

CONTRACT
[Electrical Panel Replacement for McPherson Athletic Facility
& Killefer Park (Bid No. 190-60)]

THIS CONTRACT (the "Contract") is made and entered into as of _____, 2020 ("Effective Date") by and between the CITY OF ORANGE, a municipal corporation ("City"), and ACADEMY ELECTRIC, INC., a California corporation ("Contractor"), who agree as follows.

ARTICLE 1
Work Performed

a. For and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by City, and under the conditions expressed in the two (2) bonds presented to City with this Contract and incorporated herein by this reference, Contractor hereby agrees to and shall do all the work and furnish all the labor, materials, tools and equipment, except such as are mentioned in the specifications to be furnished by City to Contractor, necessary to complete in good workmanship and substantial manner the work (the "Work") described in:

(1) The Request for Bid which includes Construction Plans and Contractor's bid (Exhibit A);

(2) The latest edition of the "City of Orange Standard Plans and Specifications" (the "Orange Book") with the term "Engineer," as used in the Orange Book and in this Contract, to specifically include the City Engineer (or his/her designee);

(3) City of Orange Park Development Standards and Specifications;

(4) The "Standard Specifications for Public Works Construction" (the "Green Book"), and all amendments thereto.

b. Contractor acknowledges that it has received the Plans from City and that a complete copy of the Plans are in its possession and are hereby specifically referred to and by such reference made a part hereof. The Orange Book, Green Book and City of Orange Standard Special Provisions and Standard Plans are on file with City's Community Services Director and are hereby specifically referred to and by such reference made a part hereof. Contractor hereby acknowledges that it has read, reviewed and understands the Plans, the Orange Book, the Green Book, the Special Provisions, the Standard Plans, as they relate to the Work, all of which documents shall be referred to herein collectively as the "Plans and Specifications."

c. Contractor acknowledges the provisions of Chapter 8.28 of the Orange Municipal Code which requires, among other things, that Contractor utilize City's exclusive solid waste hauler for the rental of bins for trash and debris removal and imposes mandatory recycling requirements for self-hauled construction and demolition waste. The terms and conditions set forth

in this Contract shall control over any terms and conditions in the Plans and Specifications to the contrary.

d. The Work shall be performed in conformity with the Plans and Specifications and the Bid Proposal and all applicable laws, including any and all applicable federal and state labor laws and standards and applicable prevailing wage requirements and any and all state, federal and local statutes, regulations and ordinances relating to the protection of human health or the environment.

e. Unless and until otherwise notified in writing by City's Community Services Director, City's Sr. Landscape Project Coordinator, Don Equitz ("Authorized City Representative"), shall be the person to whom Contractor will report for the performance of the Work hereunder. It is understood that Contractor's performance hereunder shall be under the direction and supervision of the Authorized City Representative or such other person as City's Community Services Director may designate from time to time, that Contractor shall coordinate the Work hereunder with the Authorized City Representative to the extent required by the Authorized City Representative, and that all performances required hereunder by Contractor shall be performed to the satisfaction of the Authorized City Representative or City's Community Services Director.

f. It is expressly agreed by and between the parties hereto that should there be any conflict between the terms of this instrument and Contractor's Bid Proposal, then this instrument shall control and nothing herein shall be considered as an acceptance of the said terms of said Bid Proposal conflicting herewith.

ARTICLE 2

Commencement of Work

Contractor shall commence the Work provided for in this Contract within fifteen (15) days of the date of the issuance by City of a Notice to Proceed and diligently prosecute completion of the Work within the timeframe as set forth in Exhibit A, unless legal extension is granted in accordance with the terms set forth in the Green Book. Time is of the essence in this Contract. Contractor shall do all things necessary and incidental to the prosecution of Contractor's Work.

ARTICLE 3

Compensation

a. Contractor agrees to receive and accept an amount not to exceed ONE HUNDRED NINETY THOUSAND NINE HUNDRED SIXTY DOLLARS and 00/100 (\$190,960.00) as compensation for furnishing all materials and doing all the Work contemplated and embraced in this Contract. Said compensation covers (1) all loss or damage arising out of the nature of the Work, from the acts of the elements; (2) any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the Work until its acceptance by City, other than as provided below; (3) all risks of every description connected with the Work; (4) all expenses incurred by or in consequence of the suspension or discontinuance of the Work; and (5) well and faithfully completing the Work, and for the whole thereof, in the manner and according to the

Plans and Specifications, and requirements of the Authorized City Representative under them. Retention amounts shall be withheld from progress payments as required by law unless Contractor provides securities in lieu of retention.

b. In addition to the scheduled Work to be performed by the Contractor, the parties recognize that additional, unforeseen work and services may be required by the Authorized City Representative. In anticipation of such contingencies, the sum of NINETEEN THOUSAND NINETY-SIX DOLLARS and 00/100 (\$19,096.00) has been added to the total compensation of this Contract. The Authorized City Representative may approve the additional work and the actual costs incurred by the Contractor in performance of additional work or services in accordance with such amount as the Authorized City Representative and the Contractor may agree upon in advance. Said additional work or services and the amount of compensation therefor, up to the amount of the authorized contingency, shall be memorialized in the form of a Contract Amendment approved by the City Manager on a form acceptable to the City Attorney. The Contractor agrees to perform only that work or those services that are specifically requested by the Authorized City Representative. Any and all additional work and services performed under this Contract shall be completed in such sequence as to assure their completion as expeditiously as is consistent with professional skill and care in accordance with a cost estimate or proposal submitted to and approved by the Authorized City Representative prior to the commencement of such Work or services.

c. The total amount of compensation under this Contract, including contingencies, shall not exceed TWO HUNDRED TEN THOUSAND FIFTY-SIX DOLLARS and 00/100 (\$210,056.00).

ARTICLE 4

Licenses

Contractor represents that it and any subcontractors it may engage, possess any and all licenses which are required under state or federal law to perform the Work contemplated by this Contract and that Contractor and subcontractors shall maintain all appropriate licenses, including a City of Orange business license, at its cost, during the performance of this Contract.

ARTICLE 5

Guarantees

a. Contractor guarantees the construction and installation of all Work included in the Plans and Specifications for which Contractor has been awarded this Contract.

b. Should any of the materials or equipment installed pursuant to this Contract prove defective or should the Work as a whole prove defective, due to faulty equipment, workmanship, materials furnished or methods of installations, or should said Work or any part thereof fail to function properly, as designed, due to any of the above causes within twelve (12) months after the date on which said Work is accepted by City, Contractor shall make repairs and furnish such materials and equipment as are necessary to be furnished and installed within fifteen (15) calendar days after the receipt of a demand from City.

c. Said Work will be deemed defective within the meaning of this guarantee in the event that it fails to function as originally intended either by the Plans and Specifications of this Contract or by the manufacturer(s) of the equipment incorporated into the Work.

d. In the event repairs are not made within fifteen (15) calendar days after Contractor's receipt of a demand from City, City shall have the unqualified option to make any needed repairs or replacements itself or by any other contractor. Contractor shall reimburse City, upon demand, for all expenses incurred in restoring said Work to the condition contemplated in this Contract, including the cost of any equipment or materials replaced.

e. It is understood that emergency repairs may, by necessity, be made by City. Therefore, when defective equipment, materials or workmanship result in emergency repairs by City, Contractor shall reimburse City, upon demand, for all expenses incurred. Emergency repairs will be deemed as those repairs determined by City's Director of Public Works to be necessary due to an immediate detriment to the health, safety, welfare or convenience of the residents of City.

ARTICLE 6

Water Quality

a. The Santa Ana Regional Water Quality Control Board ("RWQCB") has issued National Pollutant Discharge Elimination System ("NPDES") Permit No. R8-2009-0030 (the "Permit"), which governs storm water and non-storm water discharges resulting from municipal activities performed by City or its contractors. In order to comply with the Permit requirements, the County of Orange has prepared a Drainage Area Management Plan ("DAMP"), containing Model Maintenance Procedures with Best Management Practices ("BMPs") that City and its contractors must adhere to. The Model Maintenance Procedures contain pollution prevention and source control techniques to minimize the impact of those activities upon dry-weather urban runoff, storm water runoff, and receiving water quality. Examples include: wash water from cleaning of sidewalks or parking lots must be collected and disposed of in the sewer or landscaped areas.

b. The Permit, the DAMP and the Model Maintenance Procedures are on file in the office of City's Director of Public Works. Contractor hereby acknowledges that it has read, reviewed and understands the Permit, the DAMP and the Model Maintenance Procedures, as they relate to the Work and hereby shall perform the Work in conformance therewith.

ARTICLE 7

Independent Contractor; Contractor not Agent

a. At all times during the term of this Contract, Contractor shall be an independent contractor and not an employee of City. City shall have the right to control Contractor only insofar as the result of Contractor's services rendered pursuant to this Contract. City shall not have the right to control the means by which Contractor accomplishes services rendered pursuant to this Contract. Contractor shall, at its sole cost and expense, furnish all facilities, materials and

equipment which may be required for furnishing services pursuant to this Contract. Contractor shall be solely responsible for, and shall indemnify, defend and save City harmless from all matters relating to the payment of its subcontractors, agents and employees, including compliance with social security, withholding and all other wages, salaries, benefits, taxes, exactions, and regulations of any nature whatsoever. Contractor acknowledges that Contractor and any subcontractors, agents or employees employed by Contractor shall not, under any circumstances, be considered employees of City, and that they shall not be entitled to any of the benefits or rights afforded employees of City, including, but not limited to, sick leave, vacation leave, holiday pay, Public Employees Retirement System benefits, or health, life, dental, long-term disability or workers' compensation insurance benefits.

b. Except as City may specify in writing, Contractor shall have no authority, express or implied, to act on behalf of City in any capacity whatsoever as an agent. Contractor shall have no authority, express or implied, to bind City to any obligation whatsoever.

ARTICLE 8

Public Work; Prevailing Wage

a. The Work which is the subject of this Contract is a "public work," as that term is defined in Section 1720 of the California Labor Code, for which prevailing wages must be paid. To the extent Contractor's employees will perform any work that falls within any of the classifications for which the Department of Labor Relations of the State of California promulgates prevailing wage determinations, Contractor hereby agrees that Contractor, and any subcontractor under it, shall pay not less than the specified prevailing rates of wages to all such workers. The general prevailing wage determinations for crafts can be located on the website of the Department of Industrial Relations (www.dir.ca.gov/DLSR). Additionally, to perform work under this Contract, Contractor must meet all State registration requirements and criteria, including project compliance monitoring.

b. Attached hereto as Attachment No. 1 and incorporated herein by this reference is a copy of the provisions of Sections 1725.5, 1771, 1771.1, 1771.4, 1775, 1776, 1777.5, 1813 and 1815 of the California Labor Code. Contractor hereby acknowledges that it has read, reviewed and understands those provisions of the Labor Code and shall prosecute and complete the Work under this Contract in strict compliance with all of those terms and provisions.

c. Contractor shall secure the payment of compensation to its employees in accordance with the provisions of Section 3700 of the California Labor Code. Accordingly, and as required by Section 1861 of the California Labor Code, Contractor hereby certifies as follows:

"I am aware 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 I will comply with such provisions before commencing the performance of the work of this contract."

d. Contractor shall indemnify, protect, defend and hold harmless City and its officers, employees, contractors and agents, with counsel reasonably acceptable to City, from and against any and all loss, liability, damage, claim, cost, expense, and/or “increased costs” (including reasonable attorney’s fees, court and litigation costs, and fees of expert witnesses) which result or arise in any way from the noncompliance by Contractor of any applicable local, state and/or federal law, including, without limitation, any applicable federal and/or state labor laws (including, without limitation, the requirement to pay state prevailing wages). It is agreed by the parties that, in connection with the construction of the Work which is the subject of this Contract, Contractor shall bear all risks of payment or non-payment of state prevailing wages. “Increased costs” as used in this paragraph shall have the meaning ascribed to it in Labor Code Section 1781, as the same may be enacted, adopted or amended from time to time. The foregoing indemnity shall survive termination of this Contract.

ARTICLE 9

Equal Employment Opportunity

During the performance of this Contract, Contractor agrees as follows:

a. Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, mental or physical disability, or any other basis prohibited by applicable law. Contractor shall ensure that applicants are employed and that employees are treated during employment, without regard to their race, color, religion, sex, national origin, mental or physical disability, or any other basis prohibited by applicable law. Such actions shall include, but not be limited to the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation and selection for training, including apprenticeship. Contractor shall post in conspicuous places, available to employees and applicants for employment, a notice setting forth provisions of this non-discrimination clause.

b. Contractor shall, in all solicitations and advertisements for employees placed by, or on behalf of Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, mental or physical disability, or any other basis prohibited by applicable law.

c. Contractor shall cause the foregoing paragraphs (a) and (b) to be inserted in all subcontracts for any Work covered by this Contract, provided that the foregoing provisions shall not apply to subcontracts for standard commercial supplies or raw materials.

ARTICLE 10

Conflicts of Interest

Contractor agrees that it shall not make, participate in the making, or in any way attempt to use its position as a contractor to influence any decision of City in which Contractor knows or has reason to know that Contractor, its officers, partners, or employees have a financial interest as defined in Section 87103 of the Government Code. Contractor further agrees that it shall not be eligible to work as the builder for any project for which the design work is part of this Contract.

ARTICLE 11

Indemnity

Contractor shall defend, indemnify and hold harmless City and its officers, officials, agents, and employees from and against:

a. Any and all claims, liabilities, losses, damages, penalties, costs or expenses (including reasonable attorneys' fees and court costs) which City may directly or indirectly sustain or suffer arising from or as a result of the death of any person or any accident, injury, loss or damage whatsoever caused to any person or the property of any person which shall occur on or adjacent to the real property which is the subject of this Contract, or in connection with performance of this Contract which may be directly or indirectly caused by the acts or omissions of Contractor or its officers, employees, contractors or agents, or as a consequence of any use, generation, manufacture, storage, disposal, release or threatened release of a hazardous waste or substance. Contractor shall not be responsible for (and such indemnity shall not apply to) any willful misconduct, negligence or breach of this Contract by City or its officers, officials, agents, and employees. The foregoing indemnity shall survive termination of this Contract.

b. Any and all claims under workers' compensation acts and other employee benefit acts with respect to Contractor's employees or Contractor's subcontractor's employees arising out of Contractor's Work under this Contract, including any and all claims under any law pertaining to Contractor's status as an independent contractor.

ARTICLE 12

Insurance

a. Contractor shall procure and maintain for the duration of this Contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the Work hereunder and the results of that Work by Contractor, its agents, representatives, employees or subcontractors.

b. Contractor shall maintain the following minimum amount of insurance: the greater of either the limits set forth in (1) through (4), below; or all of the insurance coverage and/or limits carried by or available to Contractor.

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|-----------------------|-------------|--|
| (1) General Liability | \$2,000,000 | per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit. |
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|---------------------------|-------------|---|
| (2) Automobile Liability | \$1,000,000 | per accident for bodily injury and property damage. |
| (3) Workers' Compensation | | as required by the State of California. |
| (4) Employer's Liability | \$1,000,000 | per accident for bodily injury or disease. |

c. Any insurance proceeds in excess of or broader than the minimum required coverage and/or minimum required limits which are applicable to a given loss shall be available to City. No representation is made that the minimum insurance requirements of this Contract are sufficient to cover the obligations of Contractor under this Contract.

d. Any deductibles or self-insured retentions must be declared to and approved by City. At the option of City, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions with respect to City, its officers, officials, agents and employees; or Contractor shall provide a financial guarantee satisfactory to City guaranteeing payment of losses and related investigations, claim administration, and defense expenses.

e. Each policy of general liability and automotive liability insurance shall contain, or be endorsed to contain, the following provisions:

(1) City, its officers, officials, agents, and employees are declared to be additional insureds under the terms of the policy, with respect to liability arising out of automobiles owned, leased, hired or borrowed by or on behalf of Contractor (any auto), and with respect to liability arising out of Work or operations performed by or on behalf of Contractor, including materials, parts or equipment furnished in connection with such Work or operations. A policy endorsement to that effect shall be provided to City along with the certificate of insurance. In lieu of an endorsement, City will accept a copy of the policy(ies) which evidences that City is an additional insured as a contracting party. The minimum coverage required by Subsection 12.b, above, shall apply to City as an additional insured.

(2) For any claims related to this Contract, Contractor's insurance coverage shall be primary insurance with respect to City, its officers, officials, agents and employees. Any insurance or self-insurance maintained by City, its officers, officials, agents and employees shall be excess of Contractor's insurance and shall not contribute with it.

(3) Coverage shall not be canceled, except after thirty (30) days' prior written notice has been provided to City.

f. Contractor shall furnish City with original certificates of insurance and endorsements effecting coverage required by this Article 12. The endorsements shall be on forms acceptable to City. All certificates and endorsements are to be received and approved by City before the Work commences. However, failure to do so shall not operate as a waiver of these insurance requirements. City reserves the right to require complete, certified copies of all required insurance policies, including endorsements effecting the coverage required by these specifications at any time.

g. All insurance procured and maintained by Contractor shall be issued by insurers admitted to conduct the pertinent line of insurance business in California and having a rating of Grade A or better and Class VII or better by the latest edition of Best Key Rating Guide.

h. Contractor shall immediately notify City if any required insurance lapses or is otherwise modified and cease performance of this Contract unless otherwise directed by City. In such a case, City may procure insurance or self-insure the risk and charge Contractor for such costs and any and all damages resulting therefrom by way of set-off from any sums owed Contractor.

i. Contractor agrees that in the event of loss due to any of the perils for which it has agreed to provide insurance, Contractor shall look solely to its insurance for recovery. Contractor hereby grants to City, on behalf of any insurer providing insurance to either Contractor or City with respect to the services of Contractor herein, a waiver of any right to subrogation which any such insurer may acquire against City by virtue of the payment of any loss under such insurance. The Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of City for all Work performed by Contractor, its employees, agents and subcontractors. Contractor shall obtain any other endorsement that may be necessary to effect this waiver of subrogation.

j. Contractor shall require and verify that all subcontractors maintain insurance meeting all of the requirements stated herein.

ARTICLE 13

Termination

City, acting through its City Manager or his/her designee, reserves the right to terminate this Contract for any reason by giving five (5) days' written notice of intent to terminate to Contractor. Upon receipt of notice, Contractor shall immediately cease work, unless the notice provides otherwise. Should City terminate this Contract, City shall pay Contractor for services satisfactorily provided and all allowable reimbursements incurred to the date of termination in compliance with this Contract, unless such termination shall be for cause, in which event City may withhold any disputed compensation. City shall not be liable for any claim of lost profits.

ARTICLE 14

Maintenance and Inspection of Records

In accordance with generally accepted accounting principles, Contractor and its subcontractors shall maintain reasonably full and complete books, documents, papers, accounting records and other information (collectively, the "records") pertaining to the costs of and completion of services performed under this Contract. During the term of this Contract and for a period of three (3) years after termination or completion of this Contract, City shall have the right to inspect and/or audit Contractor's records pertaining to the performance of this Contract at Contractor's office. Contractor shall make available all such records for inspection or audit at its offices during normal business hours and upon three (3) days' notice from City, and copies thereof shall be furnished if requested.

ARTICLE 15

Compliance with Laws

a. Contractor shall be knowledgeable of and comply with all local, state and federal laws pertaining to the subject matter hereof or in any way regulating the activities undertaken by Contractor or any subcontractor hereunder.

b. Contractor represents and warrants that it:

(1) Has complied and shall at all times during the term of this Contract comply, in all respects, with all immigration laws, regulations, statutes, rules, codes, and orders, including, without limitation, the Immigration Reform and Control Act of 1986 (IRCA); and

(2) Has not and will not knowingly employ any individual to perform services under this Contract who is ineligible to work in the United States or under the terms of this Contract; and

(3) Has properly maintained, and shall at all times during the term of this Contract properly maintain, all related employment documentation records including, without limitation, the completion and maintenance of the Form I-9 for each of Contractor's employees; and

(4) Has responded, and shall at all times during the term of this Contract respond, in a timely fashion to any government inspection requests relating to immigration law compliance and/or Form I-9 compliance and/or worksite enforcement by the Department of Homeland Security, the Department of Labor, or the Social Security Administration.

c. Contractor shall require all subcontractors and/or subconsultants to make the same representations and warranties required by this Article 15 when hired to perform services under this Contract.

d. Contractor shall, upon request of City, provide a list of all employees working under this Contract and shall provide, to the reasonable satisfaction of City, verification that all such employees are eligible to work in the United States. All costs associated with such verification shall be borne by Contractor. Once such request has been made, Contractor may not change employees working under this Contract without written notice to City, accompanied by the verification required herein for such employees. Contractor shall require all subcontractors and/or sub-consultants to make the same verification when hired to perform services under this Contract.

e. If Contractor, or a subcontractor or subconsultant, knowingly employs an employee providing Work under this Contract who is not authorized to work in the United States, and/or fails to follow federal laws to determine the status of such employee, such shall constitute a material breach of this Contract and may be cause for immediate termination of this Contract by City.

f. Contractor shall indemnify and hold City, its officials and employees harmless for, of and from any loss, including but not limited to fines, penalties and corrective measures, City

may sustain by reason of Contractor's failure to comply with said laws, rules and regulations in connection with the performance of this Contract.

