. Air Content, 1-inch Aggregate: Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content as follows within a tolerance of plus 1 or minus 1.5 percent, unless otherwise indicated:
   i. Air Content: 6 percent for 1-inch- (25-mm-) nominal maximum aggregate size.
I. Do not air entrain concrete to trowel-finished interior floors and suspended slabs. Do not allow entrapped air content to exceed 3 percent for those applications.
J. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
K. Admixtures: Use admixtures according to manufacturer's written instructions.
   i. Use water-reducing admixture or high-range water-reducing admixture (superplasticizer) in concrete, as required, for placement and workability.

ii. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
iii. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
iv. Use corrosion-inhibiting admixture in concrete mixes where indicated.
v. Concrete Test Cylinder: The Contractor shall provide one set of four (4) concrete test cylinders per 100 cubic yards of concrete or portions thereof for every concrete pour.

9. FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI "Manual of Standard Practice."

10. CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94 and ASTM C 1116. Furnish batch ticket information.
i. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.
B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94. Mix concrete materials in appropriate drum-type batch machine mixer.
i. For mixer capacity of 1 cu. yd. (0.76 cu. m) or smaller, continue mixing at least one and one-half minutes, but not more than five minutes after ingredients are in mixer, before any part of batch is released.
ii. For mixer capacity larger than 1 cu. yd. (0.76 cu. m), increase mixing times by 15 seconds for each additional 1 cu. yd. (0.76 cu. m).
iii. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mix type, mix time, quantity, and amount of water added. Record approximate location of final deposit in structure.

11. EPOXY

A. Where metal items are placed on precast or cast-in-place concrete, provide epoxy bond.
i. Two-component, “CIA-GEL 7000” by Covert Operation, Long Beach, CA or approved equal.

PART 3 EXECUTION

1. FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads.
B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
C. Construct forms tight enough to prevent loss of concrete mortar.
D. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical. Kerf wood inserts for forming keyways, reglets, recesses, and the like, for easy removal.
   i. Do not use rust-stained steel form-facing material.
E. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
F. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
G. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
H. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
I. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
J. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement or pouring concrete.

2. EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use Setting Drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
   i. Install anchor bolts, accurately located, to elevations required.
   ii. Install reglets to receive top edge of foundation sheet waterproofing and to receive through-wall flashings in outer face of concrete frame at

exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.

iii. Install dovetail anchor slots in concrete structures as indicated.

3. REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work, that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete provided concrete is hard enough to not be damaged by form-removal operations and provided curing and protection operations are maintained.

B. Leave formwork for beam soffits, joists, slabs, and other structural elements, that supports weight of concrete in place until concrete has achieved at least 70 percent of 28-day design compressive strength. Determine compressive strength of in-place concrete by testing representative field- or laboratory-cured test specimens according to ACI 301. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.

C. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

D. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Owner's Agent.

4. STEEL REINFORCEMENT

A. General: Comply with CRSI "Manual of Standard Practice" for placing reinforcement.

i. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

i. Shop- or field-weld reinforcement according to AWS D1.4, where indicated.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire fabric in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at

least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

5. JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Owner's Agent.
   i. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
C. Dowel Joints: Install dowel sleeves and dowels or dowel bar and support assemblies at joints where indicated.
   i. Use dowel sleeves or lubricate or asphalt-coat one-half of dowel length to prevent concrete bonding to one side of joint.

6. CONCRETE PLACEMENT

A. Mixed concrete shall be discharge within 1-½ hours or before the mixer drum has revolved 300 revolutions, whichever comes first after the introduction of the mixing water to the cement and aggregates. When the concrete temperature exceeds 30 degrees C, 85 degrees F, the time shall be reduced to 45 minutes. Concrete shall be placed within 15 minutes after it has been discharged from the transporting unit. Concrete shall be handled from mixer or transporting unit to forms in a continuous manner until the approved unit of operation is completed. Adequate scaffolding, ramps and walkways shall be provided so that personnel and equipment are not supported by in-place reinforcement. Placing will not be permitted when the sun, heat, wind, or limitations of facilities furnished by the Contractor prevent proper consolidation, finishing and curing. Sufficient placing capacity shall be provided so that concrete can be kept free of cold joints.
B. Before placing concrete, verify and obtain approval of Owner’s Agent that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
C. Do not add water to concrete during delivery, at Project site, or during placement, unless approved by Owner's Agent.
D. Before placing concrete, water may be added at Project site, subject to limitations of ACI 301.
   i. Do not add water to concrete after adding high-range water-reducing admixtures to mix.
E. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously,

provide construction joints as specified. Deposit concrete to avoid segregation.

F. Deposit concrete in forms in horizontal layers no deeper than 24 inches (600 mm) and in a manner to avoid inclined construction joints. Place each layer while preceding layer is still plastic, to avoid cold joints.
   i. Consolidate placed concrete with mechanical vibrating equipment. Use equipment and procedures for consolidating concrete recommended in ACI 309R.
   ii. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the vibrator. Place vibrators to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix constituents to segregate.

G. Cold-Weather Placement: Comply with ACI 306.1 and as follows:
   i. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
   ii. When air temperature has fallen to or is expected to fall below 40 deg F (4.4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and not more than 80 deg F (27 deg C) at point of placement.
   iii. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
   iv. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.

H. Hot-Weather Placement: When hot-weather conditions exist, place concrete according to recommendations in ACI 305R and as follows:
   i. Cool ingredients before mixing to maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option, at no additional cost to Owner.
   ii. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
   iii. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

I. Concrete Placement When Water Is Present:

i. Concrete shall be deposited either by a tremie or concrete pump. The methods and equipment used shall be subject to approval. Concrete buckets shall not be used for underwater placement of concrete except to deliver concrete to the tremie. The tremie shall be watertight and sufficiently large to permit a free flow of concrete. The concrete shall be deposited so that it enters the mass of the previously placed concrete from within, displacing water with a minimum disturbance to the surface of the concrete. The discharge end of the pump line or tremie shaft shall be kept continuously submerged in the concrete. The underwater seal at start of placing shall not produce undue turbulence in the water. The tremie shaft shall be kept full of concrete to a point well above the water surface. Placement shall proceed without interruption until the concrete has been brought to the required height. The tremie shall not be moved horizontally during a placing operation, and a sufficient number of tremies shall be provided so that the maximum horizontal flow of concrete will be limited to 0.15 feet. Concrete shall not be deposited in running water or in water with a temperature below 35 degrees F.

7. FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defective areas repaired and patched. Remove fins and other projections exceeding ACI 347R limits for class of surface specified.
B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8 inch (3 mm) in height.
   i. Apply to concrete surfaces exposed to public view or to be covered with a coating or covering material applied directly to concrete, such as waterproofing, dampproofing, veneer plaster, or painting.
   ii. Do not apply rubbed finish to smooth-formed finish.

8. CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with recommendations in ACI 305R for hot-weather protection during curing.
B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing by one or a combination of the methods indicated under 3.8D.

D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces, by one or a combination of the following methods:

i. Moisture Curing: Keep surfaces continuously moist for not less than seven days with one of the following materials:
   a. Water.
   b. Continuous water-fog spray.
   c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.

ii. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
   a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
   b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
   c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer recommends for use with floor coverings.

iii. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

iv. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

9. JOINT FILLING

A. Prepare, clean, and install joint filler according to manufacturer's written instructions.

i. Defer joint filling until concrete has aged at least six months. Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.

C. Install semirigid epoxy joint filler full depth in saw-cut joints and at least 2 inches (50 mm) deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

10. CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Owner's Agent. Remove and replace concrete that cannot be repaired and patched to Owner's Agent's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 (1.2-mm) sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

i. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch (13 mm) in any dimension in solid concrete but not less than 1 inch (25 mm) in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

ii. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.

iii. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Owner's Agent.

11. FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to sample materials, perform tests, and submit test reports during concrete placement. Sampling and testing for quality control may include those specified in this Article.

B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

i. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mix exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 100 cu. yd. (38 cu. m) or fraction thereof.
   a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mix, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
ii. Slump: ASTM C 143; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.
iii. Air Content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C 173, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
iv. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F (4.4 deg C) and below or when 80 deg F (27 deg C) and above, and one test for each composite sample.
v. Unit Weight: ASTM C 567, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
vi. Compression Test Specimens: ASTM C 31; cast and laboratory cure one set of four standard cylinder specimens for each composite sample. Cast and field cure one set of four standard cylinder specimens for each composite sample.
vii. Compressive-Strength Tests: ASTM C 39; test two laboratory-cured specimens at 7 days and two at 28 days.
   a. Test two field-cured specimens at 7 days and two at 28 days.
   b. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at age indicated.

C. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
D. Strength of each concrete mix will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).
E. Test results shall be reported in writing to Owner's Agent, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive

strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-and 28-day tests.

F. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Owner's Agent but will not be used as sole basis for approval or rejection of concrete.

G. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as determined by Owner's Agent. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42 or by other methods as determined by Owner's Agent.

END OF SECTION 03300

SECTION 26 00 00
ELECTRICAL REQUIREMENTS

PART 1 GENERAL

1. SUMMARY

A. Section Includes: Electrical requirements.
B. Related Sections:
   i. It is the Contractor's responsibility for scheduling and coordinating the Work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of Contractor's Work.
   ii. The following Sections are related to the Work described in this Section:
      a. Section 01 10 10 – Summary of Work.
      b. Section 01 13 40 – Shop Drawings, Product Data and Samples.
      c. Section 01 14 00 – Quality Control.
      d. Section 01 15 10 – Temporary Utilities.
      e. Section 01 15 60 – Temporary Controls.
      f. Section 01 16 60 – Starting, Testing, Adjusting and Balancing of Systems.
      g. Section 01 17 20 – Project Record Documents.
      h. Section 01 17 30 – Operation and Maintenance Data.
      i. Section 27 00 00 - Control System Requirements.
      j. Section 27 00 10 – Diesel Engine-Driven Pump Control System Requirements.
C. Overview of Electrical Work:
   i. See Specification Section 01 10 10 – Summary of Work for additional electrical requirements. Section 01 10 10 includes a proposed, sequential work procedure, equipment shutdown constraints and a description of temporary system power requirements. The requirements of Section 01 10 10 are intended to complement electrical requirements specified in this Section and indicated on the Drawings.
   ii. See Specification Section 27 00 00 – Control System Requirements for additional requirements related to the control systems.
   iii. See Specification Section 27 00 10 – Diesel Engine-Driven Pump Control System Requirements for additional requirements.
   iv. The Work shall include electrical system improvements at the City's existing Linda Mar Pump Station (LMPS) including, but not limited to, the following:
      a. Disconnection and removal of existing "Original Main Switchboard", existing motor control center and other existing panels and equipment as indicated on the Drawings.
      b. Retain the existing PG&E utility service intermediate service terminations within a new enclosure.
      c. Provide a new, temporary motor control center MCC-TEMP line-up and associated temporary conductors to retain pump station operation during construction. New plug-in compartments provided with new motor control center MCC-LMPS shall be temporarily installed within new MCC-TEMP as indicated on the Drawings.
      d. Provide new circuit breakers and modifications to the existing LMPS main switchboard equipment.

e. Modify two (2) existing sewage pump variable frequency drives as indicated on the Drawings and as specified herein.
f. Provide a new motor control center MCC-LMPS line-up.
g. Provide a new programmable logic controller panel PLC-LMPS.
h. Provide a new engine-driven sewage pump control panel LCP-EDP for connection and operation with existing engine-driven pump equipment.

v. Work shall be performed in accordance with the constraints specified in Section 01 10 10.

vi. Provide new raceway systems, cables and conductors as required by the Contract Documents.

vii. Provide third-party, independent testing of new equipment and installations as specified in this Section.

viii. Power distribution system short circuit, coordination and arc flash hazard studies shall be performed by the Engineer. Protective device setting requirements shall be provided to the Contractor by the Engineer as specified herein.

ix. Programming of new programmable logic controller (PLC), programming modifications to existing PLCs, graphics programming at new human-machine interface (HMI) screens and programming modifications to the existing Plant SCADA system and graphics screens shall be performed by Others. See Specification Section 27 00 00 for additional requirements.

2. GENERAL ELECTRICAL REQUIREMENTS

A. Provide a tested and working electrical system as indicated in the Contract Documents. System includes all items not specifically mentioned in these Specifications or indicated on the Drawings or accepted Shop Drawings, but which are obviously necessary to make a complete and working installation, and shall be deemed to be included herein.
B. Immediately notify City, in writing, of discrepancies within the Contract Documents and discrepancies between the Contract Documents and actual field conditions.
C. The Contract Documents indicate or specify minimum sizes of equipment, electric devices, and other components of the electrical system, but the Contract Documents do not indicate every offset and fitting, or every structural or mechanical difficulty that may be encountered during the execution of the Work.
D. Install equipment at locations indicated on the Drawings as closely as field conditions permit. Obtain accepted equipment submittal dimensions prior to installing pads and conduit.
E. Make minor variations to alignment of equipment and/or installation of raceway systems to avoid conflict with other portions of the Work or existing infrastructure.
F. Contractor shall schedule a pre-installation field meeting with the City prior to installing new raceways and electrical equipment for each work area. During these field meetings, Contractor shall provide an overview of the intended temporary conductor routing paths, raceway routing paths and new equipment placement locations to ensure that proper clearances and equipment access will be maintained both during construction and after installation of the new equipment and raceways. Immediately following these field meetings, the Contractor shall prepare written meeting summary notes summarizing each field meeting discussion. The field

meeting notes shall be submitted to the City for review and acceptance prior to installing new equipment and materials at each work location.

G. Temporary Utilities:
   i. Provide and maintain temporary utilities in accordance with Section 01 15 10.
   ii. Install temporary conductors as indicated on the Drawings and in accordance with NEC Article 590 with Type SOOW (SO cord) portable cable and diesel locomotive cable (DLO cable), watertight connections, and ground fault interrupting equipment. After construction is completed, remove all temporary systems.
   iii. Temporary DLO cable shall be RoHS Compliant, MSHA accepted, UL listed as Type RHH-RHW-2 per UL 44, CSA listed as type RW90 1kV per C22.2 No.38-95 and meet FT-4 and VW-1 Flame Tests. Manufacturer shall be Southwire or accepted equal.
   iv. Temporary SO cord shall be rated 600 volts, 90 degrees Celsius, black jacket, NEC rated Extra-Hard Usage, RoHS Compliant, UL listed. Manufacturer shall be Southwire or accepted equal.
   v. During the course of the Work at each location, it will be necessary to de-energize existing panelboards which supply power to area lighting and receptacles. During such panelboard outages, the Contractor shall be responsible for providing temporary power for tools and equipment and also providing temporary lighting necessary for performing the Work.
   vi. Temporary utilities and installations shall be provided in a manner which does not impede normal facility access, operation and maintenance.
   vii. Additional temporary electrical conductors and installations not indicated on the Contract Documents but required during the course of the Work shall be provided in accordance with Section 01 15 10.

H. Upon delivery of new indoor-rated electrical power distribution and control equipment to the Project site, temporary storage of equipment until placed in final installation location shall be indoors in a heated, climate-controlled building or structure provided by the Contractor. Temporary outdoor storage of indoor-rated electrical equipment is prohibited. Equipment stored outdoors in this manner is not acceptable and shall be replaced by the Contractor at no additional cost to the City. No overall construction schedule time extension shall be granted for replacement of improperly stored electrical equipment.

I. Existing, embedded conduits that are abandoned as part of the work shall have all existing conductors completely disconnected and removed with each abandoned conduit cut flush at existing stub-up locations and filled with non-shrink grout, made smooth with existing concrete stub-up location.

3. PERFORMANCE REQUIREMENTS

A. Operate electrical equipment successfully in all control modes at full-rated load, without failure, as required by the Contract Documents.

4. SUBMITTALS

A. See Specification Section 01 13 40 – Shop Drawings, Product Data and Samples for additional requirements.

B. Product Data: Include catalog data for all new electrical materials, power distribution equipment, conduits, conductors, pullboxes and hardware specified herein and indicated on the Drawings. Catalog data shall be “arrowed” to indicate exact proposed sizes, catalog numbers, etc. for each item.
C. Custom integration drawings for modifications to existing 480 volt power distribution equipment, new 480 volt motor control center equipment and engine-driven pump control panel: As specified herein and in Sections 27 00 00 and 27 00 10.
D. Interconnection Diagrams: Electrical interconnection diagrams shall be submitted which include all provided, new power, control, signal and communication conductors and cables. Diagrams shall include field wiring and cables provided to interconnect all power distribution equipment, motor control centers, PLCs, control panels and all connections to field devices and instrumentation. Control schematic diagrams for existing engine-driven pump equipment, new motor control centers, new control panels and new PLC, in addition to indicating internal equipment connections and circuit devices and logic shall also indicate all field wiring interconnections and terminations, including connections to field-mounted devices. For interconnections between different pieces of equipment, continuation references shall be included on each individual diagram which identifies the equipment and specific submitted drawing number for continuation of the interconnection conductor. Development of separate system interconnection wiring diagrams intended to only show conductor terminations, field wiring and field raceway information shall not be submitted unless a provided field connection is not associated or connected to diagrams developed for existing engine-driven pump equipment, new motor control centers, new control panels or new PLC. It is intended that complete field interconnection wiring information only be shown on one set of documents. Interconnection field wiring diagrams which show “redundant” field conductor information required to be shown on equipment submittal drawings shall not be developed.
E. Structural Calculations: Perform structural calculations in accordance with Section 01 13 40. Anchoring requirements for new electrical equipment and installations shall be verified with structural calculations performed, stamped and signed by a licensed California Structural or Civil Professional Engineer. Calculations shall include the following areas of work:
    i. Anchoring provisions for new motor control center MCC-LMPS to new raised platform.
    ii. Anchoring provisions for new programmable logic controller panel PLC-LMPS to new raised platform.
    iii. Anchoring provisions for new engine-driven pump control panel to new raised platform.
F. Structural calculations shall summarize the adequacy of proposed supports and anchoring for each work location and provide any recommendations for additional support provisions based on the results of the structural calculations. New equipment requiring structural calculations shall not be installed until the structural calculations have been accepted by the City.
G. Cutting and Patching Requests: Notify City of cutting and patching work planned for existing equipment, roadways, sidewalks and structures prior to performing such work.
H. Submit field X-ray or scan photos for all locations where penetration of existing concrete walls, floors and ceilings are planned. Locations required to be x-ray or

scan photographed include core drills, window cut-outs and drilling for conduit supports. X-ray or scan photos shall clearly show existing wall reinforcing steel and embedded conduits with overlay of planned core drill, saw cutting and anchor drilling locations that confirm no existing reinforcing steel or embedded electrical will be hit during drilling or cutting.

I. Project Record Documents: The Contractor shall maintain a neat and orderly set of as- built record drawings, specifications, shop drawings and wiring diagrams for power distribution equipment, motor control centers, control panels and programmable logic controller which reflect any deviations from the Contract Documents, accepted shop drawings and submittal data in accordance with the requirements specified in Section 01 17 20. Documents shall be updated a minimum of once per week to reflect any field installation changes.

J. Acceptance Testing Information and Documents: Testing shall be performed in accordance with the requirements specified in Section 01 16 60 and as specified herein:

i. Contractor shall retain the services of an independent, third-party independent testing firm to perform all field electrical testing specified herein. Provide the services of one of the following testing firms or accepted equal:
   a. Pacific Power Testing.
   b. Power Systems Testing.

ii. Proposed Third-Party, independent testing firm qualifications including “NETA Accredited Company” certification and resumes for all proposed field technicians.

iii. Pre-testing submittal:
   a. Provide a comprehensive list of all equipment and components included in the field testing scope of work.
   b. Provide a complete set of “blank” equipment and system testing forms for all equipment and materials to be tested as specified in Part 3.00.
   c. Loop calibration and testing forms in accordance with ISA standards for all new instrumentation provided (for instruments with both analog and discrete signal connections).

iv. Equipment Pre-Energization Testing: Equipment and materials shall be tested in accordance with InterNational Electrical Testing Association (NETA) ANSI/NETA ATS-2017 “Standard for Acceptance Testing Specifications” as specified herein prior to energization of equipment or materials.

v. Pre-Energization Post-Testing Submittals (for testing performed prior to equipment energization): Complete set of individual equipment and system field testing data sheets indicating test values, summary evaluation of equipment, initially identified repair recommendations and follow-up testing results with confirmation that successful repairs have been implemented. Forms shall be electronically completed upon completion of testing and submitted to the City for review and acceptance prior to equipment energization or performing system functional testing. Testing forms shall clearly indicate any deficiencies or repair recommendations noted during testing along with follow-up testing results to confirm that deficient conditions have been resolved. For equipment and installations found to have deficiencies during field testing, Contractor shall make the necessary repairs and the equipment/installation shall be re-tested until acceptable results are

obtained. Repeated testing shall be performed as required at no additional cost to the City.

vi. Functional Test Plan – Equipment Factory Witness Testing: Prior to factory witness testing of new motor control center (MCC), control panel and PLC equipment, the Engineer shall provide the Contractor with a detailed functional test plan narrative and "check-off" form. The functional test plan shall be requested, in writing, by the Contractor no less than three (3) weeks prior to the scheduled date(s) for factory witness testing for new MCC, control panel and VFD equipment. The test plan provided by the Engineer shall describe, in narrative format, "cause and effect" tests for each control, alarm and indication function for each mode of operation for each piece of equipment/system included as part of the Work.

vii. Functional Test Plan – Field Testing: The functional test plan narrative utilized during factory witness testing for new MCC, control panel and PLC equipment shall be repeated after successful completion of pre-energization testing and after field-installation of the equipment is complete, including anchoring of equipment and connection of all new field power and signal conductors and cables. Field functional testing shall be successfully completed prior to start-up of the new equipment. The Engineer shall provide the Contractor with a detailed functional test plan narrative and "check-off" form. The functional test plan shall be requested by the Contractor no less than three (3) weeks prior to the scheduled date(s) of individual equipment start-up in each given work location. The test plan provided by the Engineer shall describe, in narrative format, "cause and effect" tests for each control, alarm and indication function for each mode of operation for each piece of equipment/system included as part of the Work.

viii. Post-testing submittals (for testing performed after system start-up): Comprehensive thermographic survey report with thermographic color photographs of each location specified herein submitted. Photographs of all scanned locations shall be included with any "hot spots" clearly identified. Contractor shall make any necessary component replacement or repair work to resolve "hot spots" and perform a follow-up thermographic survey of the location to verify that the "hot spot" no longer exists. Follow-up scanning and associated submittals shall be submitted to the City for review and acceptance. All required follow-up scanning and submittals shall be provided by the Contractor at no additional cost to the City.

K. Operation and Maintenance Data: Submit in accordance with Section 01 17 30 and as specified herein.

5. QUALITY ASSURANCE

A. Regulations and Codes: Perform electrical work, including connection to electrical equipment integral with mechanical equipment, in accordance with latest published requirements of the following codes and code/standard making organizations:

i. American National Standards Institute (ANSI).
ii. American Society for Testing and Materials (ASTM).
iii. Institute of Electrical and Electronics Engineers (IEEE).
iv. Insulated Cable Engineers Association (ICEA).
v. International Society of Automation (ISA).

vi. National Electrical Code (NEC).
vii. National Electrical Contractors Association (NECA).
viii. National Electrical Safety Code (NESC).
ix. National Electrical Manufacturers Association (NEMA).
x. InterNational Electrical Testing Association (NETA).
xi. National Fire Protection Association (NFPA).
xii. State and local codes.
xiii. California Building Code (2007 CBC).

B. Materials and equipment used in performance of electrical work shall be listed or labeled by Underwriter's Laboratories (UL) for the class of service intended. Custom-integrated equipment (i.e. new motor control centers, control panels and PLC) shall include a UL label indicating that the complete, integrated equipment meets applicable UL requirements.
C. Quality control shall be in accordance with the requirements specified in Section 01 14 00.

PART 2 PRODUCTS

1. SUPPORT CHANNELS AND ASSOCIATED HARDWARE

A. Provide supports and hardware in accordance with the requirements indicated on the Drawings, modified as required per the recommendations of the Contractor's accepted structural calculations.
B. All interior and exterior locations: 316 stainless steel.
C. Manufacturers: The following or accepted equal:
i. Cooper Industries.
ii. Unistrut.

2. ANCHOR BOLTS AND HARDWARE

A. 316 stainless steel for all locations.
B. Provide epoxy anchors for all floor and wall slab-mounted equipment and supports.
C. Provide wedge anchors for all ceiling-mounted equipment and supports.
D. Anchor embedment depth shall be as recommended by the anchor manufacturer's recommendations based on the accepted anchor material submittal information.
E. Sizes: As indicated on the Drawings and as required by the Contractor's accepted structural calculations.

3. NAMEPLATES

A. Black lamacoid with ½" high white letters fabricated from minimum 1/8" thick, two-ply phenolic lamacoid.
B. Fastened with 316 stainless steel screws to all locations except for existing switchboard equipment and new MCC equipment cabinet exteriors. Nameplates for this type of equipment shall be fastened with equipment manufacturer's or supplier's recommended adhesive.
C. Submittals: Include comprehensive nameplate engraving legend for all nameplates provided. Nameplate engraving legend shall be included with submittal information for all existing power distribution equipment, new motor control centers, new control

panels, new PLC, local control stations, terminal boxes, pullboxes, junction boxes, instruments and electrical devices.

4. 120 VOLT LIGHTING SWITCHES AND RECEPTACLES

A. Commercial grade, rated 20 amperes minimum, white.
B. Provide with 304 stainless steel cover plates for interior installations.
C. Provide with weather-proof enclosures suitable for outdoor installations where indicated on the Drawings.
D. Provide ground fault circuit interrupter receptacles where indicated on the Drawings.

5. CONDUIT AND CONDUCTOR IDENTIFICATION

A. Conduit tags: 316 stainless steel, 12 gauge thickness tags with conduit number stamped into tag, attached to conduit with 316 stainless steel, 18 gauge tie wire.
B. Conductor and cable markers:
   i. Machine printed, heat-shrink type. Manufacturer: Brady IDExpert or accepted equal.
C. Conductor Color Scheme:
   i. 480 Volt Power:
      a. Phase A: Brown.
      b. Phase B: Orange.
      c. Phase C: Yellow.
   ii. 208 and 240 Volt Power: Black and Red.
   iii. 120 Volt Power:
      a. Phase: Black.
      b. Neutral: White.
   iv. Field Control Wiring:
      a. 120VAC: Red.
      b. 24VDC: Blue.
   v. Internal PLC Panel Wiring:
      a. Discrete Input 120VAC: Red.
      b. Discrete Input 24VDC: Blue.
      c. Discrete Output 24VDC and 120VAC: Yellow.
   vi. Signal Cable:
      a. Positive Conductor: Clear.
      b. Negative Conductor: Black.
   vii. Communication Cable: Blue.
   viii. Ground: Green.
D. Submittals: Submit proposed identification materials and conductor color scheme summary table for City review and acceptance.

6. 600 VOLT WIRE

A. General:
   i. Conductors: ASTM B8, soft drawn copper, maximum 12 months old, minimum 97% conductivity, AWG and kcmil sizes as indicated on the Drawings, Class B.

ii. Insulation thickness: Minimum specified by article 310 of the National Electrical Code, latest edition.

B. Power and control wire:
i. Insulation: Type XHHW-2 for all conductors.
ii. Rated for cable tray installation where routed within cable trays as indicated on the Drawings.
iii. Provide single conductors for all new power and control wiring, sizes and quantities as indicated on the Drawings. Multi-conductor cables are not acceptable.
iv. Solid conductor wire: Use of solid conductor for all installations is prohibited.

7. INSTRUMENTATION CABLE
A. Analog single-pair and single triad signal cable:
1. Approved for cable tray installation in accordance with the National Electrical Code.
2. Voltage rating: 600 volts.
3. Cable type: TC.
4. Temperature rating: 90 degrees Celsius for dry locations, 75 degree Celsius for wet locations.
5. Class B, 19-strand concentric in accordance with ASTM B8.
6. Conductor insulation: Flame-retardant PVC, 15 mils nominal thickness, with nylon jacket 4 mils nominal thickness.
7. Group shielding: Minimum 1.35 mil double-faced aluminum/synthetic polymer-backed tape overlapped to provide 100 percent coverage.
8. Drain wire: 7-strand tinned copper, 2 sizes smaller than conductor.
9. Conductor size: 16 AWG.
10. Manufacturers: The following or equal:
a. Belden Cable, #9342 – Single-Pair Cables.
b. Belden Cable, #3091A – Single-Triad Cables.
c. The Okonite Company, Okoseal-N Type P-OS.

8. ETHERNET COMMUNICATION CABLE (COPPER)

A. Ethernet Communication Cable: Category-6, 600V AWM rated, suitable for industrial use in harsh environments and within 600V rated power distribution equipment.
B. Manufacturers: Belden 7953A or accepted equal.

9. RS-485 COMMUNICATION CABLE (COPPER)

A. RS-485 Communication Cable: 2-pair, 22 AWG, tinned copper, polyethylene insulation, overall shield, LSZS-TS outer jacket, suitable for industrial use in harsh environments.
B. Manufacturers: Belden 973107Z or accepted equal.

10. SPLICES BETWEEN EXISTING 600 VOLT CONDUCTORS AND NEW 600 VOLT CONDUCTORS

A. Where specifically indicated on the Drawings, splices shall be provided between new and existing 600-volt conductors.
B. Proposed conductor splice locations not indicated on the Drawings shall be submitted for review and acceptance by the City. Conductor splices not accepted in writing by the City are not acceptable and shall be replaced with continuous conductors at no additional cost to the City.
C. Splices shall consist of a mechanical crimp-type butt splice with an overall cold-shrink tubing jacket.
D. Splices shall be completely water-proof once completed and rated for prolonged submergence.

11. CONDUIT

A. PVC-coated galvanized rigid steel: 40 mils thick PVC coating, interior coated with nominal 2 mils thick corrosion-resistant urethane finish, bond between plastic coating and conduit stronger than tensile strength of plastic coating, threads factory coated with clear urethane finish.
B. PVC-coated galvanized rigid steel conduit tools: Tools used for cutting, bending and threading PVC-coated galvanized rigid steel conduit shall be approved for use by the conduit manufacturer. Damaged conduit coating resulting from the use of tools not recommended by the conduit manufacturer is not acceptable and shall be replaced at no additional cost to the City.
C. Galvanized rigid steel: Domestic raw steel, made smooth, clean and free of burrs and rough spots to enhance wire pulling; interior and exterior surfaces coated with solid, unbroken layer of zinc; threads hot dip galvanized after cutting; entire surface finish coated with secondary bichromate treatment applied over galvanizing to prevent oxidation; threads protected by end caps, UL6 listed.
D. Provide 316 stainless rigid steel conduit where indicated on the Drawings.
E. Electrical Metallic Tubing and Fittings: Not permitted.
F. Liquidtight flexible metal conduit: Grounding type, weatherproof, watertight, PVC jacket, maximum 60 inch lengths, conforming to National Electrical Code Article 350, Type LFMC.
G. Flexible metal conduit and fittings – Hazardous Locations: For flexible conduit provided in Class I, Division 2 Hazardous Locations, flexible conduit and fittings shall be listed for installation in this environment in accordance with National Electrical Code Article 501.
H. EYS Conduit Seals: Rated for installation in a Class I, Division 1 or Division 2 Hazardous Location.
I. Couplings, connectors, condulets, and fittings: Manufactured with the same materials and processes as corresponding conduit (e.g. provide PVC-coated galvanized rigid steel fittings for connections to PVC-coated rigid steel conduit).
J. Pulling Tape: Pre-lubricated type. Manufacturers: Neptco “Mule Tape” or accepted equal.
K. Submittals: Product data for proposed conduit, corresponding fittings and pulling tape.

12. CABLE TRAY

A. Aluminum, ladder cable tray, heavy-duty type.
B. Tray Width: As indicated on the Drawings.
C. Manufactured in compliance with NEMA VE 1.
D. Rung Spacing: 9 inches.
E. Rail Height: 4 inches.
F. Minimum Bending Radius: 12 inches.
G. Allowable Minimum Support Span: 20 feet.
H. Manufacturers: Cooper B-Line Series 34 or accepted equal.

13. METALLIC PULLBOXES, JUNCTION BOXES AND TERMINAL BOXES

A. Provided at locations indicated on the Drawings.
B. Enclosure ratings and requirements: NEMA 4X shall be fabricated from 316 stainless steel, 14 gauge. NEMA 1 shall be fabricated from 14 gauge painted steel.
C. Minimum dimensions: As indicated on the Drawings. Where dimensions are not indicated on the Drawings, Contractor shall provide box with minimum dimensions in accordance with National Electrical Code requirements.
D. Provide terminal boxes with internal backpan for mounting of lug-type power and grounding terminal blocks. Terminal boxes shall be provide as a UL Listed complete assembly.
E. Provide existing enclosures with new internal backpan and power terminal blocks where indicated on the Drawings.
F. Manufacturers: Hoffman or accepted equal.

14. MODIFICATIONS TO EXISTING 480 VOLT SWITCHBOARD EQUIPMENT

A. Modifications to existing 480 volt switchboard equipment are indicated on the Drawings.
B. In general, new components provided within existing equipment shall be from the same manufacturer as the existing equipment with minimum ratings provided to match existing equipment ratings and those indicated on the Drawings.
C. Contractor shall closely coordinate shutdowns of existing equipment to perform modification work.
D. New circuit breakers provided in existing switchboard equipment shall be rated as indicated on the Drawings, interrupting rating of 65kA, Eaton Type “HFD” with Eaton Digitrip 310+ electronic trip units (no equal).

15. MODIFICATIONS TO EXISTING VARIABLE FREQUENCY DRIVES

A. As indicated on the Drawings.
B. Field modifications to existing variable frequency drive systems shall be performed by one of the following Integrators:
   i. KBL Associates.
   ii. Telstar.
   iii. Tesco Controls.
C. Submittals:

a. Product data with specific components and corresponding model numbers and options “arrowed” for all components provided.
b. Front elevation indicating modifications.
c. Connection wiring diagrams showing all internal wiring, tag numbers and corresponding terminal block numbers.
d. Interconnection wiring diagrams showing all external wiring connections including field wiring tag numbers and field wiring terminal block numbers.

B. Switches and Pushbuttons: Heavy-duty type, 30.5mm, rated NEMA 4X.

16. MODIFICATIONS TO EXISTING AUTOMATIC TRANSFER SWITCH

A. As indicated on the Drawings.
D. Field modifications to existing automatic transfer switch shall be performed by one of the following Integrators:
i. KBL Associates.
ii. Telstar.
iii. Tesco Controls.
E. Submittals:
a. Product data with specific components and corresponding model numbers and options “arrowed” for all components provided.
b. Front elevation indicating modifications.
c. Connection wiring diagrams showing all internal wiring, tag numbers and corresponding terminal block numbers.
d. Interconnection wiring diagrams showing all external wiring connections including field wiring tag numbers and field wiring terminal block numbers.

17. 600 VOLT MOTOR CONTROL CENTERS

A. The Work includes the following new motor control center equipment:
i. MCC-TEMP (Temporary Motor Control Center Line-up).
ii. MCC-LMPS (Permanently Installed Motor Control Center Line-up).
B. Standards:
i. NEMA ICS-2 – Industrial Control Devices, Controllers and Assemblies.
ii. UL 845 – Motor Control Centers.
iii. NEC Article 430 – Motors, Motor Circuits and Controllers.
C. Unit Responsibility:
i. Motor control center fabricator shall be the manufacturer of the major components therein: Manufacturer shall be one of the following or accepted equal:
a. Eaton Cutler-Hammer, Freedom 2100 Series.
b. Allen-Bradley equivalent.
ii. Each new motor control center shall be custom-integrated in accordance with the following requirements. New motor control centers may be rejected at the City’s sole discretion if any one of the following criteria is not met for the Contractor’s proposed motor control center integrator. Contractor to submit documentation to verify the following criteria:
a. Panel integration shop shall be within 150 miles of the Project site.

b. Panel integration shop facilities shall include all necessary provisions for factory witness testing of each new integrated motor control center at the panel integration shop.
c. Panel integration shop shall be UL certified, shall construct new integrated motor control centers in compliance with UL-845 requirements and apply a UL label to each complete, integrated motor control center section prior to shipment to the Project site.
d. Panel integrator shall have a minimum of ten (10) years of experience in the custom integration of motor control centers.
e. At the time of bid, panel integrator shall have completed and currently have in operation a minimum of ten (10) low voltage motor control centers.
f. Acceptable Motor Control Center Integrators: One of the following or equal:
    i. KBL Associates.
    ii. Telstar Instruments.
    iii. Tesco Controls.

D. Factory Witness Testing: After each new motor control center (MCC) equipment manufacturing and integration is completed and prior to shipment of new MCC equipment from the MCC Integrator's facility, the Contractor shall notify the City no less than three (3) weeks prior to planned factory witness testing for each new line-up provided in order to schedule factory witness testing at dates mutually agreeable to the City, Engineer, MCC Integrator and Contractor. The City and Engineer shall be required to witness factory testing at the MCC Integrator's facility. The MCC Integrator shall provide all necessary power sources, simulation signals and test equipment to demonstrate full functional operation of new MCC equipment. New MCC equipment shall not be shipped from the Integrator's facility until factory witness testing is successfully completed and the results accepted by the City.

E. Submittals:
    i. Plan, front and side view drawings, including overall dimensions of each new motor control center provided. Identify shipping splits and show allowable conduit/conductor stub-up locations with dimensions. Submit written verification that proposed shipping splits have been coordinated with the building access requirements and project construction sequencing requirements as specified in Section 01 10 10.
    ii. Control schematic wiring interconnection diagrams for each plug-in unit. Wiring interconnection diagrams shall include internal MCC compartment wire identification numbers and field wiring terminal block numbers. Wiring diagrams shall include all circuit devices including field-mounted devices and equipment interconnections, with external motor control center wiring indicated with a "dashed" line. Match as closely as possible all relay and contact numbers as those indicated on the Contract Documents. Identify each equipment name and tag number on each respective wiring diagram. Where field wiring is routed to a vendor-supplied equipment local control panel, switchgear line-up, generator, PLC panel or local control panel, the diagrams shall indicate a continuation reference for the interconnected equipment and associated equipment submittal drawing number.

iii. Field wire tag numbers for each field wire indicated on the control schematic wiring interconnection diagrams shall be based on circuit numbers indicated on the drawings with a unique suffix identifier for each conductor.
iv. Single line diagrams for each motor control center showing circuit breakers, motor circuit protectors, motor starters, variable frequency drives, panelboards, transformers, power monitors and other equipment comprising the complete assembly. Proposed ratings for all devices shall be indicated.
v. Bill of material list for each motor control center plug-in compartment and each new motor control center complete assembly. Bill of material list shall indicate quantities, manufacturer and model number for each device and component provided with each new motor control center system.
vi. Nameplate schedule for each motor control center.
vii. Manufacturer's Operation and Maintenance data and installation instructions.

F. Quality Assurance: Each component, as well as the complete motor control center assembly shall be constructed and tested in accordance with the latest NEMA ICS-2 standards. A complete factory testing report indicating successful passage of all factory testing shall be submitted for review and acceptance by the City prior to shipment of the motor control centers to the project location.
G. Starter Compartment Wiring Uniformity: Upon delivery to the site, each motor control center starter compartment will be inspected to confirm agreement between the accepted control schematic wiring diagrams and actual equipment wiring. Also, "similar" starter compartments will be inspected to verify that internal wiring has been identically implemented. In the event that inconsistencies are found, the Contractor shall immediately notify the MCC Integrator in order to obtain a field technician to make any necessary compartment wiring corrections prior to installing the new motor control center equipment.
H. Warranty: Provide 1-year manufacturer's warranty from date of final acceptance.
I. Enclosures:
i. In accordance with NEMA Standards, as indicated on the Contract Documents and as specified.
ii. NEMA Type 1 with closed cell neoprene gasketing, provided indoors within the existing pump station building as indicated on the Drawings and as specified herein.
iii. Rigidly form each vertical section that holds the units of minimum 12 gauge, cold-rolled steel.
iv. Provide vertical front-of-board construction with a 21-inch depth and 90-inch height. Section width shall be 20 inches unless otherwise indicated on the Drawings.
v. Wiring: NEMA Class II, Type B-T.
vi. Provide each motor control center plug-in combination starter compartment with an off-gassing corrosion inhibitor sponge, Hoffman Model AHCI10E or accepted equal.
J. Unit Doors:
i. Mount on stationary structure and hinge on side away from vertical wireway, with slotted thumb screws to hold in closed position.
ii. Provide positive action linkage with disconnect operating mechanism. Design mechanism so that it can be locked in the OFF position with up to three (3) padlocks. When handle is not padlocked, door to open by release of door interlock with a small tool.

iii. When unit door is closed, operating mechanism shall indicate ON or OFF position, and door interlock shall automatically become effective. Design disconnect operating mechanism against inadvertent operation when door is open.
iv. Provide each unit door with nameplate that indicates load name and equipment tag number. Attach nameplates to unit doors with 316 stainless steel screws.

K. Motor Controller Units:
i. Plug-in type, sized to accommodate up to six (6) NEMA Size 1 units in one (1) vertical section.
ii. Completely enclosed with sheet metal.
iii. Provide a wireway inside of each unit to accommodate wiring without removing barriers or plates.
iv. Control wiring within each unit shall be copper Type MTW, 90 degrees Celsius, 600 volt rated, #14AWG minimum.
v. Power wiring shall be sized to suit maximum horsepower rating of unit, #12AWG minimum.
vi. Provide heat-shrinkable wiring tags at each wire termination point (same tag number at each wire endpoint) in accordance with tagging information provided on accepted shop drawings.

L. Wiring Troughs:
i. Provide continuous horizontal wiring troughs at both top and bottom of each vertical section. The troughs shall line up to form a continuous wireway for full length of the motor control center.
ii. Provide continuous, full-height vertical wiring trough along the right side of each vertical section.

M. Terminal Strips:
i. Terminate compartment wiring (both power and control wiring) and external field wiring on terminal strips provided in each unit.
ii. Provide split-type terminal strips, rated to accept conductor sizes as indicated in the Contract Documents.
iii. Provide minimum of 25 percent spare terminals for each plug-in starter unit.

N. Bus:
i. Horizontal Bus Bars: Tin-plated insulated copper, ampacity rating as indicated on the Contract Documents.
ii. Vertical Bus Bars: Tin-plated copper, effectively isolated from accidental contact by plastic insulating medium in units, including spaces.
iii. Bus Bar Supports: High impact strength, non-carbonizing insulating material mounted on padded steel brackets to provide adequate dielectric strength and creepage distance.
iv. Short Circuit Rating: Rated not less than 65,000 RMS amperes in accordance with NEMA Standards.
v. Vertical bus ampacity ratings shall be determined by the motor control center manufacturer based on constructed arrangement of units. Minimum vertical bus rating shall be 300 amperes.
vi. Provide tin-plated copper horizontal grounding bus continuous across full length of motor control center. Provide tin-plated copper vertical grounding bus which is solidly connected to the horizontal grounding bus for each vertical

section. Provide vertical grounding bus with provisions for connecting individual grounding conductors at each plug-in unit.

O. Painting:
   i. Finish metal surfaces and structural parts with a phosphatizing treatment prior to painting. Paint motor control centers with gray undercoat equal to zinc chromate.
   ii. Finish interior surfaces including bus support angles, control unit back plates and top and bottom unit barrier plates with baked white enamel.
   iii. Finish exterior of enclosures with ANSI 61 Gray.

P. Space Requirements:
   i. Provide spaces for future installation of combination starter and circuit breaker plug-in units. Provide spaces with hardware to accommodate future plug-in units without modification of vertical sections.
   ii. Provide spaces as indicated on the Contract Documents.
   iii. Extend horizontal and vertical bus to service all space compartments.

Q. Molded-case circuit breakers shall be rated minimum 65,000 amperes interrupting capacity (symmetrical), continuous ampere ratings and quantities as indicated on the Drawings.

R. Circuit breakers provided with electronic trip units shall be equipped with a field-adjustable electronic trip unit (rating as indicated on the Drawings) that includes long time, short time, instantaneous and ground fault protection (ALSIG), Eaton Digitrip 310+ or accepted equal.

S. Circuit breakers shall comply with NEMA Standard AB1 and UL 489.

T. Circuit breaker handle operation shall be up/down or side-to-side. Use of rotational operating handles is not acceptable.

U. Motor control center circuit breaker and motor starter compartments shall be minimum of 12 inches high. Use of 6 inch compartments for circuit breakers is not acceptable.

V. Motor Starter Contactors: NEMA size as indicated on the Drawings. Where not indicated on the Drawings, minimum starter size shall be NEMA Size 1.

W. Dry-Type Transformers (for lighting and distribution panelboard supply): As specified elsewhere herein, factory-integrated into each new MCC line-up where indicated on the Drawings, manufactured by same manufacturer as motor control center equipment.

X. Panelboards: As specified elsewhere herein, factory-integrated into each new MCC line-up where indicated on the Drawings, manufactured by same manufacturer as motor control center equipment.

Y. Overload Heaters: Electronic type, rating as required for existing motor equipment full-load ampere rating. Contractor shall record existing motor nameplate data for all existing motorized equipment and provide new and existing equipment motor nameplate data to the motor control center integrator for proper sizing of overload heaters.

Z. Control and Timing Relays: Provide plug-in type relays and associated bases, IDEC or accepted equal.

AA. Intrinsically-Safe Relays: Manufacturer: Gems “Safe-Pak” or accepted equal, provided with contact types and quantities as indicated on the Drawings.

BB. Switches and Pushbuttons: Heavy-duty type, rated NEMA 4X, 30.5mm.

CC. Pilot Lights: LED, push-to-test type, rated NEMA 4X, 30.5mm, lens colors as indicated on the Drawings.

DD. Lighting Contactors: Mechanically-held type, number of poles as indicated on the Drawings, 120VAC coil voltage rating, integrated into new motor control center line-up as indicated on the Drawings. Manufacturer: Eaton Type C30CN or accepted equal.

18. 120/208 VOLT PANELBOARDS

A. Voltage and phase rating as indicated on the Drawings, 22,000 amperes interrupting capacity (symmetrical) minimum, continuous bus ampere rating as indicated on the Drawings.
B. Provide each panelboard with a main circuit breaker, rating as indicated on the Drawings.
C. Feeder circuit breakers shall be molded-case, bolt-on type, rated minimum 22,000 amperes interrupting capacity (symmetrical), continuous ampere ratings and quantities as indicated on the Drawings.
D. Circuit breakers shall comply with NEMA Standard AB1 and UL 489.
E. Feeder circuit breaker handle operation shall be up/down or side-to-side. Use of rotational operating handles is not acceptable.
F. Enclosure: Integrated into new motor control center equipment as indicated on the Drawings and specified herein.
G. Phase and Grounding Bussing: Tin-plated copper.
H. Provide spaces as indicated on the Drawings.
I. Manufacturers: One of the following or equal:
   i. Eaton Cutler-Hammer, Power-R-Line 1a.
   ii. Allen-Bradley equivalent.

19. DRY-TYPE TRANSFORMERS

A. Voltage, phase and kVA ratings as indicated on the Drawings.
B. Type: Meets or exceeds Department of Energy 2016 efficiency standards.
C. Enclosure: NEMA 2, suitable for mounting within new motor control center equipment as indicated on the Drawings and as specified herein.
D. Windings: Copper.
E. Minimum Efficiency: 97.5%.
F. Provide with 2-1/2% taps, two (2) above and two (2) below nominal voltage rating.
G. Temperature Rise: 80 degrees Celsius.
H. Provide with sound level reduction option for -0.5dB operation below standard transformer sound levels.
I. Manufacturers: Eaton Cutler-Hammer, Allen-Bradley or accepted equal.

20. FIELD-MOUNTED PILOT DEVICES

A. Manufacturers: One of the following or equal:
   i. Allen-Bradley, Bulletin 800H.
   ii. General Electric – CR104P.
B. Pushbuttons and Selector Switches: Heavy-duty, industrial type, pushbuttons with lockout provisions as indicated on the Drawings, 30.5mm.
C. Pilot Lights: Lens colors as indicated on the Drawings, LED lamp, push-to-test type, 30.5mm.

D. Enclosure Rating: NEMA 4X, 14 gauge, 316 stainless steel, rated for outdoor use.

21. CUSTOM-INTEGRATED EXTERIOR LIGHTING CONTROL PANEL

A. Provide a new, factory-integrated Lighting Control Panel as specified herein and indicated on the Drawings. New Lighting Control Panel shall be custom-integrated and supplied by one of the following Integrators or equal:
   i. KBL Associates.
   ii. Telstar Instruments.
   iii. Tesco Controls.
B. Complete, integrated Lighting Control Panel shall be UL listed.
C. Enclosure: 14 gauge steel, NEMA 12, minimum dimensions as indicated on the Drawings. Exterior shall be painted with minimum 2 coats of ANSI 61 Gray epoxy powder coated paint. Interior shall be minimum 2 coats of white epoxy paint. Enclosure doors shall be lockable, three-point latch type with full-length piano hinges.
D. Provide 12 gauge steel interior back panel, coated with 2 coats of white epoxy paint for mounting of all interior components. Components shall be attached to interior back panel with 316 stainless steel screws and hardware.
E. Contactors: NEMA rated, 1-pole, rated 600 volts and 120 volts operation.
F. Panel Wiring: Minimum #14 AWG, MTW or SIS insulation.
G. Wire Tagging: Heat shrinkable, machine printed wire tags at each internal panel conductor terminal location. Wire tag numbers shall match final, “as built” integrated panel connection diagrams.
H. Feed-Through Terminal Blocks: Phoenix Contact, Clipline “UT 4” Series (no equal to match Owner’s existing installations), double-bridge shaft for connection of adjacent terminal blocks via plug-in bussing, gray for signal conductors, green for grounding and shield conductors, DIN rail mounted.
I. Provide nameplates as specified herein.
J. Pilot Devices: Switches: Heavy-duty type, rated NEMA 4X, 30.5mm.

22. TYPE “A” LIGHTING FIXTURES

A. Suitable for pendant mounting, LED, 48-inch length, fiberglass housing (white), 4,000 lumens output, acrylic frosted lens, medium distribution, 4000 Kelvin color temperature, 120VAC power supply, provided complete with hardware and options for mounting as indicated on the Drawings.
B. Manufacturers: Holophane Type EMS LED, Model No. EMS-L48-4000LM-LPAFL-MD-120-40K or accepted equal.

23. TYPE “B” LIGHTING FIXTURES

A. Suitable for wall mounting, LED, 24-inch length, steel housing finished with white polyester power coating, 12L 1,200 lumens output, 4000 Kelvin color temperature, 120VAC power supply, provided complete with options for mounting as indicated on the Drawings.
B. Manufacturers: Lithonia Lighting, WL Series or accepted equal.

24. TYPE “C” LIGHTING FIXTURES

A. Suitable for pendant mounting, LED, round 21-inch diameter, cast aluminum housing, 12,000 lumens output, medium distribution, 4000 Kelvin color temperature, 120VAC power supply, provided complete with hardware and options for mounting as indicated on the Drawings.
B. Manufacturers: Holophane “Vantage” Series, Model No. VL-12L-4K-12-M or accepted equal.

25. TYPE “C” LIGHTING FIXTURES

A. Suitable for pendant mounting, LED, round 21-inch diameter, cast aluminum housing, 12,000 lumens output, medium distribution, 4000 Kelvin color temperature, 120VAC power supply, provided complete with hardware and options for mounting as indicated on the Drawings.