ARTICLE 16

Governing Law and Venue

This Contract shall be construed in accordance with and governed by the laws of the State of California and Contractor shall submit to the jurisdiction of California courts. Venue for any dispute arising under this Contract shall be in Orange County, California.

ARTICLE 17

Integration and Amendment

a. This Contract constitutes the entire agreement of the parties. No other agreement, oral or written, pertaining to the Work to be performed under this Contract shall be of any force or effect unless it is in writing and signed by both parties. Any Work performed which is inconsistent with or in violation of the provisions of this Contract shall not be compensated.

b. Amendments to this Contract must be in writing and signed by both parties. The City Manager is authorized to execute amendments to this Contract up to the amounts specified in Chapter 3.08 of the Orange Municipal Code.

ARTICLE 18

Notice

Except as otherwise provided herein, all notices required under this Contract shall be in writing and delivered personally, by e-mail, or by first class mail, postage prepaid, to each party at the address listed below. Either party may change the notice address by notifying the other party in writing. Notices shall be deemed received upon receipt of same or within three (3) days of deposit in the U.S. Mail, whichever is earlier. Notices sent by e-mail shall be deemed received on the date of the e-mail transmission.

“CONTRACTOR”

Academy Electric, Inc.
864 South Winthrop Street
Orange, CA 92869
Attn: Donald B. Gentry

Telephone: 714-289-9143
E-Mail: don@academyelectric.net

“CITY”

City of Orange
300 E. Chapman Avenue
Orange, CA 92866-1591
Attn: Don Equitz

Telephone: 714-744-6464
E-Mail: dequitz@cityoforange.org

ARTICLE 19
Claim Resolution

City and Contractor agree that the claim resolution process applicable to any claim by Contractor in connection with the Work provided herein shall be subject to the procedures set forth in California Public Contract Code Section 9204, attached hereto as Attachment No. 2, and incorporated herein by this reference.

ARTICLE 20
Counterparts

This Contract may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Signatures transmitted via facsimile and electronic mail shall have the same effect as original signatures.

“CITY”

CITY OF ORANGE, a municipal corporation

By: _____
Mark A. Murphy
Mayor of the City of Orange

CONTRACT, BONDS AND INSURANCE
APPROVED BY:

ATTEST:

Mary E. Binning
Senior Assistant City Attorney

Pamela Coleman, City Clerk

“CONTRACTOR”

ACADEMY ELECTRIC, INC.,
a California corporation

[Note: Signature of Chairman of the Board, President or Vice President is required]

By: _____
Printed Name: _____
Title: _____

[Note: Signature of Secretary, Assistant Secretary, Chief Financial Officer or Assistant Treasurer is also required]

By: _____
Printed Name: _____
Title: _____

EXHIBIT “A”

**REQUEST FOR BIDS, CONTRACTOR’S BID AND
CONSTRUCTION PLANS**

[Behind this sheet.]



CITY OF ORANGE

COMMUNITY SERVICES DEPARTMENT www.cityoforange.org PHONE: (714) 744-7274 • FAX: (714) 744-7251

REQUEST FOR BID (RFB)
ELECTRICAL PANEL REPLACEMENT FOR MCPHERSON AND KILLEFER PARK
Bid No. 190-60

COMMUNITY SERVICES DEPARTMENT

230 E. Chapman Ave.
Orange, CA 92866
(714) 744-7274

Date: July 2, 2020

Project Name: Electrical Panel Replacement for McPherson Athletic Facility &
 Killefer Park

Location Address: **McPherson Athletic Facility- 333 S. Prospect Ave.,**
 Orange CA, 92869
 Killefer- 615 N. Lemon Street, Orange CA, 92867

Contact Name: Don Equitz Sr. Landscape Project Coordinator
Phone: 714-532-6464
E-Mail Address: dequitz@cityoforange.org

PROJECT DESCRIPTION: The City of Orange, CA, a Municipal Corporation, is requesting qualified Electrical Contractors to provide bids in accordance with specifications detailed within the approved plans prepared by **P2S Engineering** and within this RFB. All work shall also conform to City of Orange codes, ordinances and standards. The work will generally include:

Demolition/removal of the existing electrical panels/service equipment/vaults, provide temporary power during 'power outage' phase of project, installation of new concrete base and new electrical panels/service equipment/vaults and re connecting of electrical power at McPherson Athletic Facility and Killefer Park (see Attachment 2).

LEGAL NOTICE:

Formal sealed bids are being invited under our **Bid No. 190-60, Electrical Panel Replacement for McPherson Athletic Facility & Killefer Park** in accordance with bid forms and specifications available at the office of the City Purchasing Officer, 300 East Chapman Avenue, Orange, California, 92866, at no cost. The publication, "City of Orange Standard Plans and Specifications", latest edition and addendum(a) shall govern the work under this contract and a copy of the City publication is available at the office of the City Engineer at no cost.

The bidder selected by the City for the award of a contract for this Project must be properly licensed in accordance with the laws of the State of California as a General Engineering Contractor (Class A), General Building Contractor (Class B), or C-10 Electrical Contractor, at the time of submitting its bid. The City will reject the bid of a bidder as being non-responsive if the bidder does not hold the requisite contractor's license at the time of submitting its bid; such a bidder shall be subject to all legal penalties imposed by law, including, but not limited to, any appropriate disciplinary action by the Contractors' State License Board. In addition, each subcontractor listed by the bidder shall possess, both at the time of the award of a contract to the bidder and at all times when work is performed, a valid contractor's license for the appropriate classification necessary to perform the work for which that subcontractor is listed. Failure of the bidder to deliver evidence to the City prior to the award of a contract for this project that each and every subcontractor listed by the bidder is properly licensed for the classification necessary to perform the work for which that subcontractor is listed, shall constitute a failure to execute the contract and may subject the bidder to all legal penalties imposed by law, including, but not limited to, forfeiture of the security of the bidder.

GENERAL PROVISIONS:

1. **A job walk has been scheduled for Monday, July 20, 2020 at 9:00 a.m. Job Walk locations to be McPherson Athletic Facility (first stop) and then Killefer Park (second stop).**
2. NOTE: All electrical construction/installation work shall be performed accordance to all applicable codes listed within the approved plans and in adherence to the current edition of the CalTrans "Green Book" and the City of Orange Park Development Standards and Specifications.
3. The Contractor shall, at all times, carry valid insurance which meets all City of Orange insurance requirements as outlined in **Attachment No. 1**.
4. The Contractor shall be registered with Department of Industrial Relations (DIR), the State of California per Labor Code Section 177.1(a) at the time of bid. The Contractor shall pay prevailing wages per the current Department of Industrial Relations wage rate (including all scheduled increases) and furnish Certified Payroll Reports for all work days.
5. No new access points will be allowed within the boundaries/scope of this project. The Contractor is to prepare estimates for work based upon the existing ingress/egress into the park facility.
6. Working hours will be per City of Orange ordinance. Weekend work will only take place with permission from the City of Orange.
7. The contractor is responsible for carrying all pertinent licenses/permits for accomplishing this work.
8. Minimum California Contractors licenses required to bid on and perform work as described within this RFB:

1. (A) General Engineering Contractor.
2. (B) General Building Contractor.
3. C-10 Electrical Contractor.
9. If applies, the contractor shall be required to provide a \$1,500.00 deposit for use of a City water meter on a City fire hydrant, if required. Contractor shall be charged \$2.75/day for water meter rental and shall be responsible for all water charges associated with project. Consumption charge of \$2.59 per hundred cubic feet of water.
10. All vehicles used by the contractor are to be identified with door signs (approx. 20" x 16", magnetic sign okay) or equivalent with the company name and phone number. These need to be visible from both sides of said vehicle.
11. Uniforms: All of contractor's employees shall wear appropriate uniforms at all times while on duty. Uniforms must have the contractor's name.
12. Background/Security: All personnel engaged in performance of this work shall be employees of the contractor and as such shall be warranted to possess sufficient experience and security records to perform this work.

SCOPE OF WORK AND PROJECT SPECIFICATIONS PER APPROVED PLANS:

SITE PREPARATION:

1. Coordinate, orchestrate and provide the de-energizing of the existing electrical panels/service equipment.
2. Supply/provide temporary power supply for the Athletic Facility and/or Park during construction.
3. Supply all equipment and labor necessary for the demolition/removal of the existing electrical panels/service equipment and existing concrete base. All demolition materials are to be disposed off site at the expense of the Contractor.
4. Re-establish and provide new and/or amended/compacted sub grade (to 95% compaction) for the installation the new concrete base.
5. Supply/install new electrical panels/service equipment.
6. Re-energize new electrical panels/service equipment.
7. The contractor is responsible for making him/herself familiar with all existing site conditions at the work site within the boundaries detailed in the approved plans including, but not limited to, ingress/egress, soil, terrain, water supply and parking.
8. The contractor is to at all times during construction maintain/keep the job site in a safe condition. This will include, but not be limited to, the filling or covering of all exposed/open trenches or holes and securing all electrical equipment.
9. At the conclusion of each day's work, the Contractor shall remove all tools and equipment from the job site. The Contractor may arrange, with City staff, for a locked storage bin to be kept on site for tools and/or equipment storage.
10. Supply temporary barrier fencing during construction. Barrier fencing to be six feet tall chain link free standing type. Fencing to surround entire area of construction.

SPECIAL INSTRUCTIONS:

1. Contractor to submit a 10% Bid Bond with bid package.
2. This project requires a payment bond.
3. This project is subject to a 5% retention.

4. **The Contractor shall provide with this RFB a minimum of three (3) references** of commensurate/equal electrical work with cities and/or municipalities. References shall represent/include:
 - Work completed within the last five (5) years.
 - A description and location of said electrical work.
 - An approximate cost of said electrical work.
 - A contact person, email address and phone number to verify electrical work.
5. A detailed work schedule must be submitted with the RFB response and approved by the City of Orange prior to the beginning of work on this project. Work hours are between 7:00 a.m. to 4:00 p.m.
6. The City reserves the right to reject any contractor who they feel does not meet a qualifying work experience or satisfying references.
7. The City reserves the right to reject at any time any or all bids, or parts thereof, and to waive any variances, technicalities and informalities which do not impair the quality, or performance of the project.
8. Existing site amenities (e.g., building, fencing, sidewalks, curbs, landscape, etc.) are to be protected from all construction work. Any damage to any existing site amenities will be repaired or replaced at the contractor's expense to the satisfaction of the City of Orange.
9. All construction work per the approved plans is to be completed within **35 working days** from a Notice to Proceed (NTP) from the City of Orange. A 'working day' is considered to be Monday through Friday, excluding weekends, holidays and rain (weather related) delay days. Failure to complete all work as described within this bid request and the 35 working days will result in 'Liquidated Damages' being applied to the Contractor at a rate of \$400.00 per day.
- 10. All technical questions regarding RFB 190-60 are to be submitted by email to Don Equitz at dequitz@cityoforange.org, by July 23, 2020 by 2:00 p.m.**

TIME LINE (APPROXIMATE):

- | | |
|--|----------------------------------|
| 1. Job walk: | July 20, 2020, 2020 at 9:00 a.m. |
| 2. Deadline for questions regarding RFB: | July 23, 2020 by 2:00 p.m. |
| 3. Bids due: | August 6, 2020 by 2:00 p.m. |
| 4. Presentation to City Council: | October 13, 2020 |
| 5. Notice to Proceed (NTP): | TBD |
| 6. Work to be completed by: | 35 working days from NTP |

BID SUBMISSION INSTRUCTIONS:

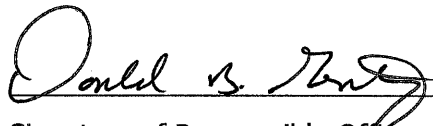
Bids must be submitted to the City Clerk at 300 E. Chapman Ave., Orange, CA 92866 by 2:00 p.m. on Thursday, August 6, 2020. Responses may be sent via U.S. Mail or delivered in person to the above address. Provide response to the above REQUEST FOR BIDS on attached bid sheets and return all pages of the Request for Bids, addenda (if applicable), bonds, schedule, and references. **Please provide three copies of bid packets.** Label submission packet: **RFB 190-60 Electrical Panel Replacement for McPherson Athletic Facility & Killefer Park.** Contact Natalie Favela for any questions related to bid submission at nfavela@cityoforange.org.

The City reserves the right to reject any and all **Bids** and any item on items therein, and to waive any non-conformity of **Bids** with this Request for Bids, whether of a technical or substantive nature, as the interest of the City may require.

**ELECTRICAL PANEL REPLACEMENT FOR MCPHERSON ATHLETIC FACILITY
& KILLEFER PARK**

BID SHEET

Date: August 6, 2020
 Bid Submitted by: Donald B. Gentry
 Company Name: Academy Electric, Inc.
 Address: 864 South Winthrop Street
Orange, California 92869
 Phone #: 714-289-9143
 E-mail Address: don@academyelectric.net
 Contact Name: Donald B. Gentry


 Signature of Responsible Officer or Employee

Donald B. Gentry
 Print Name

PROJECT

PROJECT NAME: Electrical Panel Replacement for McPherson Athletic Facility & Killefer Park
 Location Address: McPherson Athletic Facility- 333 S. Prospect Ave., Orange CA, 92869
 Killefer- 615 N. Lemon Street, Orange CA, 92867
 Contact Names: Don Equitz, Sr. Landscape Project Coordinator
 Phone Number: 714-532-6464
 E-Mail Address: dequitz@cityoforange.org

The stated bid amount below constitutes the total dollar amount to perform the work described in the above scope of services and to include all that is required to provide the work product and/or install all materials required to complete the work to a professional workmanship standard, and to install and apply all materials per the approved plans and all manufacturer's specifications and recommendations.

Contractor represents and warrants that it has thoroughly investigated and considered the scope of services and fully understands the difficulties and restrictions in performing the work. Contractor represents that it is experienced in performing the work and will follow professional standards in performance of the work. All services provided shall conform to all federal, state and local laws, rules and regulations and to the best professional standards and practices.

A. McPherson Athletic Facility Bid Amount: \$ 65,223⁰⁰

B. Killefer Park Bid Amount: \$ 125,737⁰⁰

Total Project Bid Amount: \$ 190,960⁰⁰

**Electrical Panel Replacement
For
McPherson Athletic Facility & Killefer Park**

LABOR PRICING

All bidders are required to provide the following itemized labor cost figures. These figures shall be used by the City for additions/deletions to the contract, extra work, or for payment adjustments. All itemized labor pricing shall include all comprehensive fees including, but not limited to, labor, overhead, profit and any additional fees.

Labor Pricing

1. General laborer	per hour	<u>\$ 90.00</u>
2. Foreman	per hour	<u>\$ 115.00</u>
3. Superintendent	per hour	<u>\$ 123.00</u>
4. Concrete finisher	per hour	<u>\$ 95.00</u>
5. Equipment operator	per hour	<u>\$ 105.00</u>
6. Electrician	per hour	<u>\$ 106.00</u>

Note: Contractor's extra material costs will be charged to the City of Orange at cost plus 15%.

CITY OF ORANGE

COMMUNITY SERVICES DEPARTMENT
 230 E. CHAPMAN AVENUE
 ORANGE, CALIFORNIA 92866-1591
 (714) 744-7274

Academy Electric, Inc.
 Company Name (Bidder)

TO THE CITY COUNCIL OF THE CITY OF ORANGE:

In compliance with the notice inviting bids, plans, specifications and other contract documents for the construction of **Bid No. 190-60; Electrical Panel Replacement for McPherson and Killefer Park**, the undersigned has carefully examined: the location of the proposed work, character, quality and quantity of work to be performed, conditions to be encountered, materials to be furnished and as to the requirements of the plans, specifications and other contract documents; agrees that submission of a proposal shall be considered prima facie evidence that the bidder has made such examination; and proposes to furnish all labor, materials, tools, and equipment necessary to complete the work in accordance with said plans, specifications and other contract documents at the following unit or lump sum prices set forth in the schedule.

If awarded the contract, the undersigned agrees to commence the work under the contract within fifteen (15) days after the date of contract, and complete said work within **thirty-five (35) calendar days** from the first day of commencement of such work unless legal extension is granted in accordance with the terms set forth in the specifications. If undersigned is awarded more than one zone, the work must be completed consecutively.

The undersigned agrees that the foregoing estimate of quantities of work to be done and materials to be furnished are approximate only, being given as basis for the comparison of bids.

The undersigned agrees that the City will not be held responsible if any of the approximate quantities shown in the foregoing proposal shall be found incorrect, and shall not make any claim for damages or for loss of profits because of a difference between the quantities of the various classes of work as estimated and the work actually done. If any error, omission or mis-statement shall be discovered in the estimated quantities, it shall not invalidate this contract or release the undersigned from the execution and completion of the whole or part of the work herein specified, in accordance with the specifications and the plans herein mentioned and the prices herein agreed upon and fixed therefore, or excuse him from any of the obligations or liabilities hereunder, or entitle him to any damages or compensation otherwise than as provided for in this contract.

The undersigned agrees that the City shall have the right to increase or decrease the quantity of any bid item or portion of the work or to omit portions of the work as may be deemed necessary or expedient, and that the payment for incidental items of work not separately provided in the proposal shall be considered included in the price bid for other various items of work.

Accompanying this proposal is "Bidder's Bond" (\$ 19,096.00)

NOTICE: Insert the words "Cash", "Certified Check", or "Bidder's Bond", as the case may be, in an amount equal to at least 10 percent of the total bid price, payable to the City of Orange to guarantee that the bidder will, if awarded the contract, promptly execute such contract in accordance with the

proposal and in the manner and form required by the contract documents, and will furnish good and sufficient bonds for the faithful performance of the same.

The undersigned deposits the above named security as a proposal guaranty and agrees that it shall be forfeited to the City of Orange as liquidated damages in case this proposal is withdrawn by the undersigned and the undersigned shall fail to execute a contract for doing said work and to furnish good and sufficient bonds in the form set forth in the specifications and contract documents of the City, with surety satisfactory to the City within 15 days after the bidder has received written notice of the award of the contract; otherwise, said security shall be returned to the undersigned.

Bidder hereby declares in writing, under penalty of perjury that all employees who will be performing labor, maintenance, delivery, installation or repair, will be those who are legally entitled to live and work in the United States. Further, the bidder as employer agrees to provide documentary proof of such eligibility (when requested by the City of any other authorized entity or agency).

Bids are to be submitted for the entire work. The bidder shall set forth for each unit basis item of work a unit price and a total for the item, and for each lump sum item a total for the item, all in clearly legible figures in the respective spaces provided for that purpose. In the case of unit basis items, the amount set forth under the "Item Total" column shall be the product of the unit price bid and the estimated quantity for the item. In case of discrepancy between the unit price and the total set forth for a unit basis item, the unit price shall prevail, except as provided in (a) or (b), as follows:

(a) If the amount set forth as a unit price is unreadable or otherwise unclear, or is omitted, or is the same as the amount as the entry in the item total column, then the amount set forth in the item total column for the item shall prevail and shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price;

(b) (Decimal Errors) If the product of the entered unit price and the estimated quantity is exactly off by a factor of ten, one hundred, etc., or one-tenth, or one-hundredth, etc. from the entered total, the discrepancy will be resolved by using the entered unit price or item total, whichever most closely approximates percentage wise the unit price or item total in the City of Orange Final Estimate of cost.

If both the unit price and the item total are unreadable or otherwise unclear, or are omitted, the bid may be deemed irregular. Likewise if the item total for a lump sum item is unreadable or otherwise unclear, or is omitted, the bid may be deemed irregular unless the project being bid has only a single item and a clear, readable total bid is provided.

Symbols such as commas and dollar signs will be ignored and have no mathematical significance in establishing any unit price or item total or lump sums. Written unit prices, item totals and lump sums will be interpreted according to the number of digits and, if applicable, decimal placement. Cents symbols also have no significance in establishing any unit price or item total since all figures are assumed to be expressed in dollars and/or decimal fractions of a dollar. Bids on lump sum items shall be item totals only; if any unit price for a lump sum item is included in a bid and it differs from the item total, the items total shall prevail.

The foregoing provisions for the resolution of specific irregularities cannot be so comprehensive as to cover every omission, inconsistency, error or other irregularity which may occur in a bid. Any situation not specifically provided for will be determined in the discretion of the City of Orange, and that discretion will be exercised in the manner deemed by the City of Orange, to best protect the public interest in the prompt and economical completion of the work. The decision of the City of Orange respecting the amount of a bid, or the existence or treatment of an irregularity in a bid, shall be final.

Bond No. N/A

**CALIFORNIA PUBLIC WORKS
BID BOND**

TO WHOM IT MAY CONCERN:

WE, Academy Electric, Inc. (CONTRACTOR) as Principal, and United Surety Insurance Company (SURETY), a Corporation organized and existing under the laws of the State of Nebraska and authorized to transact business in the State of California, as Surety, are held and firmly bound unto the **CITY OF ORANGE**, hereinafter called the Obligee, for the penal sum of **Ten Percent (10%) of the Amount of the Bid** as described herein and we each of us bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, by this Bid Bond.

WHEREAS, the Principal is herewith submitting a bid for
Bid No. 190-60; Electrical Panel Replacement for McPherson and Killefer Park

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH that if the Principal shall be awarded the contract, and the Principal does within the period specified therefor, or, if no period be specified, within ten (10) days after the notice of such award, enter into a contract and give bond or bonds as specified in the bidding or contract documents with good and sufficient surety of adequate financial size category rating acceptable to the Obligee for the faithful performance of the contract and for the prompt payment of labor and material furnished in the prosecution thereof, then this obligation shall be null and void. Otherwise the Principal and the Surety will pay to the Obligee the difference in money between the amount of the bid of the Principal and the amount for which the Obligee may legally contract with another party to perform the work if the latter amount be in excess of the former. In no event shall the liability hereunder exceed the penal sum hereof.

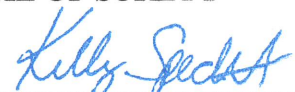
SIGNED AND SEALED this 30th day of July, 2020.

Academy Electric, Inc.**CONTRACTOR**

BY: 
SECRETARY/TREASURER

BY: 
PRESIDENT/VICE PRESIDENT

United Surety Insurance Company**NAME OF SURETY**

BY: 
ATTORNEY-IN-FACT
Kelly A. Specht

NOTARY ACKNOWLEDGEMENTS ATTACHED

California All-Purpose Certificate of Acknowledgment

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

County of Orange

} S.S.

On July 30, 2020 before me, Bethany Mercer, Notary Public,
Name of Notary Public, Title

personally appeared Kelly A. Specht
Name of Signer (1)

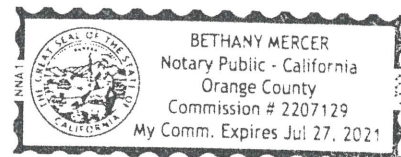
N/A
Name of Signer (2)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(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]
Signature of Notary Public



Seal

OPTIONAL INFORMATION

Although the information in this section is not required by law, it could prevent fraudulent removal and reattachment of this acknowledgment to an unauthorized document and may prove useful to persons relying on the attached document.

Description of Attached Document

The preceding Certificate of Acknowledgment is attached to a document titled/for the purpose of Bid Bond

containing 1 pages, and dated July 30, 2020

The signer(s) capacity or authority is/are as:

- ☐ Individual(s)
☒ Attorney-in-fact
☐ Corporate Officer(s) _____
Title(s)

- ☐ Guardian/Conservator
☐ Partner - Limited/General
☐ Trustee(s)
☐ Other: _____

representing: United Surety Insurance Company
Name(s) of Person(s) Entity(ies) Signer is Representing

Additional Information

Method of Signer Identification

Proved to me on the basis of satisfactory evidence:

- ☐ form(s) of identification ☐ credible witness(es)

Notarial event is detailed in notary journal on:

Page # _____ Entry # _____

Notary contact: _____

Other

- ☐ Additional Signer ☐ Signer(s) Thumbprints(s)

☐ _____



UNITED CASUALTY AND SURETY INSURANCE COMPANY
 US Casualty and Surety Insurance Company
 United Surety Insurance Company

POWER OF ATTORNEY

Agency No. 171372

KNOW ALL MEN BY THESE PRESENTS: That United Casualty and Surety Insurance Company, a corporation of the State of Nebraska, and US Casualty and Surety Insurance Company and United Surety Insurance Company, assumed names of United Casualty and Surety Insurance Company (collectively, the Companies), do by these presents make, constitute and appoint:

Kelly A. Specht, Kandis Gregory, Richard P. Ford, Thomas C. Buckner, Michael Herranen, Bethany Mercer

its true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver any and all bonds, recognizances, undertakings or other instruments or contracts of suretyship to include riders, amendments, and consents of surety. This Power of Attorney shall expire without further action on December 31st, 2023.

This Power of Attorney is granted under and by authority of the following resolutions adopted by the Board of Directors of the Companies at a meeting duly called and held on the 1st day of July, 1993:

Resolved that the President, Treasurer, or Secretary be and they are hereby authorized and empowered to appoint Attorneys-in-Fact of the Company, in its name and as its acts to execute and acknowledge for and on its behalf as Surety any and all bonds, recognizances, contracts of indemnity, waivers of citation and all other writings obligatory in the nature thereof, with power to attach thereto the seal of the Company. Any such writings so executed by such Attorneys-in-Fact shall be binding upon the Company as if they had been duly executed and acknowledged by the regularly elected Officers of the Company in their own proper persons.

That the signature of any officer authorized by Resolutions of this Board and the Company seal may be affixed by facsimile to any power of attorney or special power of attorney or certification of either given for the execution of any bond, undertaking, recognizance or other written obligation in the nature thereof; such signature and seal, when so used being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed and their corporate seals to be hereunto affixed, this 1st day of August, 2019.



UNITED CASUALTY AND SURETY INSURANCE COMPANY
 US Casualty and Surety Insurance Company
 United Surety Insurance Company

Joel R. Chachkes, Treasurer

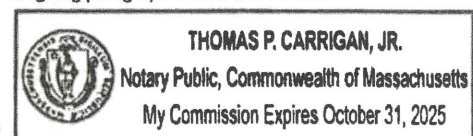
Corporate Seals

Commonwealth of Massachusetts
 County of Suffolk ss:

On this 1st day of August, 2019, before me, Thomas P. Carrigan, Jr., a notary public, personally appeared Joel R. Chachkes, Treasurer of United Casualty and Surety Insurance Company, US Casualty and Surety Insurance Company and United Surety Insurance Company, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person(s), or the entity on behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the Commonwealth of Massachusetts that the foregoing paragraph is true and correct.
 WITNESS my hand and seal.

(Seal)
 Thomas P. Carrigan, Jr., Notary Public Commission Expires: 10/31/2025



I, Robert F. Thomas, Chief Operating Officer of United Casualty and Surety Insurance Company, US Casualty and Surety Insurance Company and United Surety Insurance Company do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney, executed by said Companies, which is still in full force and effect; furthermore, the resolutions of the Board of Directors, set out in the Power of Attorney are in full force and effect.

In Witness Whereof, I have hereunto set my hand and affixed the seals of said Companies at Boston, Massachusetts this 30th day of

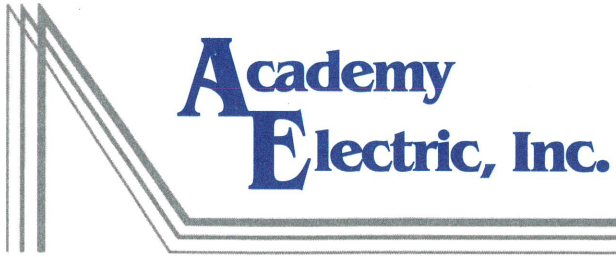
July, 2020.

Corporate Seals



Robert F. Thomas, Chief Operating Officer

TO CONFIRM AUTHENTICITY OF THIS BOND OR DOCUMENT EMAIL: CONFIRMBOND@UNITEDCASUALTY.COM



License No. C-10 662841

Bid Clarifications

RFB 190-60

1. Addendum #1 included.
2. Delivery of new Square D switchboards is 16 to 20 weeks from receipt of approved submittals.
3. Project "actual" construction start will be three weeks before scheduled delivery date of new switchboards.



CITY OF ORANGE

COMMUNITY SERVICES DEPARTMENT www.cityoforange.org

PHONE: (714) 744-7274 • FAX: (714) 744-7251

ADDENDUM #1

For Request for Bid (RFB) Bid No. 190-60

Electrical Panel Replacement for McPherson and Killefer Park

July 27, 2020

This addendum serves as written notice of the following corrections, clarifications, additions and/or deletions to any and all copies of the Request for Bid (Bid No. 190-60).

Job Walk Comments:

- The engineer's estimate for this project is \$160,000.
- City permits are required for this job, but the associated fees will be waived for this project.
- The allotted number of working days for this project may be adjusted, upon approval of the City Representative, based on delays in ordering special parts, scheduling inspections, and equipment rentals.

Regarding Submitted Questions:

- 1. Are there as built drawings for underground conduits associated with McPherson Park and Killefer Park?**
 - The City has the original electrical plan sets for both Parks. Said plans are not 'red lined' as built plan sets. The assumptions are that conduits are installed per existing plan set.
- 2. During construction/demo phase, there will be time when power is completely shut down while cutting over from permanent power to temporary power. What is the maximum allowable time for an outage?**
 - 24 hours.

- 3. Page 4 note 9 of "special instructions" of bid documents states work completed to be "35 working days", while page 7, paragraph 2 states "35 calendar days". Please clarify if contract time is defined as working days or calendar days.**
 - Working days.
- 4. What type of backfill/encasement is required over new underground conduits? If concrete encasement is required, please provide a concrete design specification.**
 - No encasement is required.
- 5. Will there be any costs (Utility Fees) related to SCE and if so will the City will cover these fees?**
 - Any subsequent fees imposed by SCE are the responsibility of the Contractor. The City will not cover said fees.
- 6. Can we quote other switchboard manufacturers besides Square D shown on the drawings?**
 - No.
- 7. Normal delivery dates for new switchboards (after submittals have been approved) is 5 to 8 weeks. Will the 35 working day schedule be extended to allow for switchboard delivery without liquidated damages?**
 - Yes.

Respectfully Submitted,

Don Equitz
Sr. Landscape Project Coordinator
dequitz@cityoforange.org
714-532-6464

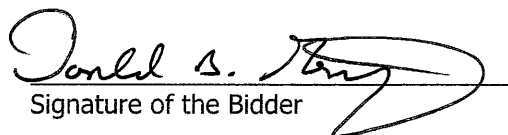
LIST OF SUBCONTRACTS

- A. ☒ The undersigned intends to subcontract a portion of this project to the following subcontracts (Note: Refer to Section 2.3 of the Standard Specifications and Section 4100 through 4113 of the California Contract Code for SUBCONTRACT DISCLOSURE REQUIREMENTS).

NAME OF SUBCONTRACTOR AND ADDRESS	LICENSE NO.	BID ITEM NUMBER(s)	PERCENT OF BID ITEM SUBBED	CHECK IF SPECIALTY	DESCRIBE WORK WHEN LESS THAN 100% OF WORK IS SUBBED	\$ AMOUNT BASED ON BID AMOUNT
Asplundh Const.	1028802	#3	100%	✓	Concrete Pad	\$ 35,834 ⁰⁰
1428 N. Lemon Street		↓	↓	✓	Removal / Replace	↓
Anaheim, CA. 92801				✓	Excavation / Backfill	
DIR#1000052788						

- B. ☐ The undersigned DOES NOT INTEND to subcontract any portion of this project.

NOTE: The bidder shall check Box A or B as applicable. If the bidder does not check either box, it will be deemed that he has checked Box B.


Signature of the Bidder

PUBLIC CONTRACT CODE

Public Contract Code Section 10285.1 Statement

In conformance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the bidder hereby declares under penalty of perjury under the laws of the State of California that the bidder has ____, has not ☒ been convicted

within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or Federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

Note: The bidder must place a check mark after "has" or "has not" in one of the blank spaces provided. The above Statement is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Statement. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

Public Contract Code Section 10162 Questionnaire

In conformance with Public Contract Code Section 10162, the Bidder shall complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

Yes ____ No ☒

If the answer is yes, explain the circumstances in the following space.

Public Contract Code 10232 Statement

In conformance with Public Contract Code Section 10232, the Contractor, hereby states under penalty of perjury, that no more than one final unappealable finding of contempt of court by a federal court has been issued against the Contractor within the immediately preceding two year period because of the Contractor's failure to comply with an order of a federal court which orders the Contractor to comply with an order of the National Labor Relations Board.

Note: The above Statement and Questionnaire are part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Statement and Questionnaire. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

Non-collusion Affidavit

(Title 23 United States Code Section 112 and
Public Contract Code Section 7106)

To the CITY OF ORANGE – DEPARTMENT OF COMMUNITY SERVICES

In conformance with Title 23 United States Code Section 112 and Public Contract Code 7106 the bidder declares that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that 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, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that 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, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Note: The above Non-collusion Affidavit is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Non-collusion Affidavit.

Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

DEBARMENT AND SUSPENSION CERTIFICATION

TITLE 49, CODE OF FEDERAL REGULATIONS, PART 29

The bidder, under penalty of perjury, certifies that, except as noted below, he/she or any other person associated therewith in the capacity of owner, partner, director, officer, manager:

- is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal agency;
- has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal agency within the past 3 years;
- does not have a proposed debarment pending; and
- has not been indicted, convicted, or had a civil judgement rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space.

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Notes: Providing false information may result in criminal prosecution or administrative sanctions. The above certification is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Certification.

The undersigned bidder hereby represents as follows:

That no Councilman, officer, agent, or employee of the City of Orange, is personally interested, directly or indirectly, in the Contract, or the compensation to be paid hereunder:

That this bid is made without connection with any person, firm or corporation making a bid for the same work, and is in all respects fair, and without collusion or fraud.

By my signature on this proposal I certify, under penalty of perjury under the laws of the State of California, that the foregoing questionnaire and statements of Public Contract Code Sections 10162, 10232 and 10285.1 are true and correct and that the bidder has complied with the requirements of Section 8103 of the Fair Employment and Housing Commission Regulations (Chapter 5, Title 2 of the California Administrative Code). By my signature on this proposal I further certify, under penalty of perjury under the laws of the State of California and the United States of America, that the Noncollusion Affidavit required by Title 23 United States Code, Section 112 and Public Contract Code Section 7106; and the Title 49 Code of Federal Regulations, Part 29 Debarment and Suspension Certification are true and correct.

Date: August 6, 2020

Sign



Here

Donald B. Gentry

Donald B. Gentry

Vice-President

Signature and Title of Bidder

(If an individual, so state. If a firm or co-partnership, state the firm name and give the names of all individual co-partners composing the firm. If a corporation, state legal name of corporation, also names of President, Secretary, Treasurer and Manager thereof).

NAME OF BIDDER Academy Electric, Inc.

BUSINESS P.O. BOX P.O. Box 2364

CITY, STATE, ZIP Orange, California 92859

BUSINESS STREET ADDRESS 864 South Winthrop Street

CITY, STATE, ZIP Orange, California 92869 (Please include even if P.O. Box is used)

PLACE OF BUSINESS (Include City & State) 864 S. Winthrop St. - Orange, CA. 92869

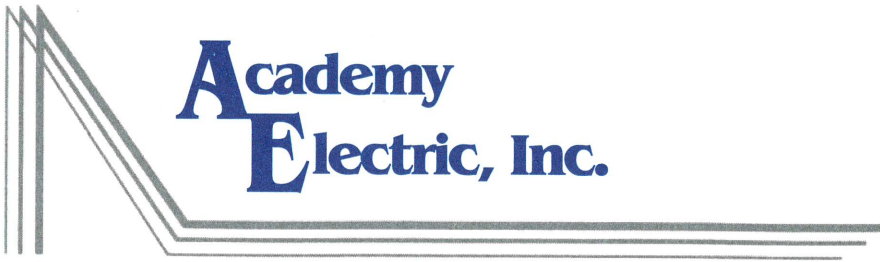
PLACE OF RESIDENCE (Include City & State) 864 S. Winthrop St. - Orange, CA. 92869

Telephone No. (714) 289-9143 Fax No. (714) 289-9743

Licensed in accordance with an Act providing for the registration of Contractors.

LICENSE NUMBER 662841

LICENSE CLASS C-10



License No. C-10 662841

References

RFB 190-60

2018

City of Orange

"Yorba Park Electrical Improvements"

Contract Amount: \$117,563.00

Project Manager: Don Equitz

Phone: 714-532-6464

Cell: 714-438-9617

Email: dequitz@cityoforange.org

2020

City of Anaheim

"Modjeska Park 12KV Service and Switchboard Replacement"

Contract Amount: \$234,636.00

Project Manager: Sean Saxton

Phone: 714-936-6809

Cell: 714-936-4272

Email: ssaxton@anaheim.net

2020-2021

City of Anaheim

"ARMD Electrical Maintenance and Repairs"

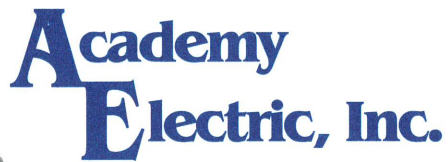
Annual Contract Amount: \$120,833.36

Project Manager: Mike Leggett

Phone: 714-765-6934

Cell: 714-620-6073

Email: mleggett@anaheim.net



License No. C-10 662841

Construction Schedule

RFB 190-60

Week #1	1. Finalize and receive contract and/or purchase order.
	2. Obtain electrical permit.
	3. Obtain SCE work order.
Week #2	4. Submit switchboard drawings to city engineer and SCE for approval.
	5. Approve switchboard construction after receipt of "approved" drawings.
	6. Confirm "Lead Time" of 16 to 20 weeks for switchboards.
Week #3	Note: This week will start three weeks before the delivery of the switchboards.
	7. Install temporary construction fencing.
	8. Circuit and conduit identifications at project site.
	9. Excavate and expose underground conduits.
	10. Deliver concrete pull boxes to job site.
	11. Job site coordination meeting with SCE inspector.
	12. Schedule outage with SCE and City of Orange.
Week #4	13. Receive temporary generator and set in place.
	14. Power outage.
	15. Remove existing switchboard to temporary location.
	16. Connect generator to temporary switchboard and connect circuits temporarily through new pull boxes.
	17. Demolish existing concrete pad and remove existing underground conduits.
	18. Install new underground conduits.
	19. Install new grounding grid system.
	20. Form and pour new pad.
Week #5	21. Set new switchboard, install new wires, make all connections.
	22. City and SCE inspections.
	23. Re-energize system / Test & Check!

RFB 190-60: ATTACHMENT 1
ELECTRICAL PANEL REPLACEMENT FOR MCPHERSON ATHLETIC FACILITY &
KILLEFER PARK
Sample Liability Insurance

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

Coverage shall be at least as broad as:

1. Insurance Services Office Commercial General Liability coverage (occurrence Form CG 00 01).
2. Insurance Services Office Form Number CA 00 01 covering Automobile Liability, code 1 (any auto).
3. Workers' Compensation insurance as required by the State of California and Employer's Liability Insurance.

Contractor shall maintain limits no less than:

- | | | |
|---------------------------|-------------|--|
| 1. General Liability: | \$2,000,000 | per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit. |
| 2. Automobile Liability: | \$1,000,000 | per accident for bodily injury and property damage. |
| 3. Workers' Compensation: | | As required by the State of California. |
| 4. Employer's Liability: | \$1,000,000 | per accident for bodily injury or disease. |

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, its officers, officials and employees; or the Contractor shall provide a financial guarantee satisfactory to the City guaranteeing payment of losses and related investigations, claim administration, and defense expenses.

Each policy of general liability and automotive liability insurance shall contain, or be endorsed to contain, the following provisions:

1. The City, its officers, officials, agents and employees are to be covered 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. General Liability coverage shall be provided in the form of an Additional Insured Endorsement, or such other form as may be acceptable to the City, to the Contractor's insurance policy, or as a separate owner's policy.

2. For any claims related to this project, the Contractor's insurance coverage shall be primary insurance as respects the City, its officers, officials and employees. Any insurance or self-insurance maintained by the City, its officers, officials and employees shall be excess of the Contractor's insurance and shall not contribute with it.

3. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be canceled by either party, except after thirty (30) days' prior written notice has been provided to the City

The Contractor shall furnish the City with original certificates of insurance and endorsements effecting coverage required by this clause. The endorsements should be on forms acceptable to City. All certificates and endorsements are to be received and approved by the City before work commences. However, failure to do so shall not operate as a waiver of these insurance requirements. The City reserves the right to require complete, certified copies of all required insurance policies, including endorsements effecting the coverage required by these specifications at any time.

All insurance procured and maintained by the Contractor shall be issued by insurers admitted to conduct the pertinent line of insurance business in the State of California and having a rating of Grade A or better and Class VII or better by the latest edition of Best's Key Rating Guide.

Contractor shall immediately notify the City if any required insurance lapses or is otherwise modified and cease performance of this Agreement unless otherwise directed by the City. In such a case, the City may procure insurance or self-insure the risk and charge Contractor for such costs and any and all damages resulting therefrom, by way of set-off from any sums owed Contractor.

Contractor hereby agrees to waive subrogation, which any insurer of the Contractor may acquire from the Contractor by virtue of the payment of any loss. The Contractor agrees to obtain any endorsement that may be necessary to effect this waiver of subrogation.

The Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of the City for all work performed by the Contractor, its employees, agents and subcontractors.