26. EXTERIOR ALARM BEACON LIGHTS AND HORNS

A. Beacon Light: LED beacon, amber lens, 120VAC power supply, three (3) separate inputs for “steady”, “flashing” and “rotating” (connected for “flashing” option), 50,000 hour LED, suitable for wall-mounting on existing building exterior wall, NEMA 4X enclosure. Manufacturers: Federal Signal, Model SLM100 or accepted equal.
B. Alarm Horn: 120VAC power supply, produces two (2) tones, choice of (64) selectable tones, adjustable volume between 55 dBa to 105 dBa at 10 feet, suitable for wall-mounting on existing building exterior wall, NEMA 3R enclosure. Manufacturers: Federal Signal, Model SLM800 or accepted equal.

PART 3 EXECUTION

1. PREPARATION

A. Cutting and Repairing: Where it becomes necessary to cut into existing work for the purpose of making electrical installations, use core drills for making circular holes in accordance with the accepted X-ray or scan photographs. Other demolition methods for cutting or removing shall be reviewed by the City prior to starting the work.

2. GENERAL INSTALLATION REQUIREMENTS

A. Corrosion Protection:
   i. Isolate dissimilar metals, except conduit and conduit fittings, that may come into contact with neoprene washers, 9 mil polyethylene tape, or gaskets.
   ii. Restore factory finishes which are damaged or rusted to their original new condition in accordance with manufacturer's surface preparation and coating instructions.
B. Install embedded electrical work prior to placing equipment pads. Provide all sleeves and openings through floors and walls required for passage of all conduits

and other raceways. Sleeves shall be rigidly supported and suitably packed or sealed to prevent ingress of wet concrete or water.

C. Provide all insets and hangers required to support raceways and other electrical equipment.
D. Field-verify dimensions indicated on the Drawings. Actual locations, distances and levels shall be governed by actual field conditions.
E. Anchor electrical equipment to structure floors and walls and electrical equipment foundations utilizing epoxy-fastened bolts. Sizes and quantities of fasteners shall be as indicated on the Drawings and in accordance with the Contractor's accepted structural calculations.
F. After installing and before energizing electrical equipment, torque each bolted bus and cable connection in accordance with manufacturer's recommendations with calibrated torque wrenches.
G. Provide channels and associated hardware as required for support of raceways, device enclosures and other electrical equipment.
H. Separate iron or steel supports from aluminum with ¼ inch neoprene or other non-metallic gasketing.
I. Provide engraved lamacoid nameplates affixed to existing switchboard equipment, new motor control center equipment, new control panels, new variable frequency drives, new panelboards, terminal boxes, junction boxes and local control stations. Engraving shall include equipment tag numbers and names as indicated on the Drawings.
J. Provide grounding bushings at each end of metallic conduit runs. Grounding bushings shall be bonded to the grounding electrode system.

3. CLEANING

A. Clean each piece of electrical equipment, existing and new, both inside and outside, and retouch equipment to match existing paint.

4. ELECTRICAL INDENTIFICATION

A. Wire colors: As specified herein.
B. Provide unique wire tagging at each individual conductor termination endpoint. Conductor tags shall match at each conductor endpoint. Conductor tags shall be developed in accordance with the accepted submittal interconnection information. Tagging convention shall be based on circuit numbers indicated on the Drawings with a unique conductor circuit number suffix (e.g. C-P1-1, C-P1-2, C-P1-3, etc.).
C. Provide stamped conduit tags at each conduit system endpoint and at each floor/ceiling/wall penetration location to indicate circuits routed within conduit (e.g. P-P1) based on the circuit schedules indicated on the Drawings.

5. CONDUCTORS

A. Provide continuous power and control circuit conductors from source to load termination locations without splices or terminations in raceway system pullboxes or junction boxes unless splices are specifically indicated on the Drawings.
B. Ethernet communication cables routed within new power distribution equipment shall be kept physically separated from 480V power conductors as is practical.

6. CONDUITS

A. Install conduit runs in accordance with schematic representations indicated on the Drawings. Adjust routing of conduit runs as required to suit actual field conditions.
B. Install straight and true conduit runs with uniform and symmetrical elbows, offsets, and bends. Make changes in direction with long radius bends or with condulet fittings.
C. Provide flexible conduit connections for short lengths required to facilitate connections between rigid conduit and vibrating equipment and instrumentation.
D. Support conduits on walls and ceilings with minimum 1-5/8 inch channel. Minimum support spacing shall be in accordance with National Electrical Code requirements unless otherwise indicated on the Drawings.
E. Install conduit runs between pullboxes, junction boxes, panels and equipment with total bends equaling not more than 270 degrees.
F. Provide pull tape in spare conduits.
G. Prior to installation of conductors, new and existing conduits 2 inches and larger shall be snaked with a cleaning mandrel.
H. Provide PVC-coated galvanized rigid steel conduit for installation locations listed below:
    i. All exterior, exposed conduit runs.
    ii. Through structure walls (extending a minimum of 6 inches on each side of wall penetration), floor and ceiling penetrations (extending a minimum of 6 inches beyond exposed portion of ceiling and floor penetrations).
    iii. Minimum 12 inches below grade for below-grade to above-grade conduit transitions.
    iv. PVC-coated galvanized rigid steel conduit factory sweeps shall be utilized for all conduit “turn up” locations from below-grade installations.
I. Provide galvanized rigid steel conduit for installation locations listed below:
    i. New conduit runs entirely routed within the interior of the existing pump station building.
J. Provide Schedule 40, PVC conduit for all below-grade conduits installed within direct-buried, slab embedded and steel-reinforced concrete electrical ductbanks.
K. Provide flexible sealing putty at all conduit stub-up locations for conduits that originate from below grade.
L. Provide separate grounding conductor in each conduit run as indicated on the Drawings. Where not indicated on the Drawings, provide minimum size grounding conductor in accordance with National Electrical Code requirements.

7. BOXES

A. Where not indicated on the Drawings, size junction boxes in accordance with National Electrical Code requirements.

8. ELECTRICAL FIELD TESTING AND EQUIPMENT CONFIGURATION

A. Electrical equipment field testing shall be performed after new equipment has been factory witness tested (as specified herein) and has been delivered to the project site.

B. Electrical conductor field testing shall be performed after new conductors have been completely installed, including splices and terminations.
C. Electrical field testing shall be performed in three (3) stages; i) Pre-Energization Testing/Instrument Loop Calibration/Testing, ii) Functional Testing and iii) Thermographic Surveying of electrical materials and equipment. Pre-energization, instrument loop calibration/testing and thermographic surveying shall be performed by an independent, third-party testing organization. Functional testing shall be performed jointly by the City's Programmer, Engineer and Contractor.
D. All electrical field testing shall be witnessed by the City or the City's representative.
E. All new power and molded-case circuit breakers and motor circuit protectors operating at 480 volts shall be tested, regardless of ampacity rating. New circuit breakers rated 50 amperes and larger operating at 120 volts, 208 volts or 240 volts shall be tested.
F. Short circuit, coordination and arc flash system studies shall be performed by the Engineer. Protective device settings shall be provided by the Engineer to the Contractor after acceptance of all associated power distribution equipment and a minimum of four (4) weeks after Contractor written notification to the City of the testing firm's scheduled arrival date at the Project site for a specific piece of equipment. Protective device settings shall be implemented by the Contractor's testing firm prior to performing field pre-energization testing.
G. Pre-Energization Testing: The first stage of electrical field testing shall consist of electrical equipment testing and conductor testing prior to energization and operation of electrical equipment. Completed equipment and conductor testing data forms shall be submitted for City's review prior to equipment start-up and energization. Unsatisfactory equipment or conductor test results shall require that the equipment and/or conductors be repaired and re-tested until acceptable results are obtained at no additional cost to the City.
H. Functional Testing: The second stage of testing shall involve the completion of functionality testing forms which include "cause and effect" tests for all control, alarm and indication functions for all possible operating scenarios. Contractor shall perform a "dry run" for all functionality tests to ensure that systems are working properly prior to scheduling witness testing by the City. As part of the "dry run" testing, Contractor shall utilize Engineer-furnished functional test plan forms with each test "item" initialed by the Contractor to confirm observed proper system operation. After the "dry run" is successfully completed, the City shall be required to witness functionality testing and shall initial all functionality testing forms upon witnessing successful operation of all systems. Facility start-up shall not commence until successful completion of all functional testing.
I. Thermographic Surveying: The third stage of testing shall involve thermographic surveying of locations specified herein. Thermographic surveying shall be performed for each individual location only after the respective load has been in continuous operation for no less than 60 minutes at maximum possible loading.
J. Equipment to be tested and configured as part of Pre-Energization Testing:
    i. New temporary motor control center MCC-TEMP. Testing shall be performed in accordance with NETA 7.16.2.1 recommendations. Testing shall include new motor control center bussing, circuit breakers operating at 480 volts (regardless of ampacity rating), lighting contactor and grounding system.

ii. New motor control center MCC-LMPS. Testing shall be performed in accordance with NETA 7.16.2.1 recommendations. Testing shall include new motor control center bussing, all circuit breakers and motor circuit protectors operating at 480 volts (regardless of ampacity rating), motor starters, motor overload heaters, dry-type transformers, panelboards and grounding system.
iii. New circuit breakers provided for installation in existing switchboard equipment in accordance with NETA 7.6.1.2.
iv. Megger testing of all new power conductors #12AWG and larger. Where new conductors are spliced to existing conductors, new conductors shall be tested after installation but prior to connection/splicing to existing conductors. Testing shall be performed phase-to-phase and each phase-to-ground in accordance with NETA 7.3.2 recommendations.
v. Existing pump station grounding system testing in accordance with NETA 7.13 recommendations.

K. Equipment to be tested as part Thermographic Surveying:
i. New circuit breakers and conductor terminations at existing main switchboards.
ii. Conductor terminations located within new terminal box TB-PNLA.
iii. Each new MCC-LMPS compartment.

9. ELECTRICAL EQUIPMENT TRAINING

A. General: Training sessions shall be scheduled on Tuesdays, Wednesdays and Thursdays during normal City working hours (recognized City holidays excluded).
B. New Motor Control Center MCC-LMPS: Two (2) separate training sessions shall be provided by a certified training technician employed by the motor control center Integrator/Supplier on non-consecutive days at dates and times mutually agreeable to the City, Contractor and certified training personnel. Training shall include overview of the motor control center operational features and equipment preventative maintenance procedures.
C. New Engine-Driven Pump Control Panel: As specified in Section 27 00 10.

END OF SECTION

SECTION 27 00 00
CONTROL SYSTEM REQUIREMENTS

PART 1 – GENERAL

1. SUMMARY

A. Section Includes: Control system requirements.
B. Related Sections:
   i. Section 01 10 10 – Summary of Work.
   ii. Section 01 13 40 – Shop Drawings, Product Data and Samples.
   iii. Section 26 00 00 – Electrical Requirements.
   iv. Section 27 00 10 – Diesel Engine-Driven Pump Control System Requirements.
C. Overview of Control System Work:
   i. See Specification Section 01 10 10 - Summary of Work for additional control system requirements. Section 01 10 10 includes equipment shutdown constraints and a description of temporary system control requirements. The requirements of Section 01 10 10 are intended to complement the requirements specified in this Section.
   ii. See Specification Section 26 00 00 – Electrical Requirements for additional requirements related to the control systems.
   iii. See Specification Section 27 00 10 – Diesel Engine-Driven Pump Control System Requirements for additional requirements.
   iv. The Work shall include control system provisions for providing upgrades to the existing Linda Mar Pump Station which includes, but not limited to, the following:
      a. Provide a new, custom-integrated programmable logic controller system PLC-LMPS.
      b. Provide new field instrumentation as indicated on the Drawings and as specified herein.
   v. Work shall be performed sequentially as specified in Section 01 10 10 and shall be closely coordinated and sequenced with the overall project construction effort, system start-up schedule and City-appointed programmer.
   vi. Programming of the new PLC, existing main plant PLCs and the plant SCADA system shall be performed by the City's Programmer. All required PLC, HMI and SCADA system programming software shall be furnished by the City's Programmer. The Contractor's project completion schedule shall include separate activity entries for system programming, start-up and testing as specified herein. Contractor shall be responsible for scheduling programming activities with the Owner's representative.

2. GENERAL ELECTRICAL REQUIREMENTS

A. Provide a tested and working control system at each location indicated in the Contract Documents. System includes all items not specifically mentioned in these Specifications or indicated on the Drawings or accepted Shop Drawings, but which are obviously necessary to make a complete and working installation, and shall be deemed to be included herein.

B. Immediately notify Owner's representative, in writing, of discrepancies within the Contract Documents and discrepancies between the Contract Documents and actual field conditions.
C. The Contract Documents indicate or specify minimum sizes of equipment, electric devices, and other components of the electrical system, but the Contract Documents do not indicate every offset and fitting, or every structural or mechanical difficulty that may be encountered during the execution of the Work.
D. Install equipment at locations indicated on the Drawings as closely as field conditions permit.
E. Make minor variations to alignment of equipment and/or installation of raceway systems to avoid conflict with other portions of the Work or existing infrastructure.
F. Temporary Utilities:
   i. Provide and maintain temporary utilities in accordance with Section 01 15 10.
   ii. Install temporary power, signal and communication wiring as indicated on the Drawings and as specified in Section 26 00 00. After construction is completed, remove all temporary systems.

3. PERFORMANCE REQUIREMENTS

A. Operate control system equipment successfully in all control modes, without failure, as required by the Contract Documents.

4. SUBMITTALS

A. See Specification Section 01 13 40 for additional requirements.
B. Product Data: Include catalog data for all new control system components and electrical materials specified herein and indicated on the Drawings. Catalog data shall be "arrowed" to indicate exact proposed sizes, catalog numbers, etc. for each item.
C. PLC Shop Drawings:
   i. Notes to Reviewer: Contractor shall include a "Notes to Reviewer" sheet explaining any proposed component deviations or clarifications.
   ii. Symbol Legend Sheet: Include all symbols with accompanying definitions for all symbols shown in the custom-developed shop drawings.
   iii. New PLC-LMPS: Panel backpan, side panel, interior door and exterior door elevations with all components shown. Drawing shall be "to scale" to accurately indicate component placement within new PLC panel.
   iv. Complete nameplate engraving schedule for all proposed new nameplates affixed to new PLC panel backpan.
   v. Complete Bill of Materials list indicating item number, component/material description, nameplate (where applicable), component manufacturer, part number and quantity.
   vi. PLC power distribution diagram indicating power circuitry, circuit breakers, fuses and terminal blocks.
   vii. PLC rack elevation indicating new I/O card arrangement.
   viii. Module connection wiring diagrams indicating all internal panel wiring and field wiring connections to new PLC panel. All terminal block numbers, internal wiring tag numbers, field wiring tag numbers, I/O tag number, signal description for each

I/O point and I/O card shall be indicated on the diagrams. Each diagram sheet shall include only one (1) I/O card.

D. Project Record Documents: The Contractor shall maintain a neat and orderly set of as-built record drawings, specifications, shop drawings and control system connection wiring diagrams which reflect any deviations from the Contract Documents, accepted shop drawings and submittal data in accordance with the requirements specified in the Contract Documents. Electronic ACAD files for all new motor control center (MCC) and programmable logic controller (PLC) equipment shall be submitted to the City upon completion of the Work.

E. Acceptance Testing Information and Documents:
   1. Completed factory testing forms for each new PLC system provided.
   2. Prior to field loop testing, blank testing forms shall be submitted for review and acceptance by the Owner's representative. Field loop testing forms shall include each input/output signal for each new PLC system provided.

5. QUALITY ASSURANCE

A. Regulations and Codes: Perform electrical work, including connection to electrical equipment integral with mechanical equipment, in accordance with latest published requirements of the following codes and code/standard making organizations:
   i. American National Standards Institute (ANSI).
   ii. American Society for Testing and Materials (ASTM).
   iii. Institute of Electrical and Electronics Engineers (IEEE).
   iv. Insulated Cable Engineers Association (ICEA).
   v. International Society of Automation (ISA).
   vi. National Electrical Code (NEC).
   vii. National Electrical Contractors Association (NECA).
   viii. National Electrical Safety Code (NESC).
   ix. National Electrical Manufacturers Association (NEMA).
   x. National Fire Protection Association (NFPA).
   xi. State and local codes.
   xii. California Building Code (2007 CBC).

B. Materials and equipment used in performance of electrical work shall be listed or labeled by Underwriter's Laboratories (UL) for the class of service intended. Custom-integrated equipment (i.e. new motor control centers, programmable logic controller cabinets and custom-integrated local control panels) shall include a UL label indicating that the complete, integrated equipment meets applicable UL requirements.

PART 2 – PRODUCTS

1. NAMEPLATES

A. As specified in Section 26 00 00.

2. NEW PLC-LMPS INTEGRATION

A. New programmable logic controller (PLC) PLC-LMPS shall be custom-integrated by Tesco Controls (no equal).

3. PROGRAMMABLE LOGIC CONTROLLER (PLC) HARDWARE

A. Hardware Platform: Allen-Bradley, 1756 Series ControlLogix (no equal).
B. Quantities and types of modules shall be as indicated on the Drawings.
C. Processor: Allen-Bradley, 1756 Series, Model No. 1756-L72 (no equal).
D. Ethernet Communication Module: Allen-Bradley, 1756 Series, Model No. 1756-EN2TR (no equal).
E. Wiring System: Provide I/O module-ready cable for each discrete I/O module provided. Each cable shall have one end factory-made with removable terminal blocks (RTBs) for connection to the corresponding I/O module and the other end with individually color-coded “flying lead” conductors that connect to a standard terminal block. Connections between new analog I/O modules and internal panel wiring terminal blocks shall be made with #16 twisted, shielded pair signal cable.
F. Chassis: Allen-Bradley, 1756 Series, Model No. 1756-Axx where “xx” is the number of slots as indicated on the Drawings for each new rack provided.
G. 24 Volt Direct-Current Discrete Input Modules: Allen-Bradley, 1756 Series, Model No. 1756-IB16I, 16-point, 24 volt direct-current, sink/source input module.
H. Discrete Output Relay Contact Modules: Allen-Bradley, 1756 Series, Model No. 1756-OW16I, 16-point, rated for use with alternating-current or direct-current control circuitry.
I. Analog Input Modules: Allen-Bradley, 1756 Series, Model No. 1756-IF8I, 8-channel, individually isolated.
J. Analog Output Modules: Allen-Bradley, 1756 Series, Model No. 1756-OF8I, individually isolated analog module, 8-point.
K. Spare I/O Modules: Provide one spare input/output module for each type provided (i.e. one each for DI, DO, AI and AO modules). Spare modules shall be provided to the City in original manufacturer’s sealed packaging prior to Project completion.
L. Power Supplies: Allen-Bradley, 1756 Series, Model No. 1756-PA75, 120VAC supply voltage.
M. Input/Output Slot Filler: Allen-Bradley, 1756 Series, Model No. 1756-N2.

4. PROGRAMMABLE LOGIC CONTROLLER (PLC) PANEL COMPONENTS

A. Enclosure: New enclosure for new PLC-LMPS shall be fabricated from 14 gauge steel, rated NEMA 12. Interior of enclosure shall have minimum of two (2) coats of white epoxy paint. Exterior of enclosure shall have minimum of two (2) coats of powder coated epoxy paint, ANSI 61 gray. Doors shall have full-length piano hinges and three-point lockable latches. Enclosure dimensions shall be as indicated on the Drawings. Manufacturer shall be Hoffman or equal.
B. Mounting Backpan: New backpan shall be fabricated from 12-gauge steel and coated with two coats of white epoxy paint. Mounting holes shall be located and sized to match enclosure mounting studs.
C. Panel Lighting Fixture: 24” LED, activated by door switch.
D. Interior Panel Wireways: Polyvinyl Chloride (PVC), narrow finger/slot design, rounded edges, UL recognized continuous use temperature of 50 degrees Celsius, UL94

Flammability Rating of V-0, conforms with NFPA 79-2002 section 14.3.1 requirement for flame-retardant material, light gray color, sizes as indicated on the Drawings, mounted to panel backpan with 316 stainless steel screws (adhesive mounting is prohibited). Manufacturers: Panduit or accepted equal.

E. Uninterruptible Power Supply (UPS): 120VAC input and output, 1500 volt-ampere rating, provided with optional relay dry contact card for "AC Power Failure" and "Low Battery" status indication, mounted within PLC-LMPS panel. Manufacturer: Marathon "Vault Series", tower type with Marathon Model No. AS-400 relay card (no equal).
F. 24-Volt Direct-Current Power Supplies: Phoenix Contact, Quint Series, Model No. QUINT-PS/1AC/24DC/10 (no equal to match City's existing installations). Rated for 120VAC, single-phase supply voltage, 24VDC $\pm$ 1% output voltage, 10 amperes output current, UL508 Listed, DIN rail mounted.
G. 24-Volt Direct-Current Power Supply Diode Redundancy Modules: Phoenix Contact, Trio-Diode, Order No. 2866514 (no equal for use with Phoenix Contact power supplies), rated for use with two (2) 24VDC, 10 ampere Quint power supplies for automatic "best source" power supply selection, DIN rail mounted.
H. Ethernet Switch: Hirschman, Model RS20-0800M4M4SDAEHH06.0.01 or accepted equal.
I. Cellular Telephone Autodialer: Cellular telephone communication technology, minimum of four (4) dry contact input provisions for dial and alarm initiation, provided complete with one (1) year celluar service contract, power supply and cord for connection to a simplex receptacle as indicated on the Drawings, mounted within the new PLC-LMPS panel as indicated on the Drawings. Configuration shall be performed by the Contractor based on telephone number and alarm messaging content as directed by the Owner's representative. Manufacturer: Raco "Guard-It Cellularm" (no equal).
J. Modbus-to-Ethernet Converter: Provide Modbus-to-Ethernet converter within new PLC-LMPS to facilitate Ethernet communication between existing standby generator controller and new PLC-LMPS. Converter shall be by Kohler Company (no equal) and shall include all required accessories required for compatibility with existing Kohler diesel engine-driven standby power generator.
K. Alternating-Current Circuit Breakers: Voltage and ampere ratings and number of poles as indicated on the Drawings, DIN rail mounted, UL489 Listed, 17.5 millimeters thickness (each single-pole breaker), 105 millimeters wide. Manufacturers: Allen-Bradley Bulletin 1489, Sprecher + Schuh Series L9 or accepted equal.
L. Discrete Output Signal Interposing Relays: Phoenix Contact, EMG 10-REL/KSR Series (no equal to match City's existing installations). Rated for 24VDC input voltage, maximum switching voltage of 250 volts AC/DC, single normally-open output contact rated 6 amperes, LED "On" indication, DIN rail mounted.
M. Intrinsically-Safe Relays: Provide intrinsically-safe relays within new PLC panels as indicated on the Drawings. Manufacturer: Gems "Safe-Pak" or accepted equal with contact types and quantities as indicated on the Drawings.
N. 4-20mA Intrinsically-Safe Analog Signal Repeaters: Suitable for isolating 4-20mA instrumentation signals originating from a Class I, Division 1 Hazardous Location. Manufacturers: Phoenix Contact Type MACX or accepted equal.
O. Feed-Through Terminal Blocks: Phoenix Contact, Clipline "UT 4" Series or accepted equal, double-bridge shaft for connection of adjacent terminal blocks via plug-in

bussing, gray for signal conductors, green for grounding and shield conductors, DIN rail mounted. “Double-stacked” terminal blocks are not acceptable.

P. Fused Terminal Blocks: Phoenix Contact, Clipline “ST 4-HESI…(5 x 20) for use with G fuse inserts or accepted equal. Spring-cage fused terminal block, black, LED blown fuse indicator, DIN rail mounted.

Q. Duplex Convenience Receptacle: Commercial grade, surface-mounted to panel backpan in box with 316 stainless steel screws, ivory cover plate, ampere rating as indicated on the Drawings.

5. HUMAN MACHINE INTERFACE (HMI) GRAPHICAL DISPLAY

A. Provide HMI screen flush-mounted to door of new PLC-LMPS panel.

B. Manufacturer: Allen-Bradley PanelView Plus 6, 1500 Color with Key/Touch, 15-inch display (no equal).

6. 600 VOLT INTERNAL PLC PANEL WIRE

A. General:
   1. Conductors: ASTM B8, soft drawn copper, maximum 12 months old, minimum 97% conductivity, AWG sizes as specified herein, Class B or C stranded.
   2. Insulation thickness: Minimum specified by article 310 of the National Electrical Code, latest edition.

B. Power and control wire:
   1. Insulation: Type MTW for all conductors routed entirely within new PLC panel.
   2. Provide single conductors for new power and control wiring, sizes as recommended by the PLC system Integrator and quantities as indicated on the Drawings.
   3. Solid conductor wire: Prohibited.

7. ULTRASONIC LEVEL ELEMENT

A. Provide new ultrasonic level element for connection to existing Milltronics HydroRanger level transmitter.

B. New ultrasonic level element shall be Siemens Model XPS-15F, suitable for installation in a Class I, Division 1 Hazardous Location (no equal).

C. Provide new level element with submergence shield option.

D. New level element cable length shall be determined by the Contractor based upon actual field installation cable distance between new level element mounting location and new field terminal box mounting location with a minimum of 10 feet of cable slack based upon final installation locations.

E. Provide manufacturer cable length as determined by the Contractor for connection between new field-mounted terminal box and new PLC-LMPS.

8. SUBMERSIBLE FLOAT SWITCHES

A. Polypropylene body, 4- inch diameter, single-pole, double-throw mechanical switch rated 250 volts, 10 amperes, minimum, provided with integral CPE jacketed submersible cord,

length as required based on Contractor's field measurements plus 10 feet of slack, mercury-free, rated for use in a Class I, Division 1 Hazardous Location.

B. Manufacturer: Flygt ENM-10 (no equal to match City's similar installations).

9. GAS DETECTION TRANSMITTERS

A. Field-mounted gas monitors/transmitters suitable for installation in a Class I, Division 1 Hazardous Location.
B. Individual sensor/transmitter units for detection of high combustible (LEL) gas levels, high hydrogen sulfide (H2S) gas levels and low oxygen (O2) gas levels.
C. Each transmitter output shall be analog 4-20mA. Analog signals shall be connected to new PLC-LMPS analog input cards as indicated on the Drawings.
D. Each transmitter shall be loop-powered from a 24VDC power supply originating from the new PLC-LMPS panel.
E. Each transmitter shall be configured for 3-wire operation as indicated on the Drawings.
F. Provide complete with all required fittings and mounting provisions for field installation within the new Equalization Basin Tank interior.
G. Manufacturer: MSA Ultima XE (no equal).

PART 3 – EXECUTION

1. PREPARATION

A. Cutting and Repairing: Where it becomes necessary to cut into existing work for the purpose of making electrical installations, use core drills for making circular holes. Other demolition methods for cutting or removing shall be reviewed by the City prior to starting the work.

2. GENERAL INSTALLATION REQUIREMENTS

A. Corrosion Protection:
   1. Isolate dissimilar metals, except conduit and conduit fittings, that may come into contact with neoprene washers, 9 mil polyethylene tape, or gaskets.
   2. Restore factory finishes which are damaged or rusted to their original new condition in accordance with manufacturer's surface preparation and coating instructions.
B. Install embedded electrical work prior to placing equipment pads. Provide all sleeves and openings through floors and walls required for passage of all conduits and other raceways. Sleeves shall be rigidly supported and suitably packed or sealed to prevent ingress of wet concrete or water.

C. Provide all insets and hangers required to support raceways and other electrical equipment.
D. Field-verify dimensions indicated on the Drawings. Actual locations, distances and levels shall be governed by actual field conditions.
E. Provide channels and associated hardware as required for support of raceways, device enclosures and other electrical equipment.

F. Separate iron or steel supports from aluminum with ¼ inch neoprene or other non-metallic gasketing.
G. Provide nameplates as specified in Section 26 00 00.
H. Provide grounding bushings at each end of metallic conduit runs. Grounding bushings shall be bonded to the grounding electrode system.
I. Installation of field instrumentation shall comply with the instrument Manufacturer's recommendations and instructions with respect to orientation and connections to process piping/equipment and electrical connections.

3. CLEANING

A. Clean each piece of equipment, existing and new, both inside and outside, and retouch equipment to match existing paint.

4. CONDUCTORS

A. Provide continuous power and control circuit conductors from source to load without splices or terminations in intermediate pullboxes or junction boxes unless splices are indicated on the Drawings.

5. TESTING

A. See Specification Section 26 00 00 for additional functional testing requirements.
B. After City's representative acceptance of the submitted Factory Test Plan, new PLC-LMPS system shall be factory tested. Factory testing shall be witnessed by the Engineer at a date mutually agreeable to the Engineer and the Contractor. Engineer shall be notified no less than four (4) calendar weeks prior to planned factory testing. Factory testing shall include PLC input/output testing to confirm that integrated system wiring from each backpanel terminal block is correctly wired to the input/output signal point indicated on the accepted shop drawings.
C. Contractor shall retain the services of certified field technicians, certified by the specific instrument manufacturer, for the configuration and calibration of new gas detection instrumentation. Contractor shall provide all necessary configuration software and hand-held programming devices. Retained field technicians shall be present at loop testing that involves the respective instrument being configured to assist with tuning and calibration.
D. After new integrated PLC system is installed at the project site, energized and connected to all field signal wiring, the Contractor shall perform loop testing for each input/output signal point. Loop testing shall be witnessed by the City's representative. Where possible, the Contractor shall simulate input/output signal state changes at the field device location. The purpose of the loop testing will be to verify the integrity of the complete, installed field instrument (analog and discrete type), field wiring and conductor terminations related to the designated PLC signal point. Testing of the PLC and SCADA programming shall not be included as part of the loop testing effort.
E. After successful completion of loop testing at each new PLC location and after new PLC programming has been downloaded by the City's programmer, the Contractor shall assist with system functional testing. The Contractor shall be present during all

system functional testing and provide support as needed to simulate field signal state changes and assist with wiring troubleshooting.

END OF SECTION

CITY OF PACIFICA
LINDA MAR PUMP STATION
UPGRADE PROJECT C004B

SECTION 27 00 10

DIESEL ENGINE-DRIVEN PUMP CONTROL SYSTEM REQUIREMENTS

PART 1.00 – GENERAL

1. SUMMARY

A. Section Includes: Diesel engine-driven pump control system requirements.
B. Related Sections:
   i. Section 01 10 10 – Summary of Work.
   ii. Section 01 13 40 – Shop Drawings, Product Data and Samples.
   iii. Section 26 00 00 – Electrical Requirements.
   iv. Section 27 00 00 – Control System Requirements.
C. Overview of Diesel Engine-Driven Pump Control System Work:
   i. See Specification Section 01 10 10 - Summary of Work for additional diesel engine-driven pump control system requirements. Section 01 10 10 includes equipment shutdown constraints and a description of temporary system control requirements. The requirements of Section 01 10 10 are intended to complement the requirements specified in this Section.
   ii. See Specification Section 26 00 00 – Electrical Requirements for additional requirements related to the control systems.
   iii. See Specification Section 27 00 00 – Control System Requirements for additional requirements.
   iv. Refer to the electrical drawings for additional new control system requirements.
   v. The Work shall include provisions for providing upgrades to the existing Linda Mar Pump Station diesel engine-driven pump control system which includes, but not limited to, the following:
      a. Provide a new, custom-integrated diesel engine-driven pump control panel system LCP-EDP.
      b. Provide new field instrumentation as indicated on the Drawings and as specified herein.
   vi. Work shall be performed sequentially as specified in Section 01 10 10 and shall be closely coordinated and sequenced with the overall project construction effort, system start-up schedule and City-appointed programmer.
   vii. Contractor shall provide new diesel engine-driven pump control panel. Contractor shall be responsible for installing new engine-driven pump control panel at the location indicated on the Drawings and for providing all new raceways and conductors routed between the new LCP-EDP, existing diesel engine-driven pump equipment and new PLC-LMPS.
   viii. Field start-up, testing and commissioning of the new LCP-EDP shall be provided by the Contractor's diesel engine-driven pump control panel Supplier.
   ix. Programming of the new engine-driven pump control panel including programmable controller and control panel human-machine interface (HMI) graphics shall be performed by the engine-driven pump control panel Supplier. The engine-driven pump control panel Supplier's programmer shall coordinate

with the City's PLC and SCADA system Programmer for implementation of status and alarm signals transmitted between the new engine-driven pump control panel and the City's SCADA system. The Contractor's project completion schedule shall include separate activity entries for engine-driven pump system programming, start-up and testing as specified herein. Contractor shall be responsible for scheduling programming activities with the engine-driven pump control panel Supplier's representative.

x. The City or City's representative shall provide technical and field support to the engine-driven pump control panel Supplier's engineering and field technical personnel as required to facilitate connection, operation, start-up and commissioning of the new engine-driven pump control panel system with the existing engine-driven pump equipment.

xi. Supply and installation of new field instrumentation and devices mounted directly on the existing engine-driven pump equipment shall be provided by the City or City's representative.

2. GENERAL ELECTRICAL REQUIREMENTS

A. Provide a tested and working diesel engine-driven pump control system required by the Contract Documents. System includes all items not specifically mentioned in these Specifications or indicated on the Drawings or accepted Shop Drawings, but which are obviously necessary to make a complete and working installation, and shall be deemed to be included herein.

B. Immediately notify Owner's representative, in writing, of discrepancies within the Contract Documents and discrepancies between the Contract Documents and actual field conditions.

C. The Contract Documents indicate or specify minimum sizes of equipment, electric devices, and other components of the electrical system, but the Contract Documents do not indicate every offset and fitting, or every structural or mechanical difficulty that may be encountered during the execution of the Work.

D. Install equipment at locations indicated on the Drawings as closely as field conditions permit.

E. Make minor variations to alignment of equipment and/or installation of raceway systems to avoid conflict with other portions of the Work or existing infrastructure.

F. Temporary Utilities:

i. Provide and maintain temporary utilities in accordance with Section 01 15 10.

ii. Install temporary power, signal and communication wiring as indicated on the Drawings and as specified in Section 26 00 00. After construction is completed, remove all temporary systems.

3. PERFORMANCE REQUIREMENTS

A. Operate control system equipment successfully in all control modes, without failure, as required by the Contract Documents.

4. SUBMITTALS

A. See Specification Section 01 13 40 for additional requirements.
B. Product Data: Include catalog data for all new diesel engine-driven pump control system components and electrical materials specified herein and indicated on the Drawings. Catalog data shall be "arrowed" to indicate exact proposed sizes, catalog numbers, etc. for each item.
C. Diesel Engine-Driven Pump Control Panel Shop Drawings:
   i. Notes to Reviewer: Contractor shall include a "Notes to Reviewer" sheet explaining any proposed component deviations or clarifications.
   ii. Symbol Legend Sheet: Include all symbols with accompanying definitions for all symbols shown in the custom-developed shop drawings.
   iii. New LCP-EDP: Panel backpan, side panel, interior door and exterior door elevations with all components shown. Drawing shall be "to scale" to accurately indicate component placement within new control panel.
   iv. Complete nameplate engraving schedule for all proposed new nameplates affixed to new control panel front door and backpan.
   v. Complete Bill of Materials list indicating item number, component/material description, nameplate (where applicable), component manufacturer, part number and quantity.
   vi. Control panel power distribution diagram indicating power circuitry, circuit breakers, fuses and terminal blocks.
   vii. Control panel controller rack elevation indicating new processor, communication module and I/O card arrangement.
   viii. Module connection wiring diagrams indicating all internal panel wiring and field wiring connections to new diesel engine-driven pump control panel. All terminal block numbers, internal wiring tag numbers, field wiring tag numbers, I/O tag number, signal description for each I/O point and I/O card shall be indicated on the diagrams.
D. Project Record Documents: The Contractor shall maintain a neat and orderly set of as-built record drawings, specifications, shop drawings and control system connection wiring diagrams which reflect any deviations from the Contract Documents, accepted shop drawings and submittal data in accordance with the requirements specified in the Contract Documents. Electronic .pdf files for all new diesel engine-driven pump control panel shall be submitted to the City upon completion of the Work.
E. Operations and Maintenance Manual: System Operations and Maintenance manual shall include specific product data for all components comprising the new diesel engine-driven pump control system and "As Built" system drawings.
F. Acceptance Testing Information and Documents:
   i. Completed factory testing forms for new diesel engine-driven pump control panel provided.

5. QUALITY ASSURANCE

A. Regulations and Codes: Perform electrical work, including connection to electrical equipment integral with mechanical equipment, in accordance with latest published requirements of the following codes and code/standard making organizations:
   i. American National Standards Institute (ANSI).

ii. American Society for Testing and Materials (ASTM).
iii. Institute of Electrical and Electronics Engineers (IEEE).
iv. Insulated Cable Engineers Association (ICEA).
v. International Society of Automation (ISA).
vi. National Electrical Code (NEC).
vii. National Electrical Contractors Association (NECA).
viii. National Electrical Safety Code (NESC).
ix. National Electrical Manufacturers Association (NEMA).
x. National Fire Protection Association (NFPA).
xi. State and local codes.
xii. California Building Code (2007 CBC).

B. Materials and equipment used in performance of electrical work shall be listed or labeled by Underwriter's Laboratories (UL) for the class of service intended. Custom-integrated equipment (i.e. new diesel engine-driven pump control panel) shall include a UL label indicating that the complete, integrated equipment meets applicable UL requirements.

PART 2 – PRODUCTS

1. NAMEPLATES
   A. As specified in Section 26 00 00.

2. NEW LCP-EDP INTEGRATION

   A. New diesel engine-driven pump control panel LCP-EDP shall be custom-integrated by FW Murphy Production Controls (no equal).

3. NEW LCP-EDP HARDWARE
   A. New diesel engine-driven pump control panel shall be Centurion Custom Control Panel, supplied by FW Murphy Production Controls (no equal) with the features specified herein and as indicated on the Drawings.
   B. Control Panel Power Supply: 24VDC, derived from existing diesel engine-driven pump skid-mounted batteries.
   C. Maintained “Emergency Stop” red mushroom head push button with contact provisions for remote emergency stop activation at PLC-LMPS.
   D. “Automatic-Off-Local” operating mode selector switch.
   E. Green, LED, push-to-test pilot light which shall be illuminated when no alarm conditions exist and the diesel engine-driven pump is ready for operation. Auxiliary normally open relay dry contact shall be provided for remote “Ready” indication at PLC-LMPS.
   F. Amber, LED, push-to-test pilot light which shall be illuminated if any system alarm condition exists. Auxiliary normally open relay dry contact shall be provided for remote “Diesel Engine-Driven Pump Alarm” indication at PLC-LMPS.
   G. Red, LED, push-to-test pilot light which shall be illuminated if a diesel engine-driven pump fault-based shutdown occurs. Auxiliary normally open relay dry contact shall be provided for remote “Diesel Engine-Driven Pump Shutdown Alarm” indication at PLC-LMPS.

H. Provide color HMI touchscreen with graphics developed by LCP-EDP Supplier. HMI screen shall be FW Murphy Production Controls, M-VIEW Touch Series, Model MV-10T (no equal).
I. Quantities and types of control and input/output (I/O) modules shall be as required for interface with the existing diesel engine-driven pump equipment and to provide system operational features specified herein.
J. Provide new LCP-EDP with Ethernet communication provisions, capable of Ethernet communication with new PLC-LMPS equipment.
K. LCP-EDP Enclosure: Wall-mounted, fabricated from 14 gauge steel, rated NEMA 12. Interior of enclosure shall have minimum of two (2) coats of white epoxy paint. Exterior of enclosure shall have minimum of two (2) coats of powder coated epoxy paint, ANSI 61 gray. Door shall have full-length piano hinge and three-point lockable latch. Maximum enclosure dimensions shall be 24 inches wide x 48 inches high x 24 inches deep.

4. LCP-EDP OPERATIONAL REQUIREMENTS

A. Automatic Mode Operation: New LCP-EDP shall receive a dry contact start signal closure from PLC-LMPS. LCP-EDP shall provide sequencing of electric governor speed setting signal *(new governor system mfg/model TBD)* which shall govern an idle warm-up period at 600 RPM for an adjustable period of time (5 min default) then ramp up, at an adjustable rate, to process control speed from a 4-20mA speed signal derived from PLC-LMPS, up to a maximum rated engine speed of 1200 RPM.
B. Local Mode Operation: Local mode shall provide a manually initiated start sequence and provide function of “Raise – Lower” manual speed signal control via the new LCP-EDP HMI touchscreen with governed minimum setting of 600 RPM and maximum setting of 1200 RPM.
C. LCP-EDP starting sequence shall include heavy-duty auxiliary relays for piloting 2” Magnatrol gas solenoid, starters auxiliary relays, jacket water heater disconnect and general purpose relays for piloting oil cooling water solenoid and pump seal water solenoid.
D. LCP-EDP shall interface with existing engine skid-mounted TRW speed switch that shall provide Crank Termination and Overspeed signals.
E. LCP-EDP shall interface with existing engine skid-mounted Waukesha hydraulic overspeed switch that shall provide redundant overspeed circuit closure and engine magneto ground circuit.
F. Existing engine-mounted low oil pressure switch shall send a closed contact signal to LCP-EDP. LCP-EDP shall have an adjustable fault delay (5 second default) piloted by crank termination, once crank termination occurs low oil contact closure shall immediately shutdown the engine (governor signaled to minimum fuel position and gas valve de-energized).
G. Once crank termination signal occurs, starter auxiliary contactor relays drop out is to be “sealed-in”. Should the engine drop below crank termination in operation, the starters WILL NOT re-engage.
H. Existing engine-mounted low water level switch shall be connected to LCP-EDP and initiate an engine shutdown.

I. A new alternate low-low water level water pressure transmitter (0.1 psig resolution from a 0-10 psig scale) shall be provided on the existing engine skid by the City or City's representative for connection to new LCP-EDP.
J. Existing engine-mounted high oil temp switch shall be connected to LCP-EDP and initiate an engine shutdown.
K. New vibration monitor shall be supplied loose from the Contractor to the City for City installation on the existing engine skid. New vibration monitor shall be electronic type by FW Murphy Production Controls which includes a shutdown fault contact closure and has a 4-20 mA output for display at the LCP-EDP HMI and 4-20mA output signal to PLC-LMPS for remote indication and trending.
L. LCP-EDP to provide adjustable cycle cranking and overcrank shutdown function (default 10 seconds crank – 10 seconds rest – 90 seconds overall overcrank).
M. Existing engine-mounted magnetic speed pickup shall be replaced by City or City's representative. New magnetic speed pickup device shall be supplied loose from the Contractor to the City for City installation on the existing engine skid. New magnetic speed pickup device shall be FW Murphy Production Controls (no equal), installed over the flywheel ring gear, compatible with new LCP-EDP control system for display of engine speed (in RPM) with provisions for a 4-20mA speed signal to PLC-LMPS.
N. Existing engine skid-mounted gauge panel shall remain, retrofitted with addition of FW Murphy Production Controls electronic senders for instrumentation display and generation of adjustable alarm values and redundant shutdown values for engine oil pressure, engine oil temperature and engine jacket water temperature. Existing gauge panel retrofit components shall be supplied loose from the Contractor to the City for City installation on the existing engine skid.
O. A new jacket water temperature sensor shall be supplied loose from the Contractor to the City for City installation on the existing engine skid. New jacket water temperature sensor shall provide adjustable low water temperature alarm to indicate jacket water heater failure. New jacket water heater sensor shall be FW Murphy Production Controls (no equal).
P. LCP-EDP shall receive a signal from the existing engine system battery charger for "Battery Charger Alarm".
Q. A new temperature monitoring device shall be supplied loose from the Contractor to the City for City installation on the existing engine skid. New temperature monitoring device shall be outlet elbow K-type (port existing), FW Murphy Production Controls (no equal).

PART 3 – EXECUTION

1. PREPARATION

A. Prior to preparation of the initial LCP-EDP submittal, Contractor shall coordinate a one-day, onsite field meeting between FW Murphy Production Controls engineering and field technical personnel and City to review existing diesel engine-driven pump equipment, confirm scope of new engine-mounted component supply and installation requirements and confirm mutual understanding of new diesel engine-driven pump control system operational requirements. Following this onsite meeting, initial submittal for new LCP-EDP and supplied loose engine-mounted components shall be prepared and submitted for Engineer review.

2. GENERAL INSTALLATION REQUIREMENTS

A. Contractor shall provide new LCP-EDP and all associated field conductor and raceway connections prior to scheduling field testing, start-up and commissioning of new diesel engine-driven pump control system equipment.

3. CLEANING

A. Clean each piece of equipment, existing and new, both inside and outside, and retouch equipment to match existing paint.

4. CONDUCTORS

A. Provide continuous power and control circuit conductors from source to load without splices or terminations in intermediate pullboxes or junction boxes unless splices are indicated on the Drawings.

5. TESTING, START-UP AND COMMISSIONING

A. After new LCP-EDP is installed, all new associated conductors and raceways are installed and after all new Contractor-supplied engine-mounted components have been installed and connected by the City, Contractor shall coordinate onsite testing, start-up and commissioning of the new diesel engine-driven pump control system with the LCP-EDP Supplier, City and Engineer. LCP-EDP Supplier field technical personnel shall be required to be onsite per the following:
   i. Five (5) consecutive days for initial system testing, troubleshooting and start-up.
   ii. Three (3) one-day (8 hours per day), non-consecutive onsite field visits following initial start-up to provide system configuration adjustments and final system commissioning.

6. SYSTEM TRAINING

A. LCP-EDP Supplier shall provide qualified technical personnel for onsite training in the operation and maintenance of the new diesel engine-driven pump control system. Contractor shall coordinate training sessions with City to include two (2) 4-hour training sessions, provided on non-consecutive days. New control system Operations and

Maintenance manual shall be utilized as the basis for each identical training session.

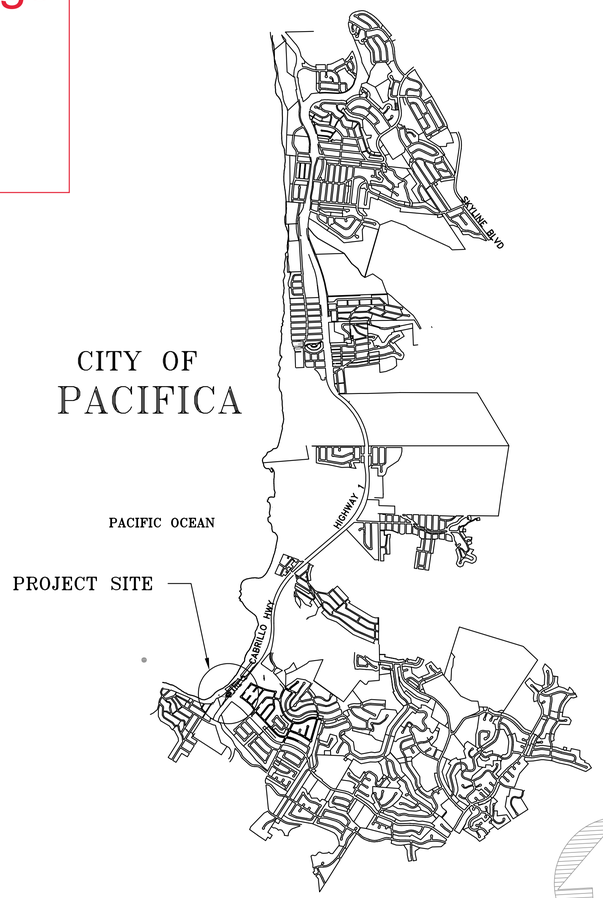
END OF SECTION

CITY OF PACIFICA

DEPARTMENT OF PUBLIC WORKS
WASTE WATER DIVISION
LINDA MAR PUMP STATION
UPGRADE PROJECT C004B
100% SUBMITTAL

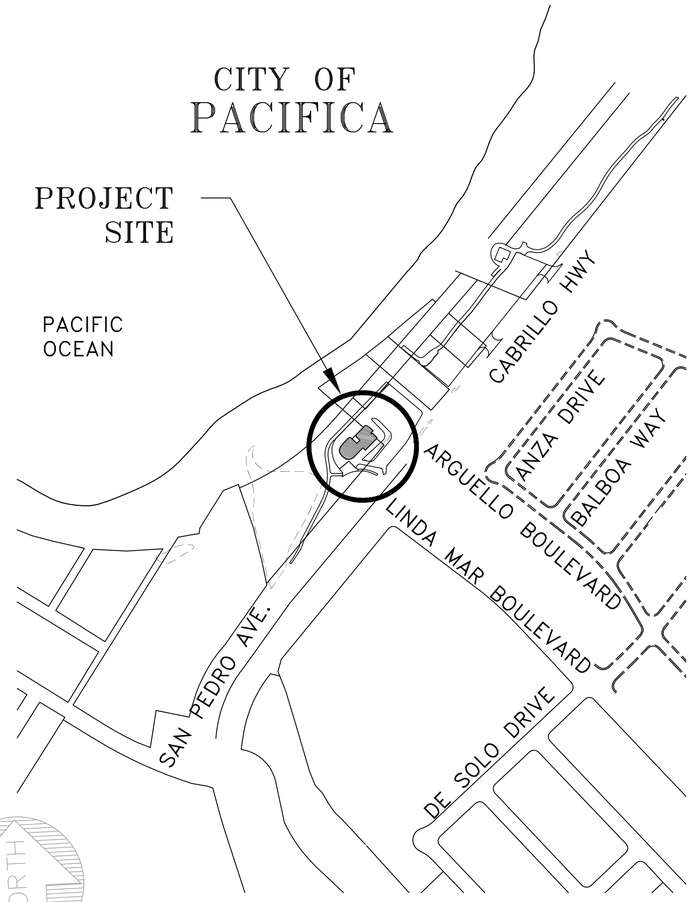
Electrical dwgs at half size, relative to Civil dwgs - please coordinate consistent plan size throughout

LOCATION MAP



NTS

SITE LOCATION



NTS

SCALE: AS NOTED				
DESIGNED: JJT				
DRAWN: SCC				
CHECKED: CB		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
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PACIFICA CALIFORNIA 94044

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LINDA MAR PUMP STATION UPGRADE PROJECT C004B

TITLE SHEET

CITY OF PACIFICA, CALIFORNIA

SHEET C-1.0

JOB NO. 240010

Z:\Projects\240 City Of Pacifica\010 Linda Mar Pump Station\AAA Latest\C-1.0-1.4 - Title Sheet, Abbrev, Notes.dwg

INDEX OF DWGS

Say (NIC) after entry
Since we will "X" out the actual drawings and leave in the project, this way, your sheet numbers are consistent. Designer preference

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C-1.1	DRAWING INDEX SHEET
C-1.2	SYMBOLS AND ABBREVIATIONS
C-1.3	GENERAL NOTES
C-1.4	GENERAL NOTES
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C-2.1	PUMP HOUSE LOWER FLOOR DEMOLITION
C-3.0	PUMP HOUSE MODIFICATION UPPER FLOOR
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C-4.0	PUMP REPLACEMENT AND PIPING MODIFICATIONS
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E915	ELECTRICAL DETAILS - 5
E916	ELECTRICAL DETAILS - 6

SCALE:	AS NOTED		
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PROJ. ENGR:	JJT		

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DRAWING INDEX SHEET

CITY OF PACIFICA, CALIFORNIA

SHEET
C-1.1

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SYMBOLS

EXISTING	PROPOSED	
		LIMIT OF WORK
		PROPERTY LINE
		STATION LINE
G	G	GAS LINE
W	W	WATER LINE
E	E	ELECTRICAL LINE
SS		SANITARY SEWER
SSFM	SSFM	SANITARY FORCE MAIN
SD		STORM DRAIN
		CHAIN LINK FENCE
		EASEMENT
		JACKING/ RECEIVING PIT
LAT		SS LATERAL/ W LATERAL
1120		ADDRESS NUMBER
		WATER VALVE
157.7		SPOT ELEVATION
FH	FH	FIRE HYDRANT
		POST OR BOLLARD
		POT HOLE
		BUILDING
102		MAJOR CONTOUR AND ELEVATION
102		MINOR CONTOUR AND ELEVATION
		EMBANKMENT AND SLOPE
	1 / C4.5	DETAIL & SHEET NOTATION
		BACKFLOW PREVENTOR

EXISTING	PROPOSED	
SS		SANITARY SEWER MANHOLE
SD		STORM DRAIN MANHOLE
T E		UTILITY MANHOLE
		CURB INLET
		STREET LIGHT FIXTURE
		COMBINATION POLE
		UTILITY BOX
		UTILITY POLE, MUNI POLE, JUNCTION POLE
PP		POWER POLE
		MONUMENT
		TREE
		ROAD SIGN, TRAFFIC SIGN
WM	W	WATER METER BOX
		CLEANOUT
		PIPE CAP, PLUG
		CURB RAMP
		DRIVEWAY, CURB CUT
		CURB & GUTTER
		VERTICAL CURB
SD		SS LAMP HOLE
		THRUST BLOCK

GENERAL NOTES

1) *CONTRACTOR SHALL CONTACT USA 48 HOURS PRIOR TO START OF WORK*
2) *ALL CONTRUCTION SHALL COMPLY WITH STATE AND LOCAL CODES.*

NOTES:

1. SYMBOLS ON THIS SHEET APPLY ONLY TO THE CIVIL DRAWINGS.

2. THIS IS A STANDARD SYMBOLS SHEET, THEREFORE, SOME SYMBOLS AND ABBREVIATIONS MAY APPEAR ON THIS SHEET AND MAY NOT BE UTILIZED ON THIS PROJECT.

ABBREVIATIONS

ABND	ABANDON OR ABANDONED
@	AT
AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
APPROX	APPROXIMATE
AP	ANGLE POINT
APVD	APPROVED
ARCH	ARCHITECTURAL
ARV	AIR RELEASE VALVE
AUTO.	AUTOMATIC
AUX	AUXILIARY
AWSS	AUXILIARY WATER SUPPLY SYSTEM
AWWA	AMERICAN WATER WORKS ASSOCIATION
BC	BACK OF CURB
BCC	BEGIN COMPOUND CURVE
BCR	BEGINNING OF CURB RAMP
BFV	BUTTERFLY VALVE
BHG	BEEHIVE GRATE
BLDG	BUILDING
BM	BENCH MARK, BEAM
BO	BLOW OFF
BRC	BEGIN REVERSE CURVE
BRWH	BEGINNING OF REDWOOD HEADER
BV	BALL VALVE
BVC	BEGINNING OF VERTICAL CURVE
BW	BACK OF SIDEWALK
C	CHANNEL (BEAM)
CARV	COMBINATION AIR RELEASE VALVE
CATV	CABLE TELEVISION
CB	CATCH BASIN
CBC	CALIFORNIA BUILDING CODE
CFS	CUBIC FEET PER SECOND
C&G	CURB AND GUTTER
CI	CAST IRON
CIMJ	CAST IRON MECHANICAL JOINT
CIP	CAST IRON PIPE
CIRJ	CAST IRON RESTRAINED JOINT
CISP	CAST IRON SOIL PIPE
CJ	CONSTRUCTION JOINT
CL	CENTERLINE
CLDIP	CEMENT-LINED DUCTILE IRON PIPE
CLR	CLEAR, CLASS
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
COL	COLUMN
COMB.	COMBINED
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS, CONTINUATION
COORD	COORDINATE
COP.	COPPER
CPLG	COUPLING
CR	CURB RETURN
CS	COMBINED SEWER
CTD	CENTERED
CTE	CONNECT TO EXISTING
CTR	CENTER
C TO C	CENTER TO CENTER
CU	CUBIC
CU FT	CUBIC FOOT
CU IN.	CUBIC INCH
CU YD	CUBIC YARD
CV	CHECK VALVE
D	DELTA
DBL	DOUBLE
DET	DETAIL
DI	DROP INLET
DIA	DIAMETER
DIAG	DIAGONAL
DIMJ	DUCTILE IRON MECHANICAL JOINT
DIP	DUCTILE IRON PIPE
DN	DOWN
DR	DRAIN
DW	DOMESTIC WATER, DRIVEWAY
(E),EX,EXIST	EXISTING
E	EAST, ELECTRIC, EASTING
EA	EACH
EC	END CURVE
ECC	ECCENTRIC, END COMPOUND CURVE
ECR	END OF CURB RAMP
EHC	END OF HORIZONTAL CURVE
EL	ELEVATION
ELB	ELBOW
ELEC	ELECTRIC, ELECTRICAL
ENGR	ENGINEER
EP	EDGE OF PAVEMENT
EQPT	EQUIPMENT
ERC	END REVERSE CURVE
EVC	END OF VERTICAL CURVE
EWEF	EACH WAY, EACH FACE
EW	EACH WAY
EX	EXISTING
EXP	EXPOSED, EXPANSION
EXP JT	EXPANSION JOINT
(F),F	FUTURE
FC	FLEXIBLE COUPLING
FCA	FLANGED COUPLING ADAPTER
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FDA	FLOOR DRAIN W/INTEGRAL TRAP
FDN	FOUNDATION
FF	FINISH FLOOR
FG	FINISH GRADE
FH	FIRE HYDRANT
FIG.	FIGURE
FLG	FLANGE
FL	FLOW LINE
FNSH	FINISH
FO	FIBER OPTICS
FOC	FACE OF CONCRETE
FP	FINISH PAVEMENT
FT	FOOT OR FEET
FTG	FOOTING
FW	FIRE WATER
FWD	FORWARD
°F	DEGREE FAHRENHEIT
G	GAS
GAL	GALLON
GALV	GALVANIZED
GB	GRADE BREAK
GCO	GRADE CLEAN OUT
GL	GLASS
GPM	GALLONS PER MINUTE
GR	GRATE, GROUND
GRTG	GRATING
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
HDW	HARDWARE
HORIZ	HORIZONTAL
HP	HIGH POINT, HINGE POINT
HPG	HIGH PRESSURE GAS
HPW	HIGH PRESSURE WATER
HR	HANDRAIL
HWY	HIGHWAY
ID	INSIDE DIAMETER
IF.	INSIDE FACE
IN.	INCH
INSUL	INSULATE
INV	INVERT
IRR	IRRIGATION
JP	JOINT POLE
JT	JOINT / JOINT TRENCH
L	LENGTH
L, LT	LEFT
LAT	LATERAL
LB	POUNDS
LB/CU FT	POUNDS PER CUBIC FOOT
LF	LINEAR FEET
LG	LONG
LH	LEFT HAND
LIP	LIP OF CUTTER
LONG.	LONGITUDINAL
L.O.W.	LIMIT OF WORK
LPW	LOW PRESSURE (DOMESTIC) WATER
MAX	MAXIMUM
MB	MACHINE BOLT
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM, MINUTE
MISC	MISCELLANEOUS
MTL	MATERIAL
(N)	NEW
N	NORTH, NORTHING
NIC	NOT IN CONTRACT
NO.	NUMBER, NUMBERING
NTS	NOT TO SCALE
(OH)	OVERHEAD
OC	ON CENTER
OD	OUTSIDE DIAMETER, OVERFLOW DRAIN
OF.	OUTSIDE FACE, OVERFLOW
OG	ORIGINAL GROUND
OPNG	OPENING
OFI	OVERFLOW INLET
(P)	PROPOSED
PAE	PUBLIC ACCESS EASEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE OR PORTLAND CEMENT CONCRETE
PE	PLAIN END, PERMANENT EASEMENT
PERF	PERFORATED PIPE
PH	POTHOLE
PI	POINT OF INTERSECTION
PL	PLATE, PROPERTY LINE
POC	POINT OF CONNECTION
PRC	POINT OF REVERSE CURVE
PREFAB	PREFABRICATED
PROP	PROPOSED (OR PROPERTY)
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
PSIG	POUNDS PER SQUARE INCH, GAUGE
PT	POINT OF TANGENCY
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVT	PRIVATE
PWR	POWER
R, RAD	RADIUS
R, RT	RIGHT
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RCW	RECLAIMED WATER
RD	ROAD, ROOF DRAIN
RDCR	REDUCER
REF	REFER OR REFERENCE
REINF	REINFORCED, REINFORCING, REINFORCE
REQD	REQUIRED
RJ	RESTRAINED JOINT
RMV	REMOVE
RO	ROUGH OPENING
ROW	RIGHT-OF-WAY
RST	REINFORCING STEEL
RTN	RETURN
RWH	REDWOOD HEADER
RWL	RECLAIMED WATER LINE
S	SLOPE
SD	STORM DRAIN
SDI	STORM DRAIN INLET
SEC	SECTION
SHT	SHEET
SPEC	SPECIFICATIONS
SPLY	SUPPLY
SQ	SQUARE
SQ FT	SQUARE FOOT
SQ IN	SQUARE INCH
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
SST	STAINLESS STEEL
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL, STEEL PIPE
STRUCT	STRUCTURAL
SVC	SERVICE
S/W, SW	SIDEWALK
SWI	STORM WATER INLET
SYMM	SYMMETRICAL
T	TANGENT
T&B	TOP AND BOTTOM
TC	TOP OF CURB
TD	TRENCH DRAIN
TECH	TECHNICAL
TELE	TELECOMMUNICATIONS
TF	TOP FACE
TG	TOP OF GRATE
TL	TOP OF LIP
TP	TOP OF POLE
TRANSV	TRANSVERSE
TST	TOP OF STEEL
TT	THRUST TIE
TW	TOP OF WALL
TYP	TYPICAL
(UG)	UNDERGROUND
UBC	UNIFORM BUILDING CODE
UON	UNLESS OTHERWISE NOTED
UNK	UNKNOWN
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VPI	VERTICAL POINT OF INTERSECTION
W/	WITH
W	WATER, WEST
WM	WATER METER
WS	WATER SURFACE, WATER STOP
WSP	WELDED STEEL PIPE

SCALE: AS NOTED					
DESIGNED: JJT					
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SYMBOLS & ABBREVIATIONS

CITY OF PACIFICA, CALIFORNIA

SHEET
C-1.2

JOB NO.
240010

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GENERAL NOTES

GR GENERAL REQUIREMENTS

GR–1) AS USED IN THESE GENERAL NOTES:
"DRAWINGS" MEANS THE LATEST DRAWINGS, UON.
"SPECIFICATIONS" MEANS THE LATEST PROJECT SPECIFICATIONS, UON.
"CONTRACT DOCUMENTS" IS DEFINED AS THE ENGINEER OF RECORD FOR THE FINAL CONDITION.
"DESIGN PROFESSIONALS" IS DEFINED AS THE OWNER'S CIVIL ENGINEER AND SER.
"MEP" INCLUDES, BUT IS NOT LIMITED TO MECHNIAL, ELECTRICAL, PLUMBING.

"CONTRACTOR" IS DEFINED TO INCLUDE ANY OF THE FOLLOWING: GENERAL CONTRACTOR AND THEIR SUBCONTRACTORS, CONSTRUCTION MANAGER AND THEIR SUBCONTRACTORS.

GR–2) THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE PROJECT WORK WITH THE CIVIL, MEP CONTRACT DOCUMENTS, AS WELL AS ANY OTHER APPLICABLE TRADES.

GR–3) THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE UNTIL THE CONSTRUCTION OF THE STRUCTURE REACHES ITS FINAL CONDITION.

GR–4) THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE INSTALLATION, AND REMOVAL OF TEMPORARY BRACING AND OTHER REQUIRED CONSTRUCTION SUPPORTS, FOR NEW AND EXISTING STRUCTURES, AS NECESSARY TO COMPLETE THE PROJECT. NO PORTION OF THE PROJECT WHILE UNDER CONSTRUCTION IS INTENDED TO BE STABLE IN THE ABSENCE OF THE TEMPORARY SUPPORTS AND BRACES. CONTRACTOR SHALL RETAIN A STRUCTURAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED TO ASSIST TEMPORARY BRACING INSTALLATION AND REMOVAL AND OTHER CONSTRUCTION SUPPORTS.

GR–5) THE SPECIFICATIONS ARE AN INTEGRAL PART OF THE CONTRACT DOCUMENTS AND SHALL BE USED IN CONJUNCTION WITH THE DRAWINGS.

GR–6) IN CASES OF CONFLICT BETWEEN DRAWINGS AND/OR SPECIFICATIONS AND OTHER DISCIPLINES OR EXISTING CONDITIONS, CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONALS AND OBTAIN CLARIFICATION PRIOR TO BIDDING AND PROCEEDING WITH WORK.

GR–7) APPLY DETAILS, SECTIONS, AND NOTES ON THE DRAWINGS WHERE CONDITIONS ARE SIMILAR TO THOSE INDICATED BY DETAIL, DETAIL TITLE OR NOTE.

GR–8) ONLY USE DIMENSIONS INDICATED ON THE DRAWINGS. DO NOT SCALE DRAWINGS.

GR–9) ASSUME EQUAL SPACING BETWEEN ESTABLISHED DIMENSIONS, IF NOT INDICATED ON DRAWINGS.

GR–10) THE CONTRACTOR SHALL PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITIES FROM DAMAGE, UON.

GR–11) THE CONTRACTOR SHALL VERIFY THAT CONSTRUCTION LOADS DO NOT EXCEED THE CAPACITY OF THE STRUCTURE AT THE TIME THE LOAD IS APPLIED.

GR–12) ELEVATIONS INDICATED ON DRAWINGS ARE BASED ON A PROJECT DATUM INDICATED ON THE CIVIL DRAWINGS.

CM CONCRETE MATERIALS

CM–1) CONCRETE STRENGTHS AND WEIGHT (SEE SPECIFICATION SECTION FOR ADDITIONAL CONCRETE PROPERTIES):

LOCATION	MIN COMPRESSIVE STRENGTH (PSI)	MAX WEIGHT (PCF)
CONCRETE PUMP PAD	4000 PSI @ 28 DAYS	145
ALL OTHER CONC NOT SPECIFICALLY SPECIFIED	4000 PSI @ 28 DAYS	145

CM–2) ALL CONCRETE SHALL BE THOROUGHLY CONSOLIDATED.

CM–3) THE USE OF CALCIUM CHLORIDE AND OTHER CHLORIDE CONTAINING AGENTS IS PROHIBITED. THE USE OF RECYCLED CONCRETE IS PROHIBITED. PLACEMENT WITHIN AND CONTACT BETWEEN ALUMINUM ITEMS, INCLUDING ALUMINUM CONDUIT, AND CONCRETE IS PROHIBITED.

RE CONCRETE REINFORCEMENT

RE–1) ALL CONCRETE SHALL INCLUDE REINFORCEMENT. IF REINFORCEMENT IS NOT SPECIFICALLY INDICATED ON THE DRAWINGS, VERIFY WITH THE ENGINEER BEFORE PROCEEDING WITH WORK.

RE–2) REINFORCEMENT SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES:

DEFORMED BARS:	ASTM A615, GRADE 60, UON
WELDABLE DEFORMED BARS:	ASTM A706, GRADE 60, UON
WELDED BAR ANCHORS:	NELSON D2L DEFORMED BAR ANCHORS (ICC–ES REPORT ER–5217)

RE–3) DETAIL REINFORCEMENT BASED ON THE PROJECT REQUIREMENTS, ACI–318 AND ACI–315, UON.

RE–4) WHERE A 90–DEG, 135 –DEG OR 180–DEG HOOK IS GRAPHICALLY INDICATED, PROVIDE CORRESPONDING ACI STANDARD HOOKS, UON.

RE–5) DOWELS SHALL MATCH SIZE AND SPACING OF MAIN REINFORCEMENT, UON.

RE CONCRETE REINFORCEMENT (CONT)

RE–6) REINFORCEMENT SHALL HAVE CONCRETE PROTECTION (CLEAR COVER) PER ACI 318 UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

RE–7) LAP REINFORCEMENT AS SPECIFICALLY DETAILED ON THE DRAWINGS.

RE–8) UNLESS OTHERWISE NOTED ALL LAP SPLICES ARE TO BE CLASS "B" SPLICES.

RE–9) PROVIDE MECHANICAL SPLICES FOR BARS LARGER THAN #11 OR WHERE INDICATED. PROVIDE TENSILE, PRE–QUALIFIED, WELDED OR THREADED MECHANICAL SPLICES UON.

RE–10) TERMINATION OF REINFORCEMENT, UON:

A. TERMINATE ALL BARS IN LAPS, 90 DEGREE BENDS, OR WITH DOWELS INTO EXISTING CONCRETE.

B. BEND TOP MAT OR FOOTING BARS DOWN TO BOTTOM BARS AT ENDS.

C. BEND BOTTOM MAT OR FOOTING BARS UP WITH STANDARD 90 DEGREE BENDS.

D. PROVIDE DOWELS FROM FOOTINGS AND SLABS INTO WALLS AND COLUMNS TO MATCH SIZE AND SPACING OF VERTICAL REINFORCEMENT.

SP STRUCTURAL PRECAST CONCRETE

SP–1) TYPICAL DETAILS INDICATE GENERAL CRITERIA FOR DESIGN AND DETAILING OF PRECAST CONCRETE. PROVIDE DESIGNS THAT MEET INDICATED CRITERIA BELOW AND LISTED CODES AND STANDARDS AND ICC–ES EVALUATION REPORT ESR–2660.

SP–2) PROVIDE CAMBER TO LIMIT DEFLECTION SUCH THAT NO POINT OF THE DEFLECTED STRUCTURE EXCEEDS BELOW THE STATED ELEVATION. CAMBER DESIGN SHALL INCLUDE EFFECTS OF LONG–TERM DEFLECTION, SHRINKAGE, CREEP, AND MAXIMUM ALLOWABLE CONSTRUCTION TOLERANCES.

SP–3) DO NOT USE POWER–DRIVEN ANCHORS OR ANCHORS WHICH REQUIRE DRILLING AT PRESTRESSED UNITS. SUBMIT PROPOSED ANCHOR PROCEDURES FOR PRECAST UNITS TO THE DESIGN PROFESSIONALS AND PRECAST SUPPLIER FOR REVIEW.

DEFERED APPROVAL

THE FOLLOWING ITEMS ARE DESIGN–BUILD SYSTEMS AND WILL BE DEFERRED SUBMITALS BY THE CONTRACTOR AT A LATER DATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENGINEERING AND CALCULATIONS FOR APPLICABLE ITEMS. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A CIVIL OR STRUCTURAL ENGINEER REGISTERED IN CALIFORNIA FOR THE DESIGN OF THE ITEMS. THE CONTRACTOR SHALL SUBMIT THE CALCULATIONS AND SHOP DRAWINGS TO THE ENGINEER OF RECORD (EOR), WHO WILL REVIEW THEM AND ADD A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN REQUIREMENTS SPECIFIED IN THE CONTRACT DOCUMENTS. THE EOR WILL FORWARD THE SUBMITTAL TO THE CITY OF PACIFICA BUILDING DEPARTMENT FOR APPROVAL. THE SUBMITTAL ITEMS SHALL NOT BE FABRICATED OR CONSTRUCTED UNTIL THE SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE CITY.

1. RAISED METAL PLATFORM, RAILING, AND STAIRS

PA POST–INSTALLED ANCHORS

PA–1) POST–INSTALLED ANCHORS INCLUDE EXPANSION ANCHORS, EPOXY ANCHORS/DOWELS, AND POWDER–ACTUATED FASTENERS.

PA–2) INSTALL POST–INSTALLED ANCHORS IN ACCORDANCE WITH THE APPLICABLE ICC–ES REPORT AND THE MANUFACTURER'S RECOMMENDATIONS.

PA–3) USE SCANNING EQUIPMENT OR OTHER MEANS TO LOCATE AND AVOID CUTTING OR DAMAGING REINFORCING BARS. EOR APPROVAL IS REQUIRED PRIOR TO CUTTING OR DAMAGING REINFORCING.

PA–4) SPECIAL INSPECTION IS REQUIRED FOR ALL POST–INSTALLED ANCHOR INSTALLATIONS, UON.

PA–5) FIELD TESTING OF POST–INSTALLED ANCHORS IS REQUIRED, UON. TEST INSTALLED ANCHORS IN ACCORDANCE WITH THE FOLLOWING:

A. TEST 100% OF ANCHORS AT ALL STRUCTURAL APPLICATIONS, UON.

B. TEST 50% OF ANCHORS AT ALL NON–STRUCTURAL APPLICATIONS (SUCH AS EQUIPMENT ANCHORAGE), UON.

C. TEST 10% OF ANCHORS AT SILL PLATE BOLTING APPLICATIONS, UON.

D. IF ANY ANCHOR FAILS TESTING, TEST ALL ANCHORS OF THE SAME TYPE NOT PREVIOUSLY TESTED UNTIL 20 CONSECUTIVE ANCHORS PASS.

E. FIELD TESTS SHALL BE EITHER TENSION TESTS OR TORQUE TESTS, AS REQUIRED FOR THE SPECIFIC ANCHOR TYPE.

F. TENSION TESTS: APPLY TEST LOADS TO ANCHORS WITHOUT REMOVING THE NUT IF POSSIBLE. IF NOT, REMOVE NUT AND INSTALL A THREADED COUPLER TO THE SAME TIGHTNESS AS THE ORIGINAL NUT USING A TORQUE WRENCH. REACTION LOADS FROM TEST FIXTURES MAY BE APPLIED CLOSE TO THE ANCHOR BEING TESTED, PROVIDED THE ANCHOR IS NOT RESTRAINED FROM WITHDRAWING BY THE FIXTURES. TO BE ACCEPTABLE, ANCHORS SHALL HAVE NO OBSERVABLE MOVEMENT AT THE APPLICABLE TEST LOAD (OBSERVABLE MOVEMENT IS DEFINED AS THE WASHER UNDER THE NUT BECOMING LOOSE).

PA POST–INSTALLED ANCHORS (CONT)

G. TORQUE TESTS: TO BE ACCEPTABLE, THE APPLICABLE TEST TORQUE MUST BE REACHED WITHIN ONE–HALF TURN OF THE NUT.

H. TEST EQUIPMENT IS TO BE CALIBRATED BY AN APPROVED TESTING LABORATORY IN ACCORDANCE WITH STANDARD RECOGNIZED PROCEDURES.

I. FIELD TESTING SHALL BE DONE IN THE PRESENCE OF THE PROJECT INSPECTOR.

J. TESTING SHOULD OCCUR A MINIMUM OF 24 HOURS AFTER INSTALLATION OF THE SUBJECT ANCHOR.

PA–6) EXPANSION ANCHORS

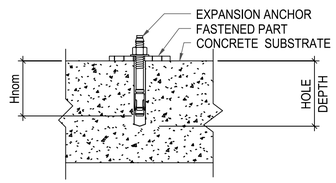
A. EXPANSION ANCHORS SHALL BE EITHER ONE OF THE FOLLOWING, UON:

HILTI KWIK BOLT TZ
(ICC–ES REPORT ESR–1917)

SIMPSON STRONG–BOLT 2
(ICC–ES REPORT ESR–3037)

USE OF CARBON STEEL EXPANSION ANCHORS IS LIMITED TO DRY, INTERIOR LOCATIONS. USE STAINLESS STEEL EXPANSION ANCHORS AT EXTERIOR, WEATHER–EXPOSED, OR DAMP LOCATIONS. USE OF EXPANSION ANCHOR INSIDE OF THE BASIN IS NOT ALLOWED.

B. ANCHOR EMBEDMENTS BELOW ARE TO BE USED WHEN EXPLICITLY SPECIFIED IN THE STRUCTURAL DRAWINGS. FOR LOCATIONS WHERE TENSION TEST VALUES ARE NOT SPECIFIED IN THE DRAWINGS, CONSULT WITH THE EOR.



CONCRETE SLAB

HILTI KWIK BOLT TZ IN NORMAL–WEIGHT CONCRETE			
ANCHOR DIAMETER	Hnom	MINIMUM HOLE DEPTH	TORQUE TEST VALUE (FT–LBS)
3/8"	2 5/16"	2 5/8"	25
1/2"	2 3/8"	2 5/8"	40
5/8"	4 7/16"	4 3/4"	60
3/4"	5 9/16"	5 3/4"	110

SIMPSON STRONG–BOLT 2 IN NORMAL–WEIGHT CONCRETE			
ANCHOR DIAMETER	Hnom	MINIMUM HOLE DEPTH	TORQUE TEST VALUE (FT–LBS)
3/8"	1 7/8"	2"	30
1/2"	2 3/4"	3"	60
5/8"	5 1/8"	6"	90
3/4"	5 3/4"	5 3/8"	150

C. Hnom IS MEASURED FROM FACE OF CONCRETE SUBSTRATE TO THE END OF THE BOLT.

D. CONTRACTOR SHALL PROVIDE ANCHORS WITH SUFFICIENT TOTAL LENGTH FOR THE SPECIFIED EMBEDMENT LENGTH, THICKNESS OF FASTENED PART, WASHER AND NUT.

PA–7) EPOXY ANCHORS AND DOWELS

A. EPOXY SHALL BE EITHER ONE OF THE FOLLOWING, UON:

HILTI HIT–HY 200 (ICC–ES REPORT ESR–3187)

HILTI HIT–RE 500–SD (ICC–ES REPORT ESR–2322)

SIMPSON SET–XP (ICC–ES REPORT ESR–2508)

B. RODS EMBEDDED IN EPOXY SHALL BE STAINLESS (ASTM 593,A316) STEEL THREADED RODS PER MANUFACTURER'S ICC–ES REPORT.

C. REINFORCING STEEL BARS EMBEDDED IN EPOXY SHALL BE ASTM A615, GRADE 60, UON.

D. ANCHOR EMBEDMENT AND TENSION TEST VALUES BELOW ARE TO BE USED WHEN EXPLICITLY SPECIFIED IN THE DRAWINGS. FOR LOCATIONS WHERE TENSION TEST VALUES ARE NOT SPECIFIED IN THE DRAWINGS, CONSULT WITH THE SER.

PA POST–INSTALLED ANCHORS (CONT.)

EPOXY ANCHORS IN NORMAL–WEIGHT CONCRETE (3000 PSI MIN)				
REBAR SIZE	EMBEDMENT (IN)	TENSION TEST VALUE (LBS)		
		HILTI HIT–HY 200	HILTI HIT–RE 500–SD	SIMPSON SET–XP
#3	3	2900	940	1040
#4	4	5180	1670	3740
#5	5	8130	2600	5260
#6	6	11120	3750	6740
#7	7	12260	4320	8020
* LISTED EPOXY ADHESIVE MAY NOT BE USED WITH NOTED REBAR SIZES				

EPOXY ANCHORS IN NORMAL–WEIGHT CONCRETE (3000 PSI MIN)				
THREADED ROD DIAMETER (IN)	EMBEDMENT (IN)	TENSION TEST VALUE (LBS)		
		HILTI HIT–HY 200	HILTI HIT–RE 500–SD	SIMPSON SET–XP
3/8	3	2500	1230	1700
1/2	4	4480	2110	2600
5/8	5	7030	3170	3450
3/4	6	10180	4450	4440
7/8	7	11710	4720	5540

E. TESTING OF EPOXY DOWELS AT JOINTS BETWEEN NEW AND EXISTING SLABS–ON–GRADE IS NOT REQUIRED.

F. TESTING SHALL OCCUR AFTER EPOXY HAS CURED, AS PER MANUFACTURER'S RECOMMENDATIONS.

G. OVERHEAD AND/OR CONSTANT TENSION EPOXY ANCHOR INSTALLATIONS NOT SHOWN ON THE DRAWINGS SHALL NOT BE PERMITTED UNLESS EACH CONDITION IS REVIEWED AND APPROVED IN WRITTING BY SER.

H. EPOXY ANCHORS SHALL BE INSTALLED IN CONCRETE HAVING A MINIMUM AGE OF 21 DAYS AT TIME OF ANCHOR INSTALLATION.

I. INSTALLATION AND INSPECTION OF EPOXY ANCHORS SHALL COMPLY WITH ACI 318–11 APPENDIX D SECTIONS D.9.2.2 AND D.9.2.4.

J. FOR USES OF EPOXY DOWELS NOT EXPLICITLY SPECIFIED IN THE STRUCTURAL DRAWINGS, CONTACT THE SER.

SU SUBMITTALS

SU–1) THE CONTRACTOR IS TO REVIEW EACH SUBMITTAL PRIOR TO FORWARDING TO CIVIL ENGINEER. THE CONTRACTOR IS TO STAMP EACH SUBMITTAL VERIFYING THAT THE FOLLOWING IS ADDRESSED:

1. THE SHOP DRAWING IS REQUESTED.
2. THE SHOP DRAWING IS BASED ON THE LATEST DESIGN.
3. THE CIVIL ENGINEER'S COMMENTS FROM ANY PREVIOUS SUBMITTALS ARE ADDRESSED.
4. THE WORK IS COORDINATED AMONG ALL CONSTRUCTION TRADES.
5. REVISIONS FROM PREVIOUS SUBMITTALS ARE CLEARLY MARKED BY CIRCLING OR CLOUDS.
6. SUBMITTAL IS COMPLETE.
7. SUBMITTAL DOES NOT INCLUDE SUBSTITUTION REQUEST
8. SUBMITTAL SHALL INCLUDE A STAMP INDICATING PROJECT NAME AND LOCATION, SUBMITTAL NUMBER, SPECIFICATION SECTION NUMBER.

THE CIVIL ENGINEER SHALL RETURN, WITHOUT COMMENT, SUBMITTALS WHICH THE CONTRACTOR HAS NOT STAMPED OR WHICH DO NOT MEET THE ABOVE REQUIREMENTS. THE CIVIL ENGINEER'S REVIEW OF SUBMITTALS SHALL BE FOR GENERAL CONFORMANCE WITH THE DESIGN INTENT. NO WORK SHALL BE STARTED WITHOUT SUCH REVIEW.

SU–2) FOR COMPONENTS THAT REQUIRE ENGINEERING BY THE CONTRACTOR, PROVIDE A NOTE ON EACH SHOP DRAWING, WRITTEN AND SIGNED BY THE SUPPLIER' S ENGINEER, INDICATING THAT THE SHOP DRAWING IS IN CONFORMANCE WITH THE CALCULATIONS OF THE CONTRACTOR'S ENGINEER.

SU–3) THE FOLLOWING ITEMS REQUIRE SUBMITTALS FOR REVIEW AS OUTLINED IN THE SPECIFICATIONS:

S = SHOP DRAWINGS AND/OR PRODUCT DATA REQUIRED

CALC = SUPPORTING CALCULATIONS REQUIRED, SIGNED AND SEALED BY A LICENSED [PROFESSIONAL] ENGINEER IN THE STATE IN WHICH THE PROJECT IS LOCATED.

THE ITEMS IN THIS SECTION REQUIRE SHOP DRAWINGS, SUBMITTED FOR REVIEW OF INTERACTION WITH THE BASE BUILDING STRUCTURE.

SU–4) DEFERRED SUBMITTALS SHALL FIRST BE SUBMITTED TO THE PROJECT CIVIL ENGINEER AND/OR THE ENGINEER OF RECORD FOR REVIEW AND COORDINATION. FOLLOWING THE COMPLETION OF THE CIVIL ENGINEER OR ENGINEER'S REVIEW, A SUBMITTAL TO THE PLAN CHECK AUTHORITY SHALL BE MADE FOR REVIEW AND APPROVAL. THIS SUBMITTAL SHALL BE PROCESSED IN ACCORDANCE WITH CBC APPENDIX CHAPTER 1, SECTION 106.3.4.2. FOR A LIST OF DEFERRED ITEMS, SEE CIVIL ENGINEER DRAWINGS.

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DEPARTMENT OF PUBLIC WORKS, WWTP
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PACIFICA CALIFORNIA 94044

PROGRESS SET NOT FOR CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT C004B
GENERAL NOTES
CITY OF PACIFICA, CALIFORNIA

SHEET C–1.3
JOB NO. 240010

Z:\Projects\240 City Of Pacifica\010 Linda Mar Pump Station\AAA Latest\C–1.0–1.4 – Title Sheet, Abbrev, Notes.dwg

GENERAL NOTES (CONT.)

PI PERFORMANCE ITEMS

PI–1) THE CONTRACTOR SHALL EMPLOY OR RETAIN A LICENSED STRUCTURAL ENGINEER IN THE STATE IN WHICH THIS PROJECT IS LOCATED TO DESIGN AND DETAIL PERFORMANCE ITEMS AS PART OF THE BASE BUILDING STRUCTURE INDICATED IN THE CONTRACT DOCUMENTS INCLUDING BUT NOT LIMITED TO:

1. CONCRETE PUMP PAD
2. MCC ACCESS PLATFORM AND STAIRS.

SI SPECIAL INSPECTIONS AND STRUCTURAL TESTING (NIC)

S1–1) SPECIAL INSPECTIONS SHALL BE PERFORMED BY A SPECIAL INSPECTOR PER CBC SECTIONS 1704 AND 1705. THE SPECIAL INSPECTOR SHALL BE EMPLOYED BY THE OWNER AND NOT BY THE CONTRACTOR OR ANY OTHER PERSON RESPONSIBLE FOR THE THE CONTRACTOR SHALL COMPLETE AND SUBMIT THE CITY OF PACIFICA'S SPECIAL INSPECTION AND TESTING AGREEMENT WORK. FORM. THE FORM MUST BE SUBMITTED PRIOR TO PERMIT ISSUANCE. ENSURE THAT ALL REQUIRED SIGNATURES ARE PROVIDED AND THE AREA OF SPECIAL INSPECTION IS CLEARLY INDICATED ON THE FORM AND ON THE COVDER SHEET OF THE PLANS

S1–2) THE SPECIAL INSPECTOR SHALL BE A QUALIFIED (LICENSED) PERSON WHO SHALL PROVIDE WRITTEN DOCUMENTATION TO THE BUILDING OFFICIAL DEMONSTRATING HIS OR HER COMPETENCE AND RELEVANT TRAINING OR EXPERIENCE TO THE SATISFACTION OF THE BUILDING OFFICIAL. EXPERIENCE SHALL BE FOR SPECIAL INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.

SI–3) THE CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY PER CBC SECTION 1704.4 TO THE BUILDING OFFICIAL AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK WHEN RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN WIND FORCE OR SEISMIC FORCE RESISTING SYSTEM. THE STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTION.

SI–4) THE FOLLOWING WORK REQUIRES STRUCTURAL TESTS. FOR SPECIFIC REQUIREMENTS OF STRUCTURAL TESTS, SEE THE SPECIFICATIONS AND GENERAL NOTES.

1. CONCRETE REINFORCEMENT
2. CAST–IN–PLACE CONCRETE
3. POST–INSTALLED ANCHORS
4. GROUTED DOWELS
5. WELDING: STRUCTURAL STEEL AND REINFORCING STEEL

SI–5) THE FOLLOWING ITEMS SHALL RECEIVE SPECIAL INSPECTION BY A CERTIFIED SPECIAL INSPECTOR IN ACCORDANCE WITH CBC 1704 AND 1705:

1. STAINLESS STEEL PLATFORM, RAILING, AND STAIRS.

REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD	CBC REFERENCE
1. INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT.	—	X	ACI 318: 3.5, 7.1–7.7	1910.4
2. INSPECTION OF REINFORCING STEEL WELDING.	—	—	AWS D1.4, ACI 318: 3.5.2	—
3. INSPECTION OF ANCHORS CAST IN CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED OR WHERE STRENGTH DESIGN HAS BEEN USED.	—	X	ACI 318: 8.1.3, 21.2.8	1908.5, 1909.1
4. INSPECTION OF ANCHORS POST–INSTALLED IN HARDENED CONCRETE MEMBERS.	—	X	ACI 318: 3.8.6, 8.1.3, 21.2.8	1909.1
5. VERIFYING USE OF REQUIRED DESIGN MIX.	—	X	ACI 318: Ch. 4, 5.2–5.4	1904.2, 1910.2, 1910.3
6. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	—	ASTM C 172, ASTM C 31, ACI 318: 5.6, 5.8	1910.10
7. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	—	ACI 318: 5.9, 5.10	1910.6, 1910.7 1910.8
8. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	—	X	ACI 318: 5.11–5.13	1910.9
9. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	—	X	ACI 318: 6.1.1	—

REQUIRED VERIFICATION OF STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	REFERENCED STANDARD
1. INSPECTION OF WELDING:			
A. REINFORCING STEEL:			
1. VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A706	—	X	
2. REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT	X	—	AWS D1.4, ACI 318: CBC SECTION 3.5.2
3. SHEAR REINFORCEMENT	X	—	
4. OTHER REINFORCING STEEL	—	X	

What ever is not relevant, NIC or remove - designer choice

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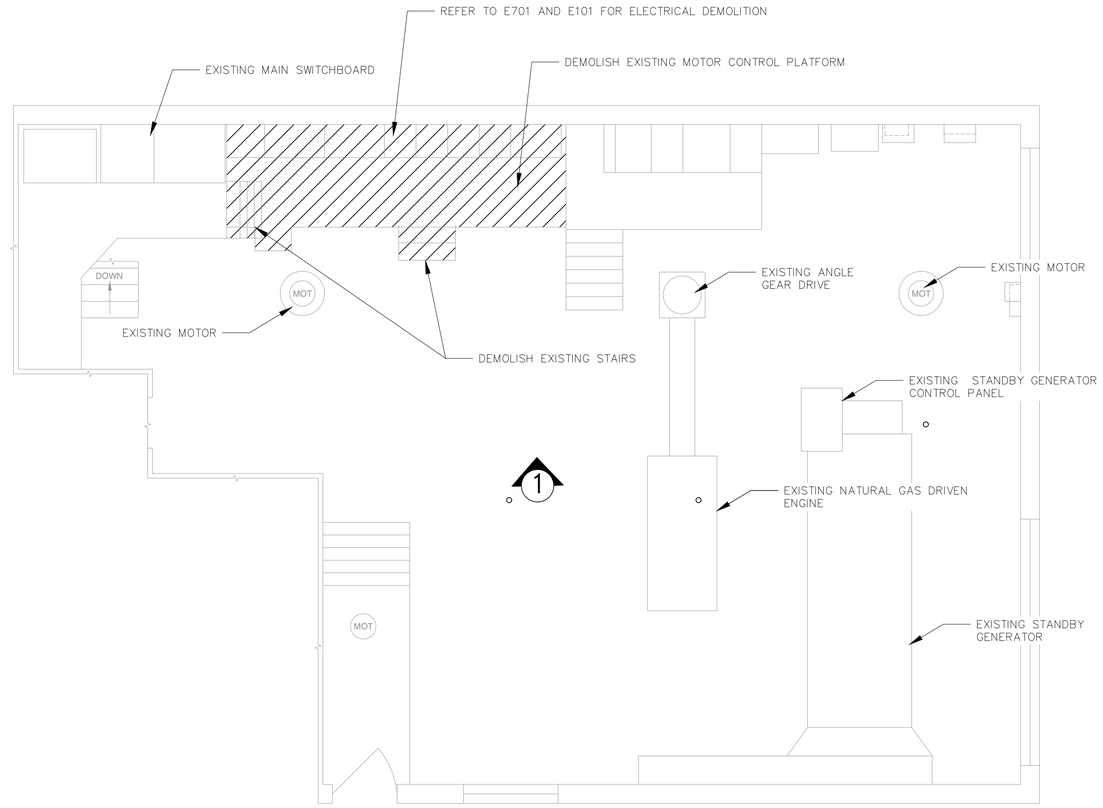
LINDA MAR PUMP STATION UPGRADE PROJECT C004B
GENERAL NOTES
CITY OF PACIFICA, CALIFORNIA

SHEET C–1.4
JOB NO. 240010

1 EXISTING SWITCHBOARD AND MCC WITH ACCESS PLATFORMS
NTS



PLAN VIEW
SCALE: 1"= 4'

Delete note

NOTES:
1. REFER TO SPECIFICATIONS FOR SEQUENCE OF CONSTRUCTION
2. RECORD DRAWINGS SUCTION AND DISCHARGE PIPING ARE DIFFERENT THAN FIELD CONDITIONS. REFER TO PHOTOS.

NORTH

GRAPHIC SCALE
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LINDA MAR PUMP STATION UPGRADE PROJECT C004B
PUMP HOUSE UPPER FLOOR DEMOLITION
CITY OF PACIFICA, CALIFORNIA

SHEET C-2.0
JOB NO. 240010

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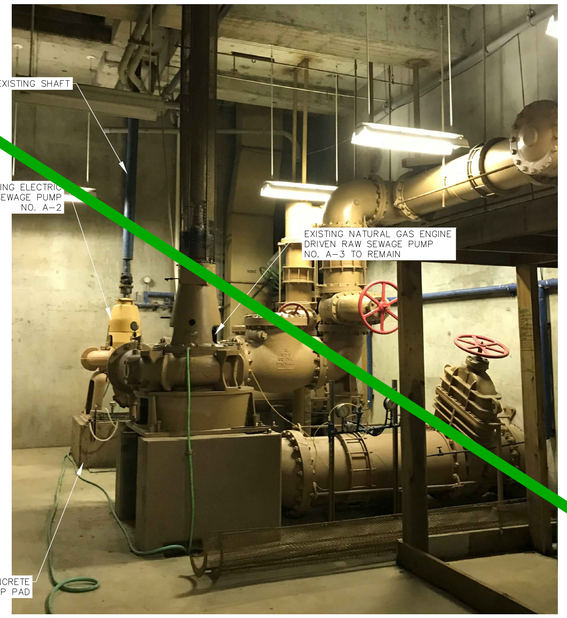
NOTES:
1. REFER TO SPECIFICATIONS FOR SEQUENCE OF CONSTRUCTION
2. RECORD DRAWINGS SUCTION AND DISCHARGE PIPING ARE DIFFERENT THAN FIELD CONDITIONS. REFER TO PHOTOS.

Note - will backcheck against 90% comments when we do this next year



1 EXISTING GAS ENGINE DRIVEN PUMP A-3 AND ELECTRIC DRIVEN PUMP A-2
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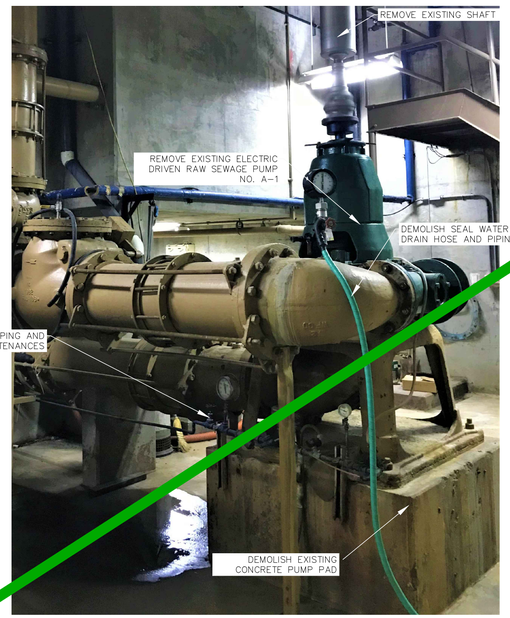
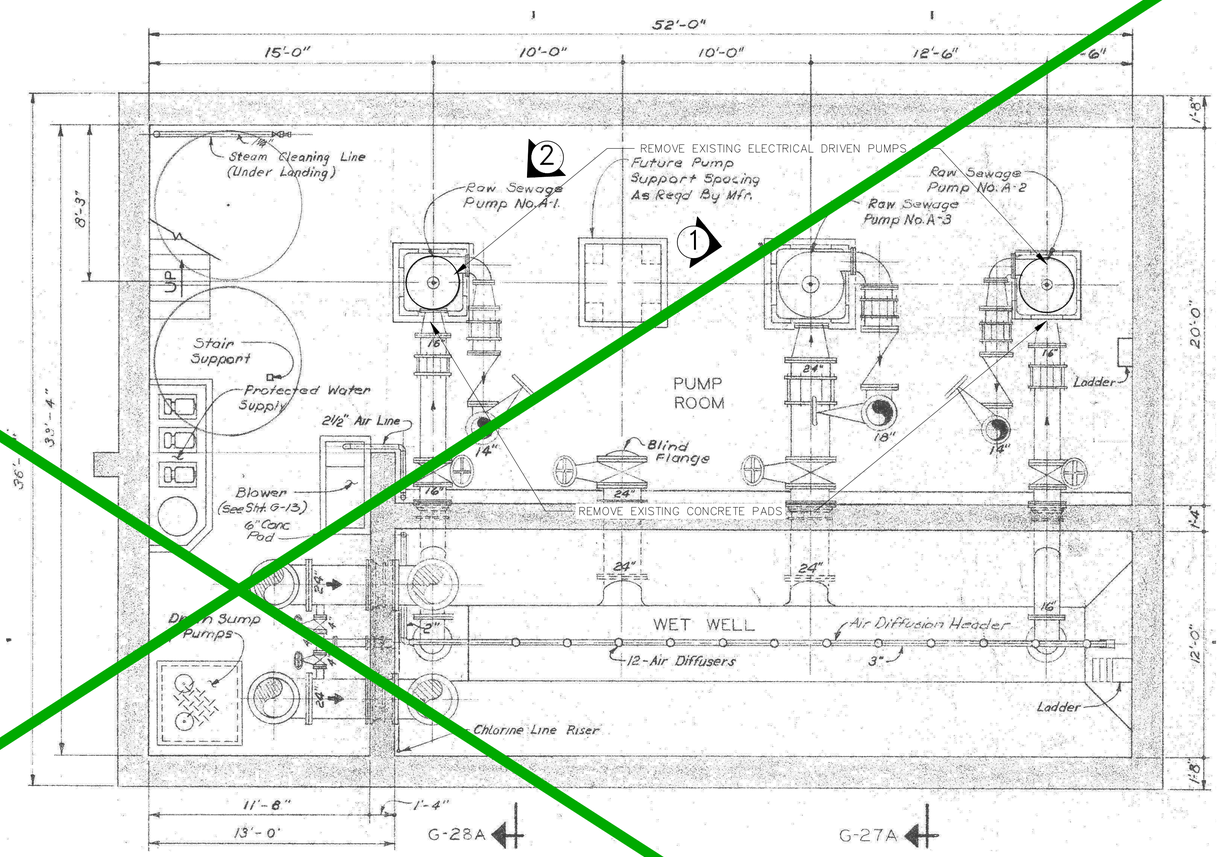


2 EXISTING ELECTRIC DRIVEN PUMP A-1
NTS



PLAN VIEW
SCALE: 1"= 4'

NORTH

GRAPHIC SCALE
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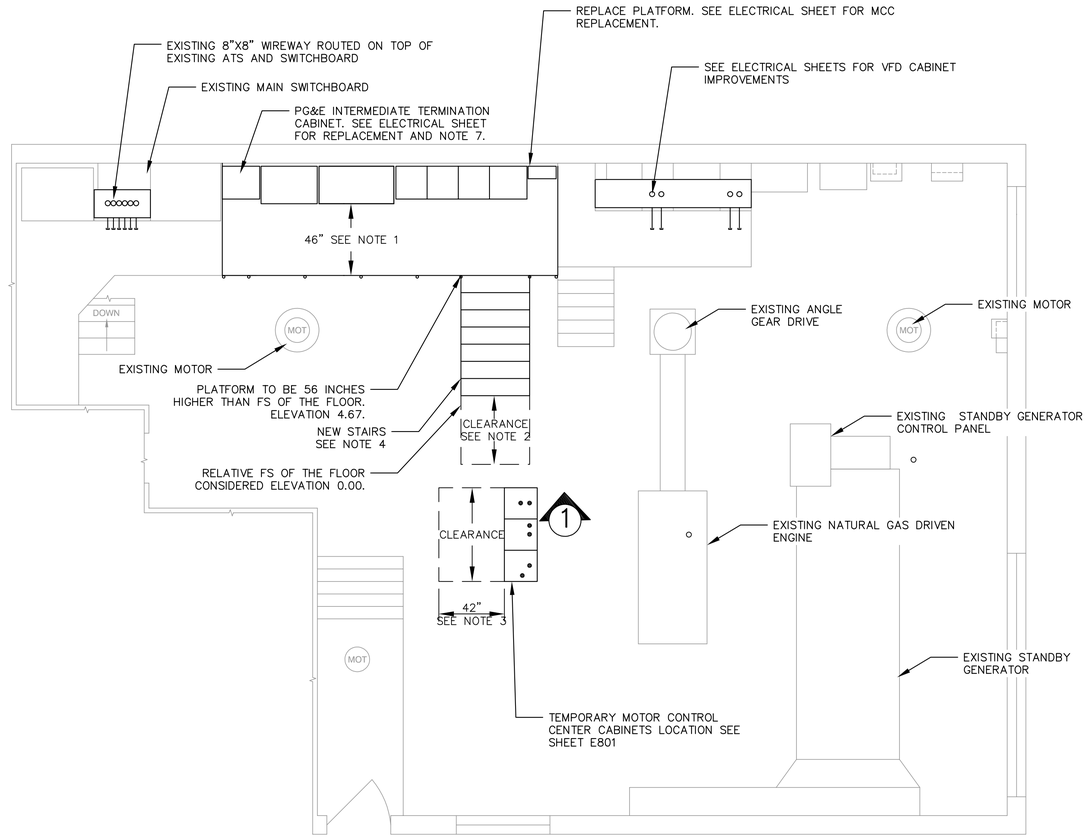
LINDA MAR PUMP STATION UPGRADE PROJECT CO04B
PUMP HOUSE LOWER FLOOR DEMOLITION
CITY OF PACIFICA, CALIFORNIA

SHEET C-2.1
JOB NO. 240010

1 EXISTING SWITCHBOARD AND MCC WITH ACCESS PLATFORMS

NTS



PLAN VIEW

SCALE: 1"= 4'

NOTES

1. CONTRACTOR TO MAINTAIN MINIMUM CLEARANCE OF 44 INCHES.
2. MINIMUM CLEARANCE OF 44 INCHES BY 44 INCHES PER CBC CODE.
3. MINIMUM CLEARANCE OF 42 INCHES PER NFPA 70 –110.26
4. STAIRS PER TITLE 24 PART 2 VOLUME 1 CHAPTER 1011.5 AND 1011.2 OF RISE OF 7" AND RUN OF 11".
5. REFER TO SPECIFICATIONS FOR SEQUENCE OF CONSTRUCTION
6. RECORD DRAWINGS SUCTION AND DISCHARGE PIPING ARE DIFFERENT THAN FIELD CONDITIONS. REFER TO PHOTOS.
7. PG&E INTERMEDIATE TERMINATION CABINET REQUIRES WINDOW CUTOUT THROUGH PLATFORM FOR CABLES. WINDOW EDGE LINED WITH RUBBER TO PROTECT CABLES.

Delete Note

NORTH

GRAPHIC SCALE

4 0 2 4 8 16

(IN FEET)

1 inch = 4 ft.