The Contractor shall require and verify that all subcontractors maintain insurance meeting all of the requirements stated herein.

RFB 190-60: Attachment 2
Plan Sets and Calculations for Killefer and McPherson Parks

[Behind this page.]

LEGEND

SYMBOL	DESCRIPTION
	NOTE CALLOUT
	DETAIL CALLOUT - NUMBER ON TOP DENOTES DETAIL NUMBER - NUMBER ON BOTTOM DENOTES SHEET DETAIL IS SHOWN
	NEW LINework
	EXISTING LINework
	DEMOLISHED LINework
	CONDUIT CONCEALED IN WALL OR ABOVE CEILING
	CONDUIT TURNED UP
	CONDUIT CONCEALED UNDERGROUND OR BELOW FLOOR
	BRANCH CIRCUIT HOMERUN TO PANELBOARD AND CIRCUITS AS INDICATED
	CIRCUIT BREAKER
	SWITCH
	GROUND CONNECTION
	METER
	JUNCTION BOX
	SINGLE POLE SWITCH
	SWITCH 3-WAY
	THERMOSTAT

ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
1/C	SINGLE CONDUCTOR	KVA	KILOVOLT-AMPERES
&	AND	KW	KILOWATT
@	AT	LF	LINEAR FEET
A OR AMP	AMPERES	LS	LOAD INTERRUPTER SWITCH
ABV	ABOVE	LOC	LOCATION
A.C.	ASPHALT CONCRETE	LTG	LIGHTING
AFF	ABOVE FINISHED FLOOR	LV	LOW VOLTAGE
AFG	ABOVE FINISH GRADE	MAX	MAXIMUM
AIC	AMPERE INTERRUPTING CAPACITY	MCC	MOTOR CONTROL CENTER
AL	ALUMINUM	MCP	MOTOR CIRCUIT PROTECTOR
APPROX.	APPROXIMATE	MFG	MANUFACTURER
ARCH.	ARCHITECT	MH	MANHOLE
ATC	AIR TERMINAL CHAMBER	MI	MECHANICAL INTERLOCK
ATS	AUTOMATIC TRANSFER SWITCH	MRCT	MULTI-RATIO CURRENT TRANSFORMER
AUTO	AUTOMATIC	MTD	MOUNTED
AUX	AUXILIARY	MTG	MOUNTING
AWG	AMERICAN WIRE GAUGE	MV	MEDIUM VOLTAGE
BAT	BATTERY	N	NORTH
BEL	BELOW	NAC	NOTIFICATION APPLIANCE CIRCUIT
BKBD	BACKBOARD	NC	NORMALLY CLOSED
BKR	BREAKER	NEC	NATIONAL ELECTRICAL CODE
BLDG	BUILDING	NF	NON-FUSED
B.S.	BARE STRANDED	NIC	NOT IN CONTRACT
C	CONDUIT	NL	NIGHT LIGHT- 24HRS ON
CB	CIRCUIT BREAKER	NO	NUMBER
CC	CONSTANT CURRENT	OC	ON CENTER
CKT	CIRCUIT	OD	OUTSIDE DIAMETER
CL	CENTER LINE	OE	OVERHEAD ELECTRICAL
CLG	CEILING	OFC	OIL FUSED CUTOUT
CMU	CONCRETE MASONRY UNIT	OH	OVERHEAD
C.O.	CONDUIT ONLY WITH PULL WIRE	OL	OIL LEVER SWITCH
COL	COLUMN	P	POLE
CP	COMMUNICATION PROCESSOR	PB	PULL BOX
CPT	CONTROL POWER TRANSFORMER	PC	PHOTOCELL
CR	CONTROL RELAY	PCB	POLYCHLORINATED BIPHENYL
CSU	CALIFORNIA STATE UNIVERSITY	PDS	PRESSURE DIFFERENTIAL SWITCH
CSFD	COMBINATION SMOKE FIRE DAMPER	PF	POWER FACTOR
CT	CURRENT TRANSFORMER	PH OR Ø	PHASE
CW	COLD WATER	PLC	PAPER INSULATED, LEAD COVER
CJ	CORPUS INDICATING VALVE	PL	PLATE
DIAG	DIAGRAM	PNL	PANEL
DL	DAMP LOCATION LISTING	POC	POINT OF CONNECTION
DM	DIGITAL METER	PRI	PRIMARY
DP	DISTRIBUTION PANEL	PVC	POLY-VINYL CHLORIDE
DIST.	DISTANCE	PWR	POWER
DWG	DRAWING	REC/RECEPT	RECEPTACLE
DWP	DEPARTMENT OF WATER & POWER	REQD	REQUIRED
EA	EACH	RGS	RIGID GALVANIZED STEEL
ELEC.	ELECTRICAL	REB	REDUCED PRESSURE BACK FLOW
EMH	ELECTRICAL MANHOLE	PREVENTER	PREVENTER
EMT	ELECTRICAL METALLIC TUBING	RM	ROOM
EPO	EMERGENCY POWER OFF	SCE	SOUTHERN CALIFORNIA EDISON
EPR	ETHYLENE PROPYLENE RUBBER	SF	SQUARE FEET
EQUIP	EQUIPMENT	SHT	SHEET
EXIST/(E)	EXISTING	SIG.	SIGNAL
EXP	EXPLOSION PROOF	SP	SPARE
FA	FIRE ALARM	SPECS	SPECIFICATIONS
FFE	FINISHED FLOOR ELEVATION	ST	STREET
FIN.	FINISH	STD	STANDARD
FIP	FIELD INTERFACE PANEL	SW	SWITCH
FIXT	FIXTURE	SWBD	SWITCHBOARD
FLA	FULL LOAD AMPS	SWGR	SWITCHGEAR
FLR	FLOOR	SWST	SWITCHING STATION
FLUOR	FLUORESCENT	TB	TERMINAL BLOCK
FT	FEET	TEL/TELE	TELEPHONE
FACP	FIRE ALARM CONTROL PANEL	TMH	TELEPHONE MANHOLE
FATC	FIRE ALARM TERMINAL CABINET	T.O.D.	TOP OF DUCTBANK
FO	FIBER OPTIC	T.O.M.	TOP OF MANHOLE
FTG	FOOTING	TIS	TWISTED SHIELDED PAIR
GFI	GROUND FAULT INTERRUPTER	TRANSF/XFMR	TRANSFORMER
GFR	GROUND FAULT RELAY	TS	TAMPER SWITCH
GG	GREEN GROUND	TYP	TYPICAL
GND	GROUND	UG	UNDERGROUND
HOA	HAND-OFF-AUTOMATIC	UON	UNLESS OTHERWISE NOTED
HP	HORSEPOWER	V	VOLTS
HT	HEIGHT	VA	VOLT-AMPERES
ISC	SHORT CIRCUIT CURRENT	W/	WITH
JB	JUNCTION BOX	WP	WEATHERPROOF
		WR	WEATHER RESISTANT
KMIL	THOUSAND CIRCULAR MILS	Z	IMPEDANCE
KV	KILOVOLT		

IN THE EVENT ABBREVIATIONS NOT MENTIONED HEREIN ARE USED, REFERENCE WILL BE MADE TO ANSI Y1.1, MILITARY STANDARD ABBREVIATIONS, AND OTHER STANDARD INDUSTRY CONVENTIONS.

SUGGESTED ORDER OF CONSTRUCTION

- TRACE, IDENTIFY, LABEL, AND DOCUMENT EXISTING FEEDER AND BRANCH CIRCUIT LOADS, ROUTING, AND TERMINATION LOCATIONS. PROVIDE DOCUMENTATION TO CITY REPRESENTATIVE. CONFIRM LOADS NO LONGER IN SERVICE WITH CITY REPRESENTATIVE.
- COORDINATE CONSTRUCTION WITH SOUTHERN CALIFORNIA EDISON. CALL SANTA ANA SERVICE PLANNING OFFICE AT (714) 973-5653.
- PREPARE FOR TEMPORARY GENERATOR INSTALLATION:
 - LOCATE EXISTING UNDERGROUND FEEDER AND BRANCH CIRCUIT CONDUITS TEN FEET FROM EXISTING SERVICE LOCATION.
 - LOCATE EXISTING UNDERGROUND IRRIGATION CONDUCTOR CONDUITS TEN FEET FROM EXISTING SERVICE EQUIPMENT LOCATION. NOTIFY CITY REPRESENTATIVE OF SPRINKLER CONFLICTS AND RELOCATION REQUIREMENTS.
 - EXCAVATE AND PREPARE FOR IN-GRADE PULLBOX INSTALLATIONS AT LOCATED CONDUIT LOCATIONS.
 - PROVIDE 400A, 480/277V, 3P, 4W, NEMA 3R, TEMPORARY SWITCHBOARD; 25KVA, 480-240/120V, 1P, 3W, NEMA 3R TRANSFORMER; 100A, 480/277V, 3P, 4W, NEMA 3R, AND 125A, 240/120V, PANELS; LIGHTING TIME CLOCKS; LIGHTING RELAYS; IRRIGATION TIME CLOCKS; IRRIGATION TRANSFORMER; AND ADDITIONAL EQUIPMENT AND MATERIALS AS NECESSARY TO MAINTAIN OPERATION OF THE FACILITY DURING CONSTRUCTION.
 - PROVIDE TEMPORARY FENCING AND SECURITY SCREENING AROUND CONSTRUCTION AREA.
 - PROVIDE PROTECTION OF TEMPORARY CABLES AT CONSTRUCTION PATHWAYS.
 - PROVIDE TEMPORARY 20A, 120V, POWER FOR CONSTRUCTION.
 - PROVIDE MOTION ACTIVATED SECURITY LIGHTING OF CONSTRUCTION AREA.
- PROVIDE 350KW, 480/277V, 3P, 4W, SCAQMD TIER 4 RATED, TEMPORARY GENERATOR WITH SOUND ATTENUATED ENCLOSURE AND 24-HOUR FUEL SUPPLY.
- SCHEDULE REFUELING TIMES AND COORDINATE WITH CITY REPRESENTATIVE.
- INTERCEPT AND REROUTE EXISTING FEEDER, BRANCH CIRCUIT, AND IRRIGATION CONDUITS AND CONDUCTORS TO IN-GRADE PULL BOX LOCATIONS. INSTALL TRAFFIC RATED IN-GRADE PULL BOXES. PROTECT EXISTING CONDUCTORS FOR REUSE AND EXTENSION TO NEW EQUIPMENT.
- ROUTE TEMPORARY CABLE CONNECTIONS FROM IN-GRADE PULL-BOXES TO TEMPORARY SWITCHBOARDS, PANELBORDS, AND TIME CLOCKS.
- DEMOLISH EXISTING SWITCHBOARD AND CONCRETE PAD. PROTECT EXISTING UTILITY FEEDER CONDUIT AND CONDUCTORS FOR REUSE.
- INSTALL GROUNDING ELECTRODE SYSTEM AND ROUTE TO SERVICE EQUIPMENT LOCATION.
- EXTEND EXISTING UTILITY FEEDER CONDUIT TO 3 INCHES ABOVE THE NEW CONCRETE SERVICE EQUIPMENT PAD HEIGHT.
- EXTEND CONDUITS FROM IN-GRADE PULL-BOXES TO NEW SERVICE PAD. PROVIDE SPARE CONDUITS.
- PROVIDE NEW CONCRETE SERVICE EQUIPMENT PAD.
- INSTALL NEW SERVICE EQUIPMENT.
- PROVIDE TESTING OF SERVICE EQUIPMENT PER NETA ATS STANDARDS. TEST EXISTING FEEDER AND BRANCH CIRCUIT CONDUCTORS PER NETA ATS STANDARDS. PROVIDE COPY OF STANDARDS TO CITY REPRESENTATIVE FOR REVIEW. DISCONNECT AND ISOLATE LINE AND LOAD CONDUCTOR TERMINATIONS PRIOR TO TESTING. NOTIFY CITY REPRESENTATIVE OF TESTING RESULTS AND RECOMMENDATIONS.
- EXTEND EXISTING FEEDER, BRANCH CIRCUIT, AND IRRIGATION CONDUCTORS FROM IN-GRADE PULL-BOXES TO NEW SERVICE AND DISTRIBUTION EQUIPMENT AND TERMINATE. PROVIDE WATER PROOF SPLICES TO EXISTING CONDUCTORS WITHIN IN-GRADE PULL-BOXES. PROVIDE HIGH-PRESSURE SPLICES FOR CONDUCTORS 6 AWG AND LARGER.
- PROVIDE SEALANT AROUND SERVICE EQUIPMENT BASE AT CONCRETE.
- OBTAIN CITY INSPECTION AND SERVICE RELEASE TO ENERGIZE. NOTIFY SCE REPRESENTATIVE.
- ENERGIZE NEW SERVICE.
- TURN OVER PROJECT DOCUMENTATION AND PROVIDE OPERATIONAL TRAINING TO CITY REPRESENTATIVES.
- CLOSEOUT.

SCOPE OF WORK:

- PROVIDE TEMPORARY POWER DURING CONSTRUCTION.
- REPLACE EXISTING CONCRETE SERVICE PAD.
- REPLACE EXISTING SERVICE EQUIPMENT.

GENERAL NOTES

- WORK SHALL COMPLY WITH THE 2016 EDITION OF THE CALIFORNIA ELECTRICAL CODE AND OTHER APPLICABLE FEDERAL, STATE, AND LOCAL AGENCY CODES. WHERE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS, THE CONSTRUCTION DOCUMENTS SHALL GOVERN BUT THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE OR REGULATION.
 - 2015 IBC AND 2016 CALIFORNIA AMENDMENTS
(2016 CALIFORNIA BUILDING CODE - PART 2, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR))
2014 NEC AND 2016 CALIFORNIA AMENDMENTS
(2016 CALIFORNIA ELECTRICAL CODE (CEC) - PART 3, TITLE 24, CCR)
2015 UMC AND 2016 CALIFORNIA AMENDMENTS
(2016 CALIFORNIA MECHANICAL CODE - PART 4, TITLE 24, CCR)
2015 UPC AND 2016 CALIFORNIA AMENDMENTS
(2016 CALIFORNIA PLUMBING CODE - PART 5, TITLE 24, CCR)-(PUBLISHER:INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS (IAPMO))
2015 IFC AND 2016 CALIFORNIA AMENDMENTS
(2016 CALIFORNIA FIRE CODE - PART 9, TITLE 24, CCR)
- APPLICABLE CODES:
 - AMERICAN SOCIETY OF TESTING MATERIALS (ASTM)
 - INSULATED POWER CABLE ENGINEERS ASSOCIATION (IPCEA)
 - NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
 - AMERICAN STANDARD ASSOCIATION (ASA)
 - NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
 - AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
 - CALIFORNIA CODE OF REGULATIONS TITLE 24 (CCR)
 - INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
 - ILLUMINATION ENGINEERING SOCIETY OF NORTH AMERICA (IESNA)
- COMPLY WITH THE MOST STRINGENT REQUIREMENT WHERE DIFFERENT REQUIREMENTS ARE SPECIFIED IN THE PLANS AND SPECIFICATIONS.
- COORDINATE AND SCHEDULE WORK WITH OTHER TRADES AND THE OWNER. BEFORE PROCEEDING WITH THE INSTALLATION.
 - ORANGE COLOR FOR HIGH-LEG OF DELTA-CONNECTED SYSTEM WHERE THE MIDPOINT OF ONE PHASE WINDING IS GROUNDED PER CEC 110.15
 - ARC-FLASH HAZARD WARNING PER CEC 110.16
 - IDENTIFICATION OF DISCONNECTING MEANS PER CEC 110.22
 - AVAILABLE FAULT CURRENT PER CEC 110.24
 - PANELBOARD CIRCUIT DIRECTORY PER CEC 408.4(A)
 - SOURCE OF SUPPLY FOR SWITCHBOARDS, SWITCHGEAR, AND PANELBOARDS PER CEC 408.4(B)
 - IDENTIFICATION OF BRANCH CIRCUITS PER CEC 210.5
 - POSTING OF IDENTIFICATION MEANS LISTING THE FEEDER POWER SOURCE PER CEC 210.5(C)(1)(b).
- NOTIFY OWNER 48 HOURS PRIOR TO PROJECT COMPLETION TO ALLOW FOR OWNER'S INSPECTION OF WORK. PROVIDE COMPETENT PERSONNEL TO ASSIST AND DEMONSTRATE EQUIPMENT OR SYSTEM OPERATION. FINAL ACCEPTANCE OF WORK BY THE OWNER WILL BE AFTER APPROVAL AND ACCEPTANCE BY AHJ.
- FURNISH A ONE-YEAR WRITTEN GUARANTEE FOR MATERIALS AND WORKMANSHIP FROM THE DATE OF SUBSTANTIAL COMPLETION, UNLESS OTHERWISE NOTED FOR A LONGER TERM IN THE EQUIPMENT SPECIFICATION.
- PROVIDE AND MAINTAIN REQUIRED WORKING SPACE, DEDICATED EQUIPMENT SPACE, AND EGRESS REQUIREMENTS PER CEC 110.26.

SHEET INDEX

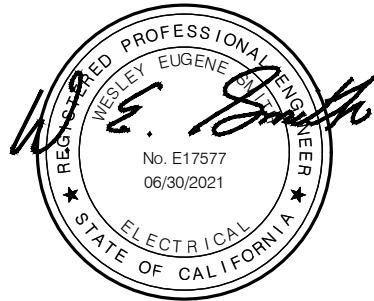
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E001	GENERAL NOTES, LEGEND, ABBREVIATIONS AND SHEET INDEX
E101	SITE PLAN
E201	TEMPORARY/NEW POWER PLAN
E501	SINGLE LINE DIAGRAMS AND PANEL SCHEDULES
E601	DETAILS AND ELEVATIONS
E602	DETAILS
E701	SPECIFICATIONS
S001	GENERAL NOTES & TYPICAL DETAILS
S002	DETAILS



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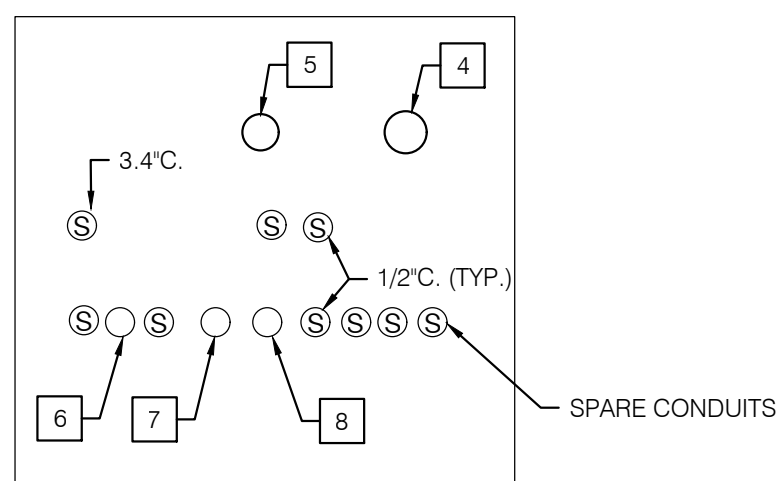
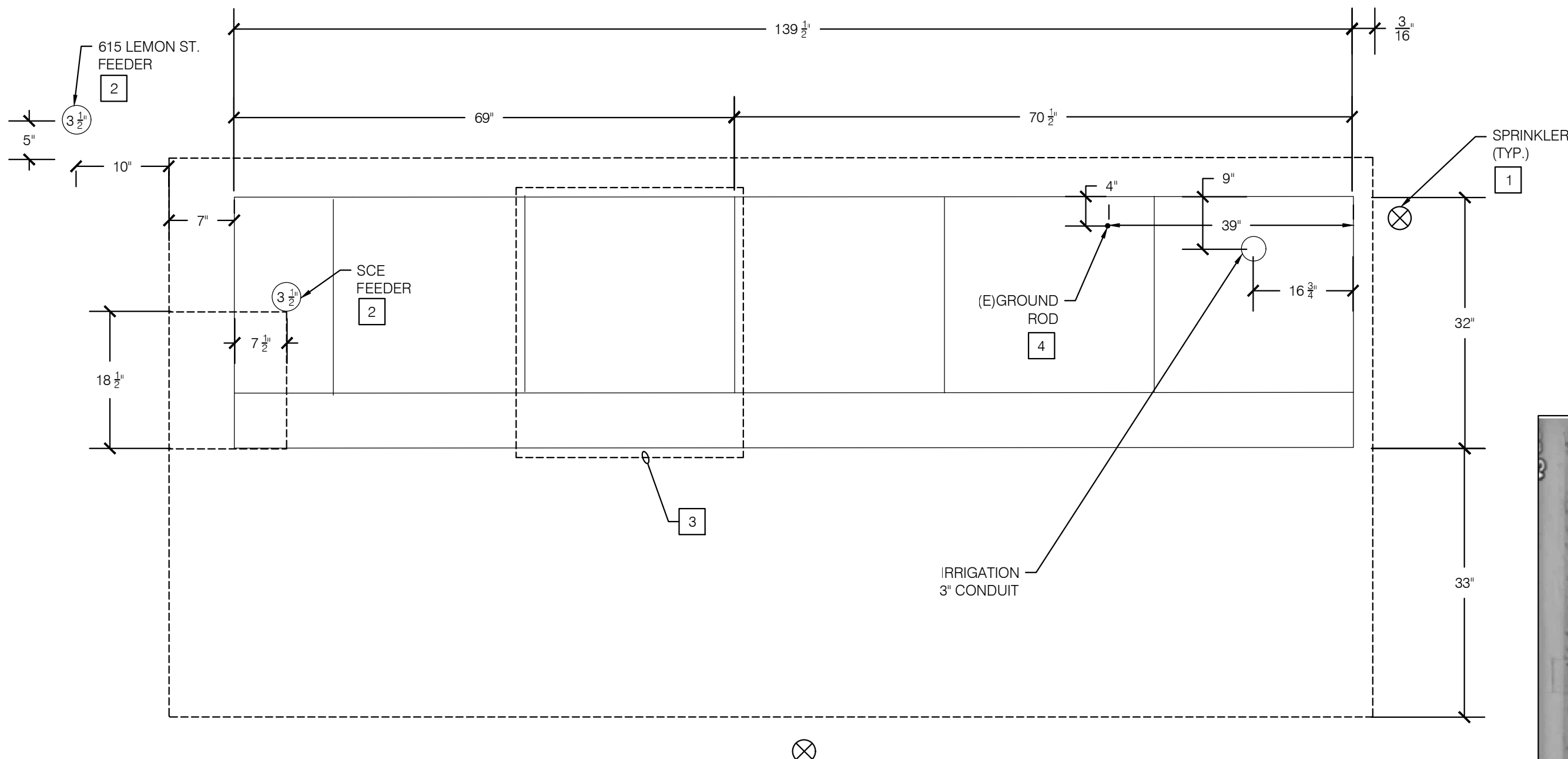
p2sinc.com