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DEPARTMENT OF PUBLIC WORKS, WWTP
170 SANTA MARIA BOULEVARD
PACIFICA CALIFORNIA 94044

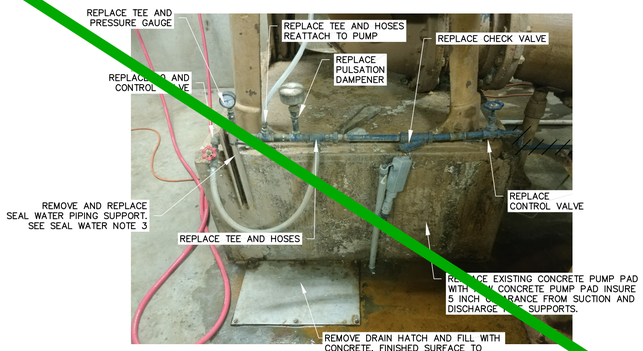
PROGRESS SET NOT FOR CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT C004B
PUMP HOUSE MODIFICATION
UPPER FLOOR
CITY OF PACIFICA, CALIFORNIA

SHEET C–3.0

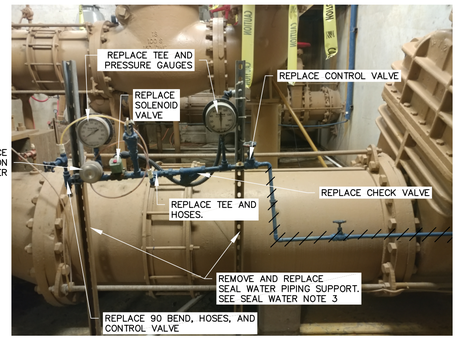
JOB NO. 240010

Note - will backcheck against 90% comments when we do this next year

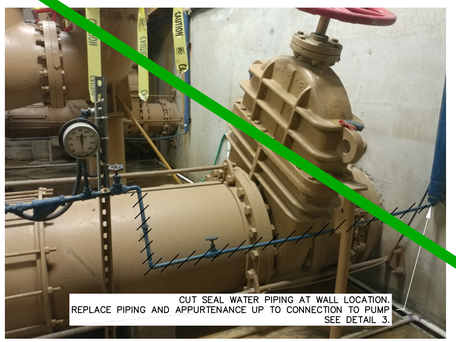


1 NTS SEAL WATER PIPING FOR EXISTING ELECTRIC DRIVEN PUMP A-2

2 NTS SEAL WATER PIPING FOR EXISTING ELECTRIC DRIVEN PUMP A-2



3 NTS SEAL WATER PIPING FOR EXISTING ELECTRICAL DRIVEN PUMP A-1



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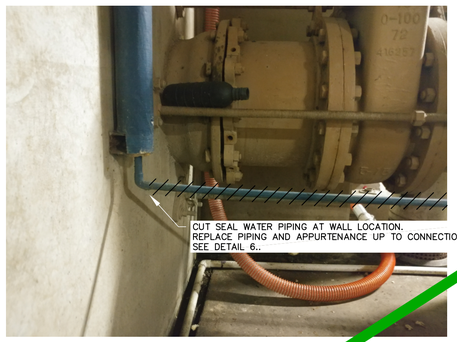
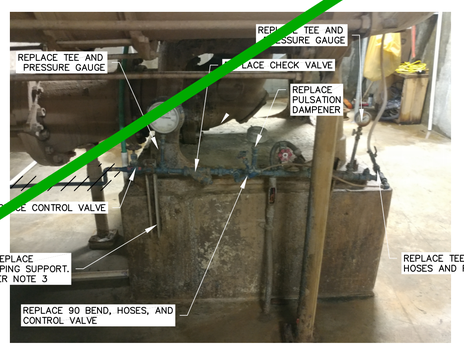
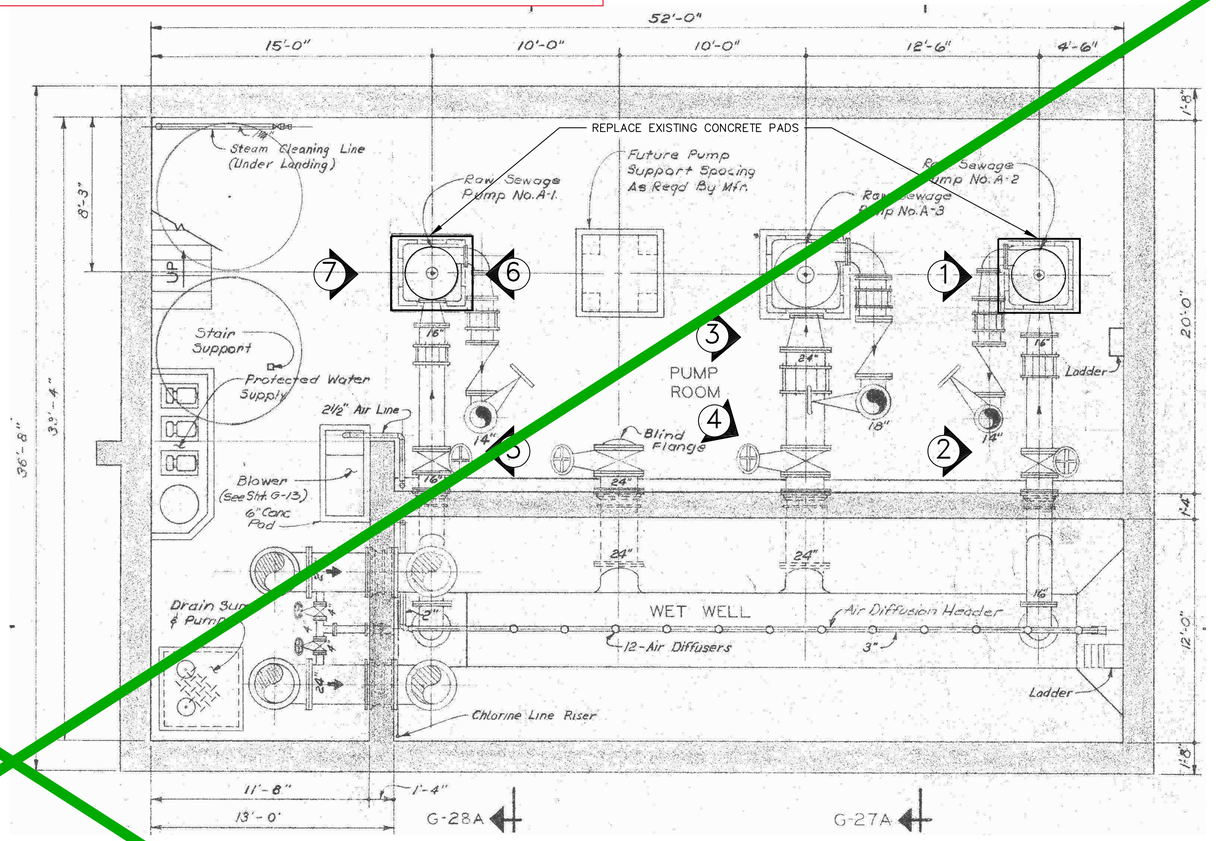


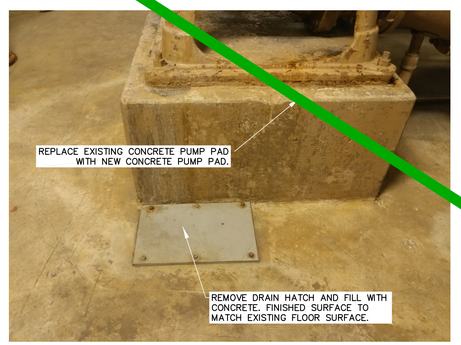
5 NTS SEAL WATER PIPING FOR EXISTING ELECTRICAL DRIVEN PUMP A-1



6 NTS SEAL WATER PIPING FOR EXISTING ELECTRIC DRIVEN PUMP A-1



PLAN VIEW
SCALE: 1"= 4'



7 NTS EXISTING ELECTRIC DRIVEN PUMP A-1

NORTH

GRAPHIC SCALE

4 0 2 4 8 16

(IN FEET)
1 inch = 4 ft.

TABLE 1: CONCRETE STAND DIMENSION

	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)
PUMP A-1		48	23.5
PUMP A-2	48	48	22

NOTES

1. ALL DIMENSIONS ABOVE ARE TAKEN FROM EXISTING CONCRETE PAD DIMENSIONS.
2. CONTRACTOR TO VERIFY IN FIELD ALL DIMENSIONS.
3. DIMENSIONS ARE FOR CONTRACTOR REFERENCE ONLY. CONTRACTOR TO CONSTRUCT PAD TO SIZE TO ACCOMADATE PUMP METAL PEDESTAL ANCHOR BOLTS AND CONCRETE PAD IN ACCORDANCE WITH PERFORMANCE ITEMS ON C-1.4.
4. REFER TO SPECIFICATIONS FOR SEQUENCE OF CONSTRUCTION.
5. RECORD DRAWINGS SUCTION AND DISCHARGE PIPING ARE DIFFERENT THAN FIELD

SEAL WATER NOTES:
1. REFER TO SPECIFICATIONS FOR SEQUENCE OF CONSTRUCTION
2. RECORD DRAWINGS SEAL WATER PIPING ARE DIFFERENT THAN FIELD CONDITIONS. REFER TO PHOTOS.
3. SEAL WATER PIPE SUPPORTS MUST HAVE 5 INCH CLEARANCE FROM PUMP SUCTION AND DISCHARGE PIPE SUPPORTS.
4. REPLACE ALL SEAL WATER PIPING AND APPURTENANCES IN LOCATIONS SHOWN.

SCALE: AS NOTED				
DESIGNED: JJT				
DRAWN: SCC				
CHECKED: CB		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
	BY	DATE	DESCRIPTION OF REVISIONS	APP'D

BAR IS ONE INCH ON ORIGINAL
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

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170 SANTA MARIA BOULEVARD
PACIFICA CALIFORNIA 94044

PROGRESS SET NOT FOR CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT CO-4B
PUMP HOUSE MODIFCATION
LOWER FLOOR
CITY OF PACIFICA, CALIFORNIA

SHEET C-3.1

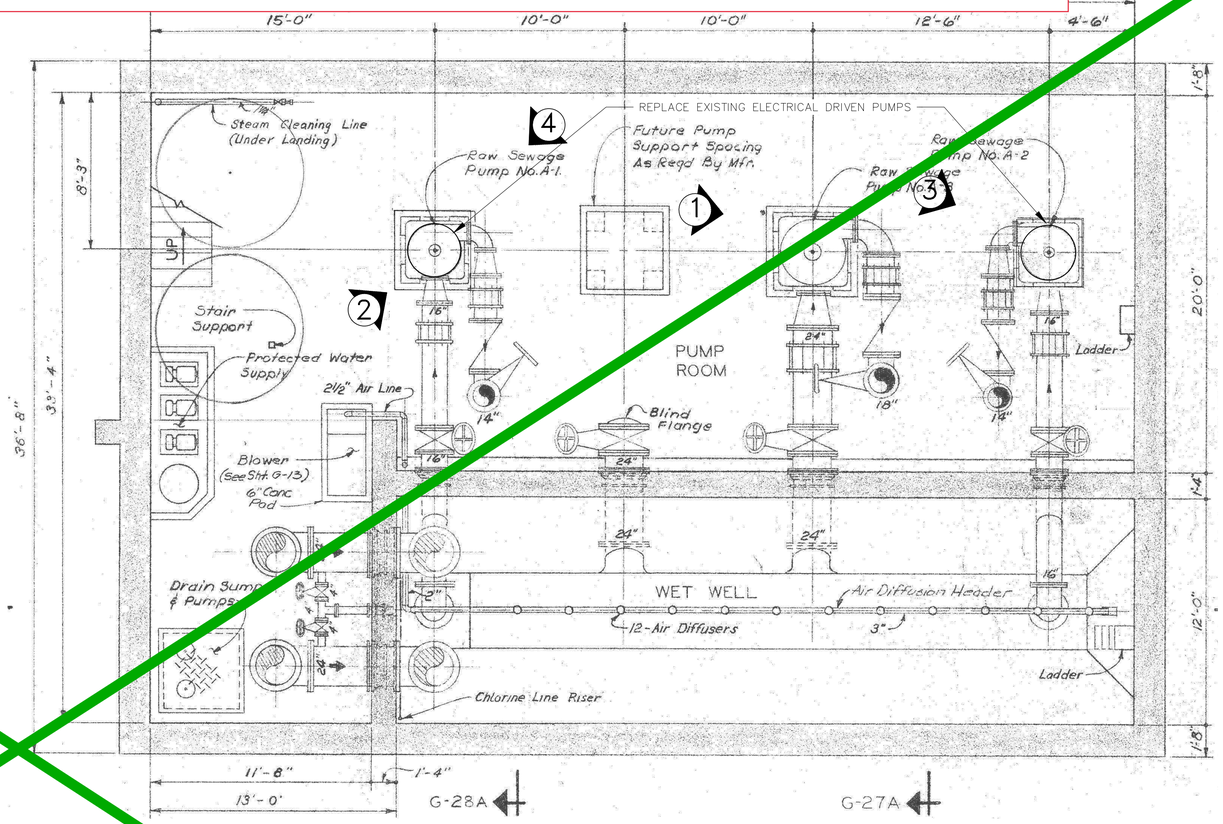
JOB NO. 240012

Z:\Projects\240 City Of Pacifica\010 Linda Mar Pump Station\AAA Latest\C-2.0, C-3.0, C-3.1 Pump Sheets.dwg

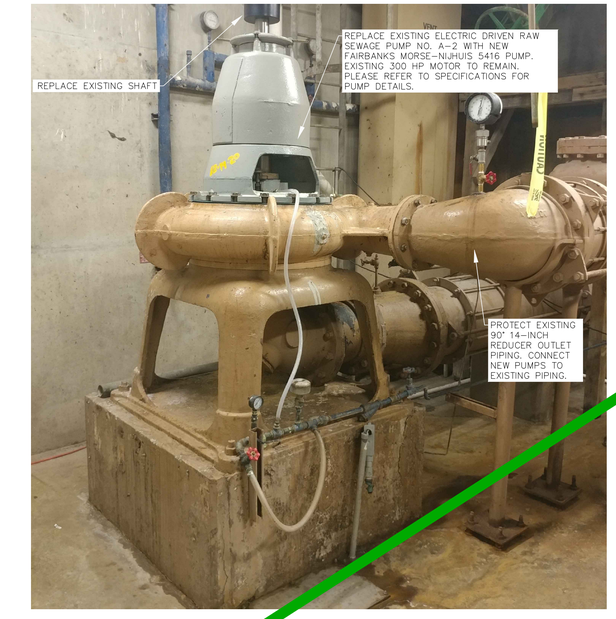
Note - will backcheck against 90% comments when we do this next year

1 NTS EXISTING GAS ENGINE DRIVEN PUMP A–3

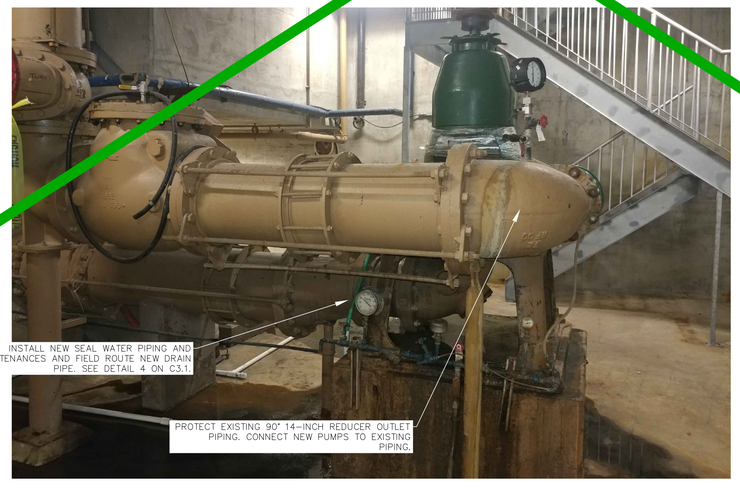
2 NTS EXISTING ELECTRIC DRIVEN RAW SEWAGE PUMP A–1



PLAN VIEW
SCALE: 1"= 4'



3 NTS EXISTING ELECTRIC DRIVEN RAW SEWAGE PUMP A–2



4 EXISTING ELECTRIC DRIVEN RAW SEWAGE PUMP A–1

NOTES:

1. REFER TO SPECIFICATIONS FOR SEQUENCE OF CONSTRUCTION
2. RECORD DRAWING PUMP DISCHARGE ANGLE, SUCTION AND DISCHARGE PIPING DO NOT REFLECT FIELD CONDITIONS. REFER TO PHOTOS.
3. NEW PUMP AND EXISTING PUMP ARE FROM SAME MANUFACTURER. FURTHERMORE, NEW PUMP DIMENSIONS OUT SHEET AND EXISTING PUMP SHOP DRAWING SHOW THE SAME DIMENSIONS. CONTRACTOR SHALL INSTALL NEW PUMP AND CONNECT TO EXISTING SUCTION AND DISCHARGE PIPING. CONTRACTOR SHALL FIELD VERIFY MEASUREMENTS AND PROVIDE ANY NECESSARY FLANGE FILLERS AND/OR APPURTENANCE TO FACILITATE CONNECTING NEW PUMP TO EXISTING PIPING AT NO ADDITIONAL COST TO THE CITY.
4. CONTRACTOR SHALL PROTECT IN PLACE SUCTION AND DISCHARGE PIPING DURING NEW PUMP INSTALLATION. CONTRACTOR SHALL REMOVE, STORE, AND REINSTALL SUCTION AND DISCHARGE PIPING AND APPURTENANCES IF AND AS NEEDED, TO FACILITATE PUMP INSTALLATION AT NO ADDITIONAL COST TO THE CITY.
5. CONTRACTOR SHALL ESTABLISH PUMP CONC. PAD DIMENSIONS SO THAT CENTERLINE OF PUMP SUCTION AND DISCHARGE PIPING MATCH EXISTING CONDITIONS, AND METAL PEDESTAL ANCHOR BOLT CLEARANCE TO EDGE OF CONC. PAD ARE MET IN ACCORDANCE WITH PERFORMANCE ITEM DESIGN. SEE SHEET C-1.3.
6. CONTRACTOR SHALL FIELD VERIFY LENGTH OF PUMP SHAFT FROM PUMP TO MOTOR ON UPPER LEVEL AND COORDINATE WITH SUPPLIER WHOSE LENGTH WAS BASED OFF EXISTING PUMP SUBMITTAL.

NORTH

GRAPHIC SCALE

4 0 2 4 8 16

(IN FEET)
1 inch = 4 ft.

	BY	DATE	DESCRIPTION OF REVISIONS	APP'D
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DESIGNED: JJT				
DRAWN: SCC				
CHECKED: CB		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	

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0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY

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DEPARTMENT OF PUBLIC WORKS, WWTP
170 SANTA MARIA BOULEVARD
PACIFICA CALIFORNIA 94044

PROGRESS SET
NOT FOR CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT C204B
PUMP REPLACEMENT AND PIPING MODIFICATIONS
CITY OF PACIFICA, CALIFORNIA

SHEET
C–4.0

JOB NO.
240610

Z:\Projects\240 City Of Pacifica\010 Linda Mar Pump Station\AAA Latest\C-4.0 Pump Replacement Sheets.dwg

GENERAL NOTES:

1. ALL LIGHTING SWITCHES, CONVENIENCE RECEPTACLES, MANUAL STARTERS, CONTROL STATIONS, DISCONNECT SWITCHES, AND THERMOSTATS SHALL BE MOUNTED AT 48" ABOVE FINISHED FLOOR UNLESS OTHERWISE SPECIFIED OR INDICATED ON THE DRAWINGS.
2. WALL MOUNTED PANELS AND EQUIPMENT SHALL BE STRUCTURALLY SUPPORTED BY PREFORMED VERTICAL CHANNELS.
3. ALL OUTDOOR ENCLOSURES SHALL BE NEMA 4X UNLESS NOTED OTHERWISE.
4. NOT ALL EQUIPMENT INTERCONNECTIONS ARE SHOWN ON THE FLOOR PLANS. REFER TO ALL SCHEMATIC DIAGRAMS, CONTROL DIAGRAMS, SINGLE LINE DIAGRAMS AND SPECIFICATIONS FOR ADDITIONAL FIELD WIRING REQUIRED.
5. FOR MOTORS SPECIFIED WITH SPACE HEATERS, CONTROL POWER TRANSFORMERS SHALL HAVE ADEQUATE CAPACITY TO HANDLE THE EXTRA RESISTIVE LOAD AS REQUIRED.
6. ALL POWER CONDUIT RUNS SHALL CONTAIN A SEPARATE GROUNDING CONDUCTOR (SIZED PER NEC) WHETHER OR NOT SHOWN ON THE PLANS.
7. ALL DEVICES SUCH AS PUSHBUTTON STATIONS, ETC. IN ADDITION TO SPECIFIC REQUIREMENTS OUTLINED HEREIN, SHALL HAVE EXTRA CORROSION PROTECTION HYPALON PROTECTION BOOTS HAVING 316 STAINLESS STEEL INSERT RING OR EQUAL.
8. COORDINATE ALL CONDUIT STUB-UP LOCATIONS INTO ELECTRICAL EQUIPMENT WITH ACCEPTED VENDOR DRAWINGS.
9. COORDINATE ALL NEW DUCTBANK RUNS WITH EXISTING AND NEW PIPING AND UTILITIES.

ABBREVIATIONS

A	AMPERES
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BCW	BARE COPPER WIRE
C	CONDUIT
CO	CONDUIT ONLY
CPT	CONTROL POWER TRANSFORMER
CU	COPPER
(E)	EXISTING
ES	EXTERNAL SUPPLY
FS	FLOAT SWITCH
GND	GROUND
GFI	GROUND FAULT INTERRUPTER
HOA	HAND-OFF-AUTO
HMI	HUMAN-MACHINE INTERFACE SCREEN
LIT	LEVEL INDICATOR/TRANSMITTER
LOC	LOCAL
LOR	LOCAL-OFF-REMOTE
LOS	LOCKOUT STOP
LS	LIMIT SWITCH
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MFM	MULTI FUNCTION METER
(N)	NEW
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	OPEN/CLOSE
OIS	OPERATOR INTERFACE STATION
OL	OVERLOAD
PLC	PROGRAMMABLE LOGIC CONTROLLER
PS	PRESSURE SWITCH
PR	TWISTED SHIELDED PAIR
R	RUN RELAY
RTU	REMOTE TERMINAL UNIT
S	START RELAY
SHD	SHIELDED
SSTL	STAINLESS STEEL
SV	SOLENOID VALVE
T	TELEPHONE
TC	TIME CLOCK
TDC	TIME DELAY CLOSING
TDO	TIME DELAY OPENING
TR	TIME RELAY
TS	TEMPERATURE SWITCH
TSP	TWISTED SHIELDED PAIR(S)
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
W	WIRE
WP	WEATHER PROOF

PNL 4A — NEW EMBEDDED OR ENCASED HOMERUN WITH DESTINATION INDICATED

PNL 4A — NEW EXPOSED HOMERUN WITH DESTINATION INDICATED

NEW CONDUIT IN DUCTBANK, SLAB OR BELOW GRADE

NEW EXPOSED CONDUIT

CONDUIT BENDS TOWARD OBSERVER

CONDUIT BENDS AWAY FROM OBSERVER

EXISTING EXPOSED CONDUIT

EXISTING CONDUIT IN DUCTBANK, SLAB OR BELOW GRADE

CONDUIT STUBBED-OUT AND CAPPED

FLEXIBLE CONDUIT

LEGEND

- 6 — MOTOR STARTER-NUMBER INDICATES NEMA SIZE
- SSRVS — SOLID-STAGE REDUCED VOLTAGE STARTER
- MCP 7 — MOTOR CIRCUIT PROTECTOR WITH CURRENT RATING
- 15A 1P — CIRCUIT BREAKER WITH TRIP RATING AND NUMBER OF POLES INDICATED (3-POLE UNLESS OTHERWISE NOTED)
- GENERATOR
- TRANSFORMER
- 3 — CURRENT TRANSFORMER (QUANTITY INDICATED)
- 2 — POTENTIAL TRANSFORMER (QUANTITY INDICATED)
- A — AMMETER
- V — VOLTMETER
- M OR 5 — MOTOR-NUMBER INDICATES HORSEPOWER
- OR — MOTOR SPACE HEATER
- VARIABLE FREQUENCY DRIVE
- 27 — RELAY DEVICE (NUMBER REFERS TO ANSI/IEEE STD C37.2 DEVICE DESCRIPTION)
- LOCATED AT CONTROL PANEL
- LOCATED IN FIELD
- LOCATED AT PANELBOARD, SWITCHBOARD OR MOTOR CONTROL CENTER
- LOCATED AT PLC-SPS OR RIO-SPS PANEL
- RTM — RUNNING TIME METER
- OR — DISCONNECT SWITCH
- $ OR S — SINGLE POLE SWITCH
- $3 OR S3 — THREE WAY SWITCH
- $4 OR S4 — FOUR WAY SWITCH
- K — KIRK-KEY MECHANICAL INTERLOCK
- TB — TERMINAL BOX
- J — JUNCTION BOX
- SIMPLEX RECEPTACLE
- DUPLEX RECEPTACLE
- SPECIALTY RECEPTACLE
- EXPOSED GROUNDING CABLE
- BURIED OR CONCRETE ENCASED GROUNDING CABLE
- GROUNDING CABLE EXOTHERMIC WELDED CONNECTION
- GROUND ROD IN GROUND WELL
- BIMETALLIC THERMAL OVERLOAD RELAY
- FUSE
- GROUND CONNECTION
- SUPP — RELAY COIL SURGE SUPPRESSOR
- CR OR CR — CONTROL RELAY
- TR OR TR — TIME DELAY RELAY
- AR OR AR — ALARM RELAY
- 1CR — NORMALLY OPEN CONTACT, RELAY COIL INDICATED
- 2CR — NORMALLY CLOSED CONTACT, RELAY COIL INDICATED
- PLC DISCRETE OUTPUT CONTACT
- 0 TO 30 SEC — TIME DELAY RELAY CONTACT (NORMALLY OPEN WITH TIME DELAYED CLOSING UPON COIL ENERGIZATION WITH TIME DELAY RANGE INDICATED)
- 0 TO 30 SEC — TIME DELAY RELAY CONTACT (NORMALLY CLOSED WITH TIME DELAYED OPENING UPON COIL ENERGIZATION WITH TIME DELAY RANGE INDICATED)
- 0 TO 30 SEC — TIME DELAY RELAY CONTACT (NORMALLY CLOSED WITH TIME DELAYED CLOSING UPON COIL DE-ENERGIZATION WITH TIME DELAY RANGE INDICATED)
- 0 TO 30 SEC — TIME DELAY RELAY CONTACT (NORMALLY OPEN WITH TIME DELAYED OPENING UPON COIL DE-ENERGIZATION WITH TIME DELAY RANGE INDICATED)
- M — MOTOR STARTER COIL (SCHEMATIC DIAGRAMS ONLY)
- SV OR SV — SOLENOID VALVE
- T OR T — THERMOSTAT
- PC OR PC — PHOTOCELL
- TM OR TM — TIMER
- OR ZS — LIMIT OR POSITION SWITCH
- OR PS — PRESSURE SWITCH
- OR FS — FLOW SWITCH
- OR TS — TEMPERATURE SWITCH
- OR LS — LEVEL SWITCH
- MAINTAINED MUSHROOM HEAD EMERGENCY STOP BUTTON (RED)
- OR — START PUSHBUTTON
- OR — STOP PUSHBUTTON
- OR — STOP PUSHBUTTON WITH LOCKOUT
- OR — SELECTOR SWITCH
- R OR — INDICATING LIGHT-LETTER DENOTES COLOR (SCHEMATIC OR ELEVATION ONLY) A=AMBER, R=RED, W=WHITE, G=GREEN
- CONDUCTOR CONNECTED
- CONDUCTOR NOT CONNECTED

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
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Beecher Engineering, Inc.

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PACIFICA CALIFORNIA 94044

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LINDA MAR PUMP STATION UPGRADE PROJECT C004B

ELECTRICAL LEGEND AND GENERAL NOTES

CITY OF PACIFICA, CALIFORNIA

SHEET E001

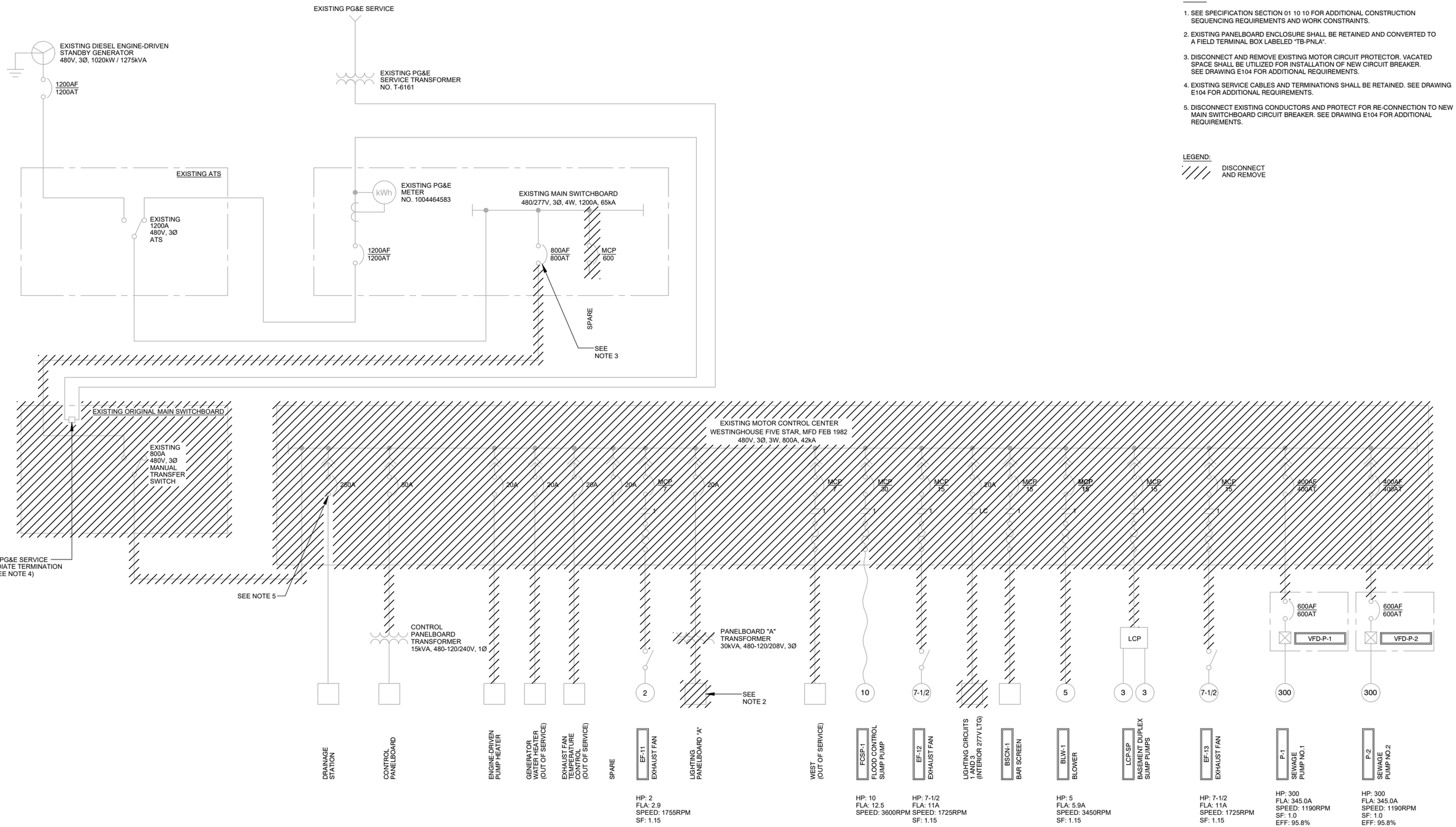
JOB NO. 240010

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.
2. EXISTING PANELBOARD ENCLOSURE SHALL BE RETAINED AND CONVERTED TO A FIELD TERMINAL BOX LABELED "TB-PNLA".
3. DISCONNECT AND REMOVE EXISTING MOTOR CIRCUIT PROTECTOR. VACATED SPACE SHALL BE UTILIZED FOR INSTALLATION OF NEW CIRCUIT BREAKER. SEE DRAWING E104 FOR ADDITIONAL REQUIREMENTS.
4. EXISTING SERVICE CABLES AND TERMINATIONS SHALL BE RETAINED. SEE DRAWING E104 FOR ADDITIONAL REQUIREMENTS.
5. DISCONNECT EXISTING CONDUCTORS AND PROTECT FOR RE-CONNECTION TO NEW MAIN SWITCHBOARD CIRCUIT BREAKER. SEE DRAWING E104 FOR ADDITIONAL REQUIREMENTS.

LEGEND:

DISCONNECT AND REMOVE



SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
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170 SANTA MARIA BOULEVARD
PACIFICA CALIFORNIA 94044

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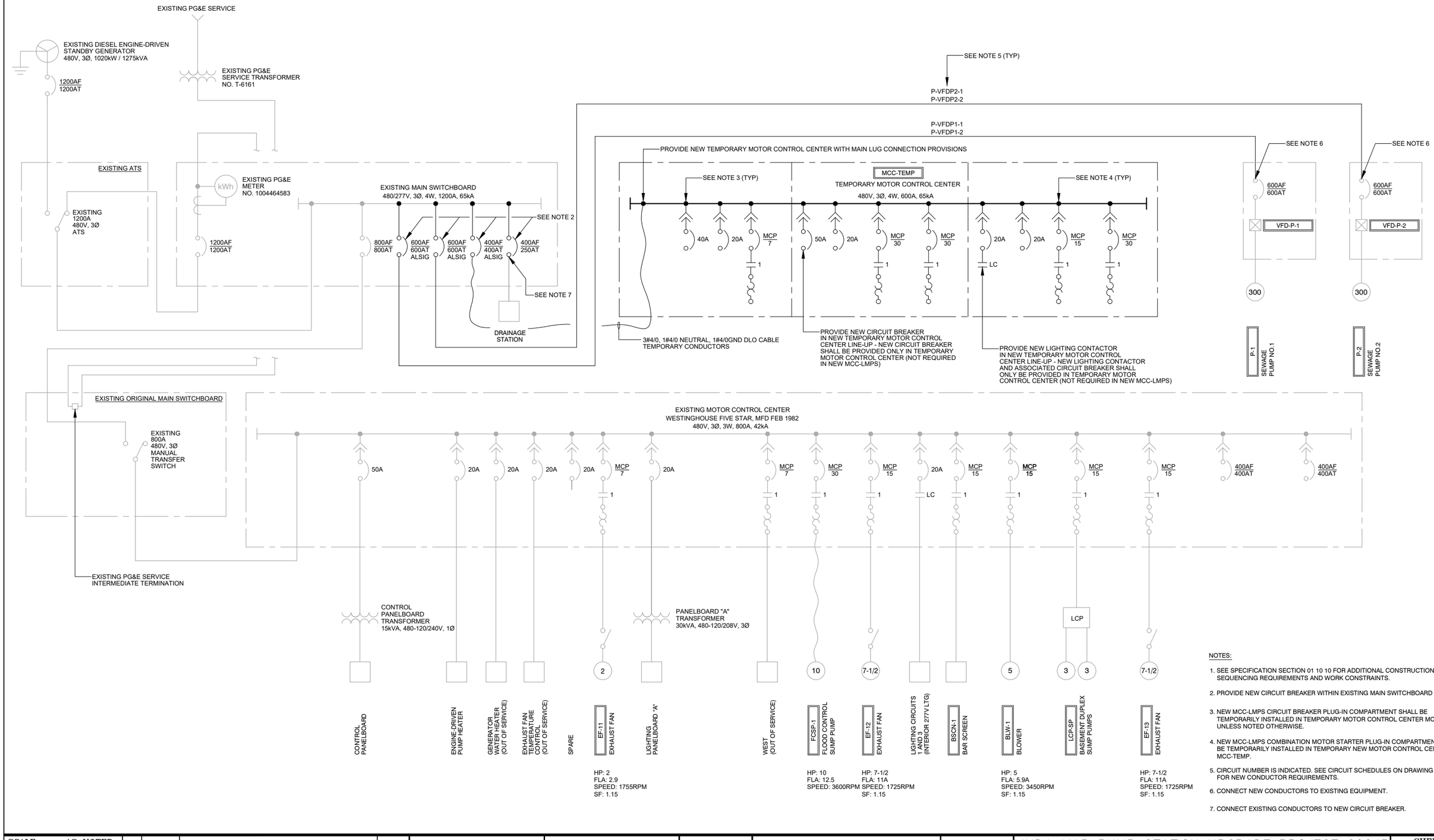
LINDA MAR PUMP STATION UPGRADE PROJECT C004B

MAIN SINGLE LINE DIAGRAM – DEMOLITION

CITY OF PACIFICA, CALIFORNIA

SHEET E101

JOB NO. 240010



NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.
2. PROVIDE NEW CIRCUIT BREAKER WITHIN EXISTING MAIN SWITCHBOARD SPACE.
3. NEW MCC-LMPS CIRCUIT BREAKER PLUG-IN COMPARTMENT SHALL BE TEMPORARILY INSTALLED IN TEMPORARY MOTOR CONTROL CENTER MCC-TEMP UNLESS NOTED OTHERWISE.
4. NEW MCC-LMPS COMBINATION MOTOR STARTER PLUG-IN COMPARTMENT SHALL BE TEMPORARILY INSTALLED IN TEMPORARY NEW MOTOR CONTROL CENTER MCC-TEMP.
5. CIRCUIT NUMBER IS INDICATED. SEE CIRCUIT SCHEDULES ON DRAWING E301 FOR NEW CONDUCTOR REQUIREMENTS.
6. CONNECT NEW CONDUCTORS TO EXISTING EQUIPMENT.
7. CONNECT EXISTING CONDUCTORS TO NEW CIRCUIT BREAKER.

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
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PACIFICA CALIFORNIA 94044

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LINDA MAR PUMP STATION UPGRADE PROJECT C004B

MAIN SINGLE LINE DIAGRAM – INTERIM SYSTEM CONFIGURATION

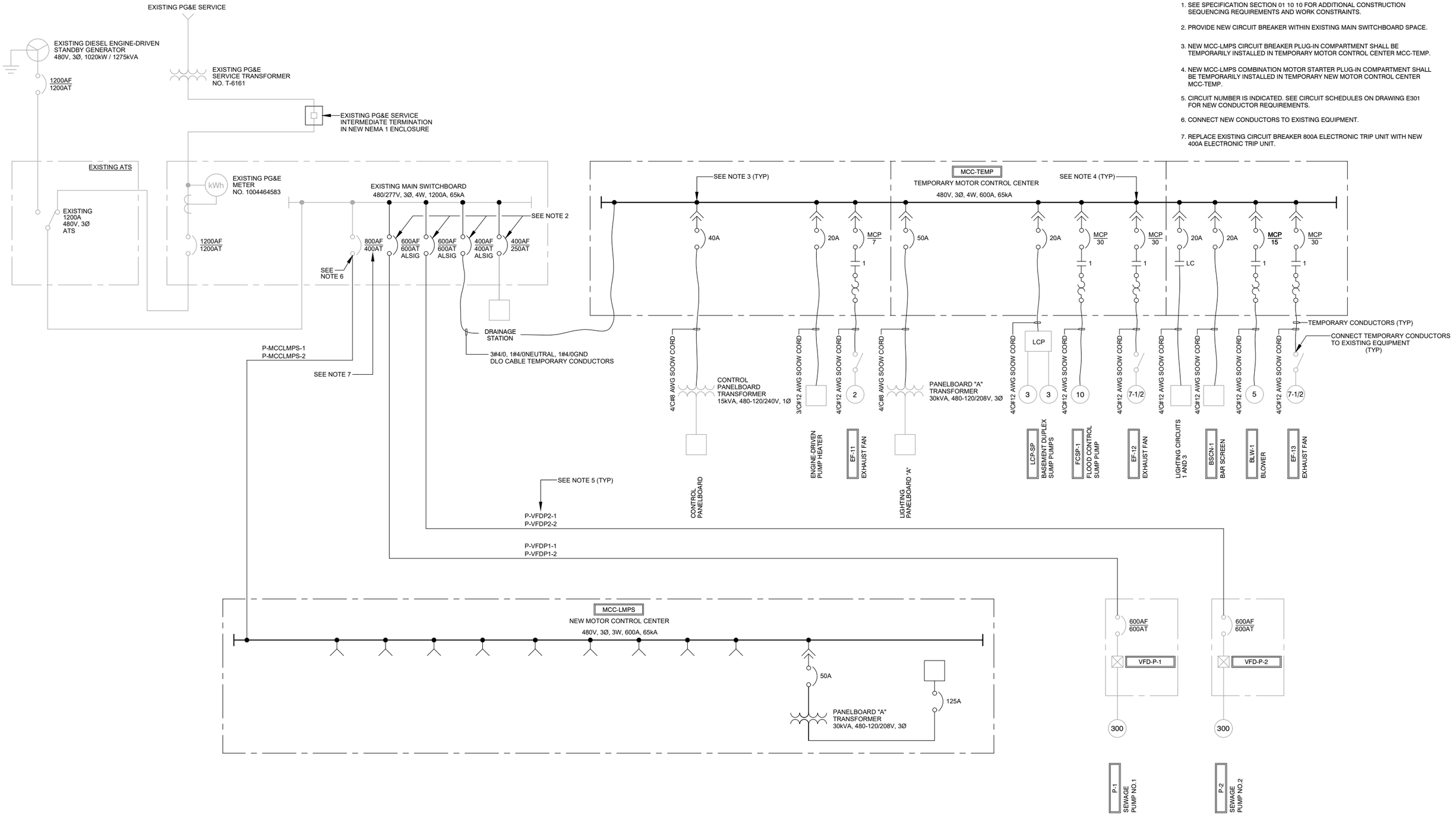
CITY OF PACIFICA, CALIFORNIA

SHEET E102

JOB NO. 240010

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.
2. PROVIDE NEW CIRCUIT BREAKER WITHIN EXISTING MAIN SWITCHBOARD SPACE.
3. NEW MCC-LMPS CIRCUIT BREAKER PLUG-IN COMPARTMENT SHALL BE TEMPORARILY INSTALLED IN TEMPORARY MOTOR CONTROL CENTER MCC-TEMP.
4. NEW MCC-LMPS COMBINATION MOTOR STARTER PLUG-IN COMPARTMENT SHALL BE TEMPORARILY INSTALLED IN TEMPORARY NEW MOTOR CONTROL CENTER MCC-TEMP.
5. CIRCUIT NUMBER IS INDICATED. SEE CIRCUIT SCHEDULES ON DRAWING E301 FOR NEW CONDUCTOR REQUIREMENTS.
6. CONNECT NEW CONDUCTORS TO EXISTING EQUIPMENT.
7. REPLACE EXISTING CIRCUIT BREAKER 800A ELECTRONIC TRIP UNIT WITH NEW 400A ELECTRONIC TRIP UNIT.



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DRAWN: BEI				
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CITY OF PACIFICA
DEPARTMENT OF PUBLIC WORKS, WWTP
170 SANTA MARIA BOULEVARD
PACIFICA CALIFORNIA 94044

STAMP: PROGRESS SET NOT FOR CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT C004B

MAIN SINGLE LINE DIAGRAM – INTERIM SYSTEM CONFIGURATION

CITY OF PACIFICA, CALIFORNIA

SHEET E103

JOB NO. 240010

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.
2. PROVIDE NEW CIRCUIT BREAKER WITHIN EXISTING MAIN SWITCHBOARD SPACE.
3. CIRCUIT NUMBER IS INDICATED. SEE CIRCUIT SCHEDULES ON DRAWING E301 FOR NEW CONDUCTOR REQUIREMENTS.
4. REPLACE EXISTING CIRCUIT BREAKER 800A ELECTRONIC TRIP UNIT WITH NEW 400A ELECTRONIC TRIP UNIT.
5. CONNECT EXISTING SUBMERSIBLE PUMP CORD TO NEW TERMINAL BOX.
6. CONNECT NEW CONDUCTORS TO EXISTING EQUIPMENT.
7. SPARE AVAILABLE FOR (F) THIRD ELECTRIC DRIVEN PUMP WITH VFD.

SEE NOTE 7

Todd - we are installing this for (F) 60 HP electric-driven jockey pump. You show this on the Power and Control Plan E901. Just want to make sure we install necessary components now o make future install next year as seamless as possible. Perhaps it already is - just wanting to confirm. Thanks.

EXISTING PG&E SERVICE

5 EXISTING DIESEL ENGINE-DRIVEN STANDBY GENERATOR 480V, 3Ø, 1020kW / 1275kVA

1200AF 1200AT

EXISTING PG&E SERVICE TRANSFORMER NO. T-6161

EXISTING PG&E SERVICE INTERMEDIATE TERMINATION IN NEW NEMA 1 ENCLOSURE (SEE DETAIL "2" ON DWG E911)

EXISTING ATS

EXISTING 1200A 480V, 3Ø ATS 4

EXISTING PG&E METER NO. 1004464583

1200AF 1200AT

EXISTING MAIN SWITCHBOARD 480/277V, 3Ø, 4W, 1200A, 65kA

SEE NOTE 4

800AF 400AT ALSIG

600AF 600AT ALSIG

600AF 600AT ALSIG

400AF 400AT ALSIG

400AF 250AT

SPARE

DRAINAGE STATION

SEE NOTE 3 (TYP)

P-MCCLMPS-1
P-MCCLMPS-2

P-VFDP2-1
P-VFDP2-2

P-VFDP1-1
P-VFDP1-2

SCHEMATIC DIAGRAM NUMBER (TYP)

MCC-LMPS
NEW MOTOR CONTROL CENTER
480V, 3Ø, 3W, 600A, 65kA

13 2 6 7 2 9 3 2

40A 20A MCP 7 MCP 30 MCP 30 20A MCP 15 MCP 30 50A 125A

P-CPNLBD
CONTROL PANELBOARD TRANSFORMER 15kVA, 480-120/240V, 1Ø

SEE NOTE 6 (TYP)

P-EDPHTR

P-EF11

P-SP

P-FCSP

P-EF12

P-BSCN1

P-BLW1

P-EF13

PANELBOARD "A" TRANSFORMER 30kVA, 480-120/208V, 3Ø

LCP

TB-FCSP

SEE NOTE 5

2 3 3 10 7-1/2 5 7-1/2 300 300

MAIN LUGS

CONTROL PANELBOARD

ENGINE-DRIVEN PUMP HEATER

EF-11 EXHAUST FAN
HP: 2
FLA: 2.9
SPEED: 1755RPM
SF: 1.15

LCP-SP BASEMENT DUPLEX SUMP PUMPS

FCSP-1 FLOOD CONTROL SUMP PUMP
HP: 10
FLA: 12.5
SPEED: 3600RPM

EF-12 EXHAUST FAN
HP: 7-1/2
FLA: 11
SPEED: 1725RPM
SF: 1.15

BSCN-1 BAR SCREEN

BLW-1 BLOWER
HP: 5
FLA: 5.9A
SPEED: 3450RPM
SF: 1.15

EF-13 EXHAUST FAN
HP: 7-1/2
FLA: 11
SPEED: 1725RPM
SF: 1.15

LIGHTING PANELBOARD "A"

600AF 600AT
VFD-P-1
1

P-1 SEWAGE PUMP NO.1
HP: 300
FLA: 345.0A
SPEED: 1190RPM
SF: 1.0
EFF: 95.8%

600AF 600AT
VFD-P-2
1

P-2 SEWAGE PUMP NO.2
HP: 300
FLA: 345.0A
SPEED: 1190RPM
SF: 1.0
EFF: 95.8%

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
	BY	DATE	DESCRIPTION OF REVISIONS	APP'D

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LINDA MAR PUMP STATION UPGRADE PROJECT C004B

MAIN SINGLE LINE DIAGRAM – FINAL SYSTEM CONFIGURATION

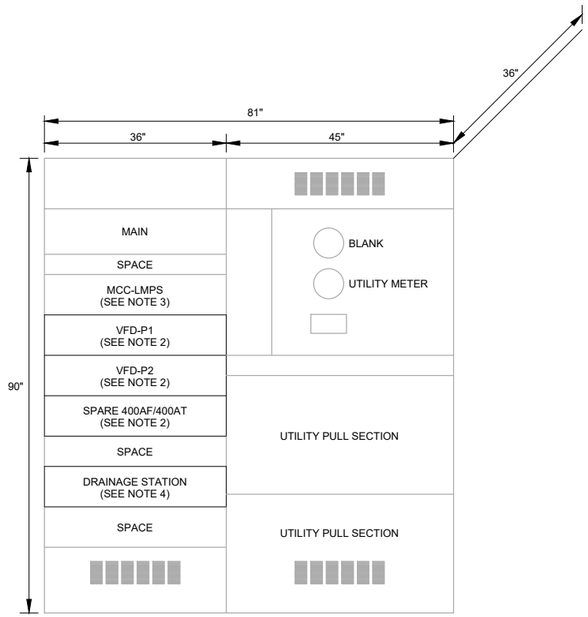
CITY OF PACIFICA, CALIFORNIA

SHEET E104

JOB NO. 240010

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.
2. PROVIDE NEW CIRCUIT BREAKER IN EXISTING SWITCHBOARD SPACE.
3. REPLACE EXISTING CIRCUIT BREAKER 800A ELECTRONIC TRIP UNIT WITH NEW 400A ELECTRONIC TRIP UNIT.
4. AFTER REMOVAL OF EXISTING MOTOR CIRCUIT PROTECTOR, PROVIDE NEW CIRCUIT BREAKER IN VACATED SWITCHBOARD SPACE.



FRONT ELEVATION - EXISTING MAIN SWITCHBOARD MODIFICATIONS

SCALE: NO SCALE

FRONT ELEVATION - EXISTING SEWAGE PUMP VARIABLE FREQUENCY DRIVE CABINET MODIFICATIONS

SCALE: NO SCALE

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
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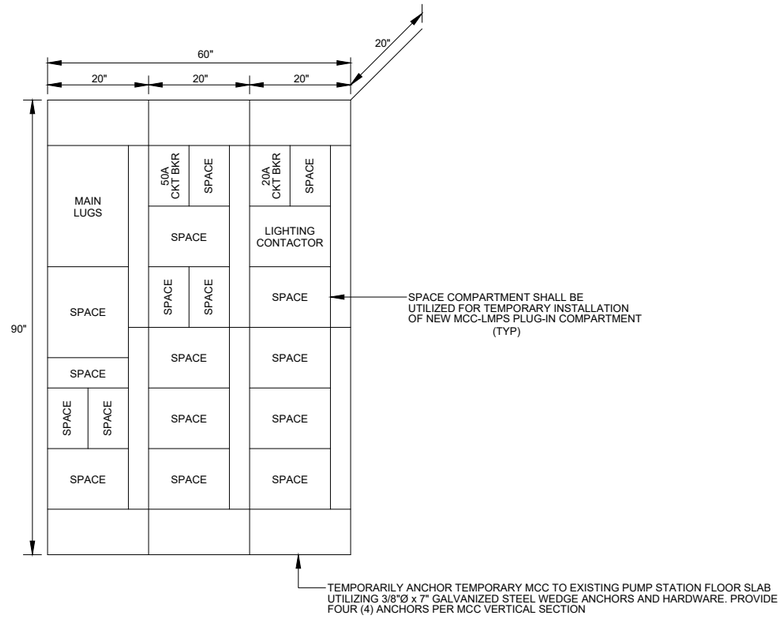
LINDA MAR PUMP STATION UPGRADE PROJECT C004B
ELECTRICAL EQUIPMENT
FRONT ELEVATIONS
CITY OF PACIFICA, CALIFORNIA

SHEET E105

JOB NO. 240010

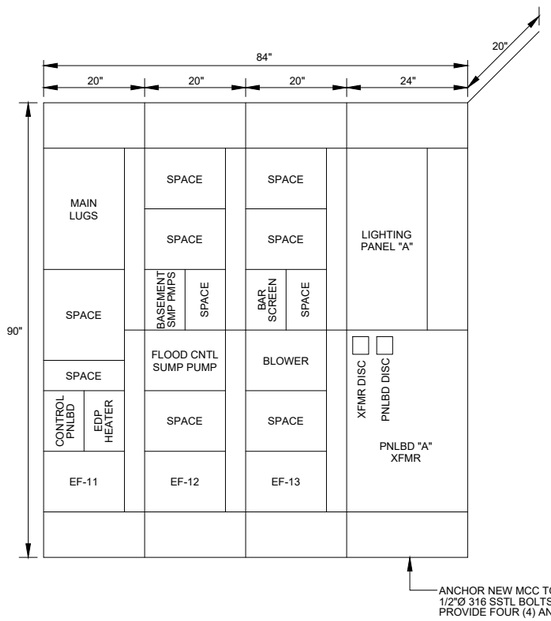
NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.