UNDER THE SUPERVISION OF:	FOR ENGINEER'S USE			CITY OF ORANGE KILLEFER PARK (615 N LEMON ST, ORANGE, CA 92867) GENERAL NOTES, LEGEND, ABBREVIATIONS & SHEET INDEX		
		NAME	DATE			
	DRAWN	MN	10/11/19			
	DESIGNED	MN	10/11/19			
DATE	CHECKED	WS	10/11/19			
REVISIONS				FOR CITY USE ONLY		
DATE	DESCRIPTION			NAME	DATE	
				STREETS		
				SEWER		
				DRAINAGE		
				WATER		
				ST. SUPT.		
				TRAFFIC		
				100% CD SUBMITTAL		
				E001		

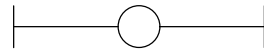
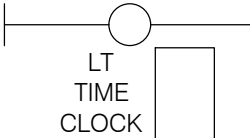

APPROVED:		APPROVED:	
DATE		DATE	
CITY ENGINEER		PUBLIC WORKS DIRECTOR	
SCALE:	HORIZ. AS NOTED	F.B. _____ PG. _____	SHEET 1 OF 7
	VERT. AS NOTED		

- 1 COORDINATE SPRINKLER AND SPRINKLER PIPING RELOCATION TO FACILITATE SERVICE REPLACEMENT WITH CITY REPRESENTATIVE.
- 2 COORDINATE POWER OUTAGE WITH UTILITY SERVICE PLANNER
- 3 TRACE, LOCATE, AND INTERCEPT EXISTING FEEDERS, BRANCH CIRCUITS, AND IRRIGATION CONDUCTORS. PROVIDE NEW IN-GRADE TRAFFIC RATED PULL BOXES LOCATED TEN FEET MINIMUM FROM EXISTING SERVICE EQUIPMENT PAD. PROVIDE SEPARATE IN-GRADE PULL BOXES FOR IRRIGATION CONDUCTORS AND POWER CONDUCTORS. DO NOT COMBINE WITH A COMMON PULL BOX. REFERENCE DETAIL 4#601.
- 4 SAVE EXISTING GROUND ROD AND BOND TO NEW REBAR WITH EXOTHERMIC BOND USING 2 AWG AND EXTEND TO GROUND BUS.

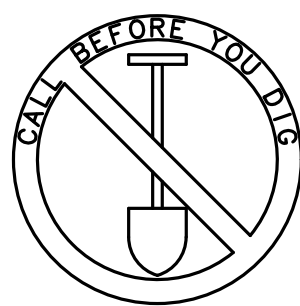


4	1 1/4" C-3#2+5#8.
5	1" C-6#8 + 1#10 GND.
6	1/2" C-2#12 + 1#12 GND
7	1/2" C-3#10+ 1#10 GND.
8	1/2" C-6#10+ 1#10 GND.

NO SCALE

<p>SCE</p> <p>PULL SECTION</p>		<p>PANEL A1B-1</p> <div>20A/3P</div> <div>20A/3P</div> <div>20A/3P</div>	<p>PANEL C1D-1</p> <div>20A/3P</div> <div>20A/3P</div> <div>20A/3P</div>	 <p>LT TIME CLOCK AND RELAYS</p>	<p>IRRIGATION CONTROL</p>
		<p>PANEL A1B-2</p> <div>20A/3P</div> <div>20A/3P</div> <div>20A/3P</div>	<p>PANEL C1D-2</p> <div>20A/3P</div> <div>20A/3P</div> <div>20A/3P</div> <div>20A/3P</div> <div>SPACE</div> <div>20A/3P</div>	<p>120/240V PANEL "L"</p>	
	<p>MAIN 400A/3P</p> <div>40A/3P</div> <div>40A/3P</div> <div>40A/3P</div> <div>250A/3P</div> <div>40A/3P</div> <div>30A/3P</div> <div>70A/3P</div> <div>SPACE</div>	<p>RELAYS AND PULL SECTION</p>	<p>RELAYS</p>	<p>25KVA XFMR 240/120V, 1P, 3W</p>	

NO SCALE

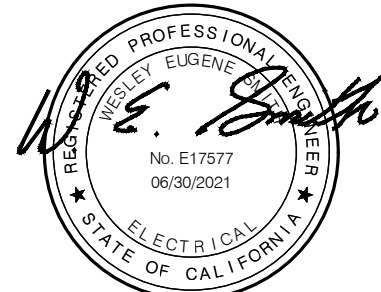


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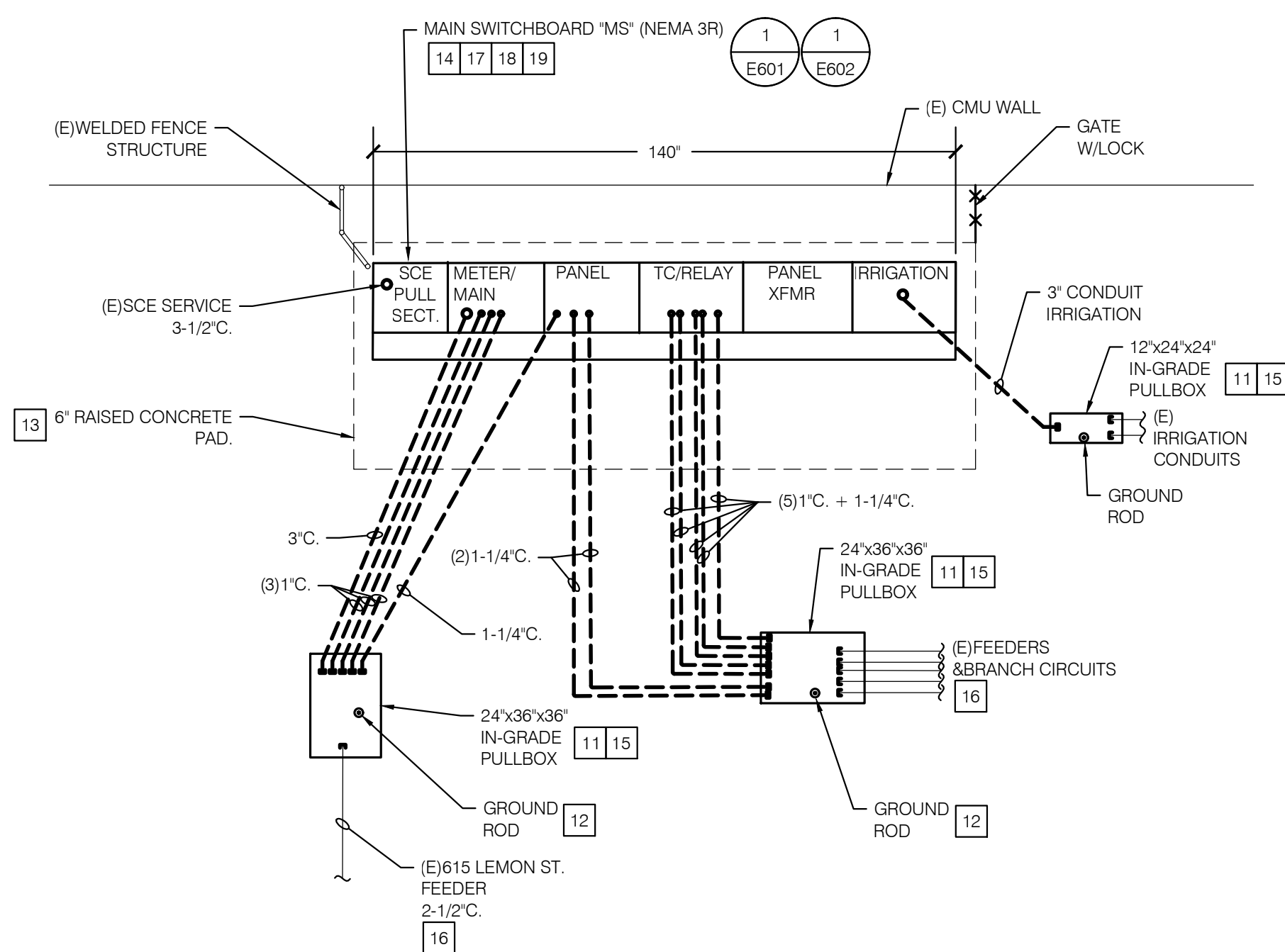
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GENERAL NOTES

- COORDINATE CONSTRUCTION WITH SOUTHERN CALIFORNIA EDISON. CALL SANTA ANA SERVICE PLANNING OFFICE AT (714) 973-5653.
- CHECK AND REFILL GENERATOR FUEL DAILY.
- PROVIDE TEMPORARY POWER FOR CONSTRUCTION.
- PROVIDE WATERPROOF SPLICES OF CONDUCTORS FOR TEMPORARY AND PERMANENT CONNECTIONS.
- PROVIDE PROTECTIVE CHAIN-LINK FENCING WITH VISUAL BLOCKING MATERIAL AROUND CONSTRUCTION SITE AND GENERATOR. REFERENCE DETAIL 4/E601.
- PROVIDE CABLE PROTECTION AT PATHWAYS PER CEC 990.4(H).
- REFERENCE SINGLE LINE DIAGRAM AND DETAIL 2/E201 FOR CONDUIT AND FEEDER SIZES AND SPARE CONDUITS.
- RETURN ALL RELAYS TO OWNER.
- REUSE IRRIGATION CONTROLLER.

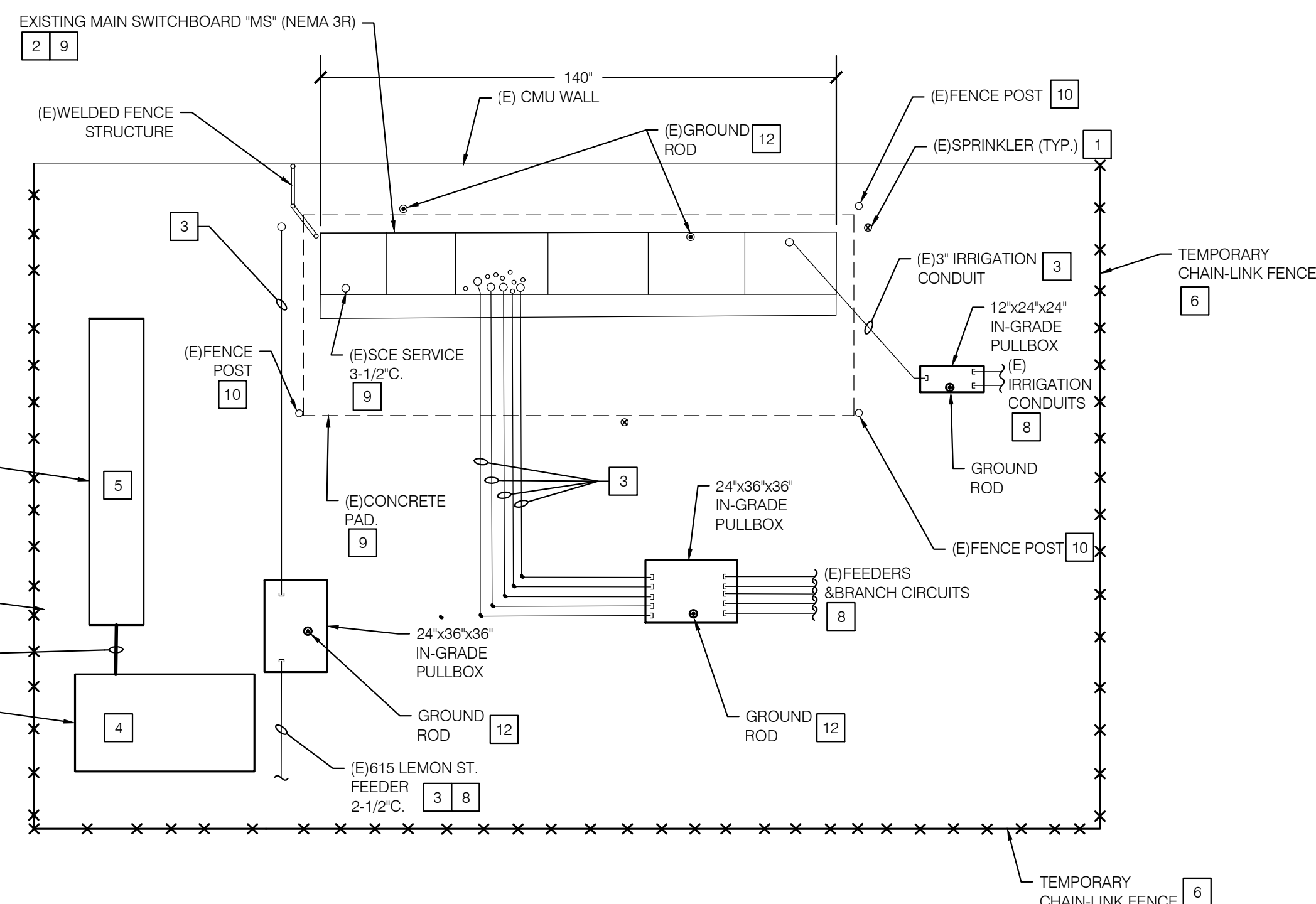
NOTES

- COORDINATE SPRINKLER AND SPRINKLER PIPING RELOCATION TO FACILITATE SERVICE REPLACEMENT WITH CITY REPRESENTATIVE.
- COORDINATE POWER OUTAGE WITH UTILITY SERVICE PLANNER AND CITY REPRESENTATIVE.
- TRACE, LOCATE, AND INTERCEPT EXISTING FEEDERS, BRANCH CIRCUITS, AND IRRIGATION CONDUCTORS. PROVIDE NEW IN-GRADE TRAFFIC RATED PULL BOXES LOCATED TEN FEET MINIMUM FROM EXISTING SERVICE EQUIPMENT. PROVIDE SEPARATE IN-GRADE PULL-BOXES FOR IRRIGATION CONDUCTORS AND POWER CONDUCTORS. REFERENCE DETAIL 5/E601.
- PROVIDE 350KW, 480/277V, 3P, 4W, TEMPORARY GENERATOR WITH SOUND ATTENUATED ENCLOSURE AND 24-HOUR FUEL SUPPLY.
- PROVIDE 400A, 480/277V, 3P, 4W, NEMA 3R, TEMPORARY SWITCHBOARD, 25KVA, 480-240/120V, 1P, 3W, NEMA 3R TRANSFORMER, 100A, 480/277V, 3P, 4W, NEMA 3R, AND 125A, 240/120V, PANELS, LIGHTING TIME CLOCKS, LIGHTING RELAYS, IRRIGATION TIME CLOCKS, IRRIGATION TRANSFORMER, AND ADDITIONAL EQUIPMENT AND MATERIALS AS NECESSARY TO MAINTAIN OPERATION OF THE FACILITY DURING CONSTRUCTION. EXISTING EQUIPMENT MAY BE REUSED FOR THE TEMPORARY INSTALLATION.
- PROVIDE TEMPORARY FENCING AND SECURITY SCREENING AROUND CONSTRUCTION AREA.
- ROUTE 8#2/0 + 1#2/0 GND TYPE W CABLES FROM THE GENERATOR TO THE TEMPORARY SWITCHBOARD.
- EXTEND EXISTING FEEDER, BRANCH CIRCUIT, AND IRRIGATION CONDUCTORS FROM IN-GRADE PULL BOXES TO TEMPORARY SWITCHBOARD TO MAINTAIN POWER TO EXISTING FACILITIES.
- DEMOLISH EXISTING SERVICE EQUIPMENT AND PAD. PROTECT EXISTING UTILITY CONDUIT AND FEEDER CONDUCTORS FOR REUSE. EXTEND EXISTING UTILITY FEEDER CONDUIT TO THREE (3) INCHES ABOVE NEW PAD. CONCEAL UTILITY CONDUCTORS FROM VIEW TO PREVENT THEFT.
- REMOVE POST AND ASSOCIATED FOOTING.
- EXTEND NEW FEEDER, BRANCH CIRCUIT, AND IRRIGATION CONDUITS FROM IN-GRADE PULL BOXES TO NEW SERVICE DISTRIBUTION SECTION LOCATION.
- PROVIDE NEW GROUNDING ELECTRODE SYSTEM. REFERENCE DETAILS 2 AND 3/E601.
- PROVIDE NEW CONCRETE SERVICE EQUIPMENT PAD, 8' A.F.G. REFERENCE SHEET 3001. LOCATE THE NORTH-EAST CORNER OF THE NEW SERVICE 'MS' AT THE SAME LOCATION AS THE EXISTING SERVICE IN ORDER TO MAINTAIN USEFULNESS OF THE EXISTING WELDED FENCE STRUCTURE.
- PROVIDE NEW NEMA 3R, 400A, 480/277V, 3P, 4W, METERED MAIN WITH DISTRIBUTION, UTILITY PULL-SECTION, AND LOW VOLTAGE SECTIONS. REFERENCE SHEET E602.
- EXTEND EXISTING CONDUCTORS FROM NEW IN-GRADE PULL BOXES TO NEW SERVICE.
- LOCATE EACH FEEDER LOAD TERMINATION LOCATION AND DISCONNECT FEEDER FROM LOAD PRIOR TO TESTING OF FEEDER CONDUCTORS. TEST EXISTING FEEDER CONDUCTORS PER ANSI/NETA ACCEPTANCE TESTING SPECIFICATIONS (ATS) 7.3.2. TERMINATE AND TEST PER SERVICE EQUIPMENT PER ATS 7.1.
- PROVIDE BLACK LABELS WITH WHITE ENGRAVED LETTERS FOR IDENTIFICATION OF EACH FEEDER. VERIFY CIRCUIT NAMES WITH CITY REPRESENTATIVE.
- PROVIDE RED LABEL WITH WHITE LETTERS BELOW METER LISTING THE AVAILABLE SHORT CIRCUIT CURRENT AND DATE. OBTAIN WRITTEN DOCUMENTATION OF UTILITY'S CONTRIBUTION TO THE AVAILABLE SHORT CIRCUIT CURRENT FROM THE SERVICE PLANNER. REFERENCE CEC 110.24. PROVIDE ORIGINAL DOCUMENTATION TO CITY REPRESENTATIVE.
- COORDINATE AND REESTABLISH UTILITY POWER TO NEW SERVICE.



2 RENOVATION POWER PLAN

NO SCALE



1 DEMOLITION/TEMPORARY POWER PLAN

NO SCALE

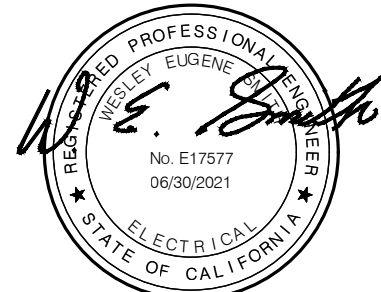


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UNDER THE SUPERVISION OF:		FOR ENGINEER'S USE		CITY OF ORANGE KILLEFER PARK (615 N LEMON ST, ORANGE, CA 92867) TEMPORARY/NEW POWER PLAN	
		NAME	DATE		
		DRAWN	10/11/19		
		DESIGNED	10/11/19		
DATE		NAME	DATE	APPROVED:	
REVISIONS		FOR CITY USE ONLY		DATE	
DATE	DESCRIPTION	NAME		CITY ENGINEER	
				DATE	
				PUBLIC WORKS DIRECTOR	
				SCALE: HORIZ. AS NOTED VERT. AS NOTED	
				F.B. PG.	
				SHEET 3 OF 7	
				E201	
				100% CD SUBMITTAL	

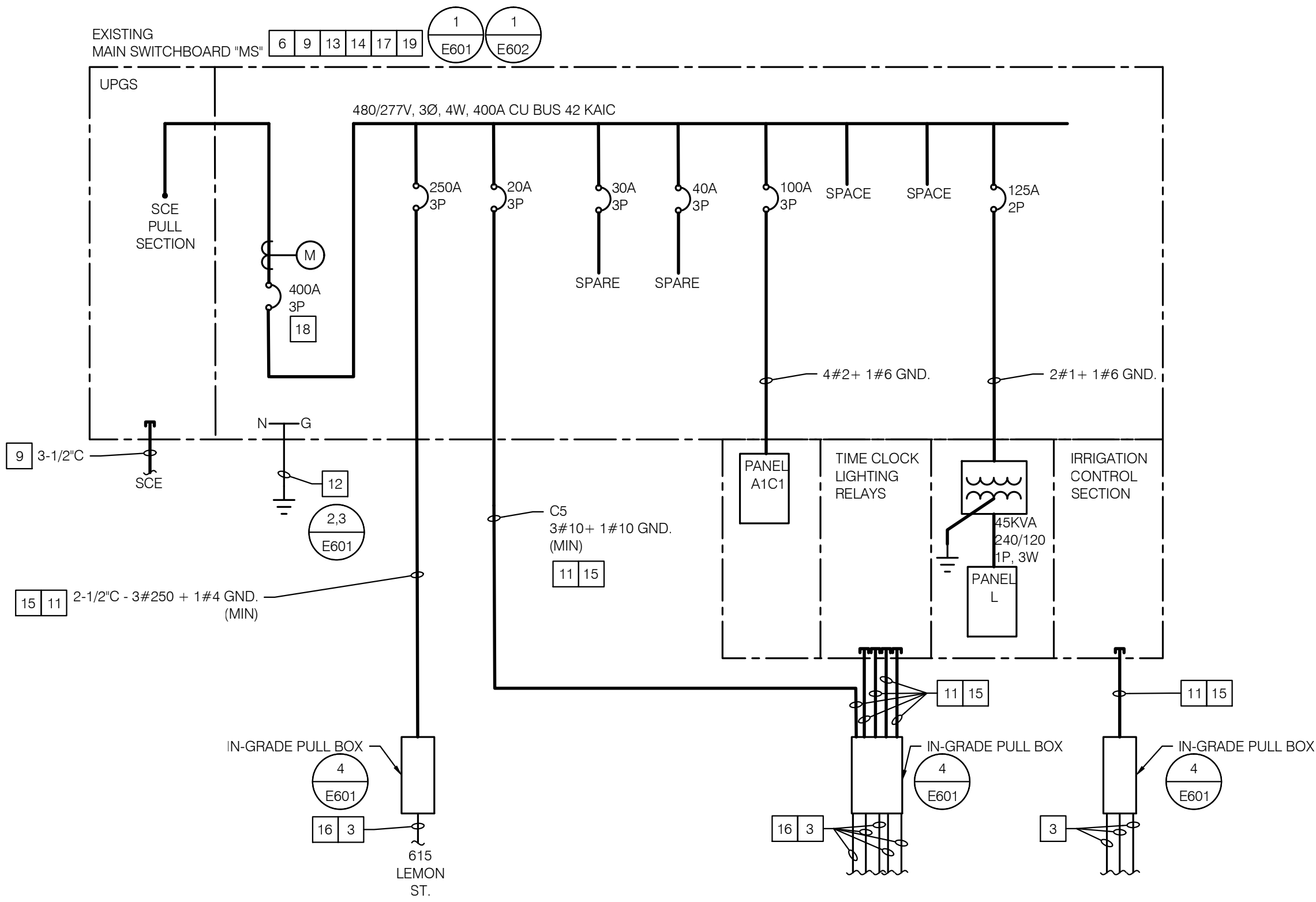
PANEL: MS	
LOCATION : KILLERFER PARK	
FLOOR : NEMA 3R	
MOUNTING : NEMA 3R	
VOLTAGE/PHASE : 480Y/277V, 3Ø, 4W	
BUS AMPS : 400A	
MAIN BREAKER : 400A, 3P	
LOADS	SEE NOTE
OUTLETS	LTGREQMISC
VOLT-AMPS	A B C
BKRV	POLE A B C
BKRV	POLE A B C
VOLT-AMPS	A B C
OUTLETS	LTGREQMISC
SEE NOTE	LOADS
SPARE	1 40/3 *- 100/3 2 16,628
---	3 - - - - 4 16,628
---	5 - - - - 6 16,628
SPARE	7 30/3 *- 125/2 8 15,230
---	9 - - - - 10 15,160
---	11 - - - - 12
EXISTING G5	13 20/3 *- - 14
---	15 - - - - 16
---	17 - - - - 18
EXISTING 615 LEMON ST.	19 250/3 *- - 20
---	21 - - - - 22
---	23 - - - - 24
NOTES:	
TOTAL OA = 77,949 VOLT-AMPS 281.4 AMPS	
TOTAL OB = 77,879 VOLT-AMPS 281.15 AMPS	
TOTAL OC = 62,719 VOLT-AMPS 228.42 AMPS	
TOTAL PANEL = 218,547 VA @ 480V, 3Ø = 263 AMPS	

PANEL: A1C1	
LOCATION : SWITCHBOARD MS	
FLOOR : NEMA 3R	
MOUNTING : NEMA 3R	
VOLTAGE/PHASE : 480Y/277V, 3Ø, 4W	
BUS AMPS : 400A	
MAIN BREAKER : M.L.O.	
LOADS	SEE NOTE
OUTLETS	LTGREQMISC
VOLT-AMPS	A B C
BKRV	POLE A B C
BKRV	POLE A B C
VOLT-AMPS	A B C
OUTLETS	LTGREQMISC
SEE NOTE	LOADS
EDGE LTS	1 20/3 *- 20/3 2 4,434
---	3 - - - - 4 4,434
---	5 - - - - 6 4,434
BASKETBALL COURT LTS	7 20/3 *- 20/3 8 4,434
---	9 - - - - 10
---	11 - - - - 12
SPARE	13 20/3 *- 20/3 14
---	15 - - - - 16
---	17 - - - - 18
SPARE	19 20/3 *- 20/3 20
---	21 - - - - 22
---	23 - - - - 24
SPARE	25 20/3 *- 26
---	27 - - - - 28
---	29 - - - - 30
SPARE	31 20/3 *- 20/3 32
---	33 - - - - 34
---	35 - - - - 36
PROVISION	37 *- - 38
PROVISION	39 *- - 40
PROVISION	41 *- - 42
NOTES:	
TOTAL OA = 16,628 VOLT-AMPS 60.03 AMPS	
TOTAL OB = 16,628 VOLT-AMPS 60.03 AMPS	
TOTAL OC = 16,628 VOLT-AMPS 60.03 AMPS	
TOTAL PANEL = 49,883 VA @ 480V, 3Ø = 60 AMPS	

PANEL: L	
LOCATION : SWITCHBOARD MS	
FLOOR : NEMA 3R	
MOUNTING : NEMA 3R	
VOLTAGE/PHASE : 120/240V, 1Ø, 3W	
BUS AMPS : 225A	
MAIN BREAKER : 225A, 2P	
LOADS	SEE NOTE
OUTLETS	LTGREQMISC
VOLT-AMPS	A B
BKRV	POLE A B
BKRV	POLE A B
VOLT-AMPS	A B
OUTLETS	LTGREQMISC
SEE NOTE	LOADS
EXISTING CONTROL CIRCUIT	1 20/1 *- 20/1 2 100
NEW SW BD, REC	3 20/1 *- 20/1 4 180
EXISTING RESTRM CIR	5 20/1 *- 20/1 6 180
EXISTING ROSE BLDG	7 100/2 *- 70/2 8 6,000
---	9 - - - - 10 6,000
SPARE	11 20/1 *- 20/1 12 400
SPARE	13 - - - - 14
SPARE	15 - - - - 16
SPARE	17 - - - - 18
SPARE	19 - - - - 20
SPARE	21 - - - - 22
SPARE	23 - - - - 24
SPARE	25 - - - - 26
SPARE	27 - - - - 28
SPARE	29 - - - - 30
SPARE	31 - - - - 32
SPARE	33 - - - - 34
SPARE	35 - - - - 36
SPARE	37 - - - - 38
SPARE	39 - - - - 40
SPARE	41 - - - - 42
NOTES:	
TOTAL OA = 15,230 VOLT-AMPS 127 AMPS	
TOTAL OB = 15,160 VOLT-AMPS 126 AMPS	
TOTAL PANEL = 30,390 VA @ 240V, 1Ø 127 AMPS	

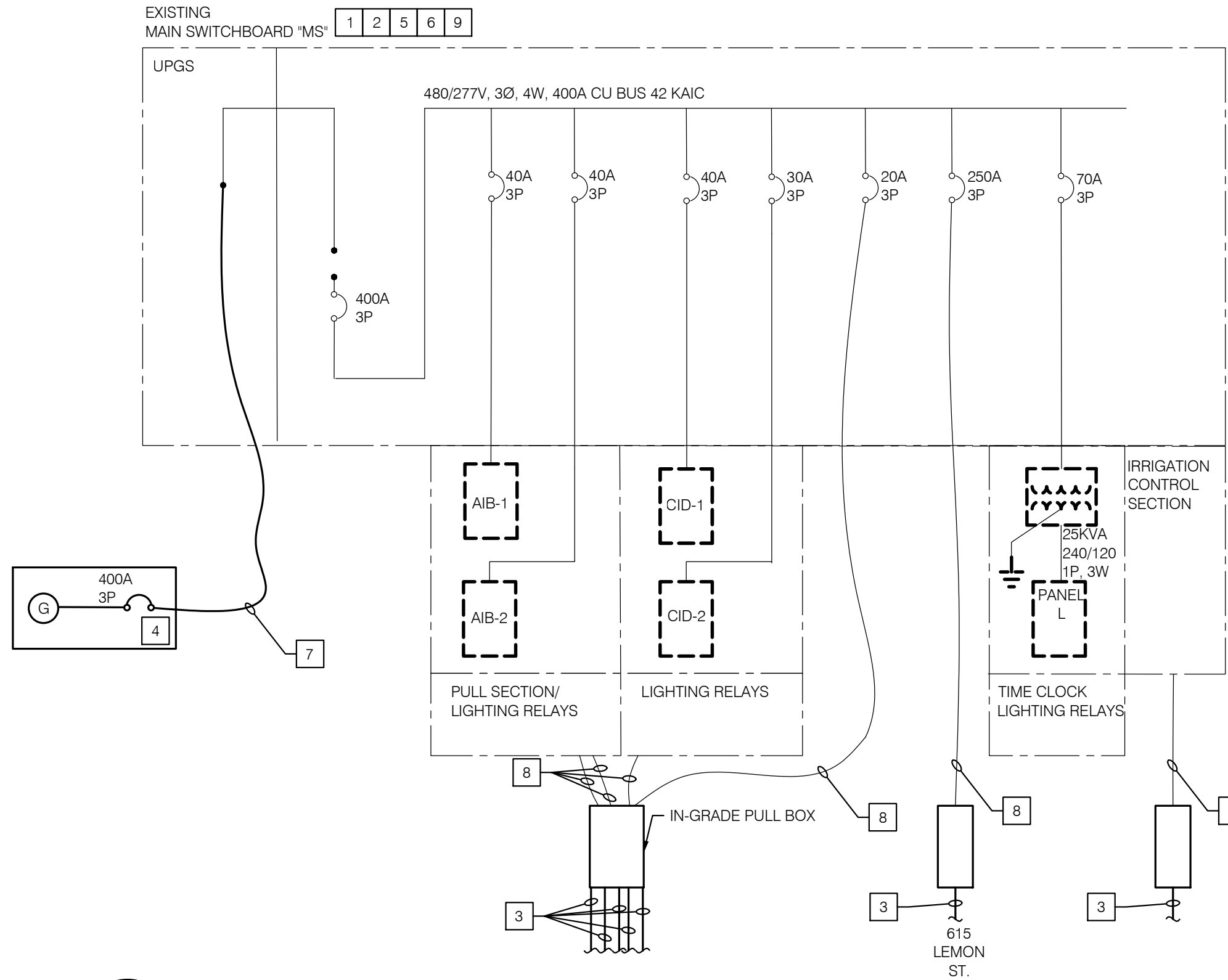
3 PANEL SCHEDULES

NO SCALE



2 RENOVATION - SINGLE LINE DIAGRAM

NO SCALE



1 DEMOLITION/TEMPORARY POWER - SINGLE LINE DIAGRAM

NO SCALE

GENERAL NOTES

- COORDINATE CONSTRUCTION WITH SOUTHERN CALIFORNIA EDISON. CALL SANTA ANA SERVICE PLANNING OFFICE AT (714) 973-5653.
- CHECK AND REFILL GENERATOR FUEL DAILY.
- PROVIDE TEMPORARY POWER FOR CONSTRUCTION.
- PROVIDE WATERPROOF SPLICES OF CONDUCTORS FOR TEMPORARY AND PERMANENT CONNECTIONS.
- PROVIDE PROTECTIVE CHAIN-LINK FENCING WITH VISUAL BLOCKING MATERIAL AROUND CONSTRUCTION SITE AND GENERATOR. REFERENCE DETAIL 4/E601.
- PROVIDE CABLE PROTECTION AT PATHWAYS PER CEC 590.4(H).
- REFERENCE SINGLE LINE DIAGRAM AND DETAIL 2/E201 FOR CONDUIT AND FEEDER SIZES AND SPARE CONDUITS.
- RETURN ALL RELAYS TO OWNER.
- REUSE IRRIGATION CONTROLLER.

NOTES

- COORDINATE SPRINKLER AND SPRINKLER PIPING RELOCATION TO FACILITATE SERVICE REPLACEMENT WITH CITY REPRESENTATIVE.
- COORDINATE POWER OUTAGE WITH UTILITY SERVICE PLANNER AND CITY REPRESENTATIVE.
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- PROVIDE 400A, 480/277V, 3P, 4W, NEMA 3R, TEMPORARY SWITCHBOARD, 25KVA, 480-240/120V, 1P, 3W, NEMA 3R TRANSFORMER, 100A, 480/277V, 3P, 4W, NEMA 3R, AND 125A, 240/120V, PANELS; LIGHTING TIME CLOCKS; LIGHTING RELAYS; IRRIGATION TIME CLOCKS; IRRIGATION TRANSFORMER; AND ADDITIONAL EQUIPMENT AND MATERIALS AS NECESSARY TO MAINTAIN OPERATION OF THE FACILITY DURING CONSTRUCTION. EXISTING EQUIPMENT MAY BE REUSED FOR THE TEMPORARY INSTALLATION.
- PROVIDE TEMPORARY FENCING AND SECURITY SCREENING AROUND CONSTRUCTION AREA.
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- DEMOLISH EXISTING SERVICE EQUIPMENT AND PAD. PROTECT EXISTING UTILITY CONDUIT AND FEEDER CONDUCTORS FOR REUSE. EXTEND EXISTING UTILITY FEEDER CONDUIT TO THREE (3) INCHES ABOVE NEW PAD. CONCEAL UTILITY CONDUCTORS FROM VIEW TO PREVENT THEFT.
- NOT USED.
- EXTEND NEW FEEDER, BRANCH CIRCUIT, AND IRRIGATION CONDUITS FROM IN-GRADE PULL BOXES TO NEW SERVICE DISTRIBUTION SECTION LOCATION.
- PROVIDE NEW GROUNDING ELECTRODE SYSTEM. REFERENCE DETAILS 2 AND 3/E601.
- PROVIDE NEW CONCRETE SERVICE EQUIPMENT PAD. IF A F.G. REFERENCE SHEET 3001, LOCATE THE NORTH-EAST CORNER OF THE NEW SERVICE 'MS' AT THE SAME LOCATION AS THE EXISTING SERVICE IN ORDER TO MAINTAIN USEFULNESS OF THE EXISTING WELDED FENCE STRUCTURE.
- PROVIDE NEW NEMA 3R, 400A, 480/277V, 3P, 4W, METERED MAIN WITH DISTRIBUTION, UTILITY PULL-SECTION, AND LOW VOLTAGE SECTIONS. REFERENCE SHEET E602.
- EXTEND EXISTING CONDUCTORS FROM NEW IN-GRADE PULL BOXES TO NEW SERVICE.
- LOCATE EACH FEEDER LOAD TERMINATION LOCATION AND DISCONNECT FEEDER FROM LOAD PRIOR TO TESTING OF FEEDER CONDUCTORS. TEST EXISTING FEEDER CONDUCTORS PER ANSI/NETA ACCEPTANCE TESTING SPECIFICATIONS (ATS) 7.3.2. TERMINATE AND TEST PER SERVICE EQUIPMENT PER ATS 7.1.
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- PROVIDE RED LABEL WITH WHITE LETTERS BELOW METER LISTING THE AVAILABLE SHORT CIRCUIT CURRENT AND DATE. OBTAIN WRITTEN DOCUMENTATION OF UTILITY'S CONTRIBUTION TO THE AVAILABLE SHORT CIRCUIT CURRENT FROM THE SERVICE PLANNER. REFERENCE CEC 110.24. PROVIDE ORIGINAL DOCUMENTATION TO CITY REPRESENTATIVE.
- COORDINATE AND REESTABLISH UTILITY POWER TO NEW SERVICE.