FRONT ELEVATION - NEW TEMPORARY MOTOR CONTROL CENTER MCC-TEMP

SCALE: NO SCALE



FRONT ELEVATION - NEW MOTOR CONTROL CENTER MCC-LMPS

SCALE: NO SCALE

FRONT ELEVATION - EXISTING AUTOMATIC TRANSFER SWITCH ENCLOSURE MODIFICATIONS

SCALE: NO SCALE

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
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LINDA MAR PUMP STATION UPGRADE PROJECT C004B
ELECTRICAL EQUIPMENT
FRONT ELEVATIONS
CITY OF PACIFICA, CALIFORNIA

SHEET
E106

JOB NO.
240010

PANEL PNL-A | VOLTAGE/PHASE 120/208V, 3Ø, 4W | POLES 42 | MOUNTING IN MCC-LMPS

LOCATION LINDA MAR PUMP STATION | MAIN 125A | BUS 225A, 22kAIC | PANEL BKR'S. BOLT-ON, RATED 22kAIC

SCHEMATIC DIAGRAM NUMBER (TYP)

	LOAD	VOLT-AMPERES Ø A	Ø B	Ø C	TRIP	CKT.	S/N A B C	CKT.	TRIP	VOLT-AMPERES Ø A	Ø B	Ø C	LOAD	
	PLC-LMPS	1000			20A	1		2	20A	1000			LIGHTING - UPPER LEVEL	
10	FLOWMETER FT-1		100		20A	3		4	20A		1000		LIGHTING - LOWER LEVEL	
4	ATS SPACE HEATER			500	20A	5		6	20A			1000	LIGHTING - EXTERIOR (TO EXT LTG LCP)	14
	EXHAUST FAN EF-17	200			20A	7		8	20A	400			LIGHTING - WET WELL/COMMINUTOR	
	WATER SOFTENER		200		20A	9		10	20A		1200		RECEPTACLES - UPPER LEVEL	
	SPARE			---	20A	11		12	20A			1200	RECEPTACLES - UPPER LEVEL	
	SPARE	---			20A	13		14	20A	400			RECEPTACLES - CHLORINE ROOM	
	SPARE		---		20A	15		16	20A		600		RECEPTACLES - LOWER LEVEL	
	SPARE			---	20A	17		18	20A			---	SPARE	
	SPARE	---			20A	19		20	20A	---			SPARE	
	SPARE		---		20A	21		22	20A		---		SPARE	
	SPACE			---	---	23		24	---			---	SPACE	
	SPACE	---			---	25		26	---	---			SPACE	
	SPACE		---		---	27		28	---		---		SPACE	
	SPACE			---	---	29		30	---			---	SPACE	
	SPACE	---			---	31		32	---	---			SPACE	
	SPACE		---		---	33		34	---		---		SPACE	
	SPACE			---	---	35		36	---			---	SPACE	
	SPACE	---			---	37		38	---	---			SPACE	
	SPACE		---		---	39		40	---		---		SPACE	
	SPACE			---	---	41		42	---			---	SPACE	
	VOLT - AMPERES / PHASE	1200	300	500						1800	2800	2200		
	TOTAL VOLT - AMPERES / PHASE	3000	3100	2700	TOTAL: 8.8 kVA									

BY	DATE	DESCRIPTION OF REVISIONS	APP'D
	08/04/21	100% DESIGN SUBMITTAL	
	05/03/21	90% DESIGN SUBMITTAL	
	11/06/20	50% DESIGN SUBMITTAL	

SCALE: AS NOTED
DESIGNED: TB
DRAWN: BEI
CHECKED: BEI
PROJ. ENGR: JJT

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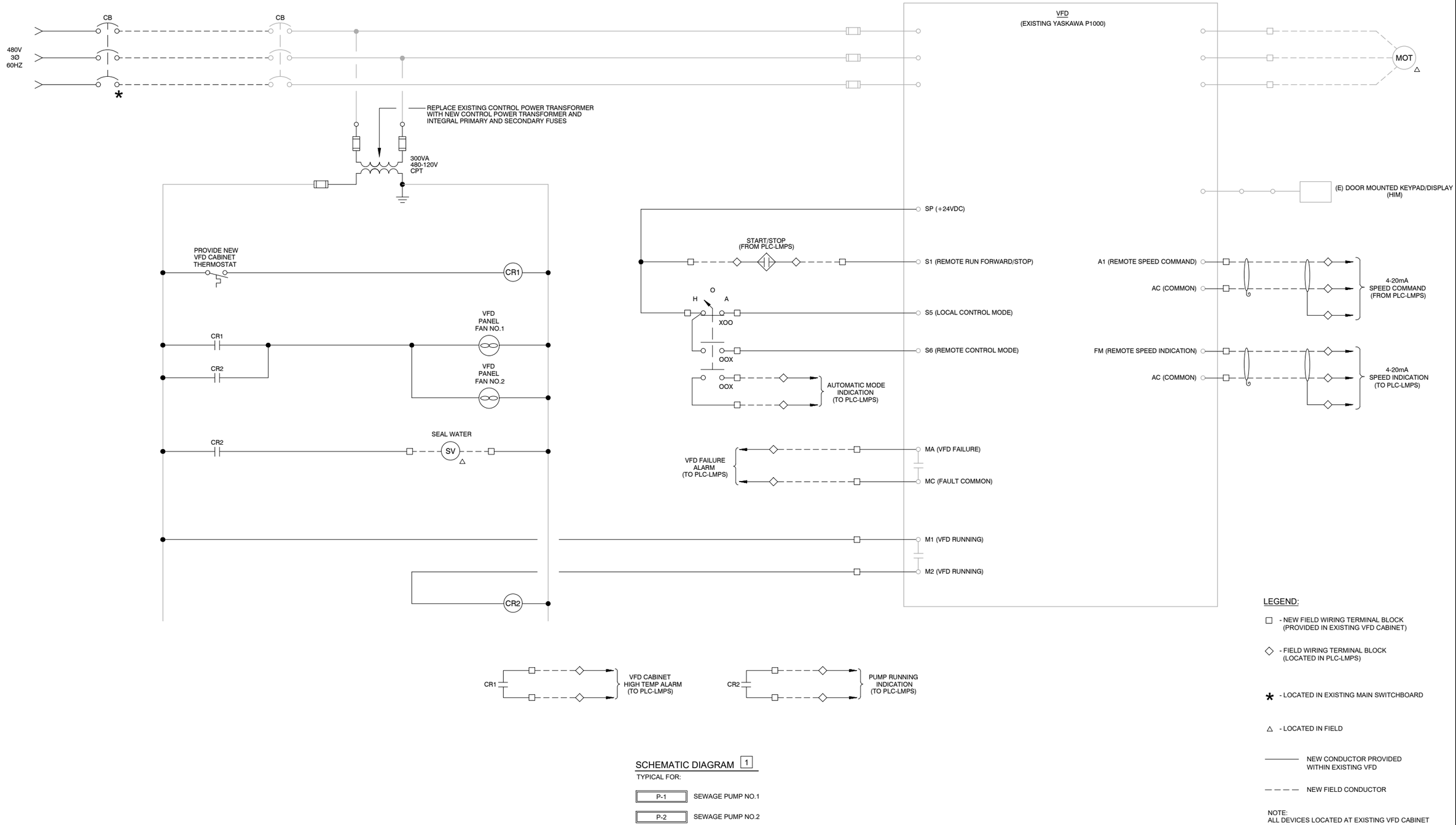
LINDA MAR PUMP STATION UPGRADE PROJECT C004B

PANELBOARD SCHEDULE

CITY OF PACIFICA, CALIFORNIA

SHEET E107

JOB NO. 240010



LEGEND:

- □ - NEW FIELD WIRING TERMINAL BLOCK (PROVIDED IN EXISTING VFD CABINET)
- ◇ - FIELD WIRING TERMINAL BLOCK (LOCATED IN PLC-LMPS)
- * - LOCATED IN EXISTING MAIN SWITCHBOARD
- △ - LOCATED IN FIELD
- ——— NEW CONDUCTOR PROVIDED WITHIN EXISTING VFD
- – – – – NEW FIELD CONDUCTOR

NOTE:
ALL DEVICES LOCATED AT EXISTING VFD CABINET UNLESS OTHERWISE NOTED

SCHEMATIC DIAGRAM 1

TYPICAL FOR:

P-1	SEWAGE PUMP NO.1
P-2	SEWAGE PUMP NO.2

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
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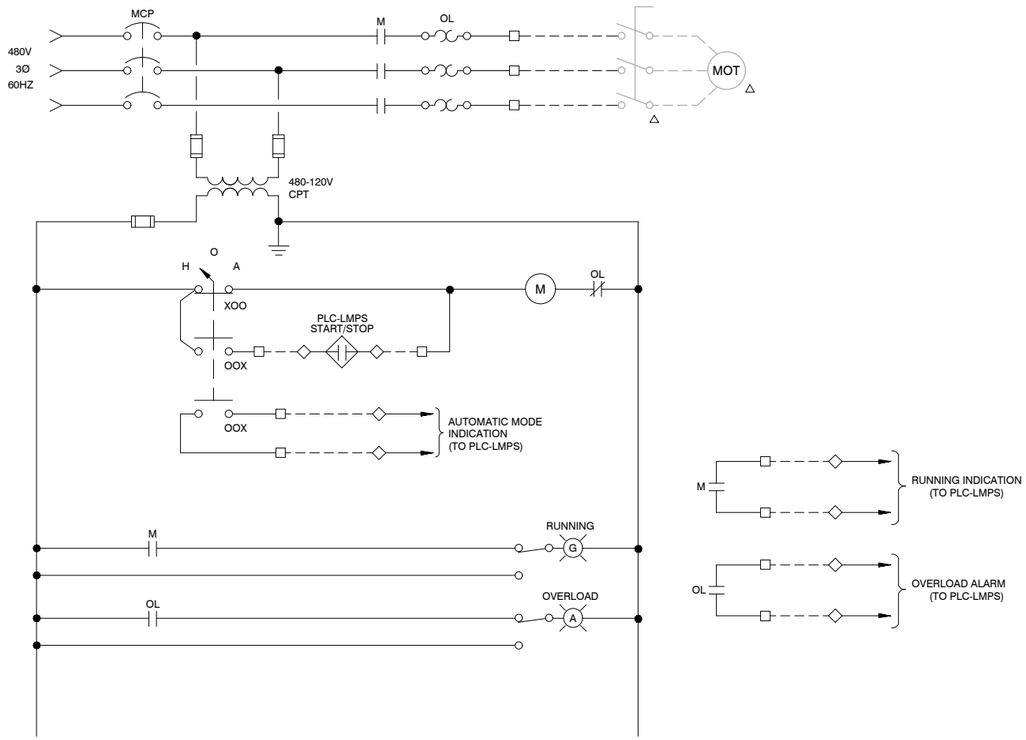
LINDA MAR PUMP STATION UPGRADE PROJECT C004B
CONTROL SCHEMATICS–1
CITY OF PACIFICA, CALIFORNIA

SHEET
E201

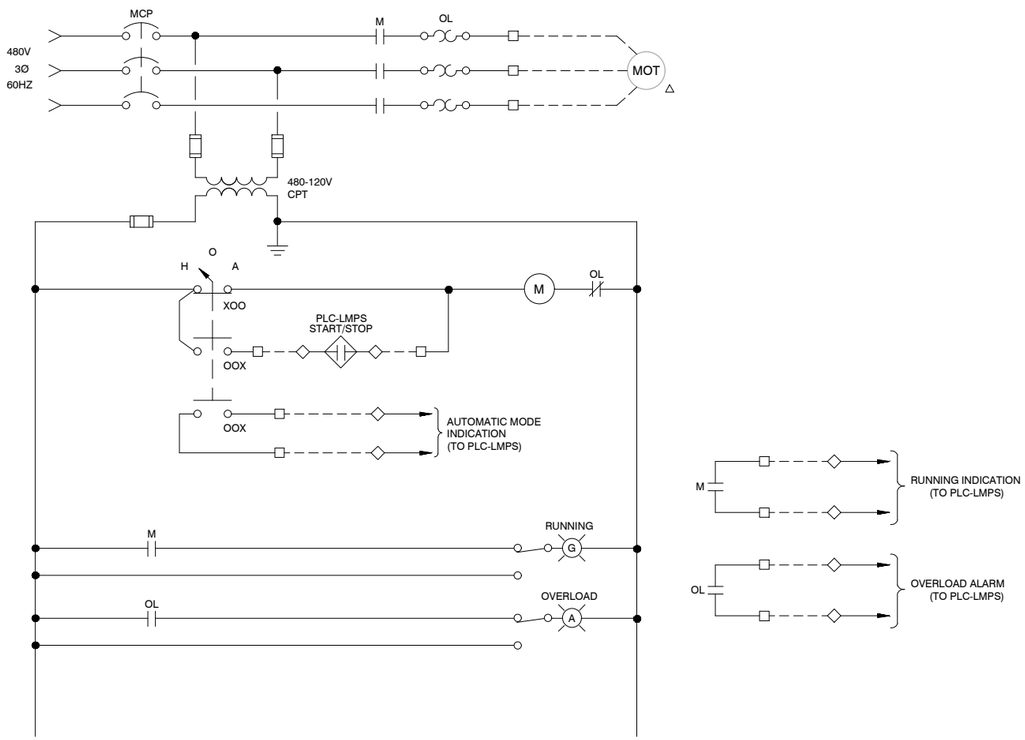
JOB NO.
240010



SCHEMATIC DIAGRAM 2

TYPICAL FOR:

EF-11	EXHAUST FAN NO.1
EF-12	EXHAUST FAN NO.2
EF-13	EXHAUST FAN NO.3



SCHEMATIC DIAGRAM 3

TYPICAL FOR:

BLW-1	BLOWER

LEGEND:

□ - FIELD WIRING TERMINAL BLOCK (PROVIDED AT NEW MCC-LMPS)

◇ - FIELD WIRING TERMINAL BLOCK (LOCATED IN PLC-LMPS)

△ - LOCATED IN FIELD

– – – – NEW FIELD CONDUCTOR

NOTE:
ALL DEVICES LOCATED AT NEW MCC-LMPS UNLESS OTHERWISE NOTED

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
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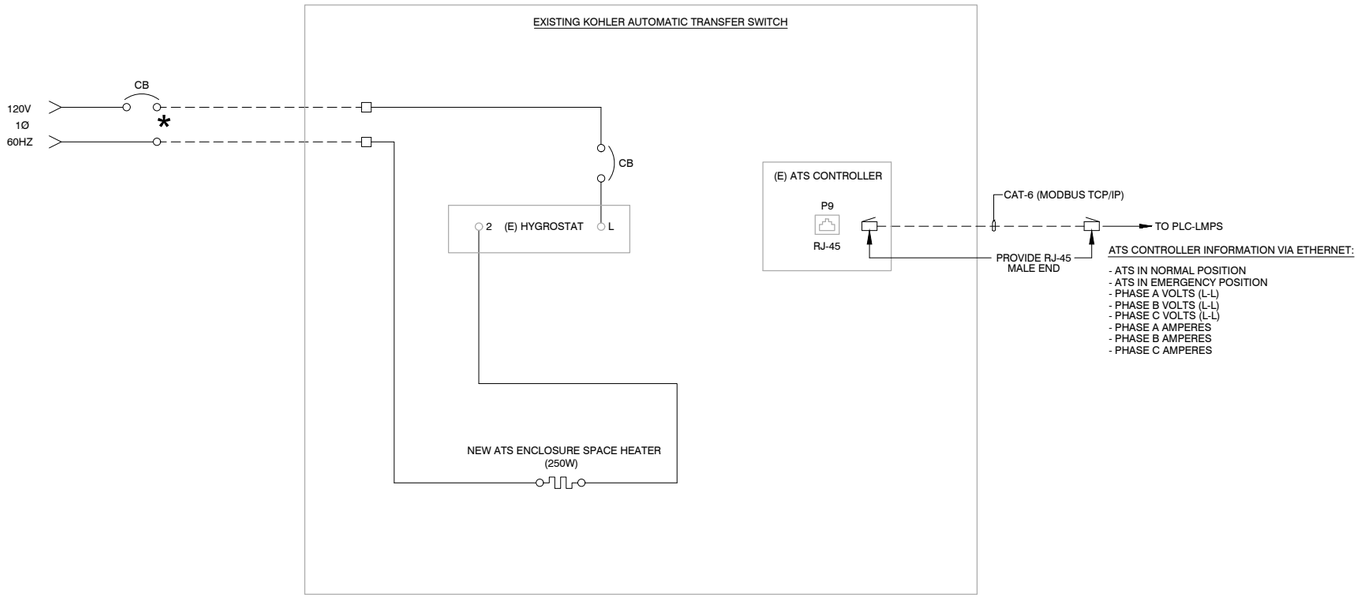
CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT C004B
CONTROL SCHEMATICS–2
CITY OF PACIFICA, CALIFORNIA

SHEET
E202

JOB NO.
240010

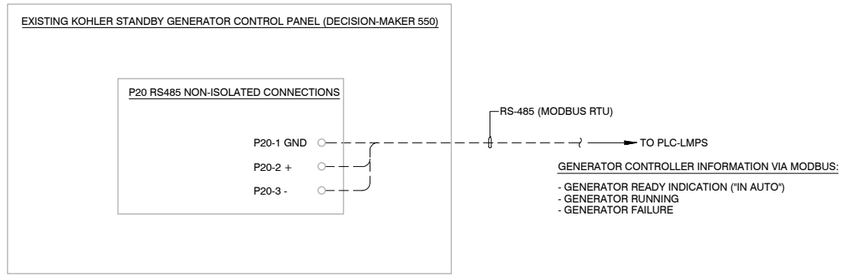


NOTE:
PROVIDE NEW ATS ENCLOSURE SPACE HEATER KIT SUPPLIED FROM KOHLER (NO EQUAL). KIT SHALL INCLUDE NEW ATS TERMINAL BLOCKS, CIRCUIT BREAKER, SPACE HEATER AND INTERNAL PANEL CONDUCTORS

SCHEMATIC DIAGRAM 4

TYPICAL FOR:

EXISTING AUTOMATIC TRANSFER SWITCH



SCHEMATIC DIAGRAM 5

TYPICAL FOR:

EXISTING STANDBY GENERATOR

LEGEND:

□ - NEW FIELD WIRING TERMINAL BLOCK (PROVIDED IN EXISTING ATS CABINET)

◇ - FIELD WIRING TERMINAL BLOCK (LOCATED IN PLC-LMPS)

* - LOCATED IN NEW PANELBOARD (PNL-A LOCATED AT MCC-LMPS)

△ - LOCATED IN FIELD

———— NEW CONDUCTOR PROVIDED WITHIN EXISTING ATS

– – – – NEW FIELD CONDUCTOR

NOTE:
ALL DEVICES LOCATED AT EXISTING ATS CABINET UNLESS OTHERWISE NOTED

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
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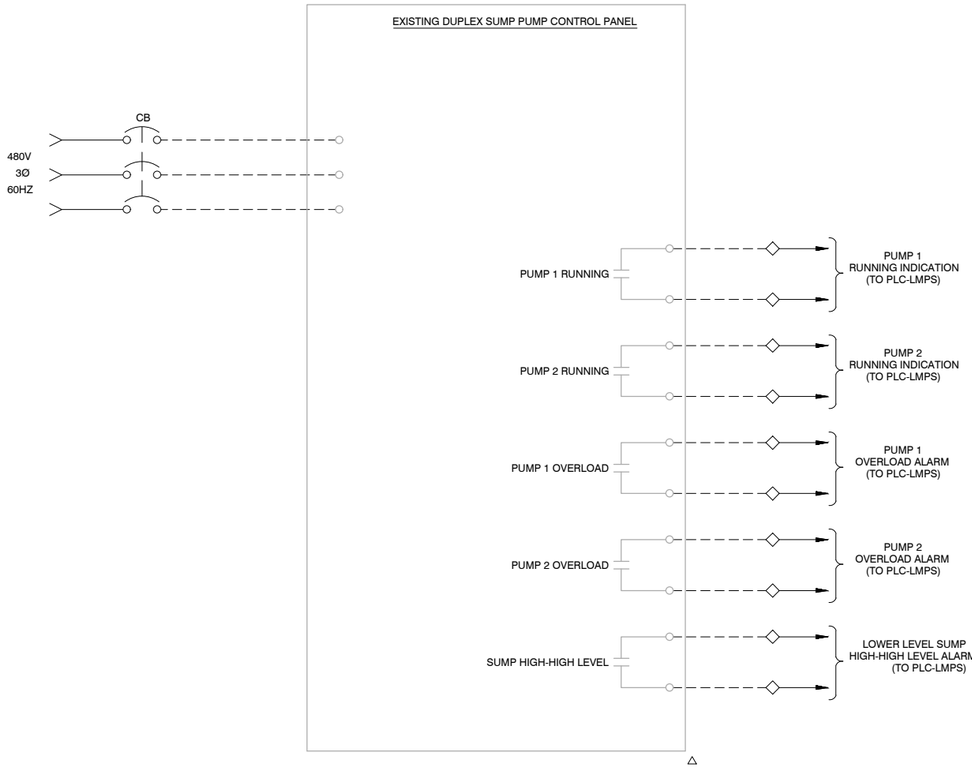
LINDA MAR PUMP STATION UPGRADE PROJECT C004B
CONTROL
SCHEMATICS–3
CITY OF PACIFICA, CALIFORNIA

SHEET
E203

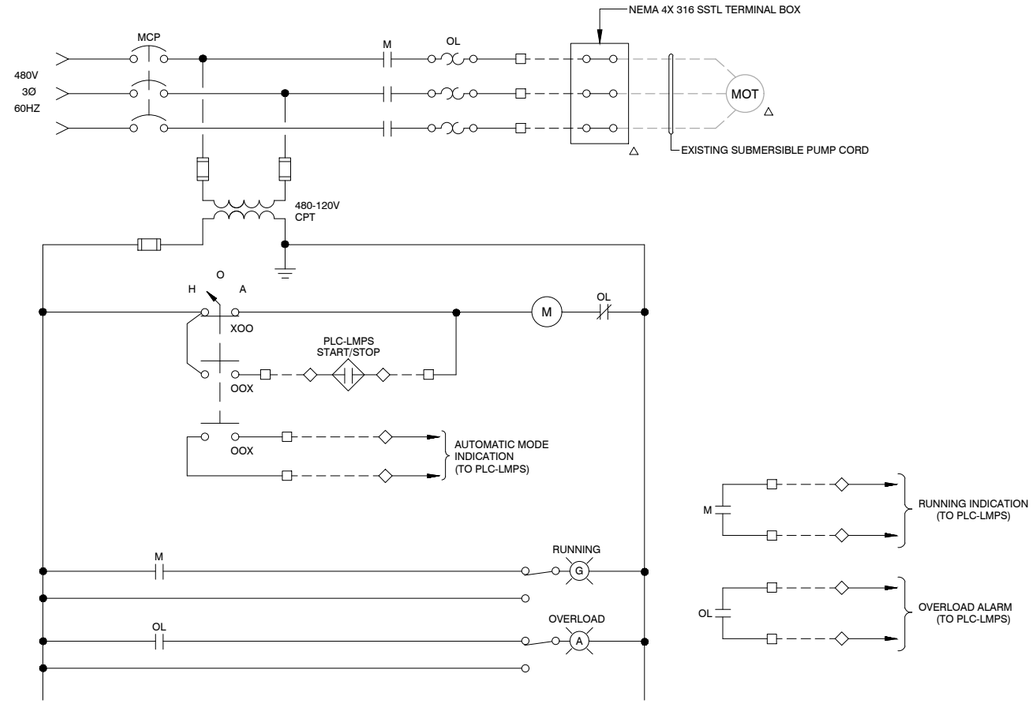
JOB NO.
240010



SCHEMATIC DIAGRAM 6

TYPICAL FOR:

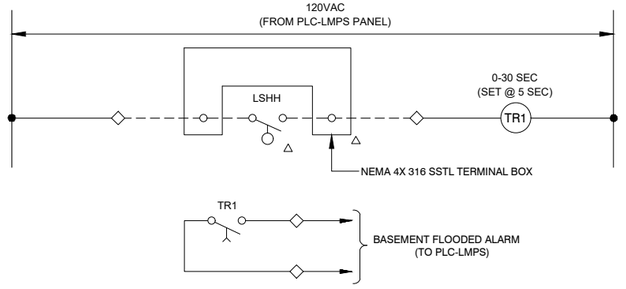
LCP-SP BASEMENT DUPLEX SUMP PUMPS LOCAL CONTROL PANEL



SCHEMATIC DIAGRAM 7

TYPICAL FOR:

FCSP-1 FLOOD CONTROL SUMP PUMP



SCHEMATIC DIAGRAM 8

TYPICAL FOR:

LSHH-1 BASEMENT FLOODED FLOAT SWITCH

LEGEND:

□ - FIELD WIRING TERMINAL BLOCK (PROVIDED AT NEW MCC-LMPS)

◇ - FIELD WIRING TERMINAL BLOCK (LOCATED IN PLC-LMPS)

△ - LOCATED IN FIELD

– – – – NEW FIELD CONDUCTOR

NOTE:
ALL DEVICES LOCATED AT NEW MCC-LMPS UNLESS OTHERWISE NOTED

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
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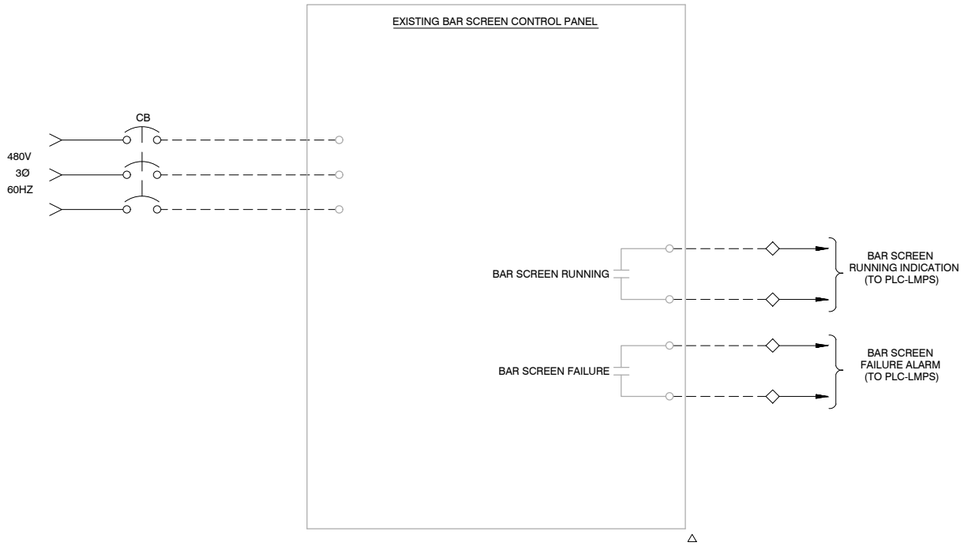
LINDA MAR PUMP STATION UPGRADE PROJECT C004B
CONTROL
SCHEMATICS–4
CITY OF PACIFICA, CALIFORNIA

SHEET
E204

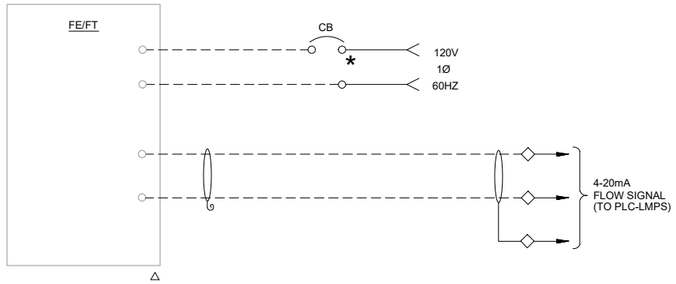
JOB NO.
240010



SCHEMATIC DIAGRAM 9

TYPICAL FOR:

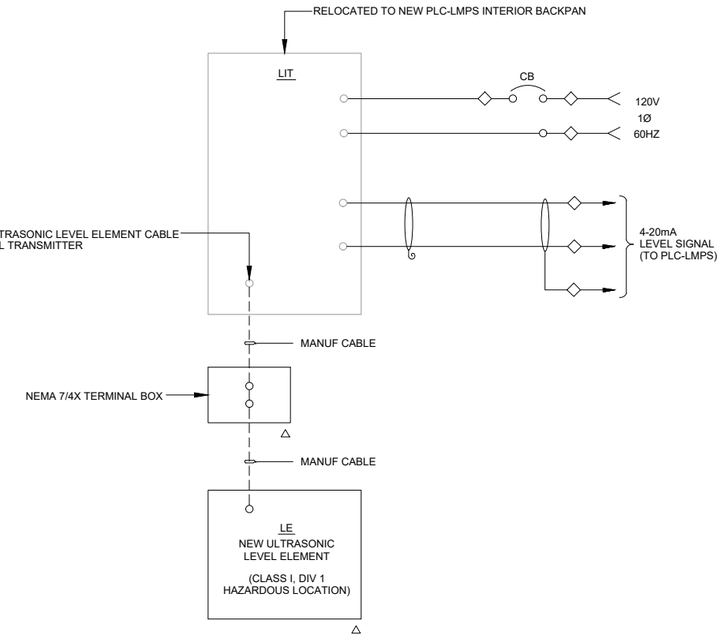
BSCN-1 BAR SCREEN LOCAL CONTROL PANEL



SCHEMATIC DIAGRAM 10

TYPICAL FOR:

FT-1 LINDA MAR PUMP STATION DISCHARGE FLOWMETER



SCHEMATIC DIAGRAM 11

TYPICAL FOR:

LIT-1 LINDA MAR PUMP STATION WET WELL LEVEL TRANSMITTER

LEGEND:

- □ - FIELD WIRING TERMINAL BLOCK (PROVIDED AT NEW MCC-LMPS)
- ◇ - FIELD WIRING TERMINAL BLOCK (LOCATED IN PLC-LMPS)
- * - LOCATED AT PANELBOARD "A" (LOCATED IN MCC-LMPS)
- △ - LOCATED IN FIELD
- — — — — NEW FIELD CONDUCTOR

NOTE:
ALL DEVICES LOCATED AT NEW MCC-LMPS UNLESS OTHERWISE NOTED

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
	BY	DATE	DESCRIPTION OF REVISIONS	APP'D

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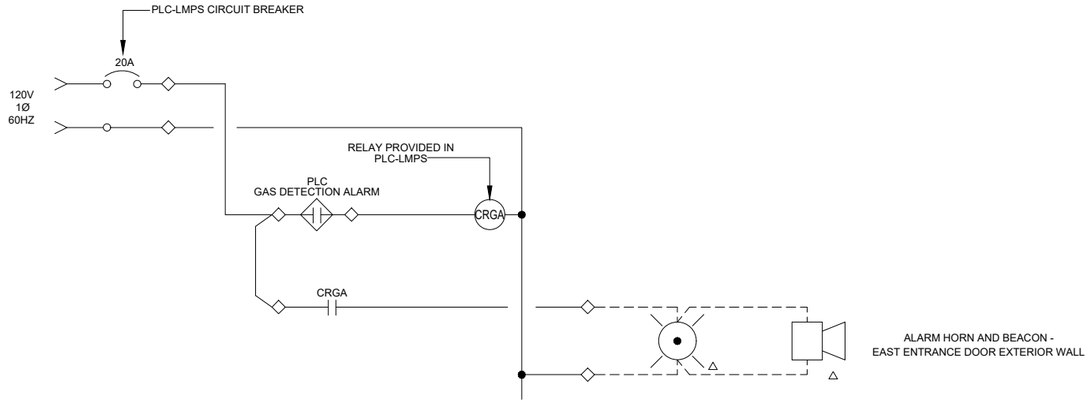
CONSTRUCTION

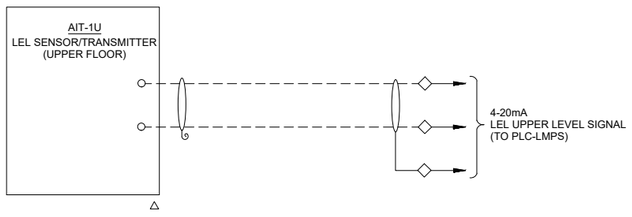
LINDA MAR PUMP STATION UPGRADE PROJECT C004B

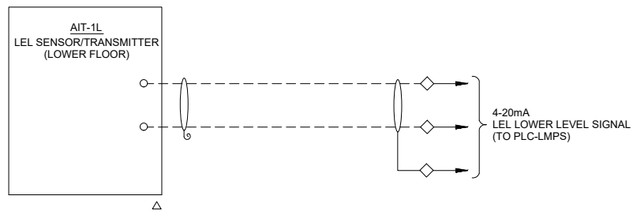
CONTROL
SCHEMATICS–5
CITY OF PACIFICA, CALIFORNIA

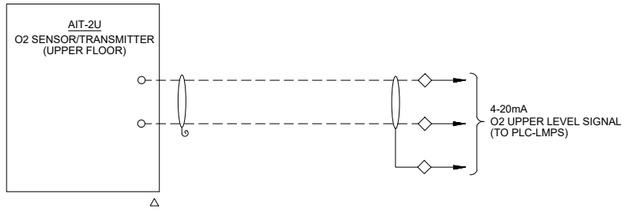
SHEET
E205

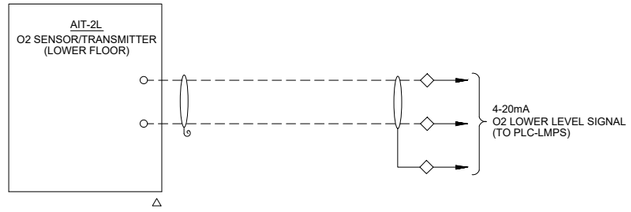
JOB NO.
240010

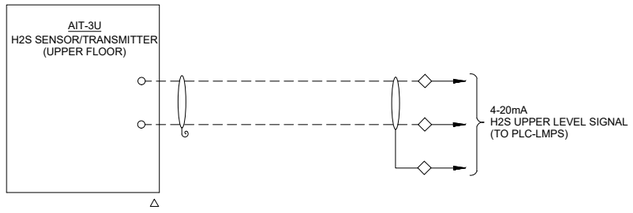


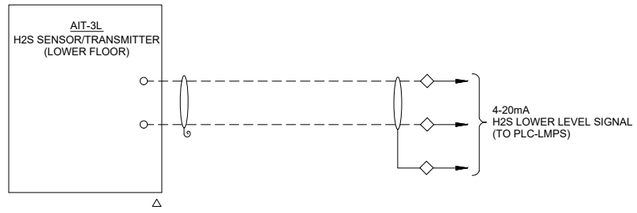












SCHEMATIC DIAGRAM 12

TYPICAL FOR:

YA-1	GAS ALARM HORN	AIT-1U	UPPER LEVEL LEL SENSOR/TRANSMITTER	AIT-1L	LOWER LEVEL LEL SENSOR/TRANSMITTER
YAL-1	GAS ALARM BEACON LIGHT	AIT-2U	UPPER LEVEL O2 SENSOR/TRANSMITTER	AIT-2L	LOWER LEVEL O2 SENSOR/TRANSMITTER
		AIT-3U	UPPER LEVEL H2S SENSOR/TRANSMITTER	AIT-3L	LOWER LEVEL H2S SENSOR/TRANSMITTER

LEGEND:

◇ - FIELD WIRING TERMINAL BLOCK (LOCATED IN PLC-LMPS)

△ - LOCATED IN FIELD

– – – – NEW FIELD CONDUCTOR

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
	BY	DATE	DESCRIPTION OF REVISIONS	APP'D

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PACIFICA CALIFORNIA 94044

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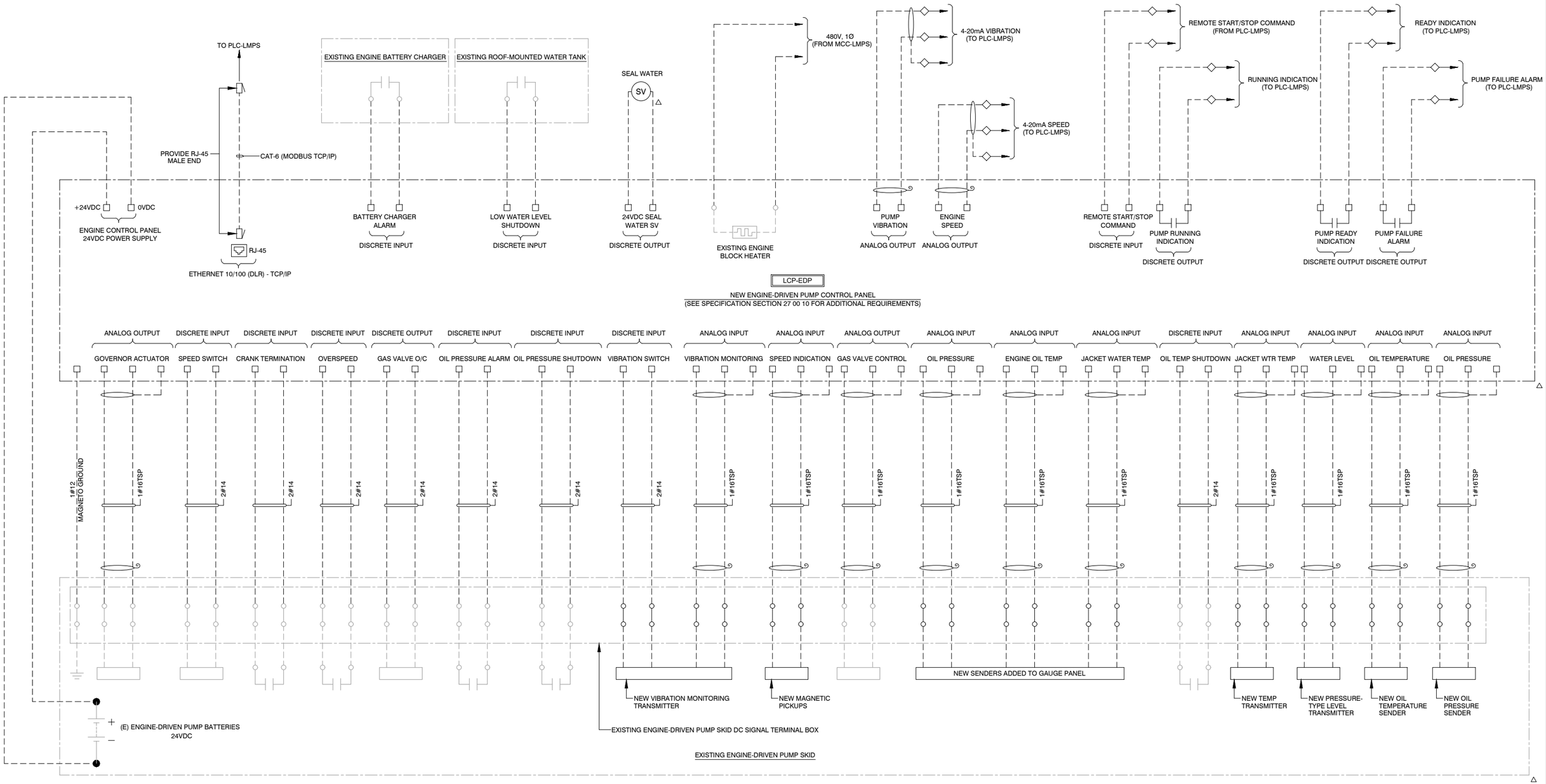
CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT C004B

CONTROL
SCHEMATICS–6
CITY OF PACIFICA, CALIFORNIA

SHEET
E206

JOB NO.
240010



LEGEND:

- □ - NEW ENGINE-DRIVEN PUMP CONTROL PANEL FIELD WIRING TERMINAL BLOCK
- ◇ - FIELD WIRING TERMINAL BLOCK (LOCATED IN PLC-LMPS)
- △ - LOCATED IN FIELD
- NEW FIELD CONDUCTOR
- EXISTING FIELD CONDUCTOR

SCHEMATIC DIAGRAM 13

TYPICAL FOR:

EXISTING DIESEL ENGINE-DRIVEN PUMP SYSTEM

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
	BY	DATE	DESCRIPTION OF REVISIONS	APP'D

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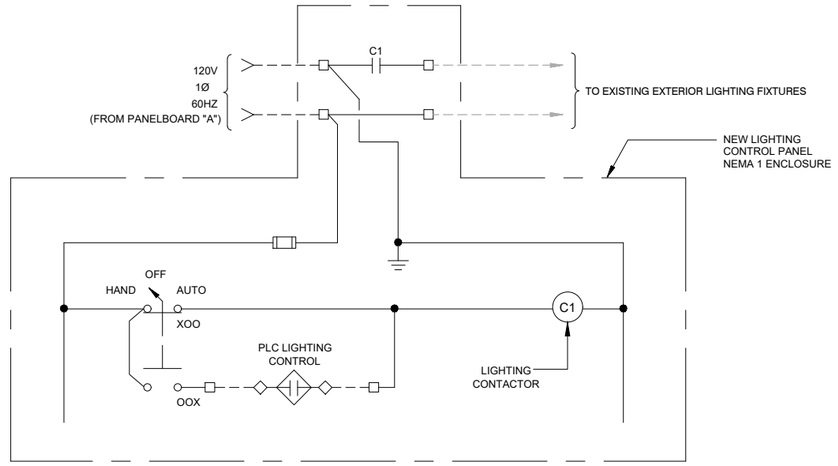
LINDA MAR PUMP STATION UPGRADE PROJECT C004B

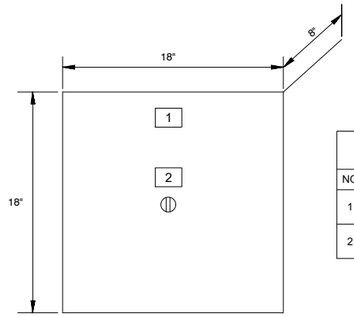
CONTROL SCHEMATICS–7

CITY OF PACIFICA, CALIFORNIA

SHEET E207

JOB NO. 240010





NAMEPLATE LEGEND	
NO.	ENGRAVING
1	EXTERIOR LIGHTING CONTROL PANEL
2	HAND-OFF-AUTO

SCHEMATIC DIAGRAM 14

TYPICAL FOR:

LINDA MAR PUMP STATION - EXTERIOR LIGHTING CONTROL

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
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CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT C004B
CONTROL
SCHEMATICS–8
CITY OF PACIFICA, CALIFORNIA

SHEET
E208

JOB NO.
240010

POWER CIRCUITS

CIRCUIT NO.	WIRE/CABLE REQUIREMENTS	FROM:	TO:	SCHEMATIC DIAGRAM NO.	CONDUCTOR TYPE
P-MCCLMPS-1	3#4/0, 1#2GND	(E) MAIN SWBD	MCC-LMPS	---	XHHW-2 (CABLE TRAY RATED)
P-MCCLMPS-2	3#4/0	(E) MAIN SWBD	MCC-LMPS	---	XHHW-2 (CABLE TRAY RATED)
P-CPNLBD	3#8, 1#10GND	MCC-LMPS	(E) XFMR	---	XHHW-2
P-PLCLMPS	2#12, 1#12GND	MCC-LMPS (PNL-A)	PLC-LMPS	---	XHHW-2
P-VFDP1-1	3-350kcmil, 1#1GND	(E) MAIN SWBD	VFD-P-1	1	XHHW-2 (CABLE TRAY RATED)
P-VFDP1-2	3-350kcmil	(E) MAIN SWBD	VFD-P-1	1	XHHW-2 (CABLE TRAY RATED)
P-VFDP2-1	3-350kcmil, 1#1GND	(E) MAIN SWBD	VFD-P-2	1	XHHW-2 (CABLE TRAY RATED)
P-VFDP2-2	3-350kcmil	(E) MAIN SWBD	VFD-P-2	1	XHHW-2 (CABLE TRAY RATED)
P-EF11	3#12, 1#12GND	MCC-LMPS	(E) EF-11 DS	2	XHHW-2
P-EF12	3#12, 1#12GND	MCC-LMPS	(E) EF-12 DS	2	XHHW-2
P-EF13	3#12, 1#12GND	MCC-LMPS	(E) EF-13 DS	2	XHHW-2
P-BLW1	3#12, 1#12GND	MCC-LMPS	BLW-1	3	XHHW-2
P-ATS	2#12, 1#12GND	MCC-LMPS (PNL-A)	(E) ATS	4	XHHW-2
P-SP	3#12, 1#12GND	MCC-LMPS	(E) SUMP PMP LCP	6	XHHW-2
P-FCSP	3#12, 1#12GND	MCC-LMPS	(N) TERM BOX	7	XHHW-2
P-BSCN1	3#12, 1#12GND	MCC-LMPS	(E) BAR SCN LCP	9	XHHW-2
P-FT1	2#12, 1#12GND	MCC-LMPS (PNL-A)	(E) FLOWMETER	10	XHHW-2
P-EDP	2#10	(E) ENG SKID	LCP-EDP	13	XHHW-2
P-EDPHTR	2#12, 1#12GND	MCC-LMPS	(E) ENG SKID	13	XHHW-2
P-LTGLCP	2#12, 1#12GND	MCC-LMPS (PNL-A)	EXT LTG LCP	14	XHHW-2

CONTROL / SIGNAL CIRCUITS

CIRCUIT NO.	WIRE/CABLE REQUIREMENTS	FROM:	TO:	SCHEMATIC DIAGRAM NO.	SIGNAL DESCRIPTION
S-PHONE	2-PAIR TELEPHONE	(E) PHONE TB	PLC-LMPS	---	STATION LEASED LINE COMMUNICATION
C-P1	10#14, 1#14GND	VFD-P-1	PLC-LMPS	1	SEWAGE PUMP NO.1 - DISCRETE PLC SIGNALS
C-P1A	2#12, 1#12GND	VFD-P-1	SEAL WTR SV	1	SEWAGE PUMP NO.1 - SEAL WATER SOLENOID VALVE
S-P1	2 - 1#16TSP	VFD-P-1	PLC-LMPS	1	SEWAGE PUMP NO.1 - ANALOG PLC SIGNALS
C-P2	10#14, 1#14GND	VFD-P-2	PLC-LMPS	1	SEWAGE PUMP NO.2 - DISCRETE PLC SIGNALS
C-P2A	2#12, 1#12GND	VFD-P-2	SEAL WTR SV	1	SEWAGE PUMP NO.2 - SEAL WATER SOLENOID VALVE
S-P2	2 - 1#16TSP	VFD-P-2	PLC-LMPS	1	SEWAGE PUMP NO.2 - ANALOG PLC SIGNALS
C-EF11	8#14, 1#14GND	MCC-LMPS	PLC-LMPS	2	EXHAUST FAN NO.1 (EF-11) - PLC SIGNALS
C-EF12	8#14, 1#14GND	MCC-LMPS	PLC-LMPS	2	EXHAUST FAN NO.2 (EF-12) - PLC SIGNALS
C-EF13	8#14, 1#14GND	MCC-LMPS	PLC-LMPS	2	EXHAUST FAN NO.3 (EF-13) - PLC SIGNALS
C-BLW1	8#14, 1#14GND	MCC-LMPS	PLC-LMPS	3	BLOWER (BLW-1) - PLC SIGNALS
S-ATS	CAT-6	(E) ATS	PLC-LMPS	4	AUTOMATIC TRANSFER SWITCH ETHERNET COMMUNICATION
S-GEN	RS-485	(E) GENERATOR	PLC-LMPS	5	STANDBY GENERATOR MODBUS RTU COMMUNICATION
C-SP	10#14, 1#14GND	PLC-LMPS	(E) SUMP PMP LCP	6	BASEMENT DUPLEX SUMP PUMP CONTROL PANEL - PLC SIGNALS
C-FCSP	8#14, 1#14GND	MCC-LMPS	PLC-LMPS	7	FLOOD CONTROL SUMP PUMP - PLC SIGNALS
C-LSHH1	2#14, 1#14GND	PLC-LMPS	(N) TERM BOX	8	BASEMENT FLOODED FLOAT SWITCH
C-BSCN1	4#14, 1#14GND	PLC-LMPS	(E) BAR SCN LCP	9	BAR SCREEN CONTROL PANEL - PLC SIGNALS
S-FT1	1#16TSP	PLC-LMPS	(E) FLOWMETER	10	LINDA MAR PUMP STATION DISCHARGE FLOW
S-LE1	MANUF CABLE	PLC-LMPS	TERMINAL BOX	11	LINDA MAR PUMP STATION WET WELL ULTRASONIC LEVEL ELEMENT
C-YAL1	2#14, 1#14GND	PLC-LMPS	ALARM BEACON	12	EXTERIOR ALARM BEACON LIGHT - GAS ALARM
C-YA1	2#14, 1#14GND	ALARM BEACON	ALARM HORN	12	EXTERIOR ALARM HORN - GAS ALARM
S-AIT1U	1#16TSP	PLC-LMPS	AIT-1U	12	UPPER LEVEL LEL
S-AIT2U	1#16TSP	PLC-LMPS	AIT-2U	12	UPPER LEVEL O2
S-AIT3U	1#16TSP	PLC-LMPS	AIT-2U	12	UPPER LEVEL H2S
S-AIT1L	1#16TSP	PLC-LMPS	AIT-1L	12	LOWER LEVEL LEL
S-AIT2L	1#16TSP	PLC-LMPS	AIT-2L	12	LOWER LEVEL O2
S-AIT3L	1#16TSP	PLC-LMPS	AIT-2L	12	LOWER LEVEL H2S
S-EDP	CAT-6	PLC-LMPS	LCP-EDP	13	ENGINE-DRIVEN PUMP CONTROL PANEL MODBUS TCP/IP COMMUNICATION
S-EDPA	2 - 1#16TSP	PLC-LMPS	LCP-EDP	13	ENGINE-DRIVEN PUMP CONTROL PANEL - ANALOG PLC SIGNALS
C-EDP	8#14, 1#14GND	PLC-LMPS	LCP-EDP	13	ENGINE-DRIVEN PUMP CONTROL PANEL - DISCRETE PLC SIGNALS
C-EDPSKID	16#14, 1#14GND	LCP-EDP	(E) ENG SKID	13	ENGINE-DRIVEN PUMP - DISCRETE FIELD SIGNALS
S-EDPSKID	11 - 1#16TSP	LCP-EDP	(E) ENG SKID	13	ENGINE-DRIVEN PUMP - ANALOG FIELD SIGNALS
C-MAGGND	1#12	LCP-EDP	(E) ENG SKID	13	ENGINE-DRIVEN PUMP - MAGNETO GROUND
C-EDPSV	2#12, 1#12GND	LCP-EDP	SEAL WTR SV	13	ENGINE-DRIVEN PUMP - SEAL WATER SOLENOID VALVE
C-LOWWTR	2#14, 1#14GND	LCP-EDP	(E) WATER TANK	13	ENGINE-DRIVEN PUMP - LOW WATER TANK LEVEL ALARM
C-CHGR	2#14, 1#14GND	LCP-EDP	(E) BATTERY CHGR	13	ENGINE-DRIVEN PUMP - BATTERY CHARGER ALARM
C-LTGLCP	2#14, 1#14GND	PLC-LMPS	EXT LTG LCP	14	EXTERIOR LIGHTING CONTROL PANEL - PLC SIGNAL

NOTES:

1. NEW CONDUIT REQUIREMENTS ARE NOT INCLUDED IN THE CIRCUIT SCHEDULES. REFER TO THE ELECTRICAL PLAN DRAWINGS FOR NEW CONDUIT REQUIREMENTS.
2. NEW LIGHTING AND RECEPTACLE CONDUCTOR REQUIREMENTS ARE NOT INCLUDED IN THE CIRCUIT SCHEDULES. REFER TO THE ELECTRICAL PLAN DRAWINGS FOR NEW LIGHTING AND RECEPTACLE CIRCUIT CONDUCTOR REQUIREMENTS.
3. TEMPORARY CONDUCTOR REQUIREMENTS ARE NOT INCLUDED IN THE CIRCUIT SCHEDULES. REFER TO THE SINGLE LINE DIAGRAMS FOR TEMPORARY CONDUCTOR REQUIREMENTS.

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
	BY	DATE	DESCRIPTION OF REVISIONS	APP'D

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PACIFICA CALIFORNIA 94044

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LINDA MAR PUMP STATION UPGRADE PROJECT C004B

CIRCUIT SCHEDULES

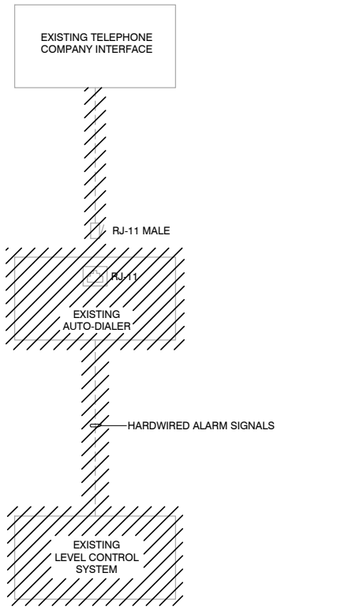
CITY OF PACIFICA, CALIFORNIA

SHEET
E301

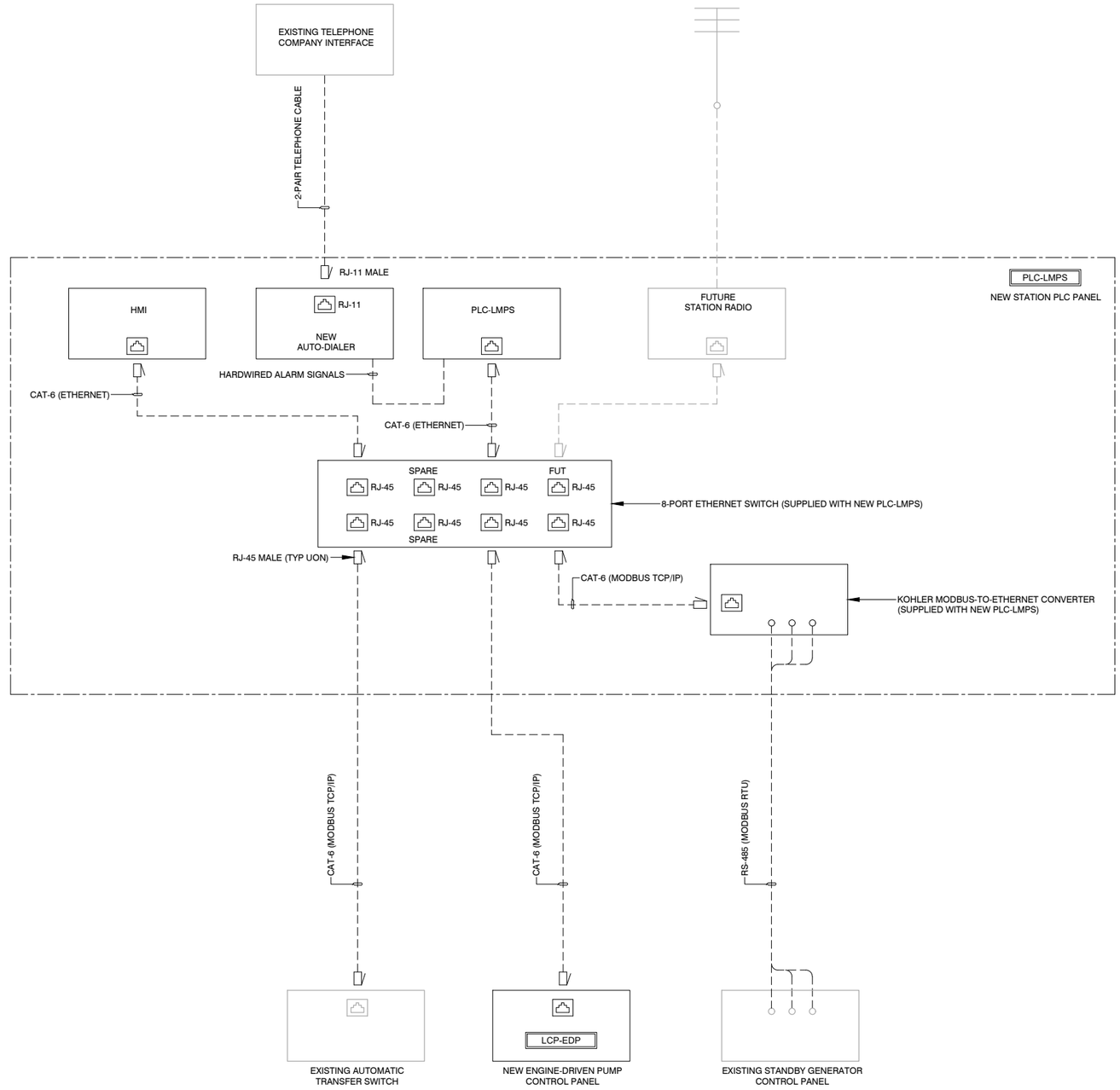
JOB NO.
240010

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.



EXISTING STATION COMMUNICATION DIAGRAM - DEMOLITION



STATION COMMUNICATION DIAGRAM - MODIFICATIONS

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
	BY	DATE	DESCRIPTION OF REVISIONS	APP'D

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PACIFICA CALIFORNIA 94044

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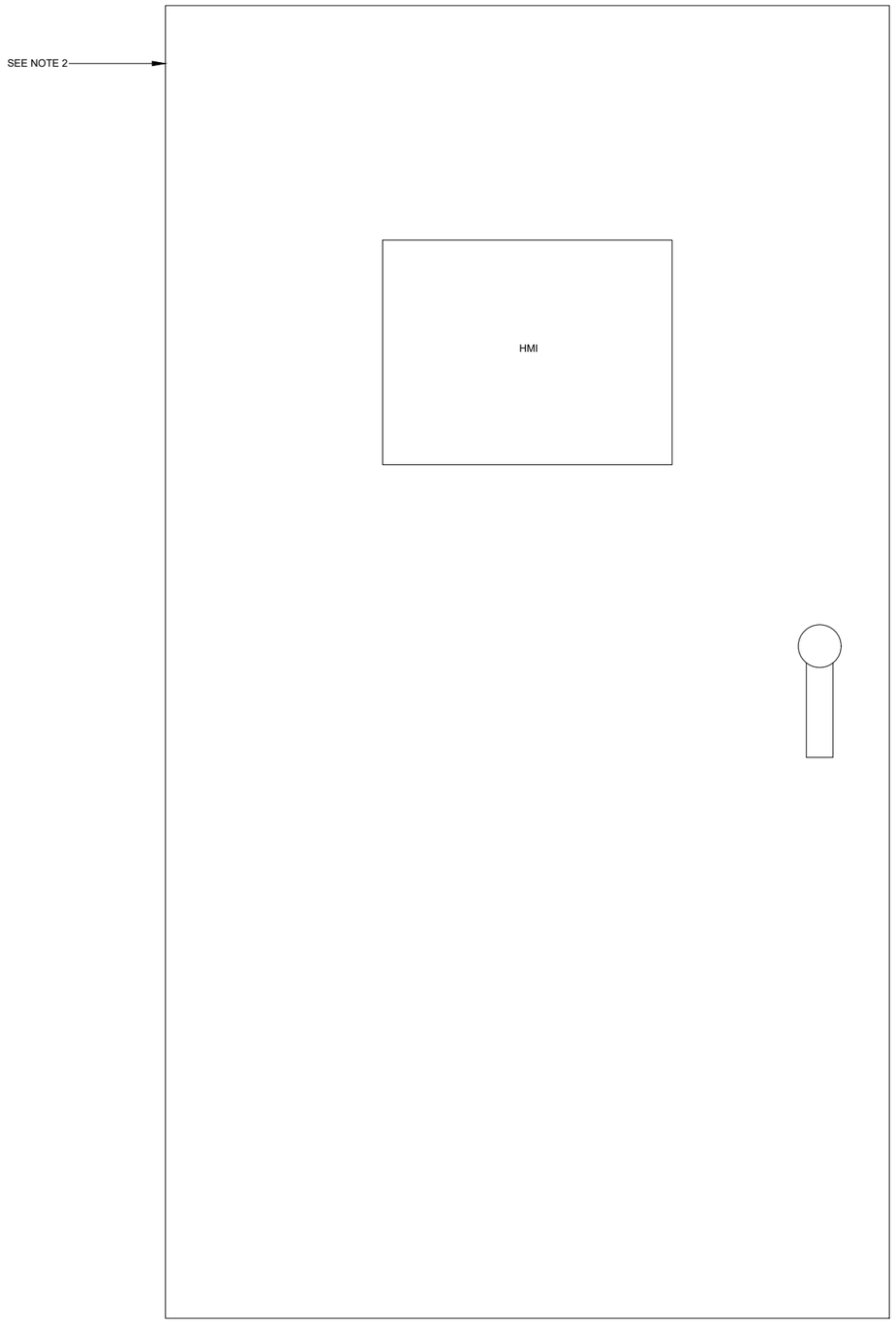
LINDA MAR PUMP STATION UPGRADE PROJECT C004B

STATION COMMUNICATION DIAGRAMS– DEMOLITION AND MODIFICATIONS

CITY OF PACIFICA, CALIFORNIA

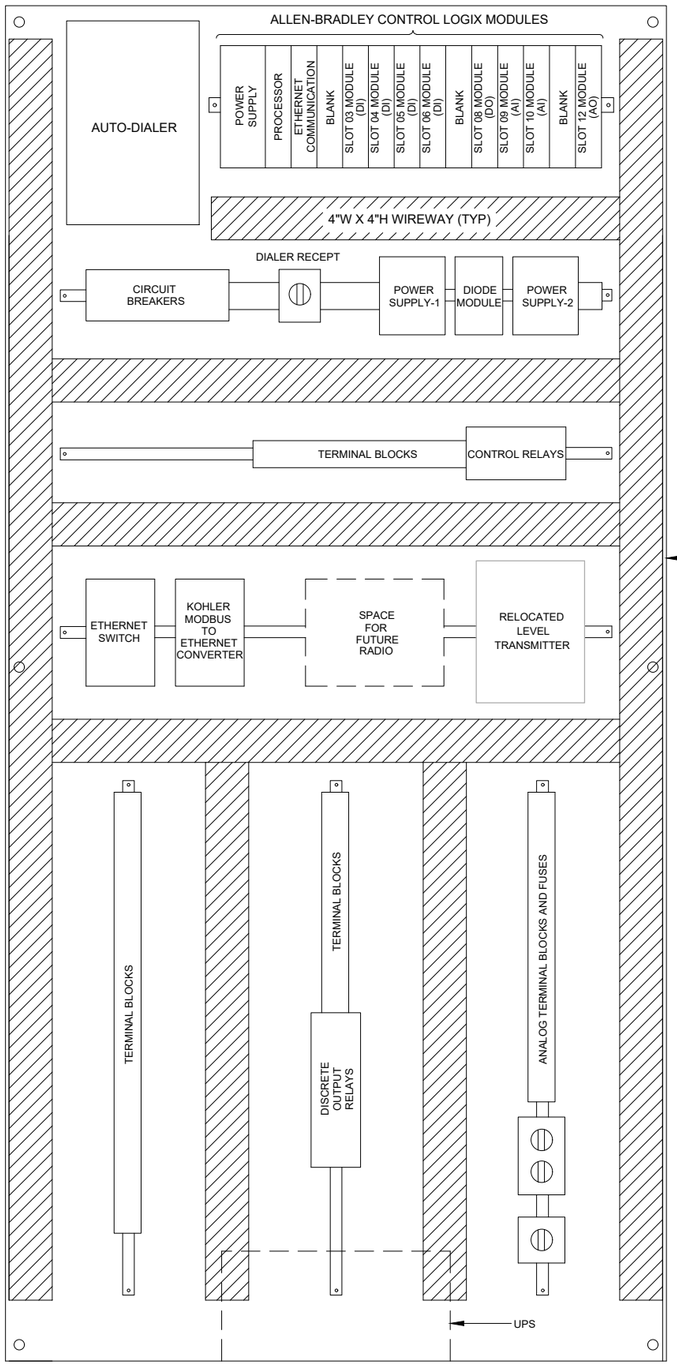
SHEET E401

JOB NO. 240010



NEW PLC-LMPS FRONT DOOR

NO SCALE



NEW PLC-LMPS INTERIOR BACKPAN ELEVATION

NO SCALE

NOTES:

1. GENERAL ARRANGEMENT OF NEW PLC-LMPS INTERIOR BACKPAN IS INDICATED. NOT ALL REQUIRED BACKPAN DEVICES ARE SHOWN FOR CLARITY. EXACT LOCATIONS AND ARRANGEMENT OF DEVICES SHALL BE PROPOSED BY THE CONTRACTOR BASED ON ACTUAL COMPONENT DIMENSIONS AND REQUIRED COMPONENT SPACING REQUIREMENTS FOR REVIEW BY THE ENGINEER.
2. PROVIDE NEW PLC-LMPS IN A NEMA 12, 48"W x 72"H x 24"D ENCLOSURE, ANSI 61 GRAY, FREESTANDING.
3. PROVIDE WHITE PAINTED STEEL INTERIOR BACKPAN.

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
	BY	DATE	DESCRIPTION OF REVISIONS	APP'D

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CITY OF PACIFICA
DEPARTMENT OF PUBLIC WORKS, WWTP
170 SANTA MARIA BOULEVARD
PACIFICA CALIFORNIA 94044

STAMP: PROGRESS SET NOT FOR CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT C004B

NEW PLC-LMPS: PANEL ELEVATIONS

CITY OF PACIFICA, CALIFORNIA

SHEET E501

JOB NO. 240010

RACK	SLOT NO.	POINT TYPE	POINT NO.	SIGNAL TAG NO.	SIGNAL DESCRIPTION
1	3	DI	0	YL001	SEWAGE PUMP NO.1 - RUNNING INDICATION
1	3	DI	1	YL001A	SEWAGE PUMP NO.1 - AUTOMATIC MODE INDICATION
1	3	DI	2	YA001	SEWAGE PUMP NO.1 - VFD FAILURE ALARM
1	3	DI	3	TAH001	SEWAGE PUMP NO.1 - VFD CABINET HIGH TEMPERATURE ALARM
1	3	DI	4	---	SPARE POINT
1	3	DI	5	---	SPARE POINT
1	3	DI	6	YL011	EXHAUST FAN NO.1 (EF-11) - RUNNING INDICATION
1	3	DI	7	YL011A	EXHAUST FAN NO.1 (EF-11) - AUTOMATIC MODE INDICATION
1	3	DI	8	YA011	EXHAUST FAN NO.1 (EF-11) - OVERLOAD ALARM
1	3	DI	9	---	SPARE POINT
1	3	DI	10	---	SPARE POINT
1	3	DI	11	YL021	BASEMENT SUMP PUMP NO.1 - RUNNING INDICATION
1	3	DI	12	YA021	BASEMENT SUMP PUMP NO.1 - OVERLOAD ALARM
1	3	DI	13	YL022	BASEMENT SUMP PUMP NO.2 - RUNNING INDICATION
1	3	DI	14	YA022	BASEMENT SUMP PUMP NO.2 - OVERLOAD ALARM
1	3	DI	15	LAHH020	BASEMENT SUMP - HIGH-HIGH LEVEL ALARM
1	4	DI	0	YL002	SEWAGE PUMP NO.2 - RUNNING INDICATION
1	4	DI	1	YL002A	SEWAGE PUMP NO.2 - AUTOMATIC MODE INDICATION
1	4	DI	2	YA002	SEWAGE PUMP NO.2 - VFD FAILURE ALARM
1	4	DI	3	TAH002	SEWAGE PUMP NO.2 - VFD CABINET HIGH TEMPERATURE ALARM
1	4	DI	4	---	SPARE POINT
1	4	DI	5	---	SPARE POINT
1	4	DI	6	YL012	EXHAUST FAN NO.2 (EF-12) - RUNNING INDICATION
1	4	DI	7	YL012A	EXHAUST FAN NO.2 (EF-12) - AUTOMATIC MODE INDICATION
1	4	DI	8	YA012	EXHAUST FAN NO.2 (EF-12) - OVERLOAD ALARM
1	4	DI	9	---	SPARE POINT
1	4	DI	10	---	SPARE POINT
1	4	DI	11	---	SPARE POINT
1	4	DI	12	YL025	FLOOD CONTROL SUMP PUMP - RUNNING INDICATION
1	4	DI	13	YL025A	FLOOD CONTROL SUMP PUMP - AUTOMATIC MODE INDICATION
1	4	DI	14	YA025	FLOOD CONTROL SUMP PUMP - OVERLOAD ALARM
1	4	DI	15	LAHH026	BASEMENT FLOODED ALARM
1	5	DI	0	YL015	BLOWER (BLW-1) - RUNNING INDICATION
1	5	DI	1	YL015A	BLOWER (BLW-1) - AUTOMATIC MODE INDICATION
1	5	DI	2	YA015	BLOWER (BLW-1) - OVERLOAD ALARM
1	5	DI	3	---	SPARE POINT
1	5	DI	4	---	SPARE POINT
1	5	DI	5	---	SPARE POINT
1	5	DI	6	YL013	EXHAUST FAN NO.3 (EF-13) - RUNNING INDICATION
1	5	DI	7	YL013A	EXHAUST FAN NO.3 (EF-13) - AUTOMATIC MODE INDICATION
1	5	DI	8	YA013	EXHAUST FAN NO.3 (EF-13) - OVERLOAD ALARM
1	5	DI	9	---	SPARE POINT
1	5	DI	10	---	SPARE POINT
1	5	DI	11	---	SPARE POINT
1	5	DI	12	---	SPARE POINT
1	5	DI	13	---	SPARE POINT
1	5	DI	14	YL031	BAR SCREEN - RUNNING INDICATION
1	5	DI	15	YA031	BAR SCREEN - FAILURE ALARM

RACK	SLOT NO.	POINT TYPE	POINT NO.	SIGNAL TAG NO.	SIGNAL DESCRIPTION
1	6	DI	0	YL003	SEWAGE PUMP NO.3 (EDP) - RUNNING INDICATION
1	6	DI	1	YL003A	SEWAGE PUMP NO.3 (EDP) - READY INDICATION
1	6	DI	2	YA003	SEWAGE PUMP NO.3 (EDP) - FAILURE ALARM
1	6	DI	3	---	SPARE POINT
1	6	DI	4	---	SPARE POINT
1	6	DI	5	---	SPARE POINT
1	6	DI	6	---	SPARE POINT
1	6	DI	7	---	SPARE POINT
1	6	DI	8	---	SPARE POINT
1	6	DI	9	---	SPARE POINT
1	6	DI	10	---	SPARE POINT
1	6	DI	11	---	SPARE POINT
1	6	DI	12	---	SPARE POINT
1	6	DI	13	---	SPARE POINT
1	6	DI	14	YA081A	UPS OPERATING ON BATTERY
1	6	DI	15	YA081B	UPS LOW BATTERY
1	8	DO	0	HC001	SEWAGE PUMP NO.1 - START/STOP COMMAND
1	8	DO	1	HC002	SEWAGE PUMP NO.2 - START/STOP COMMAND
1	8	DO	2	HC003	SEWAGE PUMP NO.3 (EDP) - START/STOP COMMAND
1	8	DO	3	HC011	EXHAUST FAN NO.1 (EF-11) - START/STOP COMMAND
1	8	DO	4	HC012	EXHAUST FAN NO.2 (EF-12) - START/STOP COMMAND
1	8	DO	5	HC013	EXHAUST FAN NO.3 (EF-13) - START/STOP COMMAND
1	8	DO	6	HC015	BLOWER (BLW-1) - START/STOP COMMAND
1	8	DO	7	HC025	FLOOD CONTROL SUMP PUMP - START/STOP COMMAND
1	8	DO	8	YA043	STATION GAS ALARM BEACON AND HORN ACTIVATION
1	8	DO	9	HC051	STATION EXTERIOR LIGHTING - AUTOMATIC CONTROL
1	8	DO	10	LAHH026A	LINDA MAR PUMP STATION - BASEMENT FLOODED
1	8	DO	11	LAHH062	LINDA MAR PUMP STATION - WET WELL HIGH-HIGH LEVEL
1	8	DO	12	YA071	LINDA MAR PUMP STATION - OPERATING ON STANDBY POWER
1	8	DO	13	YA001A	LINDA MAR PUMP STATION - PUMP NO.1 VFD FAILURE
1	8	DO	14	YA002A	LINDA MAR PUMP STATION - PUMP NO.2 VFD FAILURE
1	8	DO	15	YL003A	LINDA MAR PUMP STATION - ENGINE-DRIVEN PUMP RUNNING

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
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PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
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DEPARTMENT OF PUBLIC WORKS, WWTP
170 SANTA MARIA BOULEVARD
PACIFICA CALIFORNIA 94044

STAMP:
PROGRESS SET
NOT FOR
CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT C004B
NEW PLC–LMPS:
INPUT/OUTPUT SIGNAL LIST–1
CITY OF PACIFICA, CALIFORNIA

SHEET
E502

JOB NO.
240010

RACK	SLOT NO.	POINT TYPE	POINT NO.	SIGNAL TAG NO.	SIGNAL DESCRIPTION
1	9	AI	0	SI001	SEWAGE PUMP NO.1 - SPEED INDICATION
1	9	AI	1	FI061	LINDA MAR PUMP STATION DISCHARGE FLOW INDICATION
1	9	AI	2	AI041A	UPPER LEVEL LEL INDICATION
1	9	AI	3	AI041B	UPPER LEVEL O2 INDICATION
1	9	AI	4	AI041C	UPPER LEVEL H2S INDICATION
1	9	AI	5	VI003	SEWAGE PUMP NO.3 - VIBRATION INDICATION
1	9	AI	6	SI003	SEWAGE PUMP NO.3 - SPEED INDICATION
1	9	AI	7	---	SPARE POINT
1	10	AI	0	SI002	SEWAGE PUMP NO.2 - SPEED INDICATION
1	10	AI	1	LI062	LINDA MAR PUMP STATION WET WELL LEVEL INDICATION
1	10	AI	2	AI042A	LOWER LEVEL LEL INDICATION
1	10	AI	3	AI042B	LOWER LEVEL O2 INDICATION
1	10	AI	4	AI042C	LOWER LEVEL H2S INDICATION
1	10	AI	5	---	SPARE POINT
1	10	AI	6	---	SPARE POINT
1	10	AI	7	---	SPARE POINT
1	12	AO	0	SC001	SEWAGE PUMP NO.1 - SPEED CONTROL
1	12	AO	1	SC002	SEWAGE PUMP NO.2 - SPEED CONTROL
1	12	AO	2	---	SPARE POINT
1	12	AO	3	---	SPARE POINT
1	12	AO	4	---	SPARE POINT
1	12	AO	5	---	SPARE POINT
1	12	AO	6	---	SPARE POINT
1	12	AO	7	---	SPARE POINT

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.

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DRAWN: BEI				
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PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
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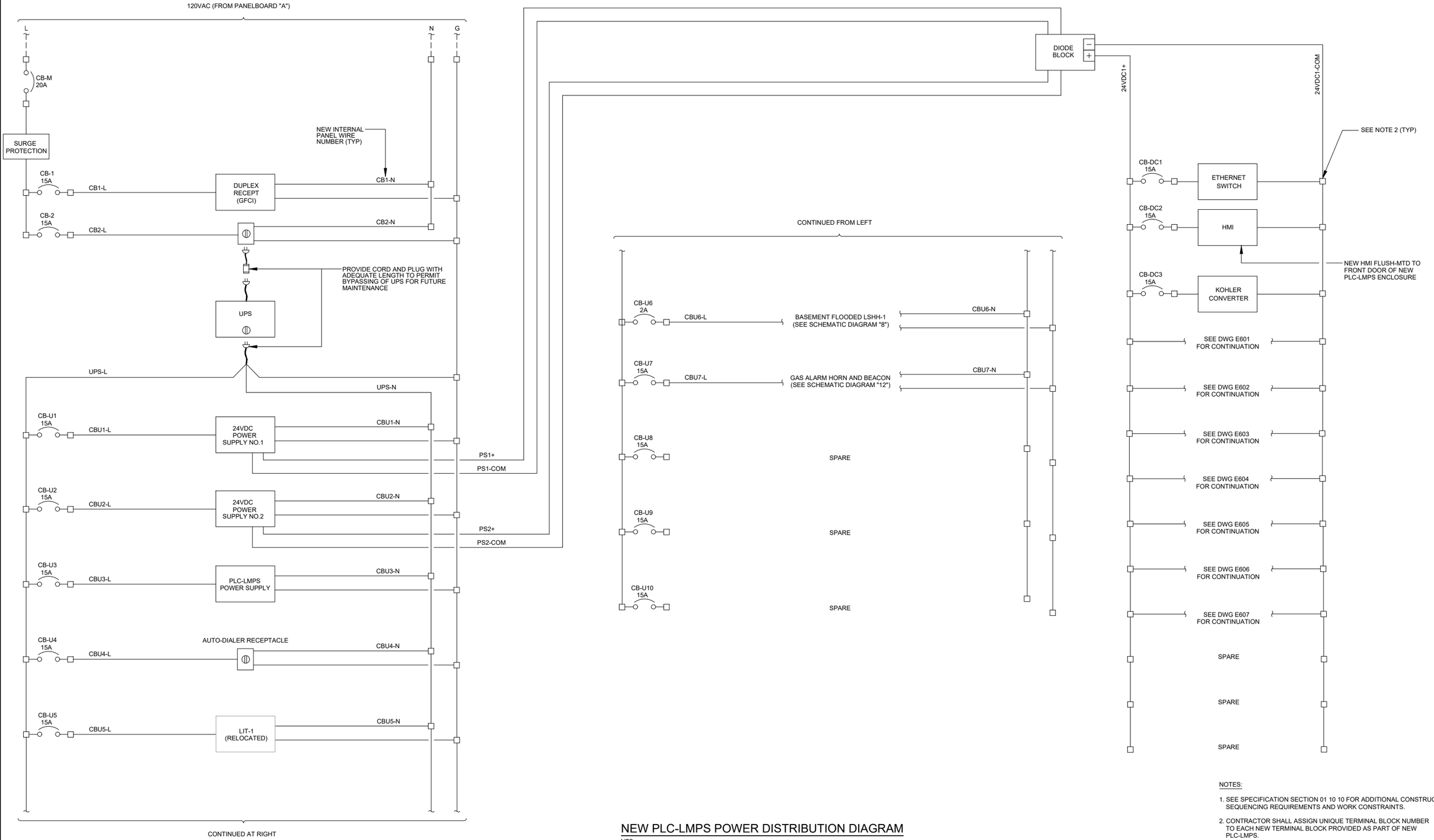
PACIFICA CALIFORNIA 94044

STAMP:
PROGRESS SET
NOT FOR
CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT C004B
NEW PLC–LMPS:
INPUT/OUTPUT SIGNAL LIST–2
CITY OF PACIFICA, CALIFORNIA

SHEET
E503

JOB NO.
240010



NEW PLC-LMPS POWER DISTRIBUTION DIAGRAM

NTS

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.
2. CONTRACTOR SHALL ASSIGN UNIQUE TERMINAL BLOCK NUMBER TO EACH NEW TERMINAL BLOCK PROVIDED AS PART OF NEW PLC-LMPS.

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
	BY	DATE	DESCRIPTION OF REVISIONS	APP'D

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STAMP: PROGRESS SET NOT FOR CONSTRUCTION

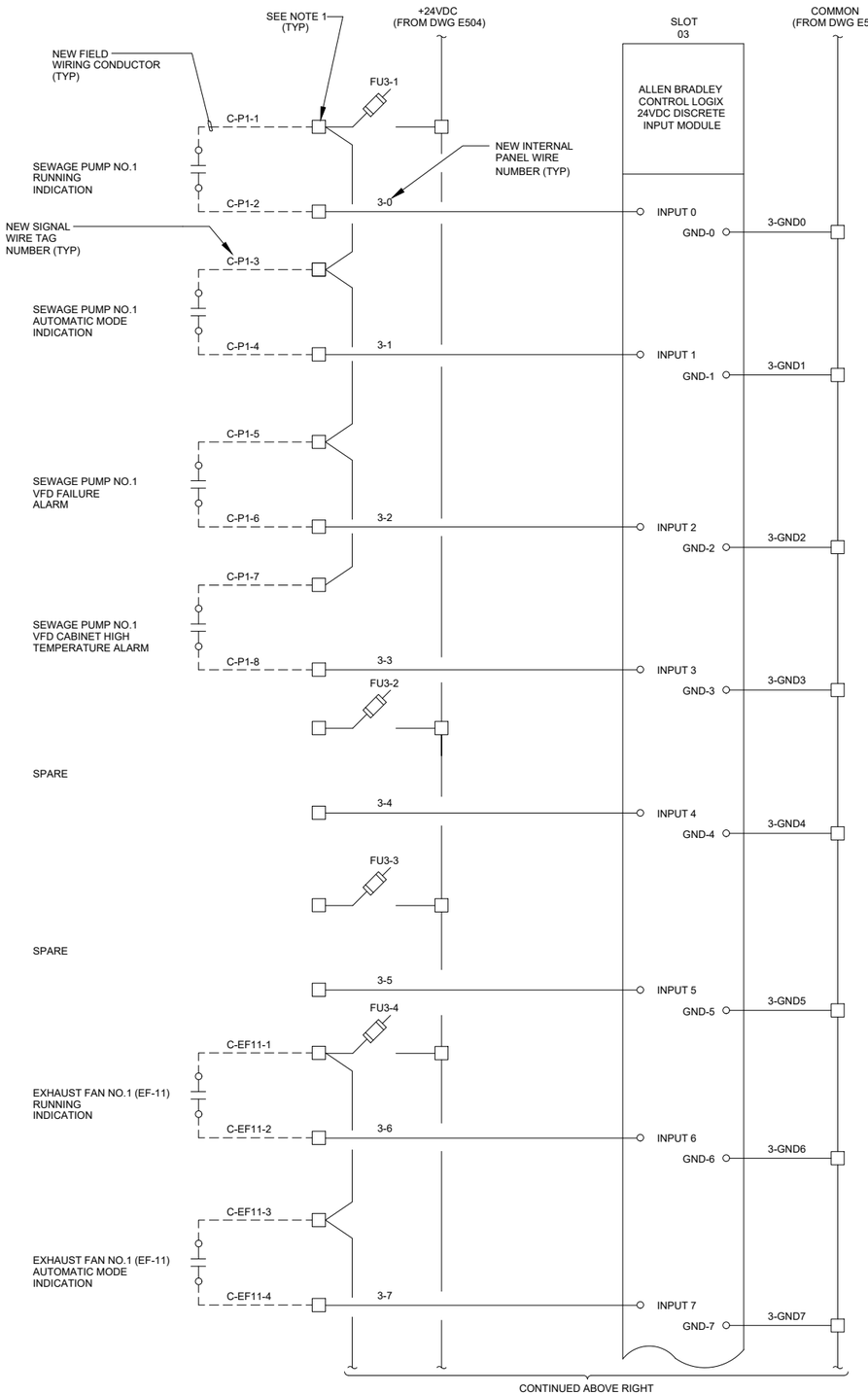
LINDA MAR PUMP STATION UPGRADE PROJECT C004B

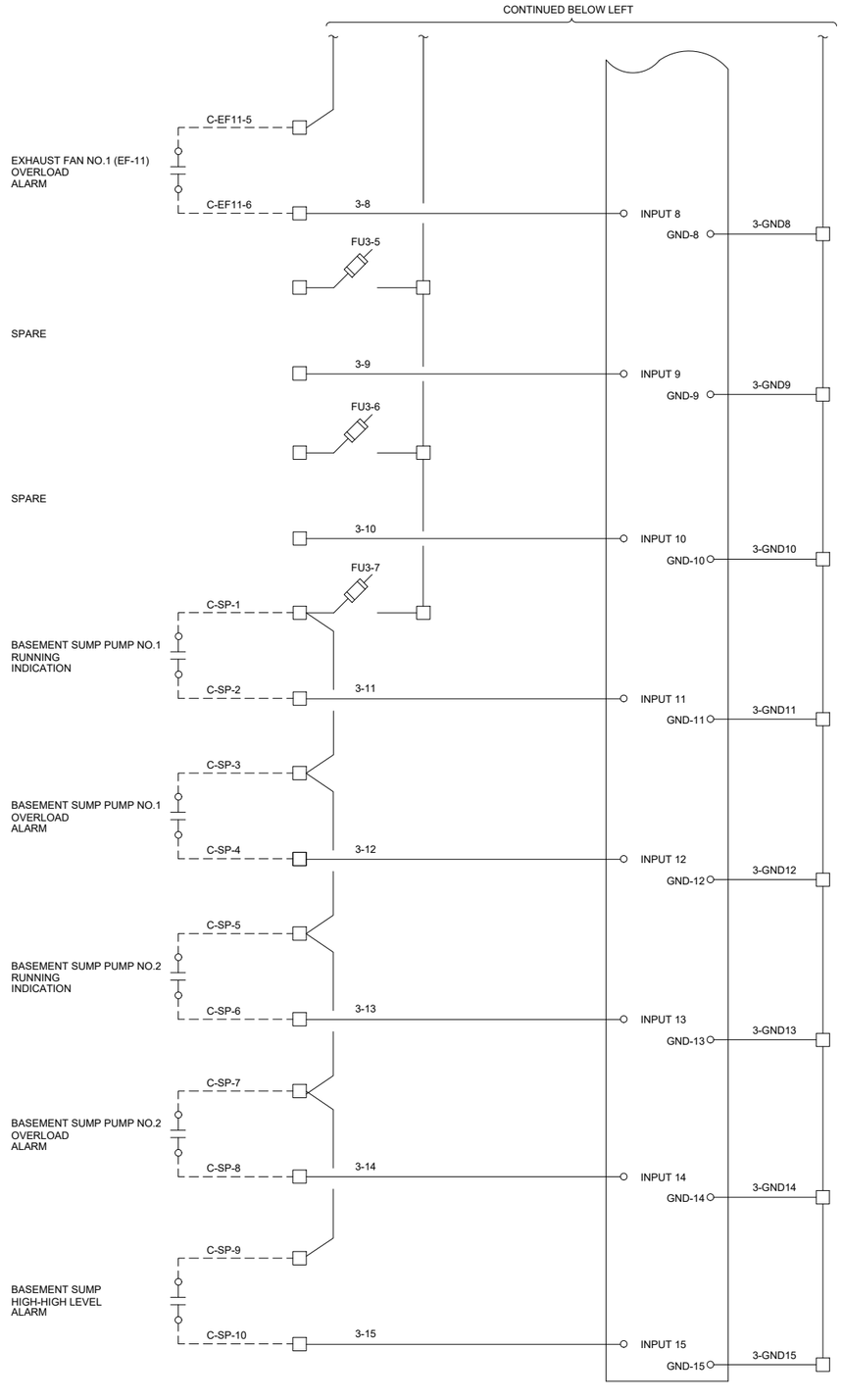
NEW PLC–LMPS: POWER DISTRIBUTION DIAGRAM

CITY OF PACIFICA, CALIFORNIA

SHEET E504

JOB NO. 240010





NOTES:

1. CONTRACTOR SHALL ASSIGN UNIQUE TERMINAL BLOCK NUMBER TO EACH NEW PANEL TERMINAL BLOCK.

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
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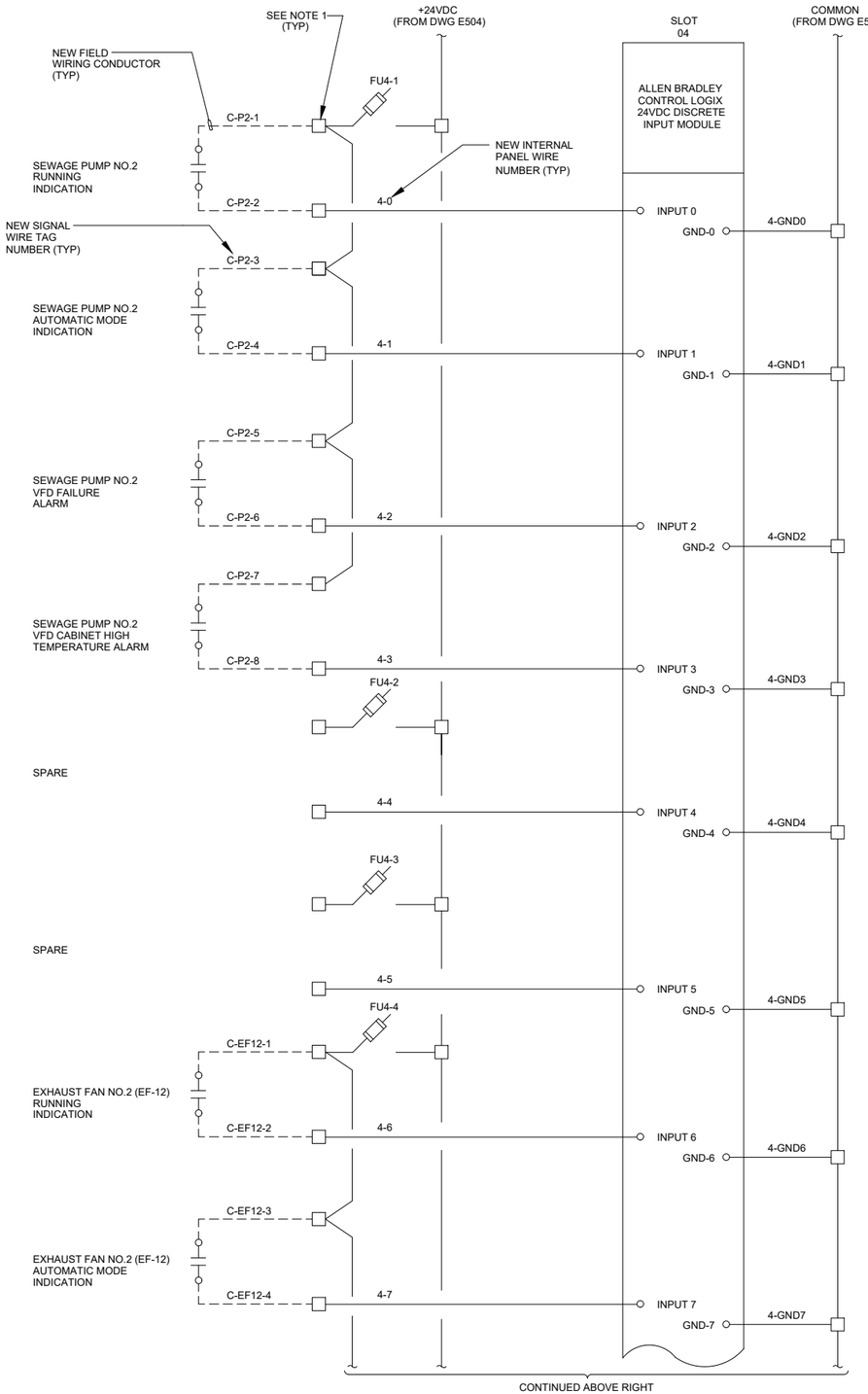
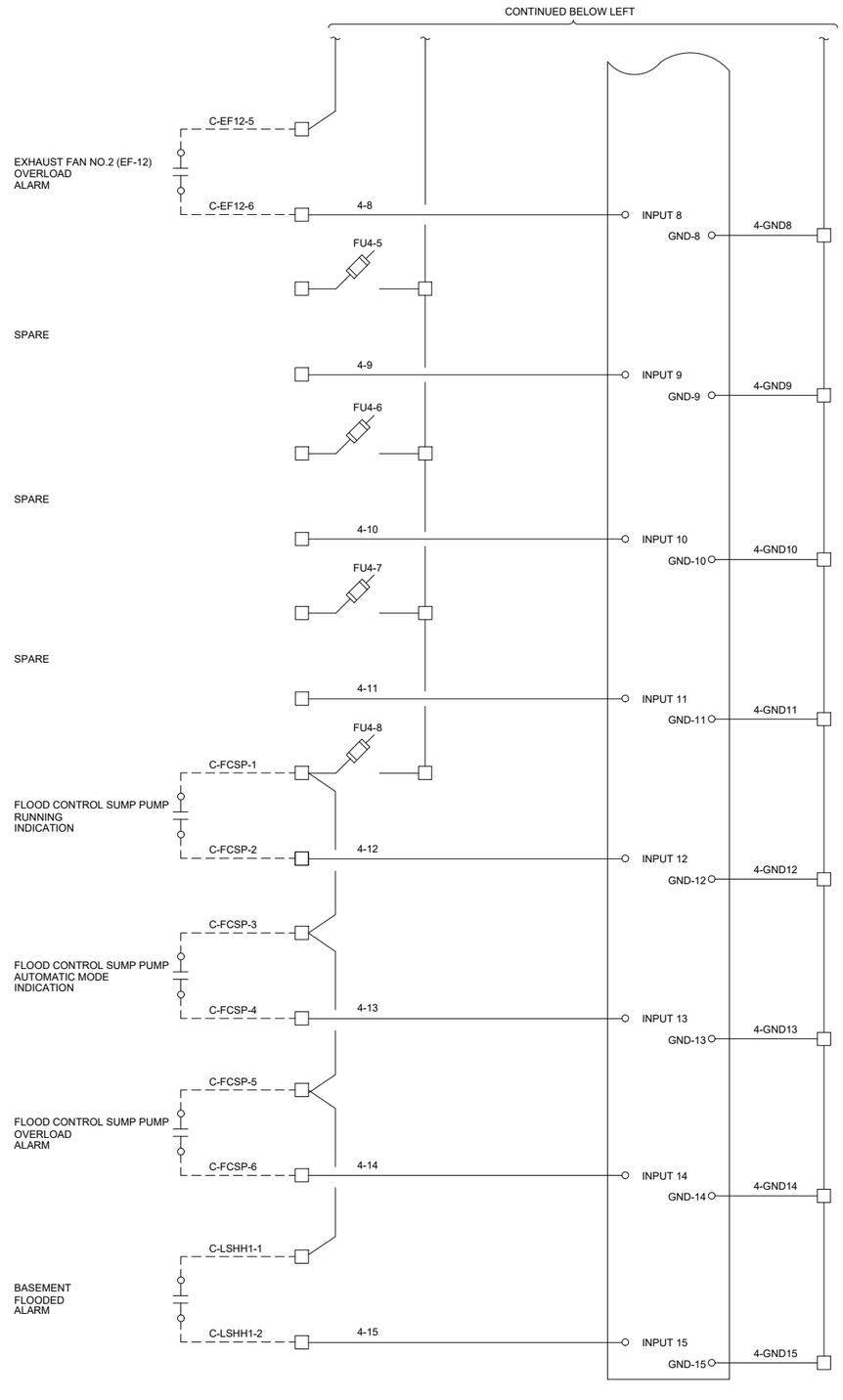
LINDA MAR PUMP STATION UPGRADE PROJECT C004B
NEW PLC–LMPS:
SLOT 03 MODULE CONNECTIONS (DI)
CITY OF PACIFICA, CALIFORNIA

SHEET E601

JOB NO. 240010





NOTES:

1. CONTRACTOR SHALL ASSIGN UNIQUE TERMINAL BLOCK NUMBER TO EACH NEW PANEL TERMINAL BLOCK.

	BY	DATE	DESCRIPTION OF REVISIONS	APP'D
SCALE: AS NOTED				
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CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
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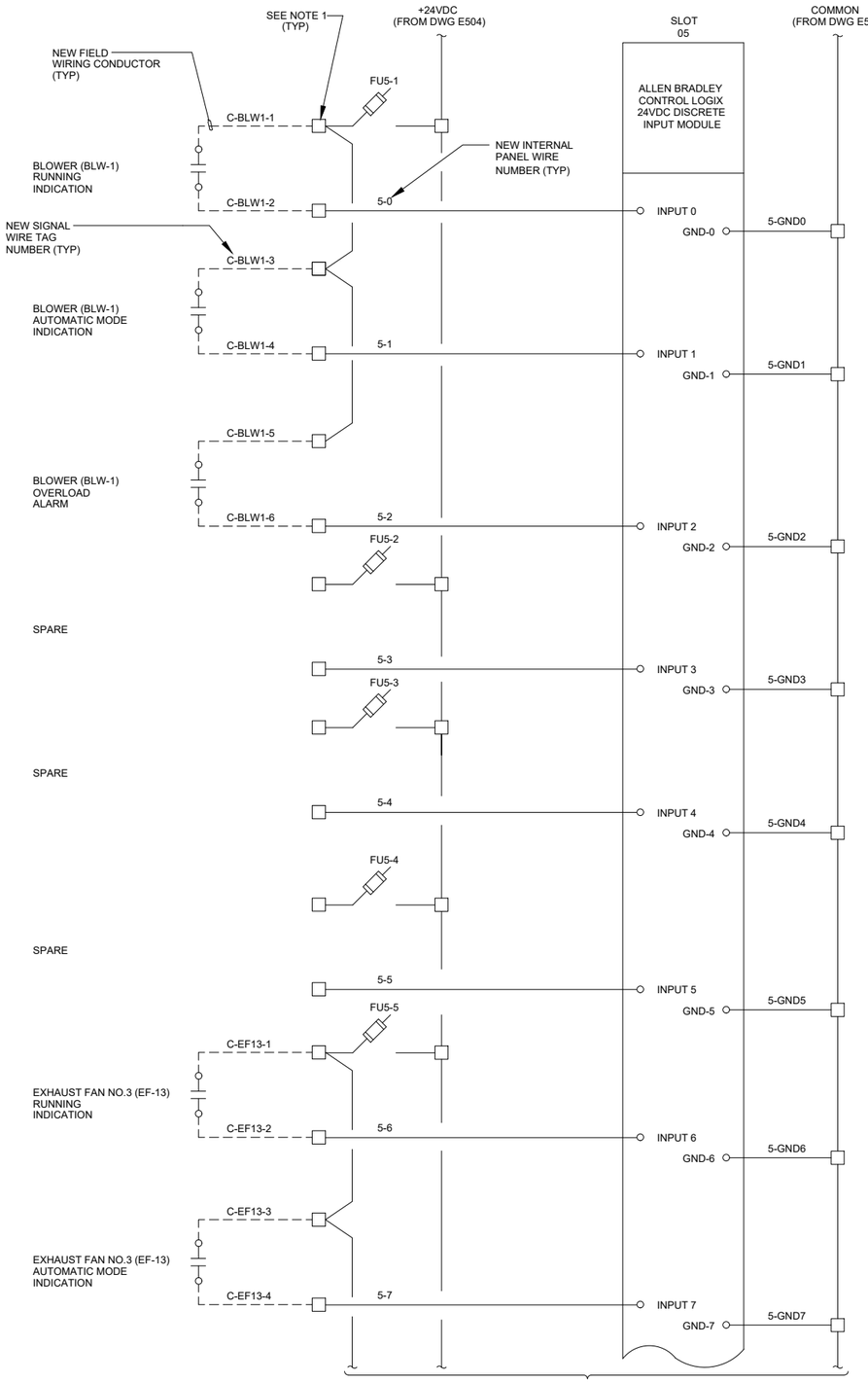
170 SANTA MARIA BOULEVARD
PACIFICA CALIFORNIA 94044

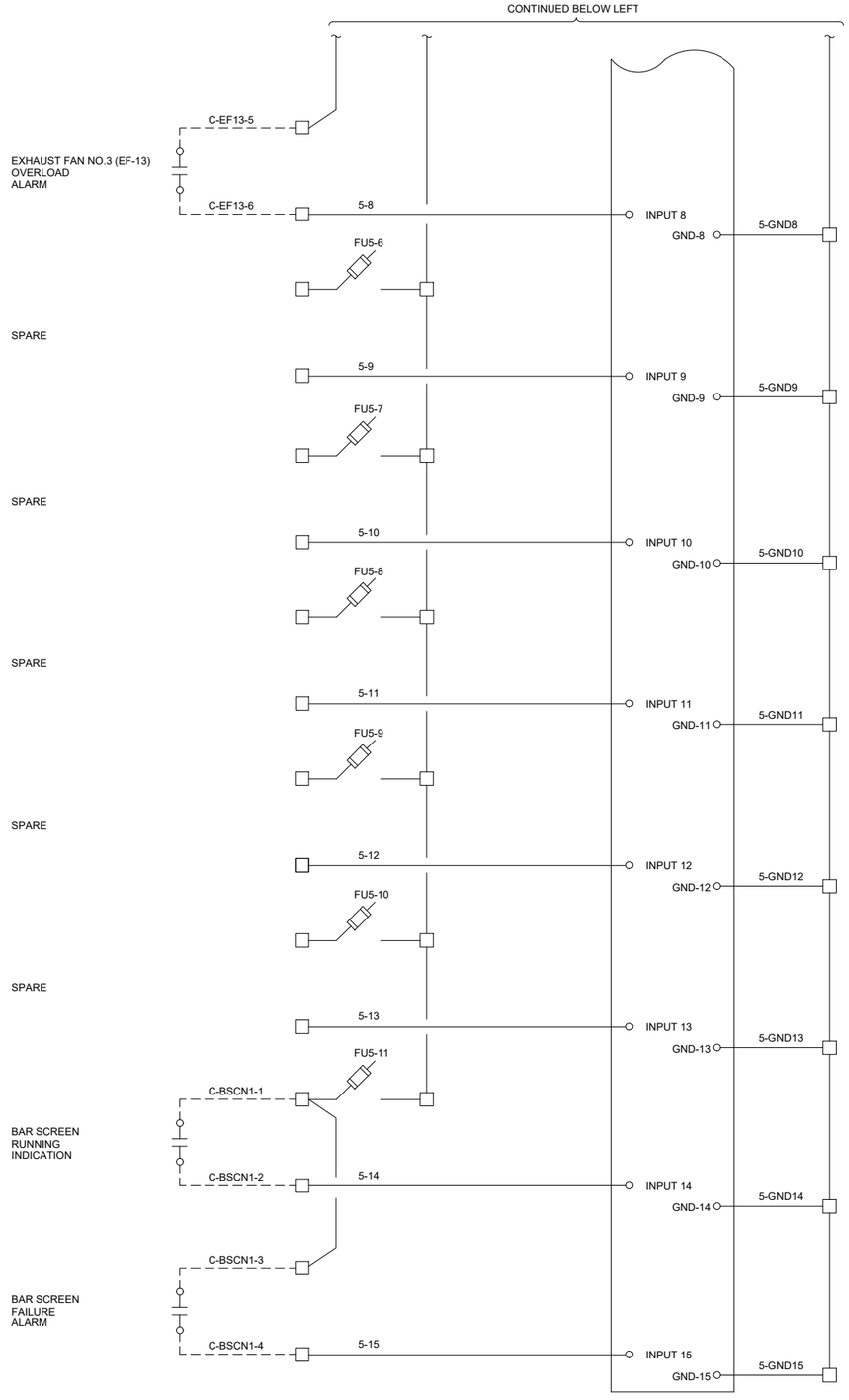
STAMP: PROGRESS SET NOT FOR CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT C004B
NEW PLC–LMPS:
SLOT 04 MODULE CONNECTIONS (DI)
CITY OF PACIFICA, CALIFORNIA