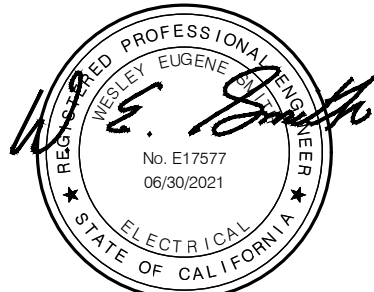


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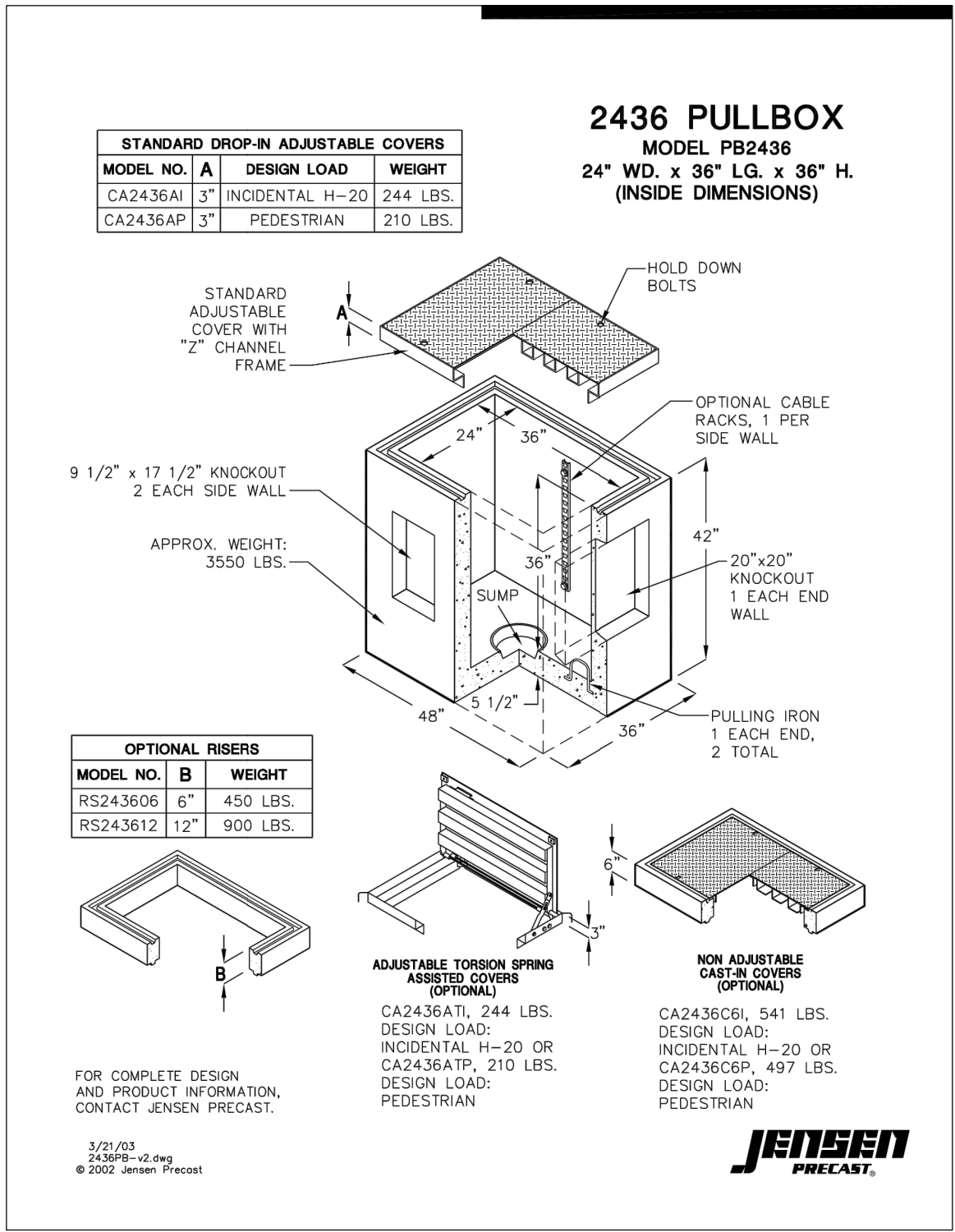
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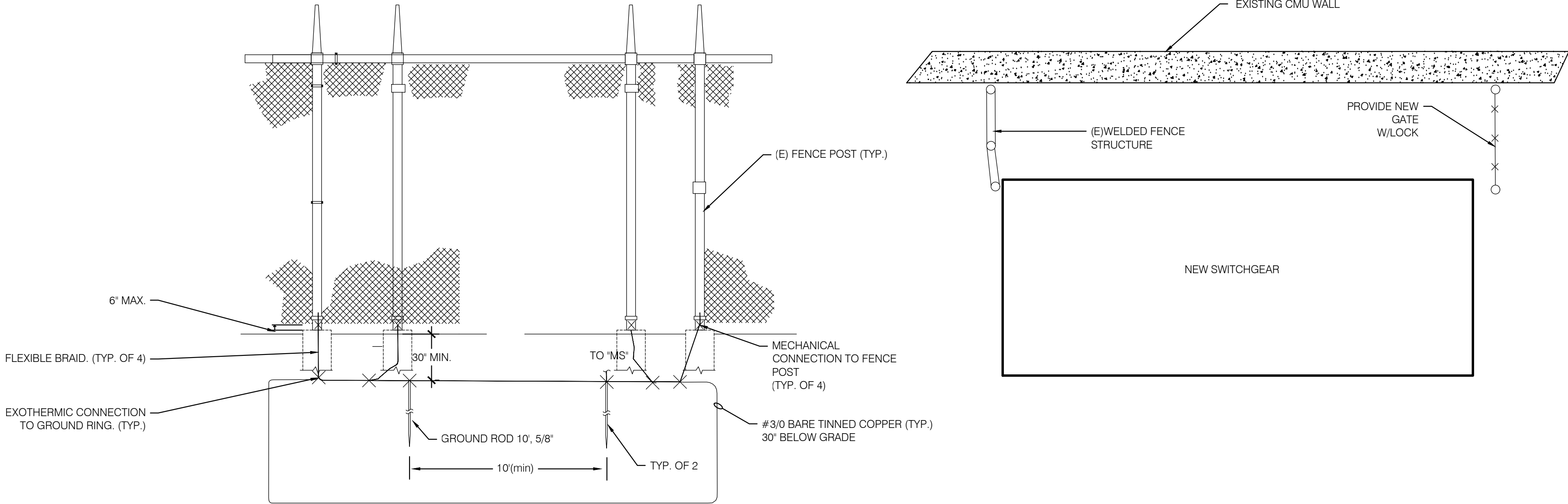


UNDER THE SUPERVISION OF:		FOR ENGINEER'S USE		CITY OF ORANGE	
DATE		NAME	DATE		
DESIGNED		MN	10/11/19	KILLEFER PARK (615 N LEMON ST, ORANGE, CA 92867)	
CHECKED		WS	10/11/19		
REVISIONS		FOR CITY USE ONLY		SINGLE LINE DIAGRAMS AND PANEL SCHEDULES	
DATE	DESCRIPTION	NAME	DATE		
STREETS		APPROVED:		APPROVED:	
SEWER		DATE		DATE	
DRAINAGE		CITY ENGINEER		PUBLIC WORKS DIRECTOR	
WATER		SCALE: HORIZ. AS NOTED		F.B. PG.	
ST. SUPT.		VERT. AS NOTED		SHEET 40F 7	
TRAFFIC		100% CD SUBMITTAL		E501	



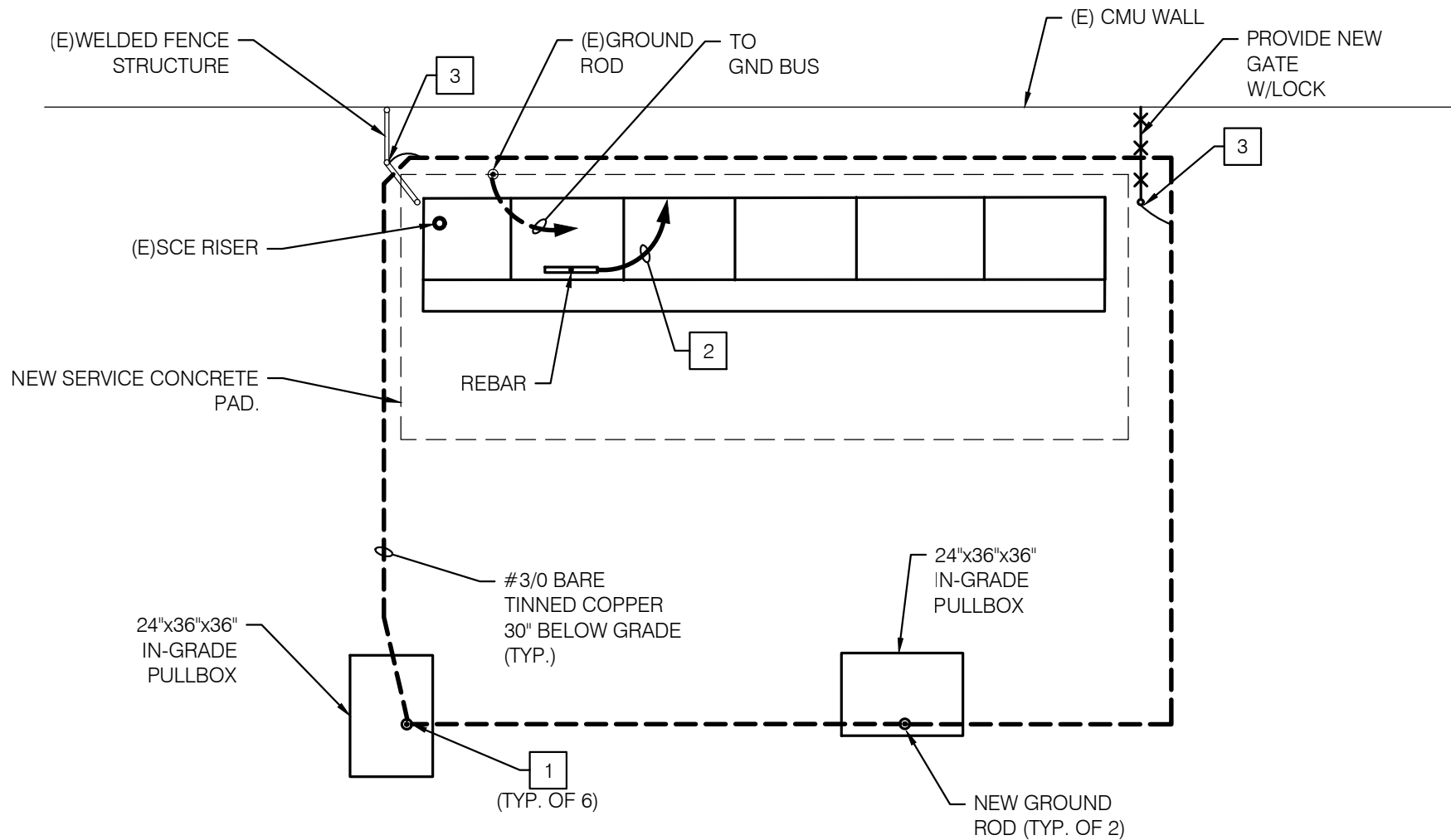
DETAIL NOTES

1. PROVIDE INSTALLATION PER MANUFACTURERS RECOMMENDATIONS.
2. PROVIDE INSTALLATION FLUSH WITH FINISHED GRADE.



4 IN-GRADE PULL BOX

NO SCALE



NOTES

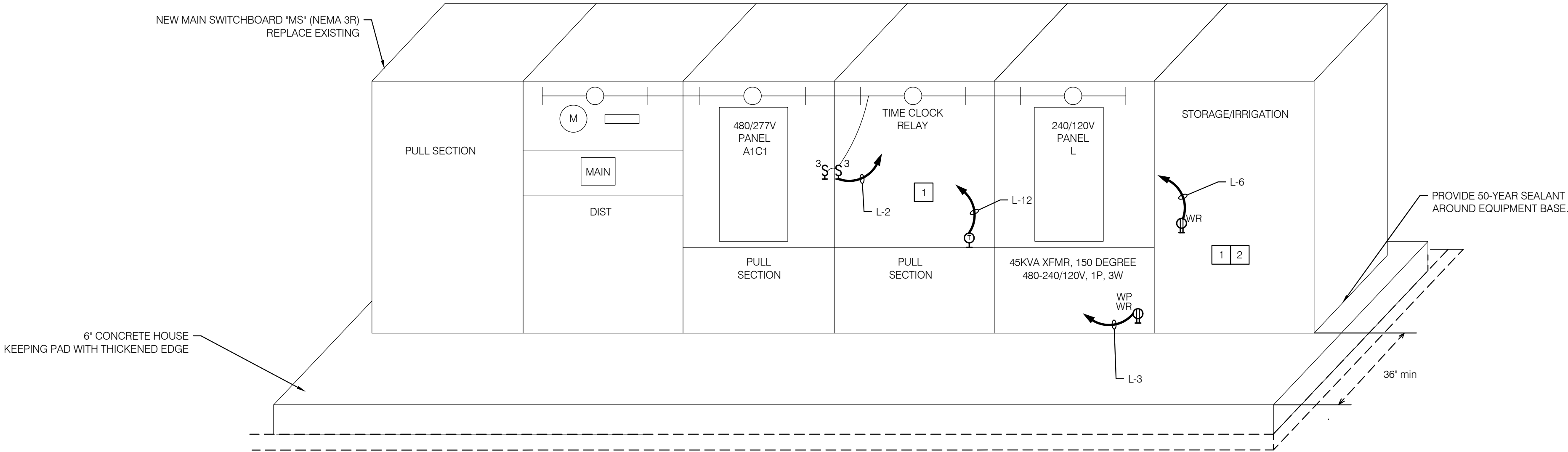
1. PROVIDE EXOTHERMIC CONNECTION.
2. PROVIDE EXOTHERMIC CONNECTION TO REINFORCING BAR WITHIN NEW PAD WITH #4AWG AND EXTEND TO GROUND BUS.
3. PROVIDE BOND TO WELDED FENCE STRUCTURE AND CHAIN-LINK GATE. USE MECHANICAL CONNECTION USING STAINLESS STEEL, INVENT ERICO#A235D2GGLH.

3 GROUNDING ELECTRODE SYSTEM

NO SCALE

2 TYPICAL FENCE GROUNDING

NO SCALE

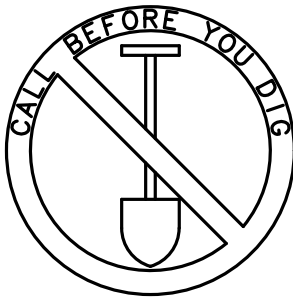


NOTES

1. PROVIDE 3/4" EXTERIOR GRADE PLYWOOD BACK BOARD WITHIN TIMECLOCK/RELAY AND IRRIGATION CONTROL SECTIONS.
2. REINSTALL IRRIGATION CONTROLLER.
3. PROVIDE TIME CLOCKS AND RELAYS. REFERENCE DETAIL 2/E602.

1 SWITCHBOARD EQUIPMENT MOUNTING ELEVATION

NO SCALE

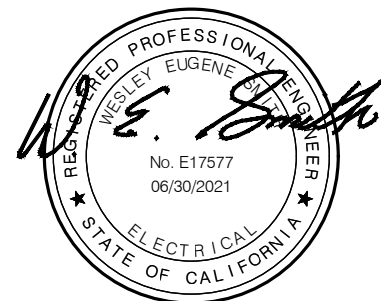


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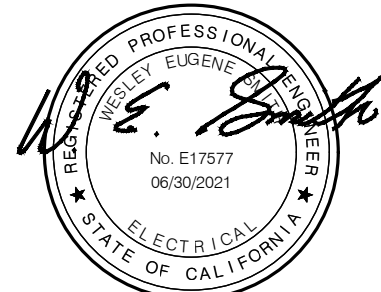


UNDER THE SUPERVISION OF:		FOR ENGINEER'S USE		CITY OF ORANGE	
		NAME	DATE		
DATE		DRAWN	MN	10/11/19	KILLEFER PARK (615 N LEMON ST, ORANGE, CA 92867)
		DESIGNED	MN	10/11/19	
		CHECKED	WS	10/11/19	
REVISIONS		FOR CITY USE ONLY		APPROVED:	
		NAME	DATE		
DATE	DESCRIPTION	STREETS			APPROVED: CITY ENGINEER DATE SCALE: HORIZ. AS NOTED VERT. AS NOTED
		SEWER			
		DRAINAGE			
		WATER			
		ST. SUPT.			
		TRAFFIC			F.B. PG.
		100% CD SUBMITTAL			SHEET 5 OF 7
					E601

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UNDER THE SUPERVISION OF: DATE _____		FOR ENGINEER'S USE		CITY OF ORANGE				
		DRAWN	NAME	DATE	KILLEFER PARK (615 N LEMON ST, ORANGE, CA 92867)			
		DESIGNED	MN	10/11/19				
		CHECKED	WS	10/11/19				
REVISIONS		FOR CITY USE ONLY		DETAILS				
DATE	DESCRIPTION	STREETS	NAME	DATE	APPROVED: _____		APPROVED: _____	
		SEWER			DATE _____ CITY ENGINEER _____		DATE _____ PUBLIC WORKS DIRECTOR _____	
		DRAINAGE			SCALE: HORIZ. AS NOTED VERT. AS NOTED		F.B. _____ PG. _____	
		WATER			SHEET 6 OF 7			
		ST. SUPT.						
		TRAFFIC			100% CD SUBMITTAL			

GENERAL

1. MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE 2016 EDITION OF THE CALIFORNIA BUILDING CODE, TITLE 24, THE ORDINANCES OF THE LOCAL BUILDING OFFICIAL, AND THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
2. REFERENCE TO CODES, RULES REGULATIONS, STANDARDS, MANUFACTURER'S INSTRUCTIONS OR REQUIREMENTS OF REGULATORY AGENCIES IS TO THE LATEST EDITION OF EACH IN EFFECT AT THE DATE OF SUBMISSION OF BID UNLESS THE DOCUMENT DATE IS SHOWN.
3. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION, WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, USE SIMILAR DETAILS OF CONSTRUCTION, SUBJECT TO REVIEW BY THE STRUCTURAL ENGINEER OF RECORD (SEOR).
4. DETAILS ON SHEETS TITLED "TYPICAL DETAILS" APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OF SIMILAR TO THOSE SPECIFICALLY REFERENCED. SUCH DETAILS ARE NOT NOTED AT EACH LOCATION THAT THEY OCCUR.
5. SEE ELECTRICAL AND VENDOR CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
6. VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS BEFORE STARTING WORK. NOTIFY THE ELECTRICAL ENGINEER OF RECORD (EER) OF DISCREPANCIES.
7. DO NOT SCALE THE DRAWINGS.
8. TOLERANCES SHALL BE ACCORDING TO THE BUILDING CODE.
9. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES. NOTIFY THE EER OF ANY DISCREPANCIES AND RESOLVE BEFORE PROCEEDING WITH THE WORK.

DESIGN CRITERIA

1. THE OBJECTIVE OF THIS WORK IS TO DESIGN AND PAD AND ANCHORAGE FOR REPLACEMENT SWITCHGEAR.
2. DESIGN LOAD CRITERIA:

GRAVITY LOADS	
DEAD LOADS	ACTUAL OPERATING EQUIPMENT WEIGHTS
ULTIMATE WIND LOADS	
RISK CATEGORY	II (T.1604.5)
EXPOSURE CATEGORY	C
DESIGN WIND SPEED, V_{ULT} , V_{ASD}	110 MPH PER FIGURE 1609.3 (1), 85 PER EQN 16-33
ULTIMATE SEISMIC LOADS (COMPONENTS)	
IMPORTANCE FACTOR, I_p	1.0 (RISK CATEGORY II, T.1604.5)
MAPPED SPECTRAL ACCELERATIONS	$S_S = 1.50g$, $S_1 = 0.55g$
SITE CLASS	D (ASSUMED)
DESIGN SPECTRAL RESPONSE COEFFICIENTS	$S_{DS} = 1.00g$, $S_{D1} = 0.55g$
SEISMIC DESIGN CATEGORY	D

3. FOUNDATIONS (BASED ON CBC TABLE 1806.2, ITEM 5):
 - A. ALLOWABLE BEARING PRESSURE: 500 PSF (LIMIT BASED ON SHALLOW SLAB TURN-DOWNS).
 - B. ALLOWABLE SLIDING RESISTANCE: 130 PSF (50% OF WEIGHT MAXIMUM)
 - C. ALLOWABLE PASSIVE PRESSURE: 100 PCF
 - D. FRICTION AND PASSIVE PRESSURE MAY BE COMBINED IN CALCULATION OF TOTAL RESISTANCE TO SLIDING.
 - E. A ONE-THIRD INCREASE IS APPLICABLE TO SOIL CAPACITIES FOR SHORT-TERM LOADING (WIND/SEISMIC).

SOILS AND FOUNDATIONS

1. THE DESIGN OF THE FOUNDATION SYSTEM IS BASED UPON THE CRITERIA AND RECOMMENDATIONS CONTAINED IN CBC TABLE 1806.2, ITEM 5.
2. LOCATE AND PROTECT EXISTING UTILITIES TO REMAIN DURING AND/OR AFTER CONSTRUCTION.
3. REMOVE ABANDONED FOOTINGS, UTILITIES, ETC. WHICH INTERFERE WITH NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED.
4. NOTIFY THE EER AND SEOR IF ANY BURIED STRUCTURES NOT INDICATED, SUCH AS CESSPOOLS, CISTERNS, FOUNDATIONS, ETC. ARE FOUND.
5. REMOVE LOOSE SOIL AND STANDING WATER FROM FOUNDATION EXCAVATIONS PRIOR TO PLACING CONCRETE.
6. BOTTOM OF FOOTINGS SHALL BE LEVEL.
7. EXCAVATIONS FOR FOUNDATIONS MUST BE ACCEPTED BY THE CITY INSPECTOR PRIOR TO PLACING REINFORCING AND CONCRETE. NOTIFY THE CITY WHEN EXCAVATIONS ARE READY FOR INSPECTION.
8. MECHANICALLY COMPACT EXCAVATION BACKFILLS IN LAYERS. PROVIDE 90% MINIMUM COMPACTION IN ACCORDANCE WITH THE ASTM D1557 TEST METHOD UON IN SOILS REPORT. PROVIDE 95% MINIMUM COMPACTION FOR FILL BENEATH FOOTINGS.
9. SCARIFY AND RECOMPACT TOP 6 INCHES OF SOIL BENEATH FILL PER ITEM ABOVE.

EXISTING CONSTRUCTION

1. THE CONTRACTOR SHALL REMOVE ALL INTERFERING ITEMS FOR NEW CONSTRUCTION AND SHALL REPAIR OR REPLACE ALL REMOVED ITEMS TO MATCH THE EXISTING CONDITIONS IN ACCORDANCE WITH THE ARCHITECTURAL DRAWINGS.
2. INFORMATION SHOWN ON THE DRAWINGS RELATED TO EXISTING CONDITIONS REPRESENTS THE PRESENT KNOWLEDGE, BUT WITHOUT GUARANTEE OF ACCURACY. REPORT CONDITIONS THAT CONFLICT WITH THE CONTRACT DOCUMENTS TO THE ARCHITECT AND SEOR. DO NOT DEVIATE FROM THE CONTRACT DOCUMENTS WITHOUT WRITTEN DIRECTION FROM THE EER AND/OR SEOR.

FORMWORK

1. PROVIDE CURING WHERE FORMS ARE REMOVED IN LESS THAN 7 DAYS.
2. REMOVE FORMS NO SOONER THAN 48 HOURS AFTER PLACING CONCRETE.