SHEET E602

JOB NO. 240010





NOTES:

1. CONTRACTOR SHALL ASSIGN UNIQUE TERMINAL BLOCK NUMBER TO EACH NEW PANEL TERMINAL BLOCK.

SCALE: AS NOTED				
DESIGNED: TB				
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	BY	DATE	DESCRIPTION OF REVISIONS	APP'D

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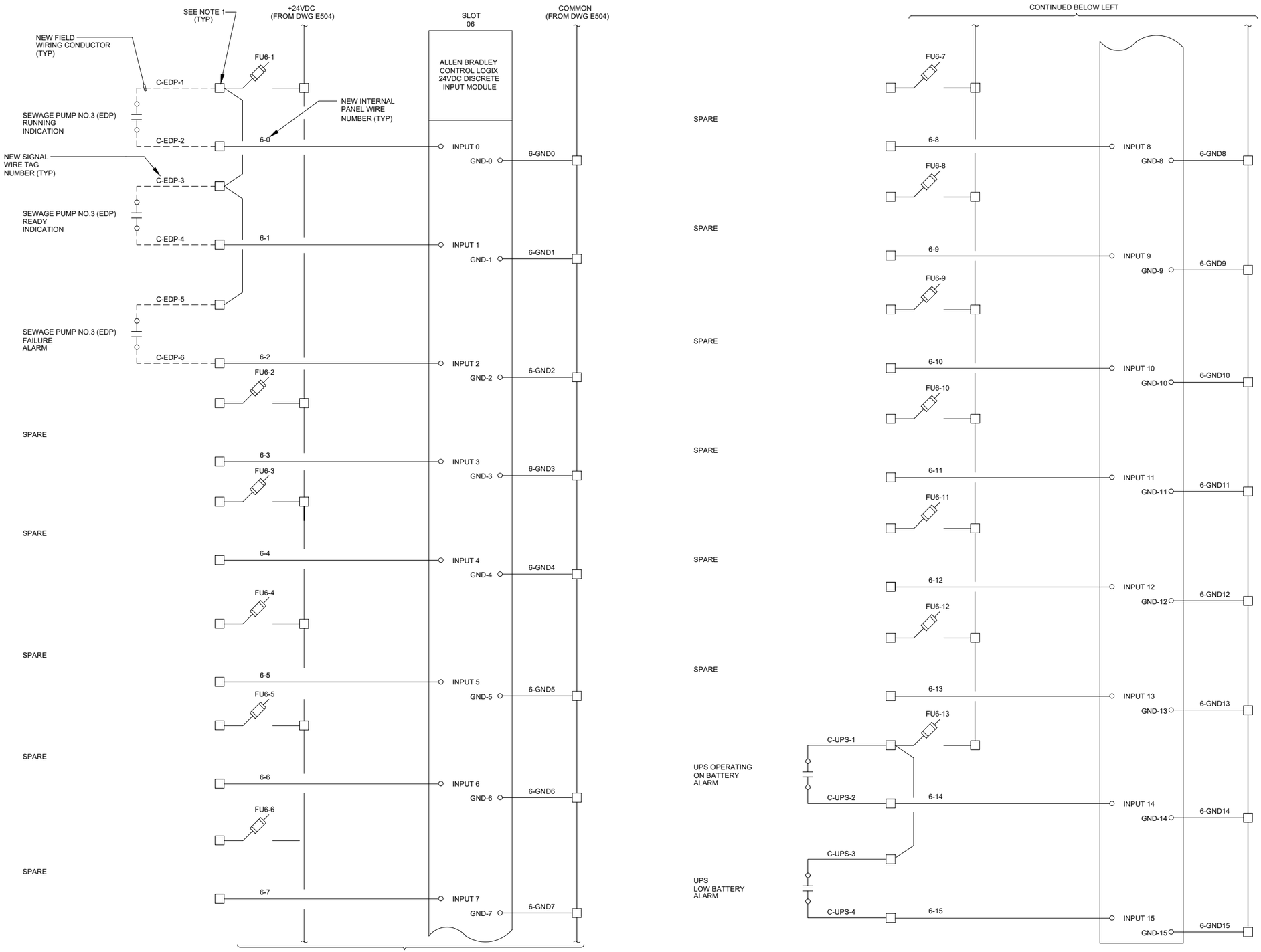
170 SANTA MARIA BOULEVARD
PACIFICA CALIFORNIA 94044

STAMP: PROGRESS SET NOT FOR CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT C004B
NEW PLC–LMPS:
SLOT 05 MODULE CONNECTIONS (DI)
CITY OF PACIFICA, CALIFORNIA

SHEET E603

JOB NO. 240010



NOTES:

1. CONTRACTOR SHALL ASSIGN UNIQUE TERMINAL BLOCK NUMBER TO EACH NEW PANEL TERMINAL BLOCK.

	BY	DATE	DESCRIPTION OF REVISIONS	APP'D
SCALE: AS NOTED				
DESIGNED: TB				
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PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
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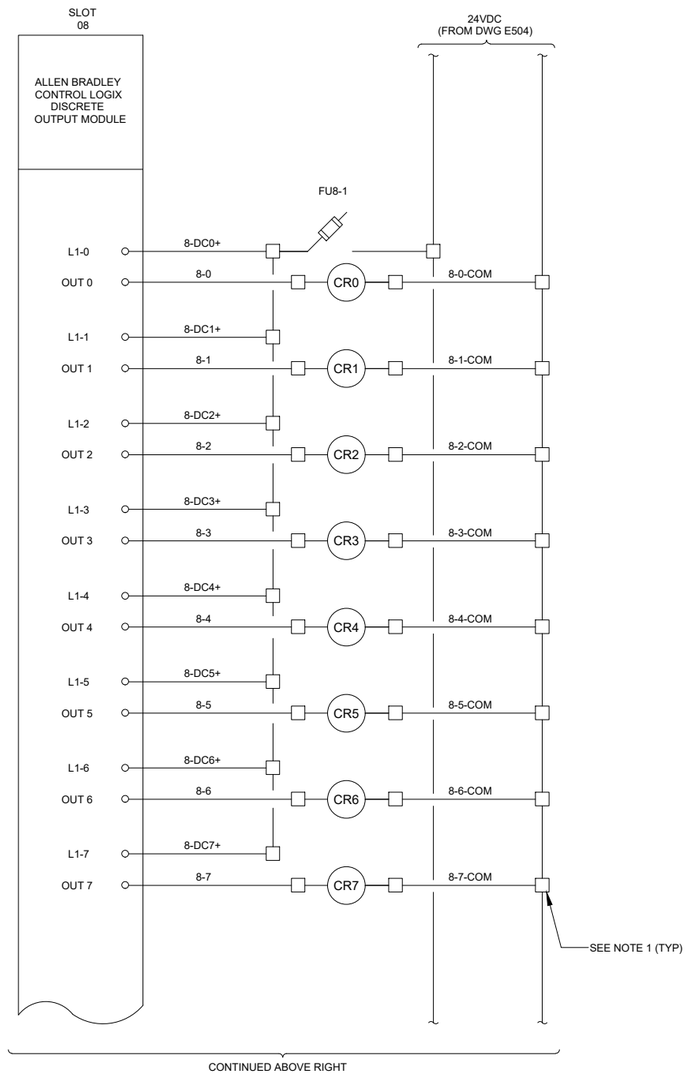
PACIFICA CALIFORNIA 94044

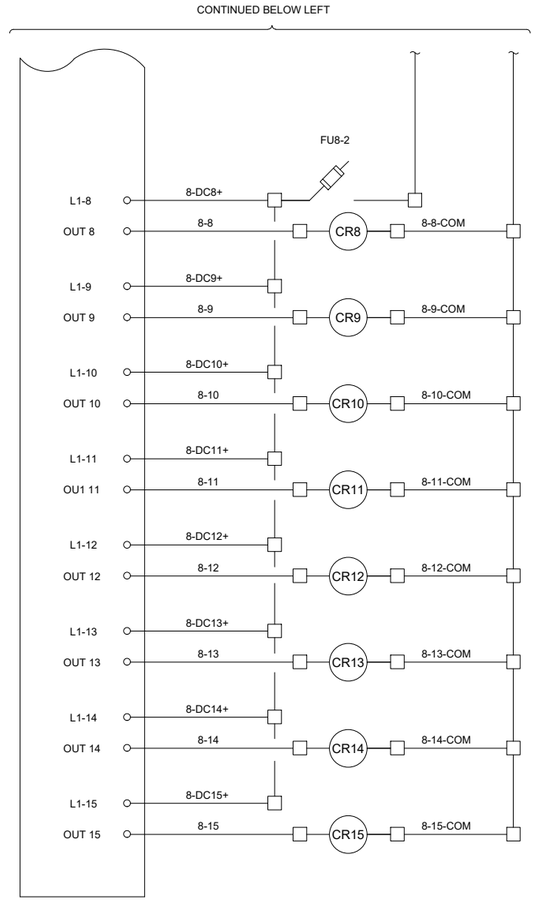
STAMP: PROGRESS SET NOT FOR CONSTRUCTION

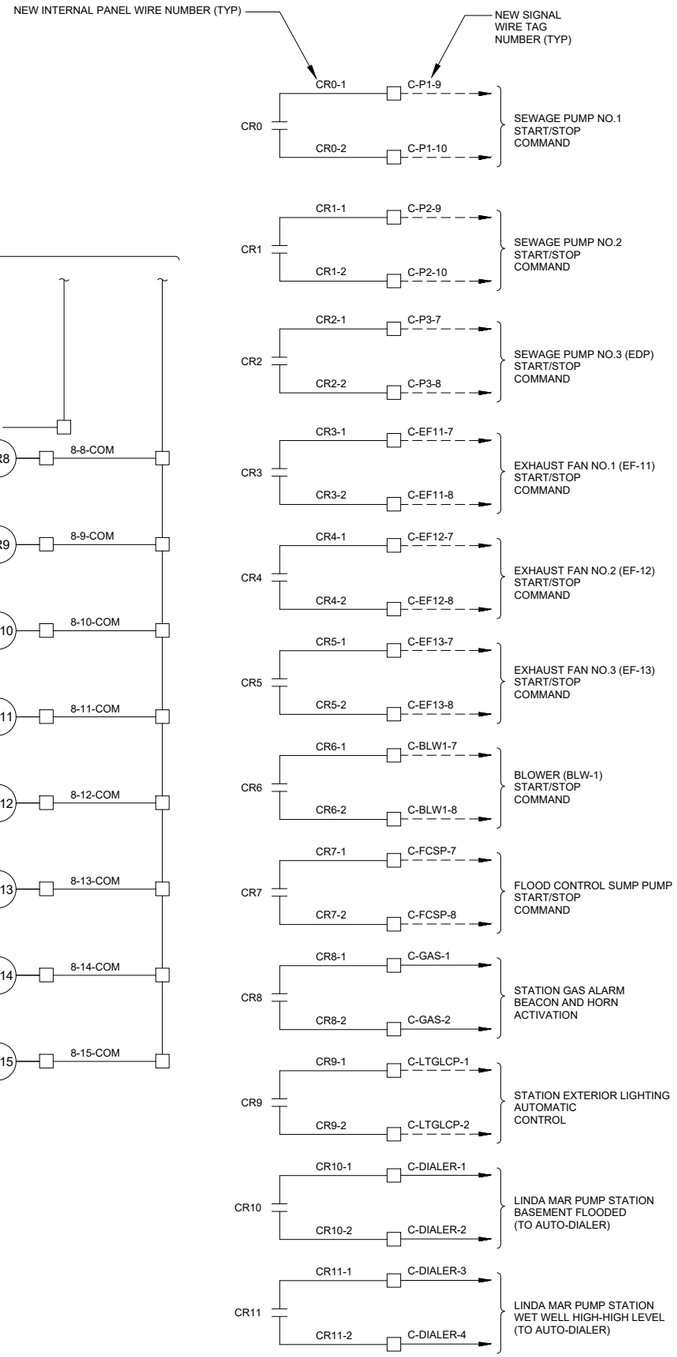
LINDA MAR PUMP STATION UPGRADE PROJECT C004B
NEW PLC–LMPS:
SLOT 06 MODULE CONNECTIONS (DI)
CITY OF PACIFICA, CALIFORNIA

SHEET E604

JOB NO. 240010







NOTES:

1. CONTRACTOR SHALL ASSIGN UNIQUE TERMINAL BLOCK NUMBER TO EACH NEW PANEL TERMINAL BLOCK.

	BY	DATE	DESCRIPTION OF REVISIONS	APP'D
SCALE: AS NOTED				
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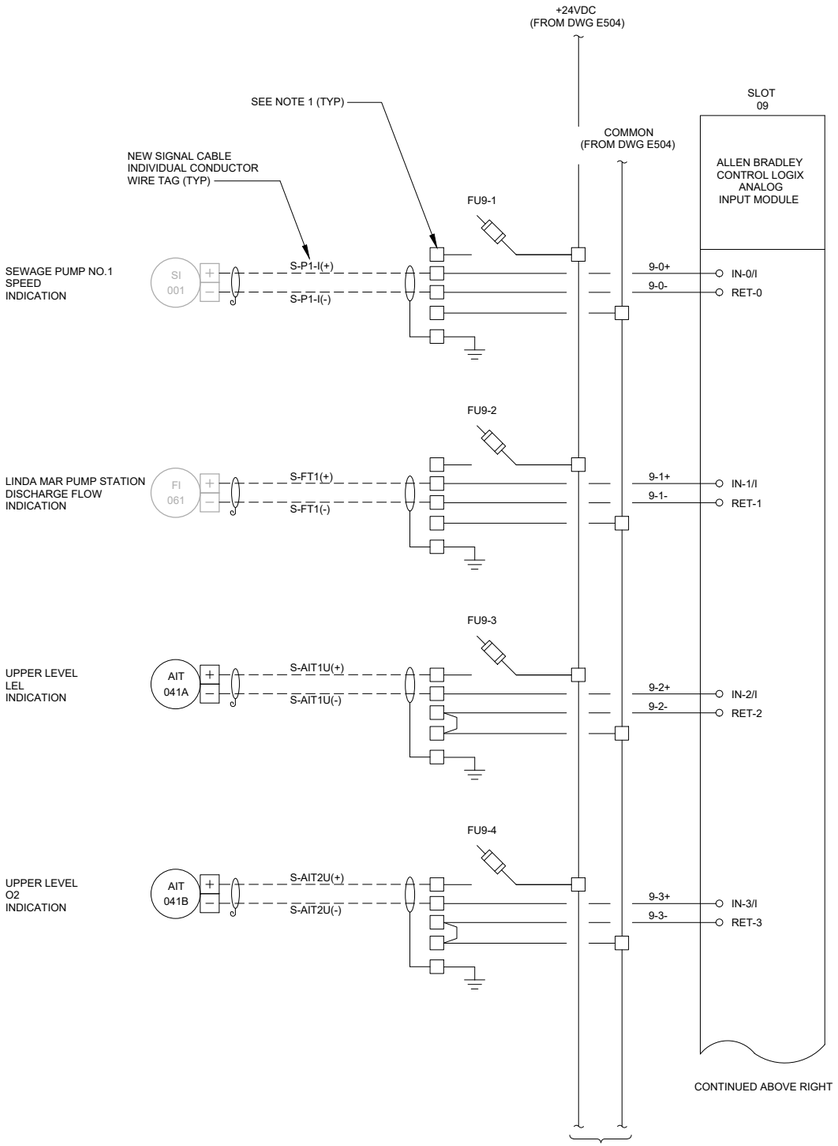
170 SANTA MARIA BOULEVARD
PACIFICA CALIFORNIA 94044

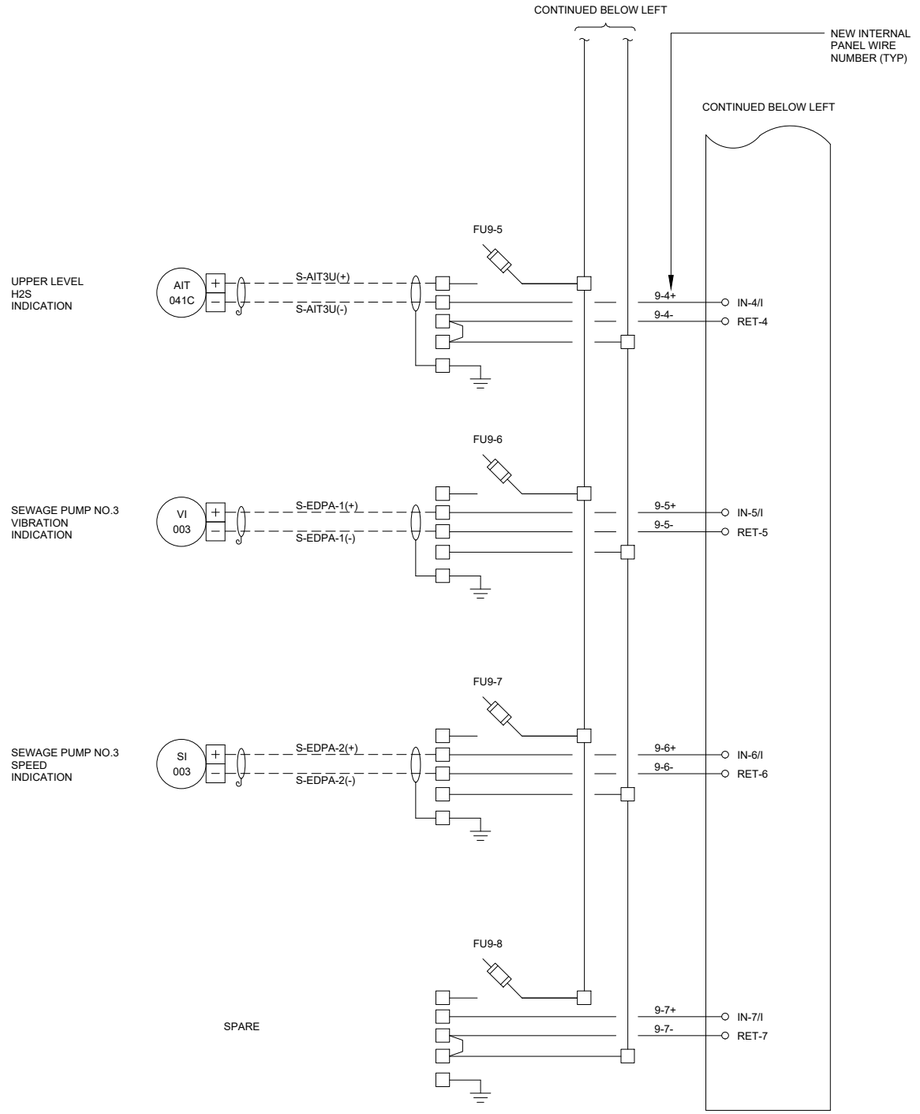
STAMP: PROGRESS SET NOT FOR CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT C004B
NEW PLC–LMPS:
SLOT 08 MODULE CONNECTIONS (DO)
CITY OF PACIFICA, CALIFORNIA

SHEET E605

JOB NO. 240010





NOTES:

1. CONTRACTOR SHALL ASSIGN UNIQUE TERMINAL BLOCK NUMBER TO EACH NEW PANEL TERMINAL BLOCK.

SCALE: AS NOTED				
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DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
	BY	DATE	DESCRIPTION OF REVISIONS	APP'D

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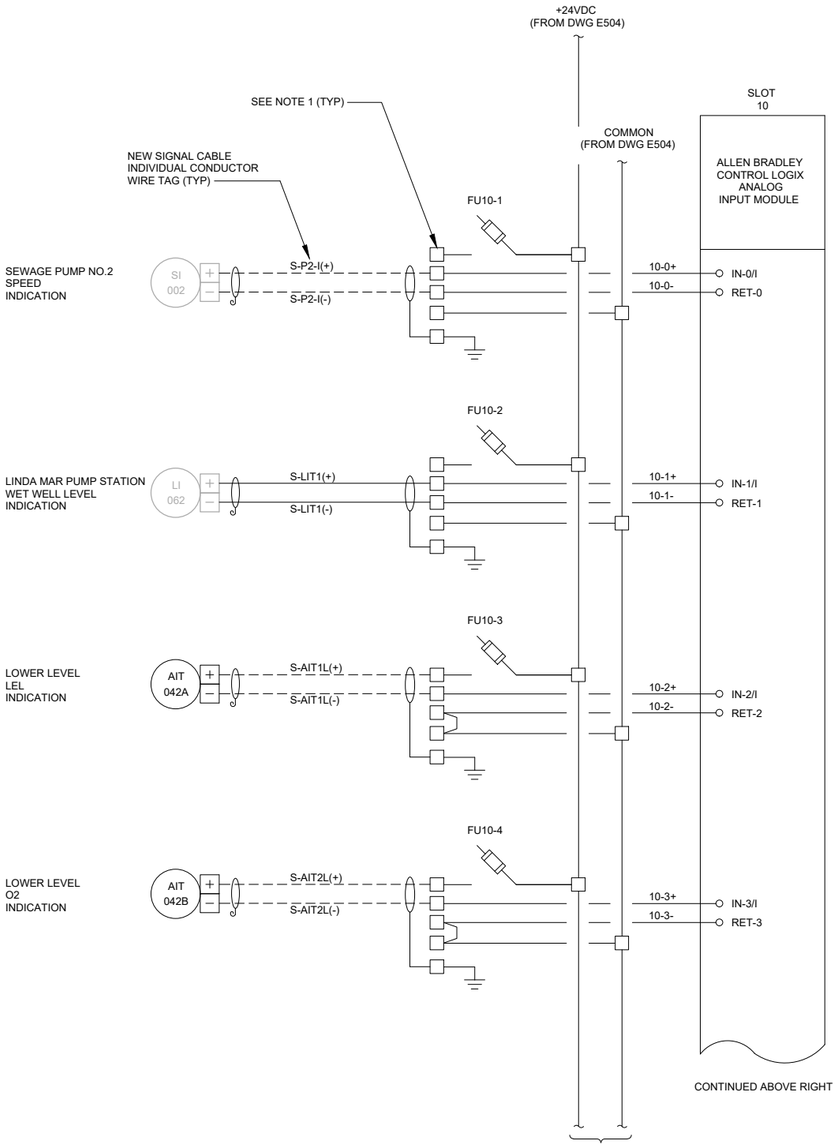
PACIFICA CALIFORNIA 94044

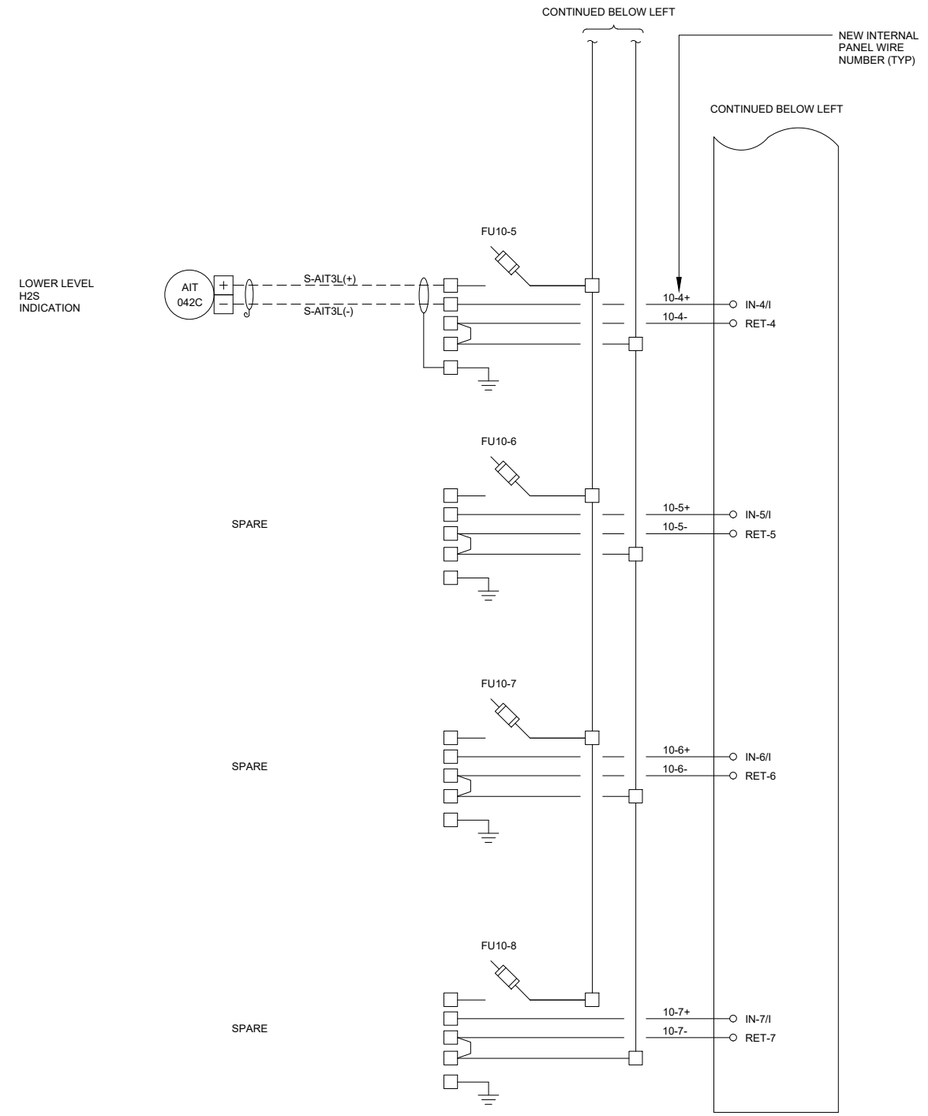
STAMP:
PROGRESS SET
NOT FOR
CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT C004B
NEW PLC–LMPS:
SLOT 09 MODULE CONNECTIONS (AI)
CITY OF PACIFICA, CALIFORNIA

SHEET
E606

JOB NO.
240010





NOTES:

1. CONTRACTOR SHALL ASSIGN UNIQUE TERMINAL BLOCK NUMBER TO EACH NEW PANEL TERMINAL BLOCK.

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
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PACIFICA CALIFORNIA 94044

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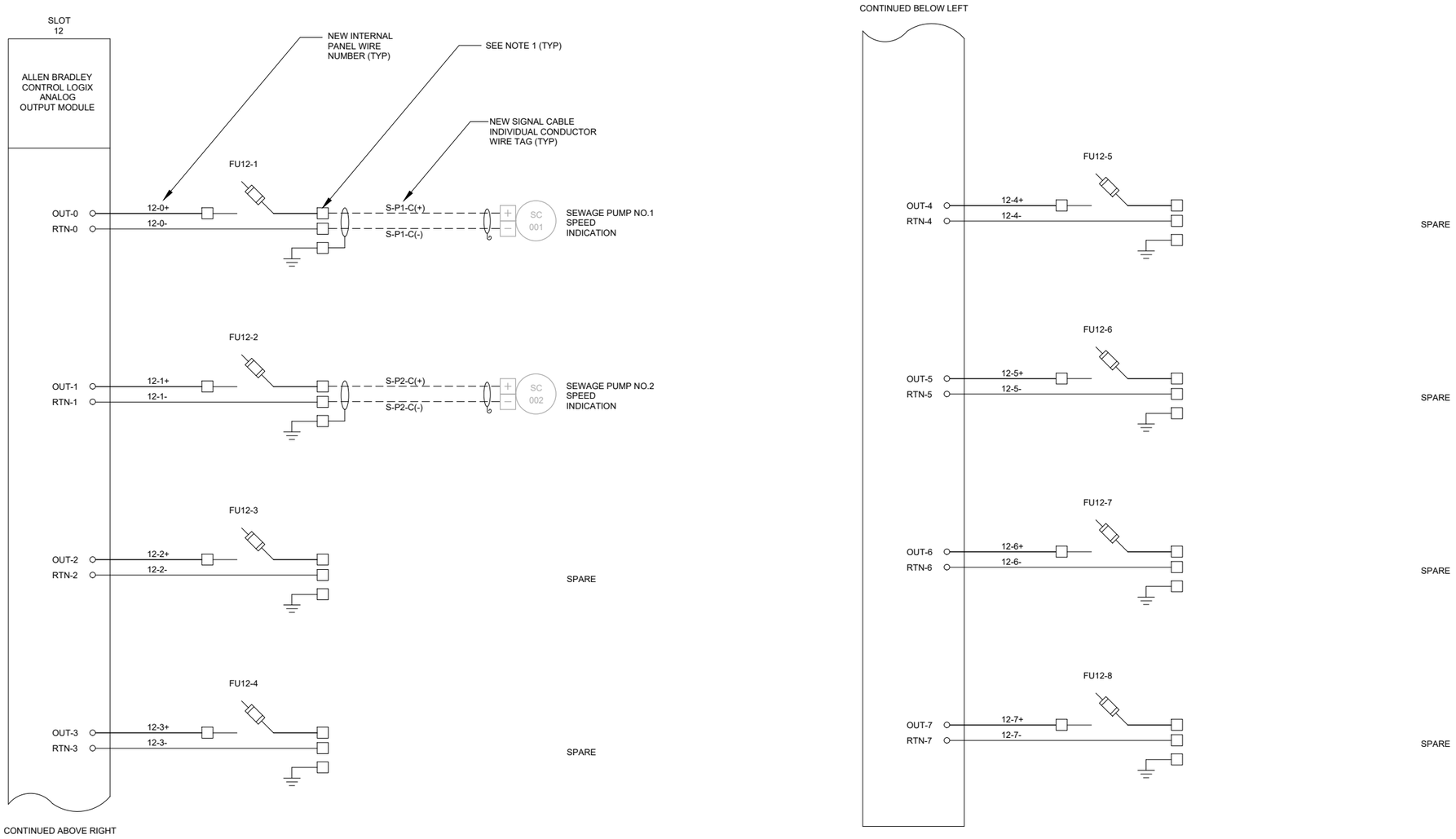
CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT C004B
NEW PLC–LMPS:
SLOT 10 MODULE CONNECTIONS (AI)
CITY OF PACIFICA, CALIFORNIA

SHEET
E607

JOB NO.
240010



NOTES:

1. CONTRACTOR SHALL ASSIGN UNIQUE TERMINAL BLOCK NUMBER TO EACH NEW PANEL TERMINAL BLOCK.

	BY	DATE	DESCRIPTION OF REVISIONS	APP'D
SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	

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PROGRESS SET
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CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT C004B
NEW PLC–LMPS:
SLOT 12 MODULE CONNECTIONS (AO)
CITY OF PACIFICA, CALIFORNIA

SHEET
E608

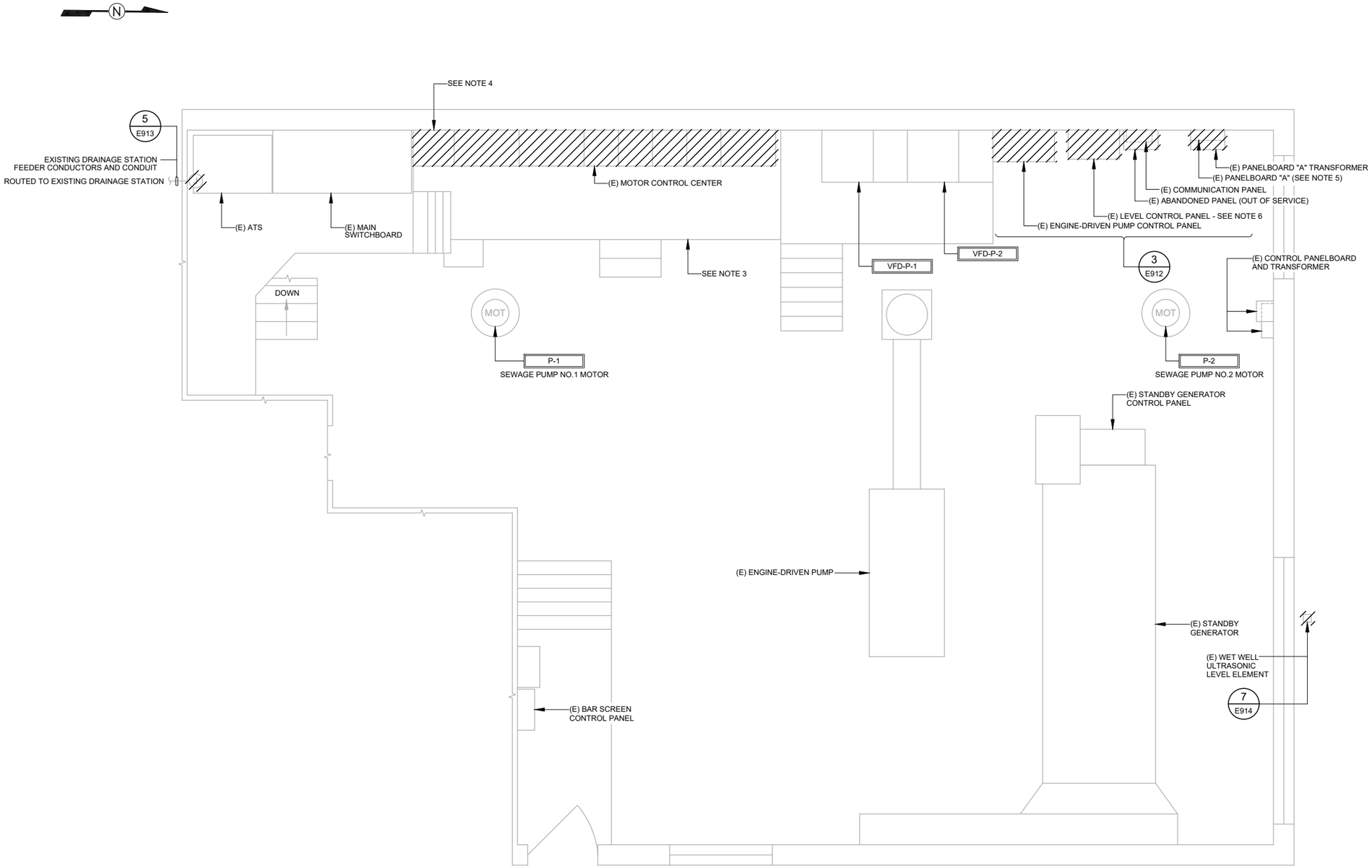
JOB NO.
240010

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.
2. NOT ALL EXISTING EQUIPMENT, CONDUITS AND JUNCTION BOXES ARE SHOWN FOR CLARITY.
3. SEE CIVIL DRAWINGS FOR EXISTING ELECTRICAL EQUIPMENT PLATFORM DEMOLITION REQUIREMENTS.
4. EXISTING PG&E SERVICE INTERMEDIATE TERMINATION CONNECTION LOCATED INSIDE OF EXISTING LINE-UP SECTION. TERMINATION CONNECTIONS SHALL BE RETAINED FOR INSTALLATION IN NEW ENCLOSURE. SEE DRAWING E901 FOR ADDITIONAL REQUIREMENTS.
5. DISCONNECT AND REMOVE EXISTING INTERIOR PANELBOARD CIRCUIT BREAKERS AND BUSSING. ENCLOSURE TO REMAIN FOR USE AS RE-PURPOSED TERMINAL BOX.
6. DISCONNECT AND REMOVE EXISTING MILLTRONICS LEVEL TRANSMITTER FOR RELOCATION TO NEW PLC-LMPS PANEL BACKPAN.

LEGEND:

DISCONNECT AND REMOVE



A — PLAN - LINDA MAR PUMP STATION - UPPER LEVEL

SCALE: 3/8" = 1'-0"

	BY	DATE	DESCRIPTION OF REVISIONS	APP'D
SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	

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STAMP: PROGRESS SET NOT FOR CONSTRUCTION

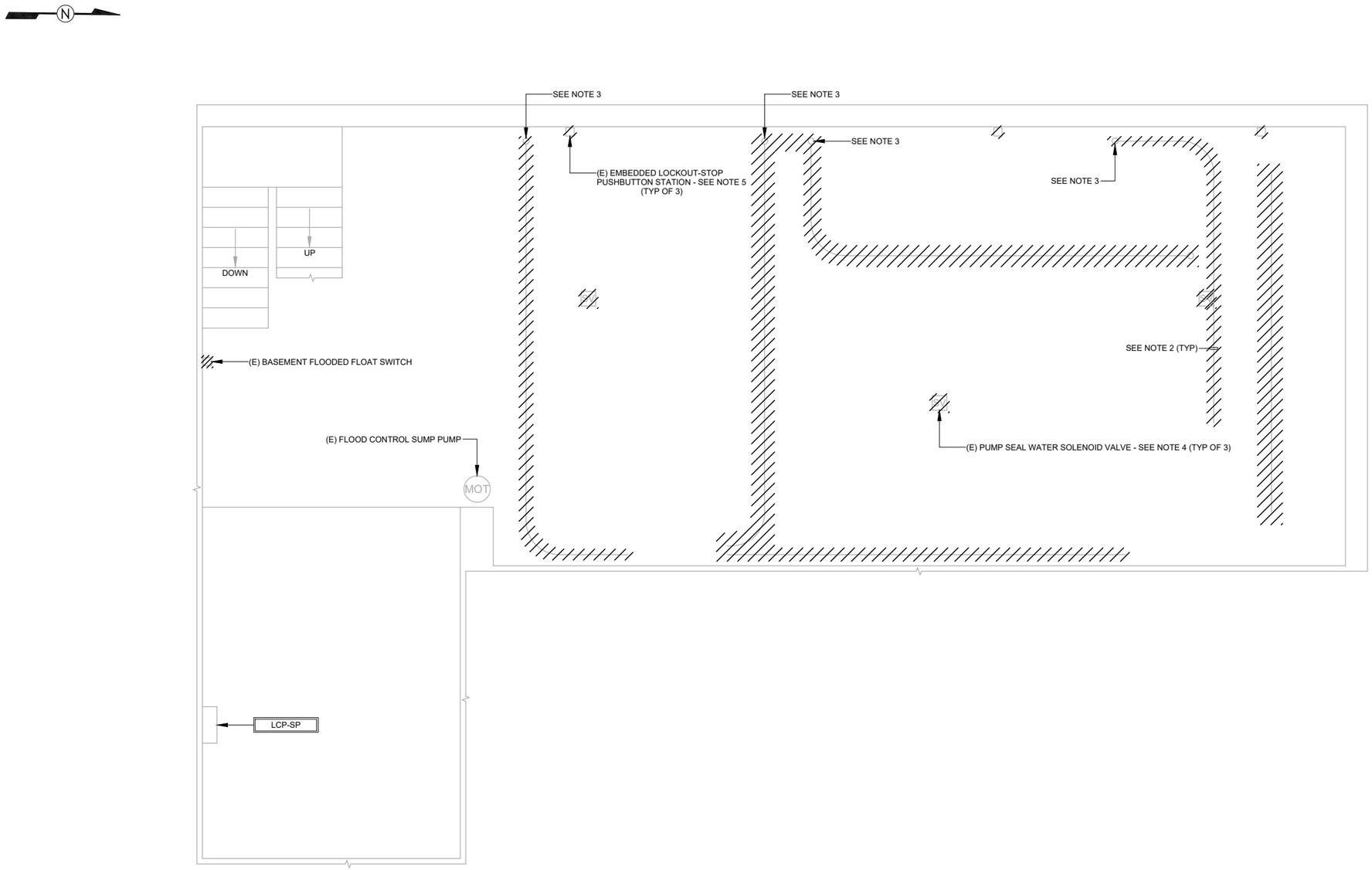
LINDA MAR PUMP STATION UPGRADE PROJECT C004B

UPPER LEVEL POWER AND CONTROL PLAN – DEMOLITION

CITY OF PACIFICA, CALIFORNIA

SHEET E701

JOB NO. 240010



B – PLAN - LINDA MAR PUMP STATION - LOWER LEVEL

SCALE: 3/8" = 1'-0"

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.
2. DISCONNECT AND REMOVE EXISTING, ABANDONED CONDUIT ROUTED OVERHEAD ALONG LOWER LEVEL CEILING.
3. AFTER REMOVAL OF CONDUIT, CUT STUB-OUT FLUSH WITH CEILING AND PROVIDE RUBBER EXPANSION PLUG TO FILL HOLE.
4. DISCONNECT AND REMOVE EXISTING SEAL WATER SOLENOID VALVE AND AND ALL ASSOCIATED CONDUCTORS AND EXPOSED PORTIONS OF CONDUIT. AFTER REMOVAL, CUT EXISTING CONDUIT STUB-UP FLUSH WITH FLOOR AND FILL WITH NON-SHRINK GROUT.
5. DISCONNECT AND REMOVE EXISTING LOCKOUT-STOP PUSHBUTTON AND ALL ASSOCIATED CONDUCTORS. AFTER REMOVAL, PROVIDE BLANK COVER PLATE OVER EXISTING EMBEDDED DEVICE JUNCTION BOX.
6. LOWER LEVEL CEILING HEIGHT IS APPROXIMATELY 19 FEET ABOVE FINISH FLOOR.

LEGEND:

DISCONNECT AND REMOVE

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
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LINDA MAR PUMP STATION UPGRADE PROJECT C004B

LOWER LEVEL POWER AND CONTROL PLAN – DEMOLITION

CITY OF PACIFICA, CALIFORNIA

SHEET E702

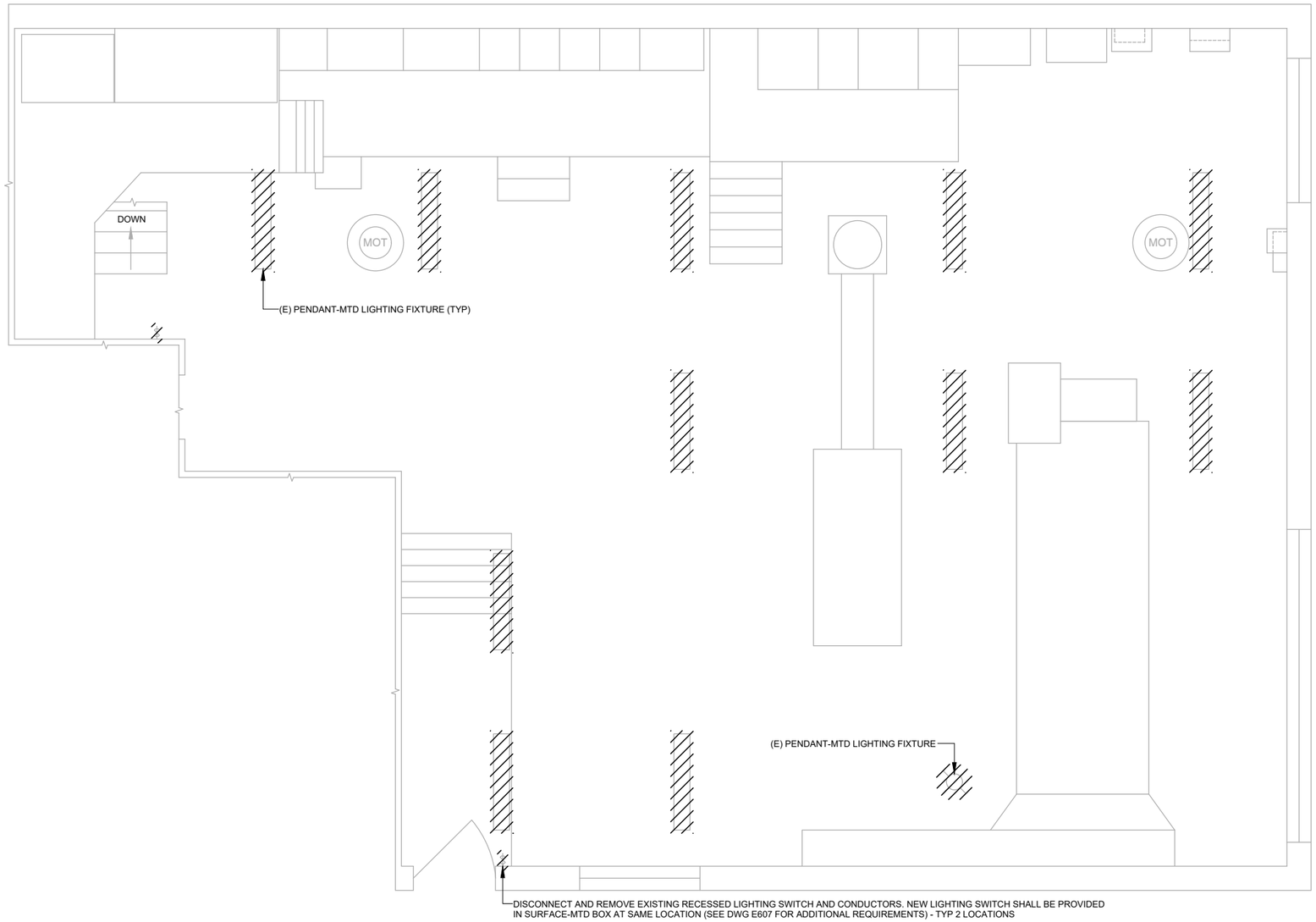
JOB NO. 240010

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.
2. EXISTING LIGHTING CONDUITS AND JUNCTION BOXES ARE NOT SHOWN FOR CLARITY. EXISTING, EXPOSED LIGHTING CONDUITS AND EXISTING LIGHTING CONDUCTORS SHALL BE DISCONNECTED AND REMOVED.

LEGEND:

DISCONNECT AND REMOVE



C
–

PLAN - LINDA MAR PUMP STATION - UPPER LEVEL

SCALE: 3/8" = 1'-0"

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
	BY	DATE	DESCRIPTION OF REVISIONS	APP'D

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CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT C004B

UPPER LEVEL LIGHTING PLAN – DEMOLITION

CITY OF PACIFICA, CALIFORNIA

SHEET
E703

JOB NO.
240010

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.
2. EXISTING LIGHTING CONDUITS AND JUNCTION BOXES ARE NOT SHOWN FOR CLARITY. EXISTING, EXPOSED LIGHTING CONDUITS AND EXISTING LIGHTING CONDUCTORS SHALL BE DISCONNECTED AND REMOVED.
3. LOWER LEVEL CEILING HEIGHT IS APPROXIMATELY 19 FEET ABOVE FINISH FLOOR.

LEGEND:

DISCONNECT AND REMOVE

D – PLAN - LINDA MAR PUMP STATION - LOWER LEVEL

SCALE: 3/8" = 1'-0"

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
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LINDA MAR PUMP STATION UPGRADE PROJECT C004B

LOWER LEVEL LIGHTING PLAN – DEMOLITION

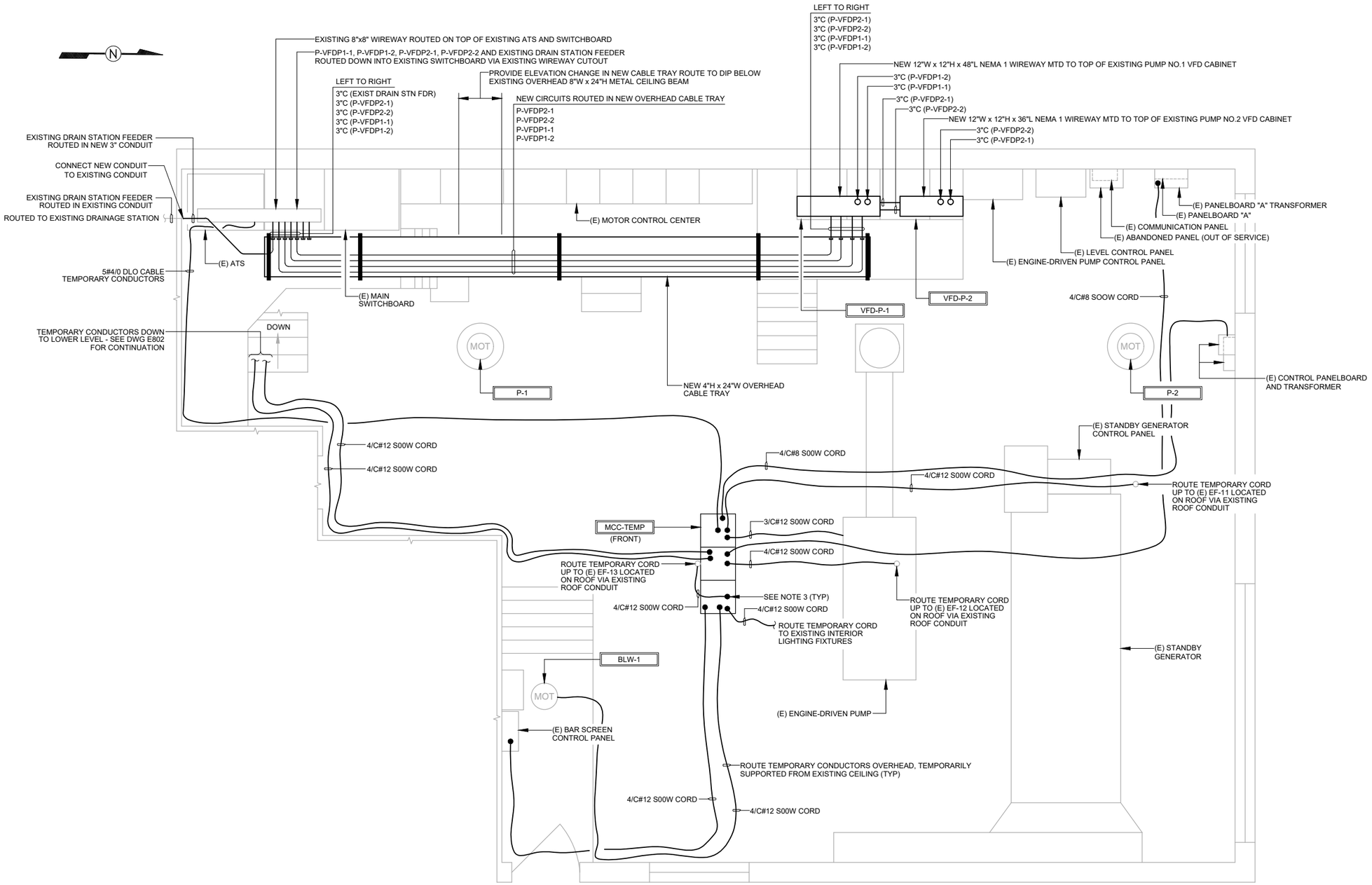
CITY OF PACIFICA, CALIFORNIA

SHEET E704

JOB NO. 240010

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.
2. NOT ALL EXISTING EQUIPMENT, CONDUITS AND JUNCTION BOXES ARE SHOWN FOR CLARITY.
3. PROVIDE "CGB" CORD GRIP FITTING FOR TEMPORARY CONDUCTOR ENTRIES INTO NEW AND EXISTING ELECTRICAL PANELS AND WIREWAYS.



E – PLAN - LINDA MAR PUMP STATION - UPPER LEVEL

SCALE: 3/8" = 1'-0"

	BY	DATE	DESCRIPTION OF REVISIONS	APP'D
SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	

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LINDA MAR PUMP STATION UPGRADE PROJECT C004B

UPPER LEVEL POWER AND CONTROL PLAN – INTERIM CONFIGURATION

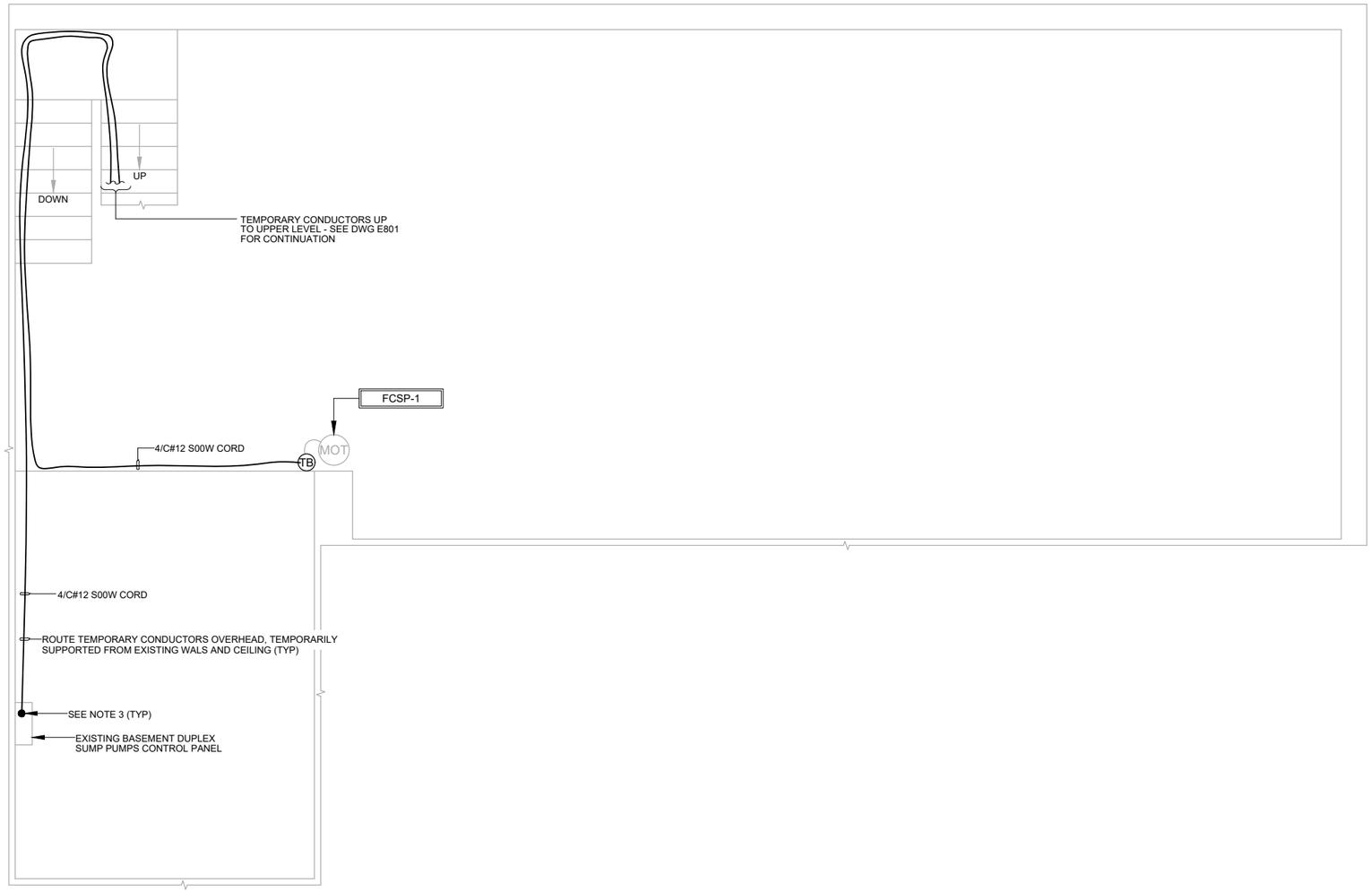
CITY OF PACIFICA, CALIFORNIA

SHEET E801

JOB NO. 240010

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.
2. NOT ALL EXISTING EQUIPMENT, CONDUITS AND JUNCTION BOXES ARE SHOWN FOR CLARITY.
3. PROVIDE "CGB" CORD GRIP FITTING FOR TEMPORARY CONDUCTOR ENTRIES INTO NEW AND EXISTING ELECTRICAL PANELS AND WIREWAYS.



F – PLAN - LINDA MAR PUMP STATION - LOWER LEVEL

SCALE: 3/8" = 1'-0"

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
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LINDA MAR PUMP STATION UPGRADE PROJECT C004B

LOWER LEVEL POWER AND CONTROL PLAN – INTERIM CONFIGURATION

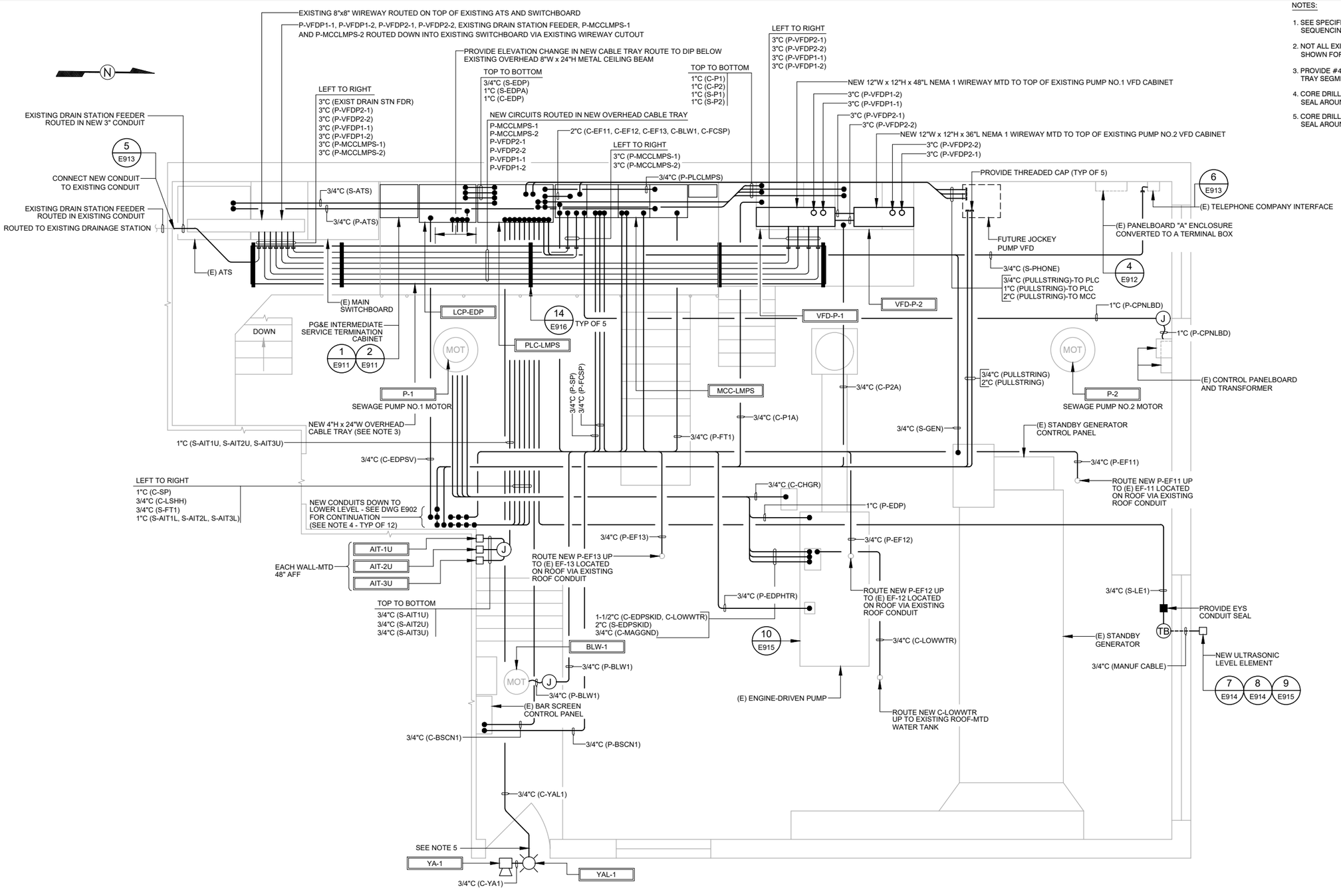
CITY OF PACIFICA, CALIFORNIA

SHEET E802

JOB NO. 240010

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.
2. NOT ALL EXISTING EQUIPMENT, CONDUITS AND JUNCTION BOXES ARE SHOWN FOR CLARITY.
3. PROVIDE #4/0 INSULATED COPPER BONDING JUMPER AT EACH NEW CABLE TRAY SEGMENT JOINT.
4. CORE DRILL EXISTING FLOOR FOR ROUTING OF NEW CONDUIT. AFTER INSTALLATION, SEAL AROUND CONDUIT WITH NON-SHRINK GROUT.
5. CORE DRILL EXISTING WALL FOR ROUTING OF NEW CONDUIT. AFTER INSTALLATION, SEAL AROUND CONDUIT WITH NON-SHRINK GROUT (BOTH SIDES OF WALL).



G – PLAN - LINDA MAR PUMP STATION - UPPER LEVEL

SCALE: 3/8" = 1'-0"

BY	DATE	DESCRIPTION OF REVISIONS	APP'D
	08/04/21	100% DESIGN SUBMITTAL	
	05/03/21	90% DESIGN SUBMITTAL	
	11/06/20	50% DESIGN SUBMITTAL	

SCALE: AS NOTED
DESIGNED: TB
DRAWN: BEI
CHECKED: BEI
PROJ. ENGR: JJT

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LINDA MAR PUMP STATION UPGRADE PROJECT C004B

UPPER LEVEL POWER AND CONTROL PLAN – MODIFICATIONS

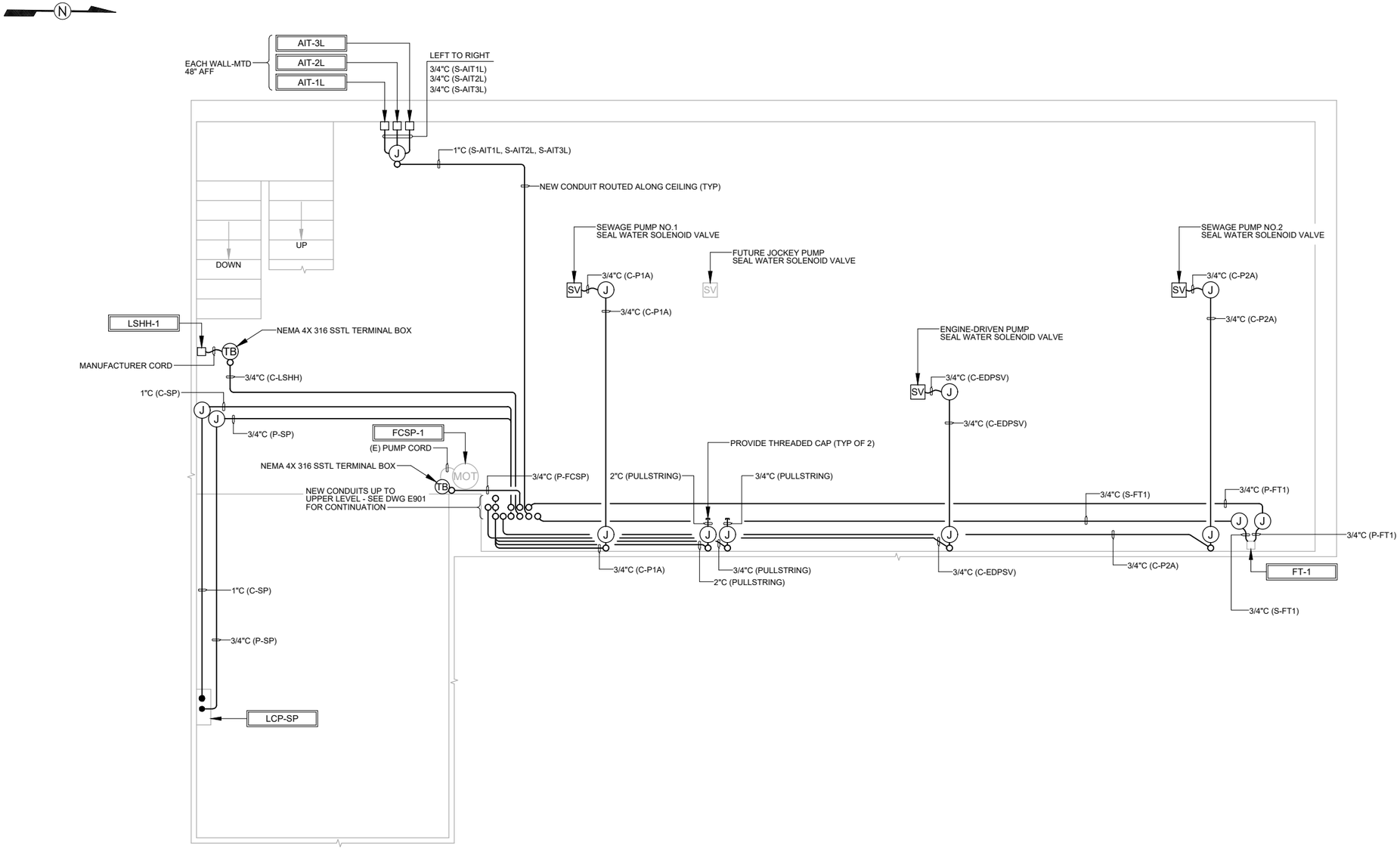
CITY OF PACIFICA, CALIFORNIA

SHEET E901

JOB NO. 240010

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.
2. NOT ALL EXISTING EQUIPMENT, CONDUITS AND JUNCTION BOXES ARE SHOWN FOR CLARITY.
3. LOWER LEVEL CEILING HEIGHT IS APPROXIMATELY 19 FEET ABOVE FINISH FLOOR.



H – PLAN - LINDA MAR PUMP STATION - LOWER LEVEL

SCALE: 3/8" = 1'-0"

BY	DATE	DESCRIPTION OF REVISIONS	APP'D
	08/04/21	100% DESIGN SUBMITTAL	
	05/03/21	90% DESIGN SUBMITTAL	
	11/06/20	50% DESIGN SUBMITTAL	

SCALE: AS NOTED
DESIGNED: TB
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PROJ. ENGR: JJT

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LINDA MAR PUMP STATION UPGRADE PROJECT C004B

LOWER LEVEL POWER AND CONTROL PLAN – MODIFICATIONS

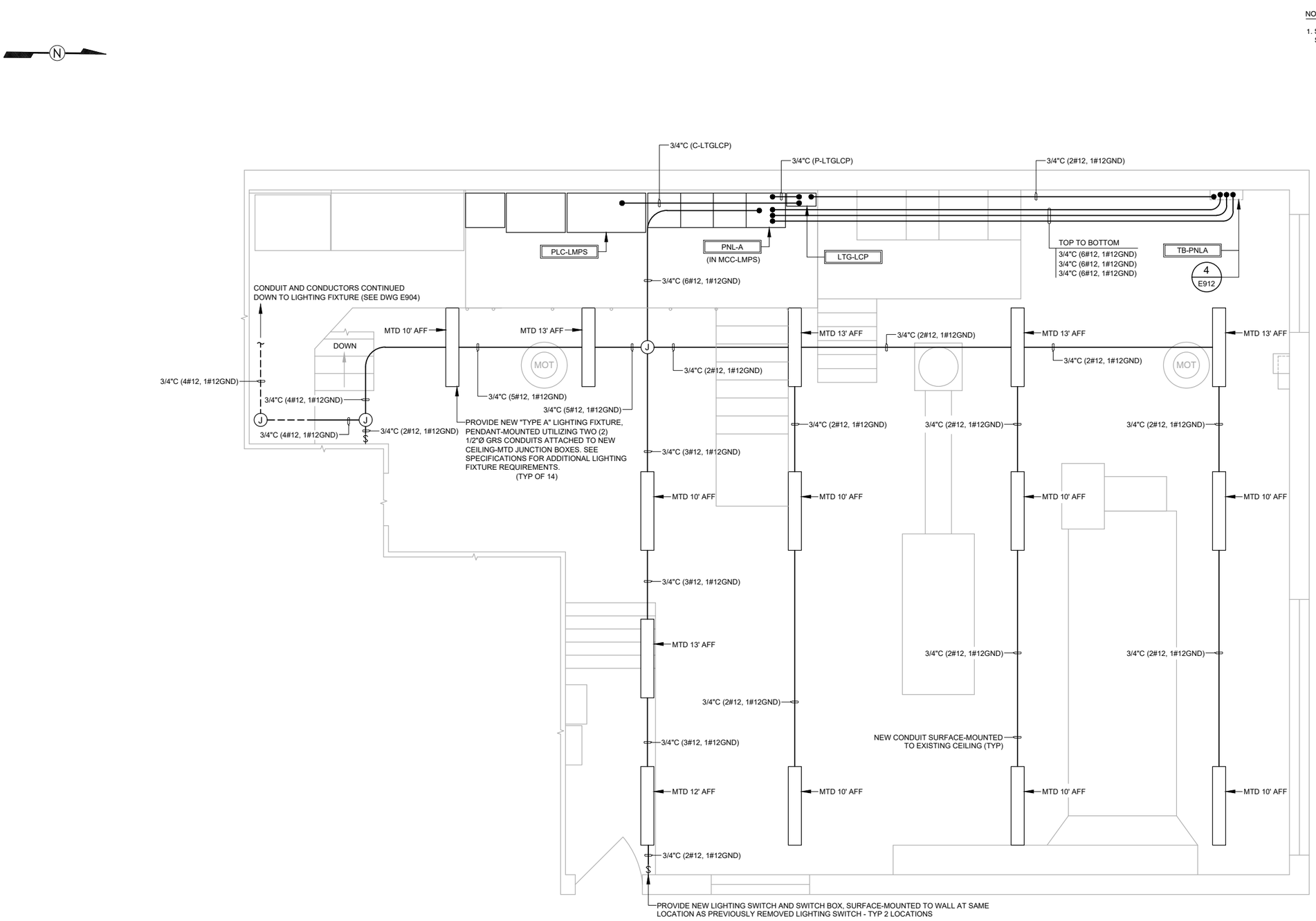
CITY OF PACIFICA, CALIFORNIA

SHEET E902

JOB NO. 240010

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.



J
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PLAN - LINDA MAR PUMP STATION - UPPER LEVEL

SCALE: 3/8" = 1'-0"

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
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LINDA MAR PUMP STATION UPGRADE PROJECT C004B

UPPER LEVEL LIGHTING PLAN – MODIFICATIONS

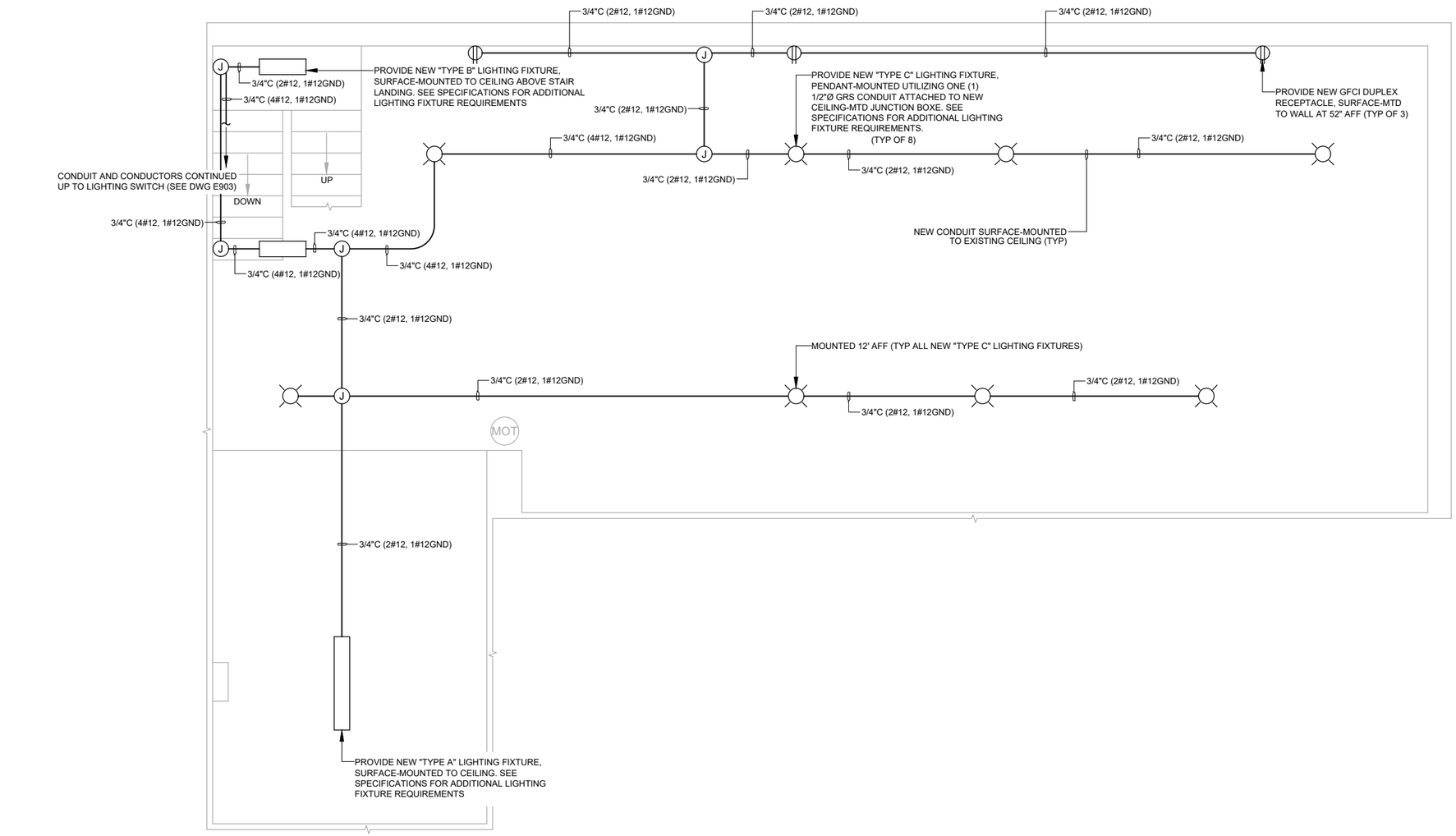
CITY OF PACIFICA, CALIFORNIA

SHEET
E903

JOB NO.
240010

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.
2. LOWER LEVEL CEILING HEIGHT IS APPROXIMATELY 19 FEET ABOVE FINISH FLOOR.



K/– PLAN - LINDA MAR PUMP STATION - LOWER LEVEL

SCALE: 3/8" = 1'-0"

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
	BY	DATE	DESCRIPTION OF REVISIONS	APP'D

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PACIFICA CALIFORNIA 94044

STAMP: PROGRESS SET NOT FOR CONSTRUCTION

LINDA MAR PUMP STATION UPGRADE PROJECT C004B

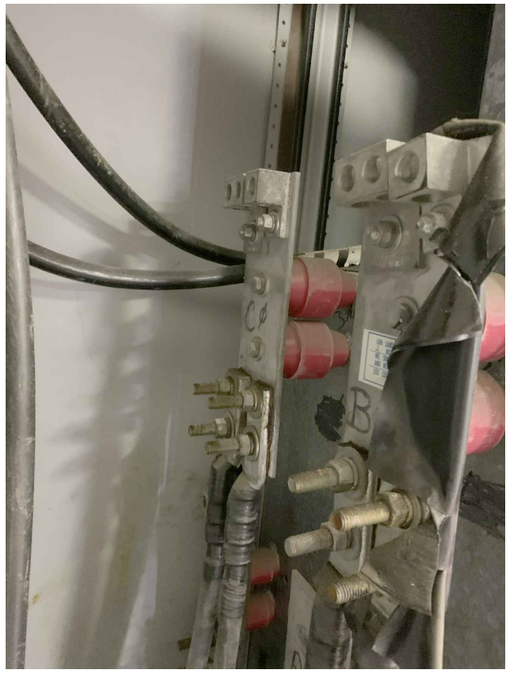
LOWER LEVEL LIGHTING PLAN – MODIFICATIONS

CITY OF PACIFICA, CALIFORNIA

SHEET E904

JOB NO. 240010

PG&E INTERMEDIATE SERVICE TERMINATIONS LOCATED WITHIN EXISTING ORIGINAL MAIN SWITCHBOARD SECTION (SEE PHOTO AT RIGHT)



NOTE:

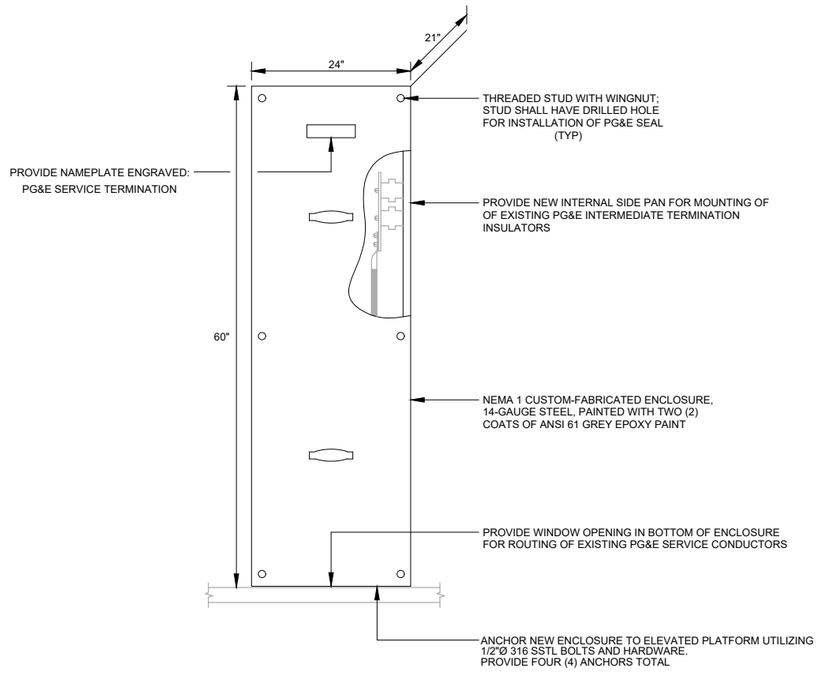
EXISTING PG&E INTERMEDIATE SERVICE TERMINATIONS SHALL BE KEPT INTACT DURING DEMOLITION OF EXISTING ORIGINAL MAIN SWITCHBOARD LINE-UP DEMOLITION. AFTER PG&E TEMPORARY SERVICE DE-ENERGIZATION, EXISTING ORIGINAL MAIN SWITCHBOARD ENCLOSURE SHALL BE REMOVED. NEW NEMA 1 ENCLOSURE SHALL BE PROVIDED TO HOUSE EXISTING PG&E INTERMEDIATE SERVICE TERMINATIONS. SEE DETAIL "2" THIS SHEET FOR ADDITIONAL REQUIREMENTS.

1 / E901 DETAIL - EXISTING PG&E INTERMEDIATE SERVICE TERMINATIONS

SCALE: NO SCALE

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.



2 / E901 DETAIL - NEW PG&E INTERMEDIATE SERVICE TERMINATIONS ENCLOSURE

SCALE: NO SCALE

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
	BY	DATE	DESCRIPTION OF REVISIONS	APP'D

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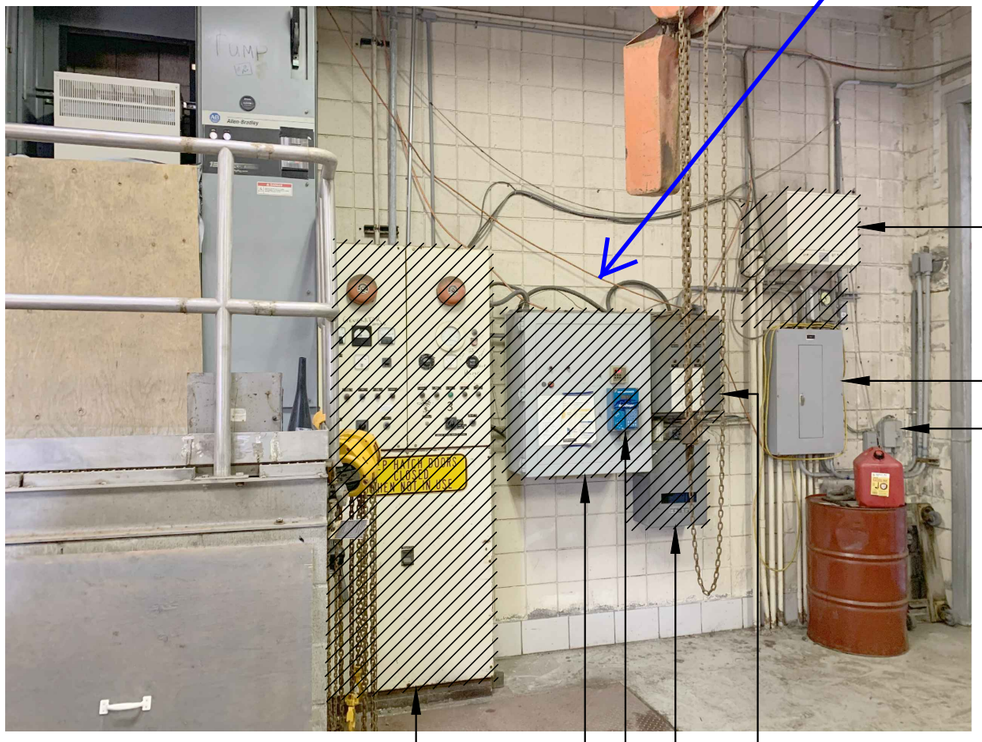
LINDA MAR PUMP STATION UPGRADE PROJECT C004B
ELECTRICAL
DETAILS–1
CITY OF PACIFICA, CALIFORNIA

SHEET E911

JOB NO. 240010

Suggest we say location of (F) Jockey Pump VFD Cabinet? Thoughts



(E) PANELBOARD "A" TRANSFORMER

(E) PANELBOARD "A" (SEE DETAIL "4" THIS SHEET)

(E) TELEPHONE COMPANY INTERFACE (SEE DETAIL "6" ON DWG E913)

(E) COMMUNICATION PANEL

(E) ABANDONED PANEL (OUT OF SERVICE)

(E) LEVEL TRANSMITTER (RELOCATE TO NEW PLC-LMPS PANEL)

(E) LEVEL CONTROL PANEL

(E) ENGINE DRIVEN PUMP CONTROL PANEL

3 E701 DETAIL - EXISTING ELECTRICAL EQUIPMENT DEMOLITION

SCALE: NO SCALE

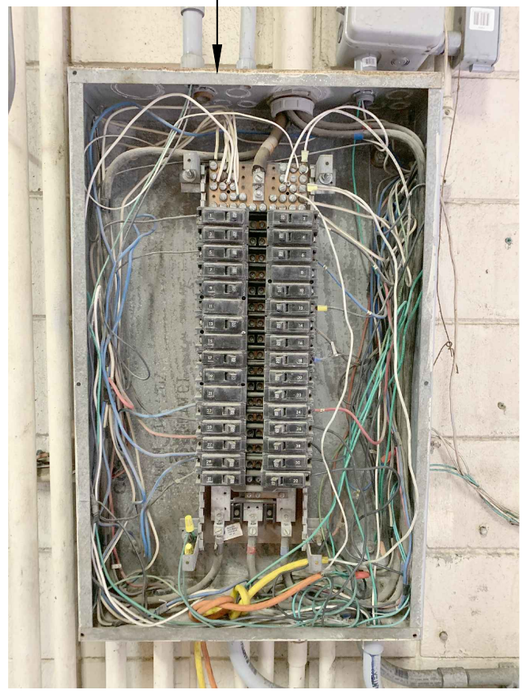
NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.

LEGEND:

DISCONNECT AND REMOVE

DISCONNECT AND REMOVE EXISTING INTERIOR PANELBOARD CIRCUIT BREAKERS AND BUSSING. ENCLOSURE TO REMAIN FOR USE AS RE-PURPOSED TERMINAL BOX "TB-LPA". PROVIDE NEW TERMINAL BLOCKS ON EXISTING PANEL BACKPAN TO INTERCEPT EXISTING FIELD CONDUCTORS AND TO CONNECT NEW CONDUCTORS FOR EXTENSION TO NEW PNL-A LOCATED AT MCC-LMPS



4 E901 4 E903 DETAIL - EXISTING PANELBOARD "A" CONVERSION TO TERMINAL BOX

SCALE: NO SCALE

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
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LINDA MAR PUMP STATION UPGRADE PROJECT C004B

ELECTRICAL DETAILS–2

CITY OF PACIFICA, CALIFORNIA

SHEET E912

JOB NO. 240010

NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.

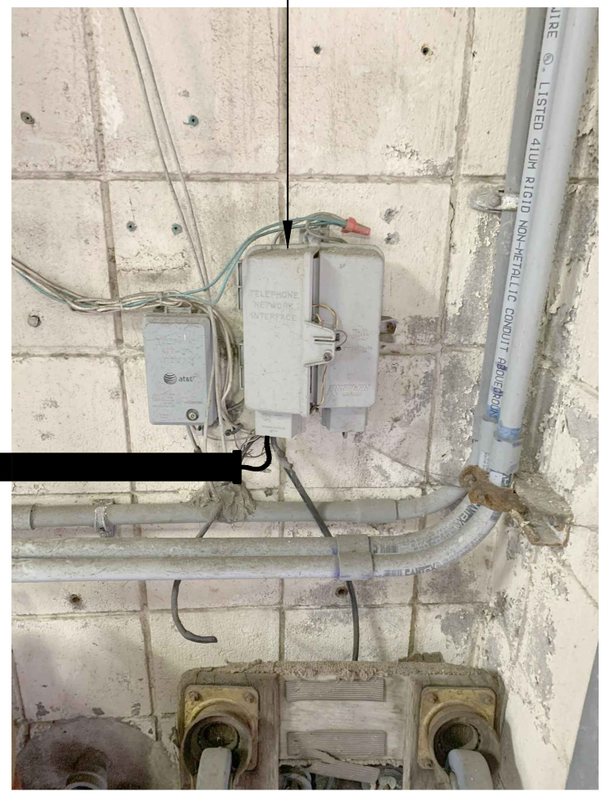
DISCONNECT EXISTING DRAINAGE STATION FEEDER CONDUCTORS FROM EXISTING MOTOR CONTROL CENTER AND PULL BACK TOWARDS DRAINAGE STATION. AFTER EXISTING CONDUCTORS ARE PULLED BACK, REMOVE EXISTING CONDULET AND CONNECT NEW 3" CONDUIT FROM WALL PENETRATION LOCATION TO NEW OVERHEAD CABLE TRAY LOCATED IN PUMP STATION UPPER LEVEL. RE-INSTALL EXISTING FEEDER CONDUCTORS THROUGH NEW CONDUIT NIPPLE AND VIA NEW OVERHEAD CABLE TRAY TO EXISTING MAIN SWITCHBOARD. CONNECT EXISTING FEEDER CONDUCTORS TO NEW CIRCUIT BREAKER PROVIDED AT THE EXISTING MAIN SWITCHBOARD.

5 / E701 — 5 / E901 DETAIL - EXISTING DRAINAGE STATION FEEDER MODIFICATIONS

SCALE: NO SCALE

(E) STATION TELEPHONE COMPANY INTERFACE BOX

TO NEW PLC-LMPS



6 / E901 DETAIL - NEW CONNECTION TO EXISTING STATION TELEPHONE INTERFACE

SCALE: NO SCALE

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
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LINDA MAR PUMP STATION UPGRADE PROJECT C004B
ELECTRICAL
DETAILS–3
CITY OF PACIFICA, CALIFORNIA

SHEET
E913

JOB NO.
240010

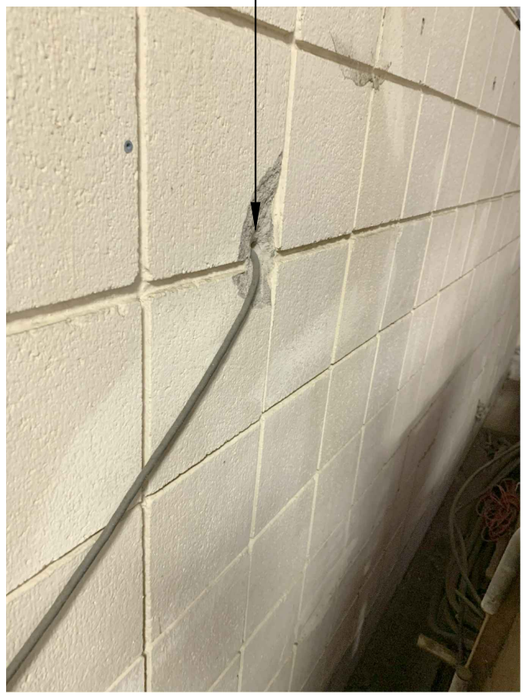
NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.

(E) WET WELL ULTRASONIC LEVEL ELEMENT IS LOCATED BELOW EXTERIOR ACCESS GRATING. EXISTING ULTRASONIC LEVEL ELEMENT SHALL BE DISCONNECTED AND REMOVED AND REPLACED WITH NEW ULTRASONIC LEVEL ELEMENT (CONNECTED TO EXISTING LEVEL TRANSMITTER)

7 / E701 — 7 / E901 DETAIL - EXISTING WET WELL ULTRASONIC LEVEL ELEMENT LOCATION
SCALE: NO SCALE

AFTER REMOVAL OF EXISTING ULTRASONIC LEVEL ELEMENT, CORE DRILL EXISTING WALL FOR INSTALLATION OF A NEW 3/4" 316 STAINLESS STEEL CONDUIT NIPPLE THROUGH WALL INTO EXTERIOR WET WELL ACCESS AREA. AFTER INSTALLATION OF CONDUIT, SEAL AROUND CONDUIT WITH NON-SHRINK GROUT. PROVIDE NEW ULTRASONIC LEVEL ELEMENT WITH NEW MANUFACTURER CABLE ROUTED VIA NEW CONDUIT NIPPLE. SEE DETAIL "9" ON DRAWING E915 FOR ADDITIONAL REQUIREMENTS.



8 / E901 DETAIL - NEW CONNECTION TO EXISTING STATION TELEPHONE INTERFACE
SCALE: NO SCALE

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
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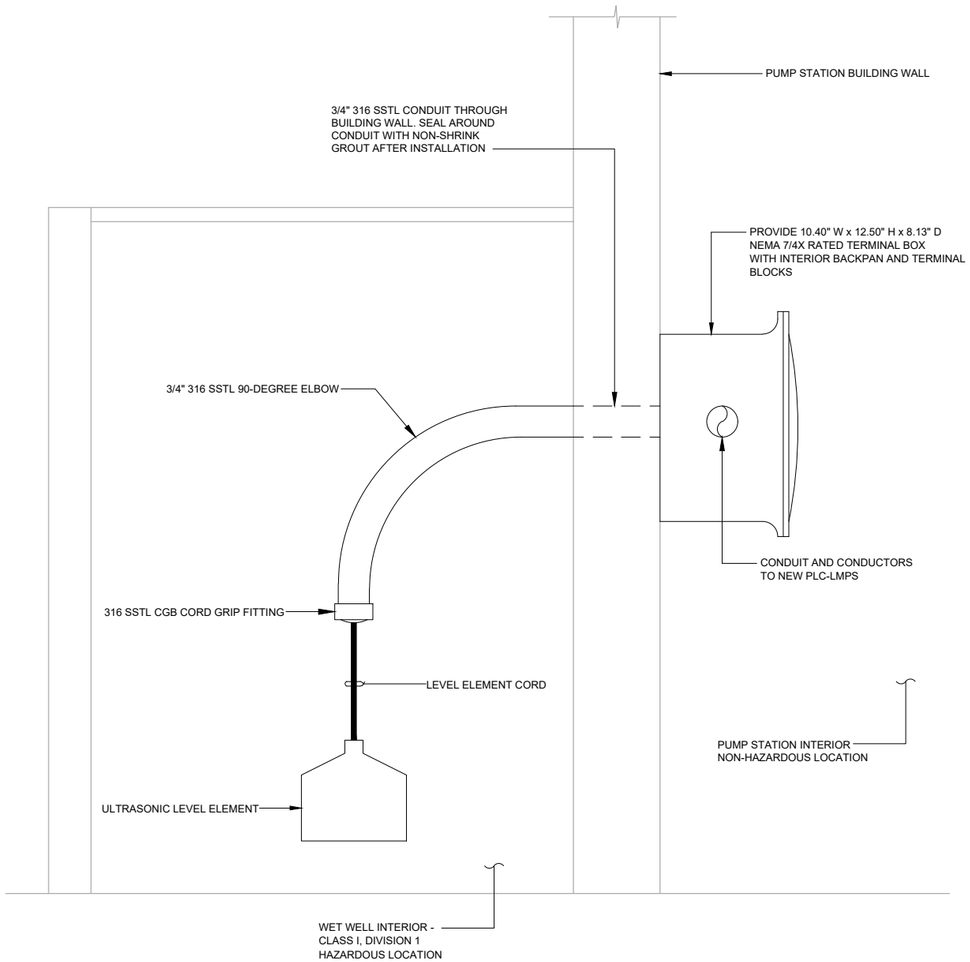
LINDA MAR PUMP STATION UPGRADE PROJECT C004B
ELECTRICAL
DETAILS–4
CITY OF PACIFICA, CALIFORNIA

SHEET
E914

JOB NO.
240010

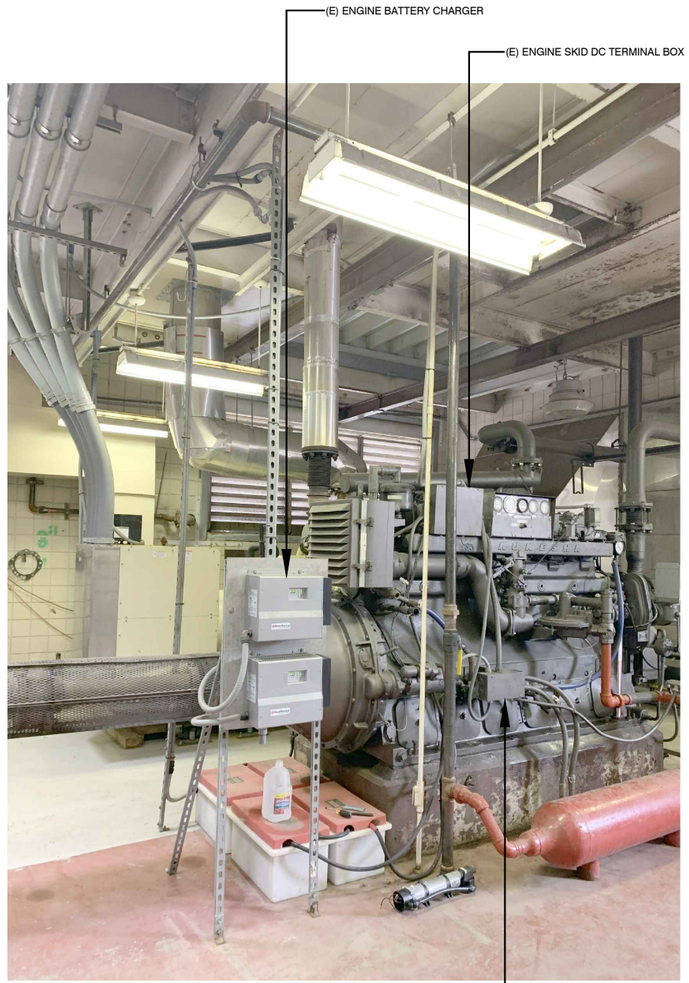
NOTES:

1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.



9 E901 DETAIL - NEW ULTRASONIC LEVEL ELEMENT INSTALLATION

SCALE: NO SCALE



10 E901 DETAIL - EXISTING ENGINE-DRIVEN PUMP SKID

SCALE: NO SCALE

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
		11/06/20	50% DESIGN SUBMITTAL	
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LINDA MAR PUMP STATION UPGRADE PROJECT C004B

ELECTRICAL

DETAILS–5

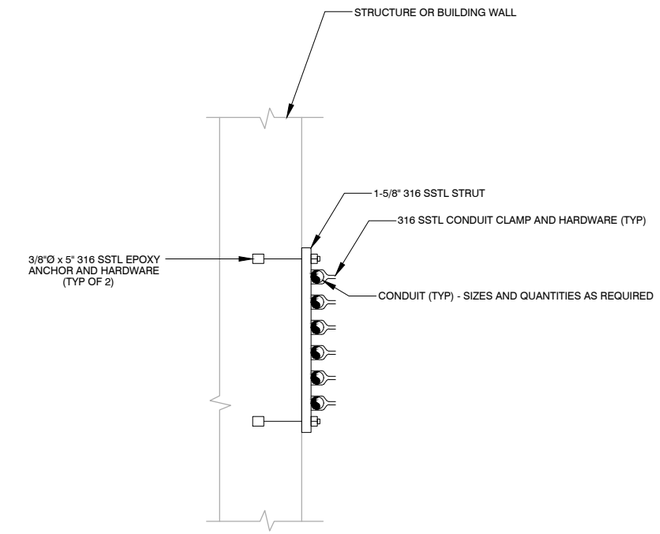
CITY OF PACIFICA, CALIFORNIA

SHEET E915

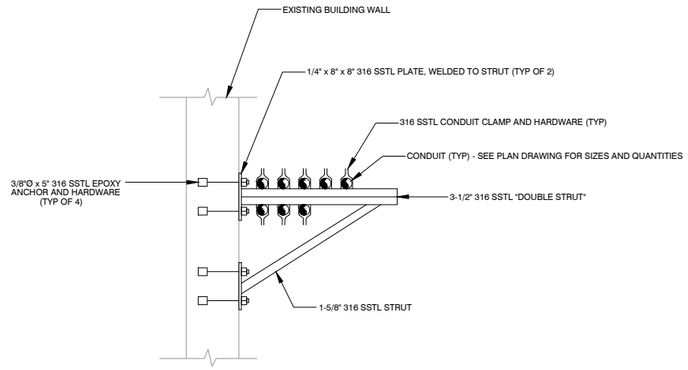
JOB NO. 240010

NOTES:

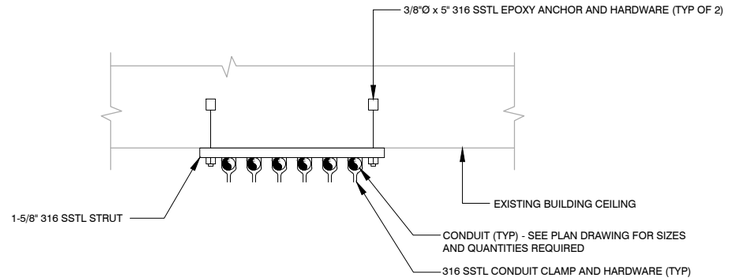
1. SEE SPECIFICATION SECTION 01 10 10 FOR ADDITIONAL CONSTRUCTION SEQUENCING REQUIREMENTS AND WORK CONSTRAINTS.



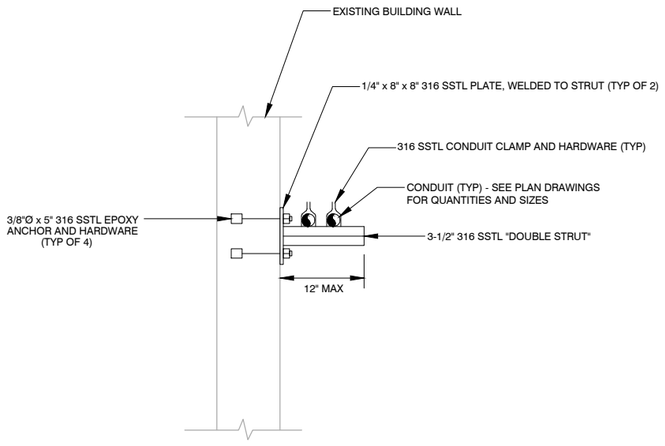
11 --- DETAIL - WALL CONDUIT SUPPORT
SCALE: NO SCALE



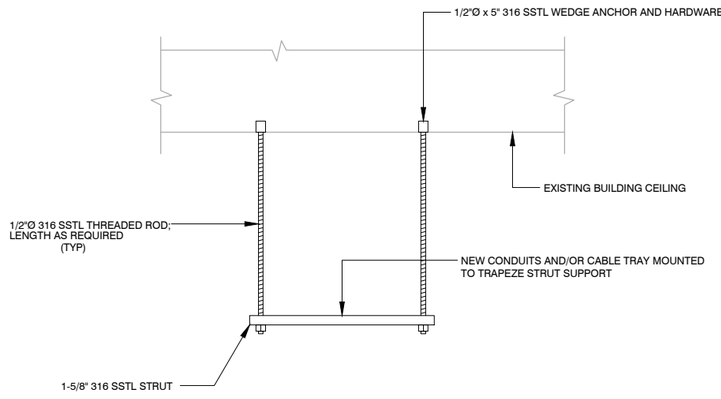
13 --- DETAIL - WALL CONDUIT SUPPORT
SCALE: NO SCALE



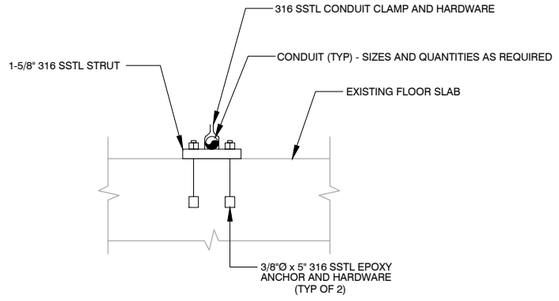
15 --- DETAIL - CEILING CONDUIT SUPPORT
SCALE: NO SCALE



12 --- DETAIL - WALL CONDUIT SUPPORT
SCALE: NO SCALE



14 --- DETAIL - TRAPEZE CONDUIT AND CABLE TRAY SUPPORT
SCALE: NO SCALE



16 --- DETAIL - SLAB AND FLOOR CONDUIT SUPPORT
SCALE: NO SCALE

SCALE: AS NOTED				
DESIGNED: TB				
DRAWN: BEI				
CHECKED: BEI		08/04/21	100% DESIGN SUBMITTAL	
PROJ. ENGR: JJT		05/03/21	90% DESIGN SUBMITTAL	
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ELECTRICAL
DETAILS–6
CITY OF PACIFICA, CALIFORNIA

SHEET E916

JOB NO. 240010