REINFORCING STEEL

1. REINFORCING SHALL BE FABRICATED ACCORDING TO THE "MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION" AND SHALL CONFORM TO ASTM A615, GRADE 60.
2. PROVIDE REINFORCING SHOWN OR NOTED CONTINUOUS IN LENGTHS AS LONG AS PRACTICABLE.
3. TERMINATE REINFORCING STEEL IN STANDARD HOOKS UNLESS OTHERWISE SHOWN.
4. REINFORCING SHALL BE SECURELY TIED IN PLACE BEFORE CONCRETE IS PLACED.
5. ACCURATELY POSITION, SUPPORT AND SECURE REINFORCEMENT FROM DISPLACING DUE TO FORMWORK, CONSTRUCTION, OR CONCRETE PLACEMENT OPERATIONS. LOCATE AND SUPPORT REINFORCING BY METAL CHAIRS, RUNNERS, BOLSTERS, SPACERS AND HANGERS AT A MAXIMUM SPACING OF 3'-0".
6. FIELD BENDING OF REINFORCING STEEL EMBEDDED IN CONCRETE OR MASONRY SHALL NOT BE ALLOWED UNLESS APPROVED BY THE SEOR.
7. MILL CERTIFICATIONS SHALL BE SUBMITTED FOR REVIEW.

CAST-IN-PLACE CONCRETE

1. CONCRETE IS MILDLY REINFORCED AND CAST-IN-PLACE UNLESS OTHERWISE NOTED. WHERE REINFORCING IS NOT SPECIFICALLY SHOWN OR WHERE DETAILS ARE NOT GIVEN, PROVIDE REINFORCING SIMILAR TO THAT SHOWN FOR SIMILAR CONDITIONS, SUBJECT TO REVIEW BY THE SEOR.
2. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
3. DIMENSIONS SHOWN FOR LOCATION OF REINFORCING ARE TO THE FACE OF BARS AND DENOTE CLEAR COVERAGE UNLESS OTHERWISE NOTED.
4. THE MINIMUM CONCRETE CLEAR COVER TO REINFORCING BARS IS AS FOLLOWS:

LOCATIONS	CLEAR COVER, INCHES
CONCRETE PLACED AGAINST EARTH	3
SLABS ON GRADE (TOP CLEARANCE)	1½

5. CONCRETE TYPES

USE	f_c (PSI) (a)	MAX SLUMP (IN)	NOMINAL MAX AGGREGATE (IN)	WATER CEMENTITIOUS RATIO (MAX)
TYPICAL	3,000*	4	1	0.50

*NOTE: CONCRETE DESIGNED USING $f_c = 2,500$ PSI (SPECIAL INSPECTION NOT REQUIRED)
a. COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS.

6. CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY, BEARING A CALIFORNIA REGISTERED CIVIL ENGINEER'S STAMP, AND APPROVED BY THE SEOR PRIOR TO USE.
7. PORTLAND CEMENT SHALL BE TYPE II OR V CONFORMING TO ASTM C150.
8. COARSE AGGREGATE SHALL CONFORM TO ASTM C-33.
9. ALL CONCRETE SHALL BE NORMAL WEIGHT (145 PCF) HARD ROCK TYPE.
10. CONTINUOUSLY MOIST CURE CONCRETE FOR 7 DAYS MINIMUM. WATER FOG SPRAYS, PONDING, SATURATED ABSORPTIVE COVERS OR MOISTURE RETAINING COVERS MAY BE USED. IN LIEU OF MOIST CURING, CURING COMPOUNDS MAY BE SUBMITTED TO THE ARCHITECT FOR ACCEPTANCE.
11. PROVIDE ¼" CHAMFERS AT ALL EXPOSED CONCRETE EDGES UNLESS OTHERWISE NOTED.
12. CONSOLIDATE CONCRETE PLACED IN FORMS BY MECHANICAL VIBRATING EQUIPMENT SUPPLEMENTED BY HAND-SPADING, RODDING OR TAMPING. USE EQUIPMENT & PROCEDURES FOR CONSOLIDATION OF CONCRETE IN ACCORDANCE WITH THE RECOMMENDED PRACTICES OF ACI 309 TO SUIT THE TYPE OF CONCRETE & PROJECT CONDITIONS.
13. NO WOOD SPREADERS ALLOWED. NO WOOD STAKES ALLOWED IN AREAS TO BE CONCRETED.

EXPANSION (WEDGE) ANCHORS

1. WHEN INSTALLING DRILLED-IN ANCHORS IN CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING.
2. EXPANSION ANCHORS INTO CONCRETE SHALL BE HILTI KB-TZ (ICC ESR-1917).
3. INSTALL ANCHORS IN ACCORDANCE WITH THE ICC REPORT.
4. PROVIDE STAINLESS STEEL FASTENERS (EXTERIOR USE).
5. IF REINFORCEMENT IS ENCOUNTERED DURING DRILLING, ABANDON HOLE AND SHIFT LOCATION TO AVOID THE REINFORCEMENT. PROVIDE A MINIMUM OF TWO ANCHOR DIAMETERS OR 1", WHICHEVER IS LARGER, OF SOUND CONCRETE BETWEEN THE ANCHOR AND THE ABANDONED HOLE. FILL THE ABANDONED HOLE WITH NON-SHRINK GROUT. IF THE ANCHOR MAY NOT BE SHIFTED AS NOTED ABOVE, CONTACT THE SEOR.
6. INSTALL ANCHORS TO THE FOLLOWING SPECIFICATIONS (EFFECTIVE EMBEDMENTS SHOWN ON DETAILS):

HILTI KB-TZ ANCHOR		
ANCHOR DIAMETER (IN)	½	¾
EFFECTIVE EMBED, h_{eff} (IN)	3¼	4
NOMINAL EMBED, h_{nom} (IN)	3¾	4⅞
MIN HOLE DEPTH, h_o (IN)	4	4¾
INSTALL TORQUE (LB-FT)	40	60
MIN THICKNESS, t_{min} (IN)	6	6
MIN EDGE DIST, c_{min} (IN)	2⅞	3¼
MIN SPACING, s_{min} (IN)	2⅞	3

STATEMENT OF SPECIAL INSPECTIONS (& STRUCTURAL TESTS)

1. STRUCTURAL TESTS AND INSPECTIONS SHALL BE ACCORDING TO 2016 CALIFORNIA BUILDING CODE.
2. THE SPECIAL INSPECTIONS IDENTIFIED ARE IN ADDITION TO THOSE REQUIRED BY SECTION 110 OF THE CODE, AS AMENDED. SPECIAL INSPECTION IS NOT A SUBSTITUTE FOR INSPECTION BY THE GOVERNING JURISDICTION.
3. AN INDEPENDENT TESTING AGENCY AND SPECIAL INSPECTORS WILL BE RETAINED BY THE OWNER (NOT THE CONTRACTOR OR ANY OTHER PERSON RESPONSIBLE FOR THE WORK) TO PERFORM TESTS AND SPECIAL INSPECTIONS. THE CONTRACTOR SHALL PROVIDE ACCESS AND FURNISH SAMPLES TO THE AGENCY AS REQUIRED.
4. IF INITIAL TESTS OR INSPECTIONS MADE BY THE OWNER'S TESTING AGENCY REVEAL THAT ANY PORTION OF THE WORK DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS, ADDITIONAL TESTS, INSPECTIONS AND NECESSARY REPAIRS WILL BE MADE AT THE CONTRACTOR'S EXPENSE.
5. A CERTIFICATE OF SATISFACTORY COMPLETION OF WORK REQUIRING SPECIAL INSPECTION MUST BE COMPLETED AND SUBMITTED TO THE GOVERNING JURISDICTION AND SEOR.
6. PERIODIC OR CONTINUOUS PRESENCE AND INSPECTION BY THE PROJECT OR SPECIAL INSPECTOR ARE REQUIRED FOR THE FOLLOWING TYPES OF WORK WHERE OCCURS:

REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION (CBC TABLE 1705.3)			
TYPE	INSPECTION FREQUENCY	REFERENCED STANDARD	IBC REFERENCE
1. NOT REQUIRED EXCEPT AS SHOWN BELOW (NOTE: $f_c = 2,500$ PSI USED IN DESIGN)			
4. INSPECT MECHANICAL ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS	PERIODIC	ACI 318: 17.8.2	---

STRUCTURAL OBSERVATION - NOT REQUIRED**ABBREVIATIONS**

@	AT	MAX	MAXIMUM
CLR	CLEAR	MIN	MINIMUM
CONT	CONTINUOUS	NWC	NORMALWEIGHT CONCRETE
(E)	EXISTING	OC	ON CENTER
E.A	EXPANSION ANCHOR	REINF	REINFORCING STEEL
EER	ELECTRICAL ENGINEER OF RECORD	S.E.D.	SEE ELEC DOCUMENTS
EMB	EMBEDMENT	SEOR	STRUCTURAL ENGINEER OF RECORD
EQ	EQUAL	S.O.G.	SLAB-ON-GRADE
EQUIP	EQUIPMENT	SS	STAINLESS STEEL
EW	EACH WAY	TOT	TOTAL
LBS	POUNDS	TYP	TYPICAL

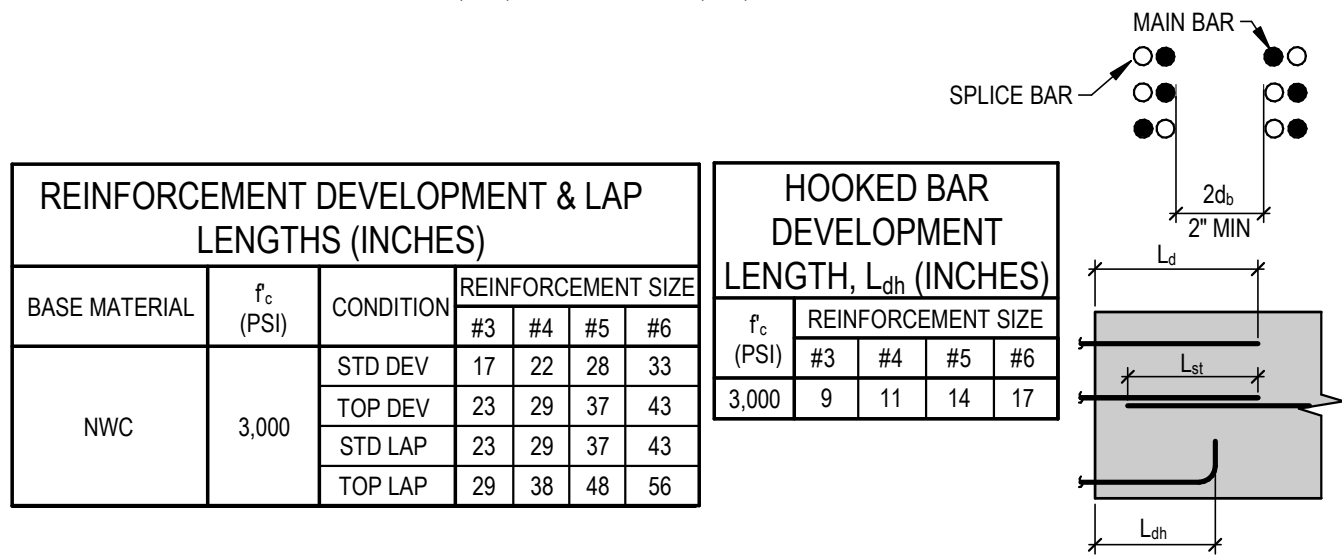
GENERAL NOTES

SCALE: NONE

5

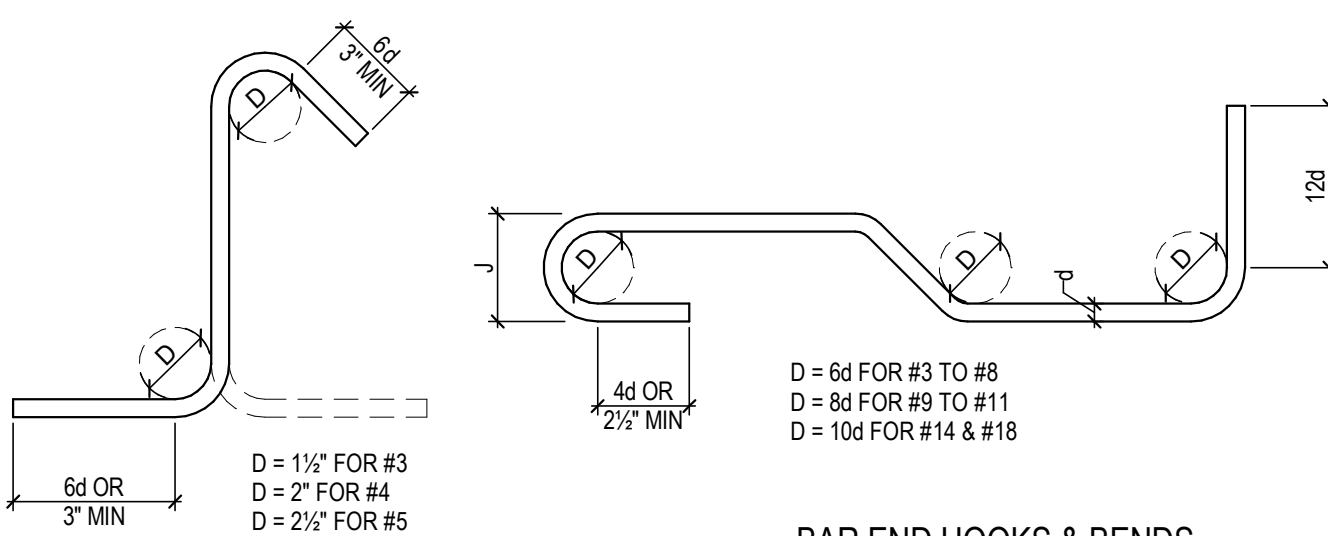
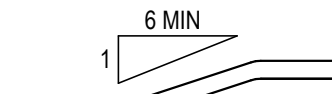
NOTES:

1. ALL DETAILING OF REINF SHALL COMPLY WITH THIS SCHEDULE UNLESS SPECIFICALLY DETAILED OTHERWISE.
2. REINF DEVELOPMENT LENGTH AND SPLICE TABLE IS BASED ON UNCOATED GRADE 60 STEEL PER ACI 318 CHAPTER 18 AND SECTION 18.8.5 (CONC) AND TMS 530 SECTION 3.3 (CMU).
3. d_b = BAR DIAMETER.
4. NP = NOT PERMITTED.
5. TOP REINF IS HORIZONTAL REINF THAT HAS MORE THAN 12" OF CONCRETE PLACED BELOW IT.
6. LAP LENGTHS SHOWN MEET REQUIREMENTS FOR CLASS "B" SPLICE.
7. CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED SHALL NOT BE LESS THAN THE LARGER OF 2 BAR DIAMETERS OR 2". CLEAR COVER SHALL NOT BE LESS THAN THE LARGER OF THE BAR DIAMETER SIZE OR PER GENERAL NOTES. (ALTERNATE: SPLICE BY WELDING OR MECHANICAL CONNECTIONS).
8. TYPE 1 SPLICES SHALL DEVELOP 125% OF THE YIELD STRENGTH OF THE REINF (75 KSI). TYPE 2 SPLICES SHALL DEVELOP THE TENSILE STRENGTH OF REINF (90 KSI).
- A. WELDED SPLICE (COMPLETE JOINT PENETRATION): SEE TYPICAL DETAILS FOR ADDL INFO.
- B. MECHANICAL CONNECTORS: TENSION-COMPRESSION TYPE WITH A VALID ICC APPROVAL REPORT AND SHALL BE INSTALLED IN ACCORDANCE WITH THE REPORT.
9. A STANDARD HOOK SHALL BE PROVIDED WHERE THE DEVELOPMENT LENGTH IS NOT POSSIBLE DUE TO SPACE RESTRICTIONS (REFER TO HOOKED BAR SCHEDULE).
10. SMALLER BAR LAP LENGTH MAY BE USED WHEN SPLICING BARS OF DIFFERING DIAMETERS.
11. AT CONC WALLS, SPLICES IN HORIZONTAL REINF SHALL BE STAGGERED.
12. L_d = DEVELOPMENT LENGTH (DEV), L_{sh} = LAP SPLICE (LAP).

**TYPICAL DEVELOPMENT & LAP LENGTHS**

SCALE: NONE

2

**BAR END HOOKS & BENDS****STIRRUP / TIE HOOKS & BENDS****BAR OFFSET**

NOTE: d = BAR DIAMETER

TYPICAL REINFORCEMENT BEND DETAILS

SCALE: NONE

1



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JOB#: 18P2S03

ENG: HZ



UNDER THE SUPERVISION OF:

DATE

DESIGNED: HZ

CHECKED: JCW

FOR CITY USE ONLY

STREETS

SEWER

DRAINAGE

WATER

ST. SUPT.

TRAFFIC

DATE

DESCRIPTION

FOR ENGINEER'S USE

NAME

DATE

DRAWN: BTM

DESIGNED: HZ

CHECKED: JCW

FOR CITY USE ONLY

NAME

DATE

STREETS

SEWER

DRAINAGE

WATER

ST. SUPT.

TRAFFIC

DATE

DESCRIPTION

CITY OF ORANGE

KILLEFER PARK

(615 N LEMON ST, ORANGE, CA 92867)

GENERAL NOTES & TYPICAL DETAILS

APPROVED:

DATE

CITY ENGINEER

SCALE:

HORIZ. AS NOTED

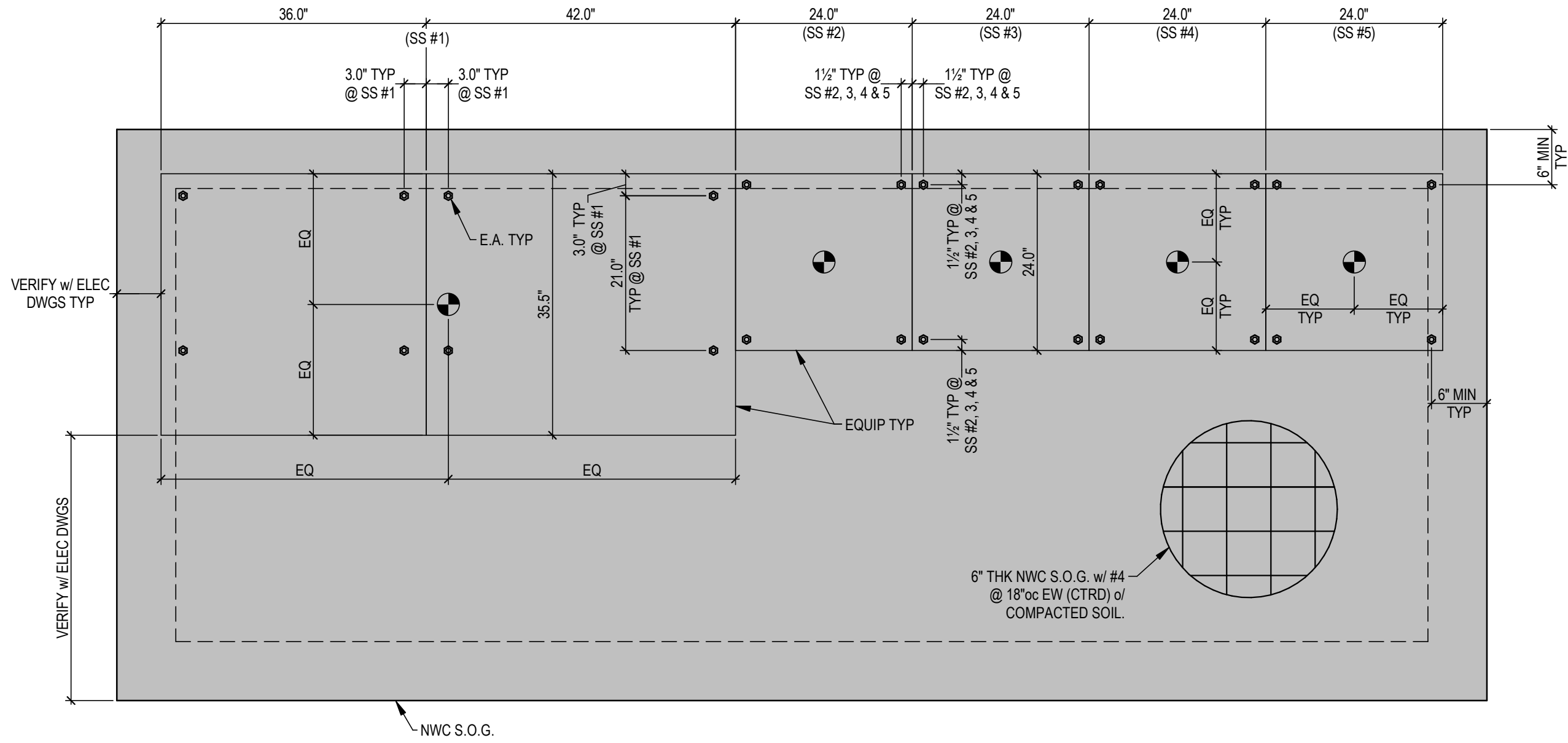
VERT. AS NOTED

F.B. _____ PG. _____

SHEET 1 OF 2 SHEETS

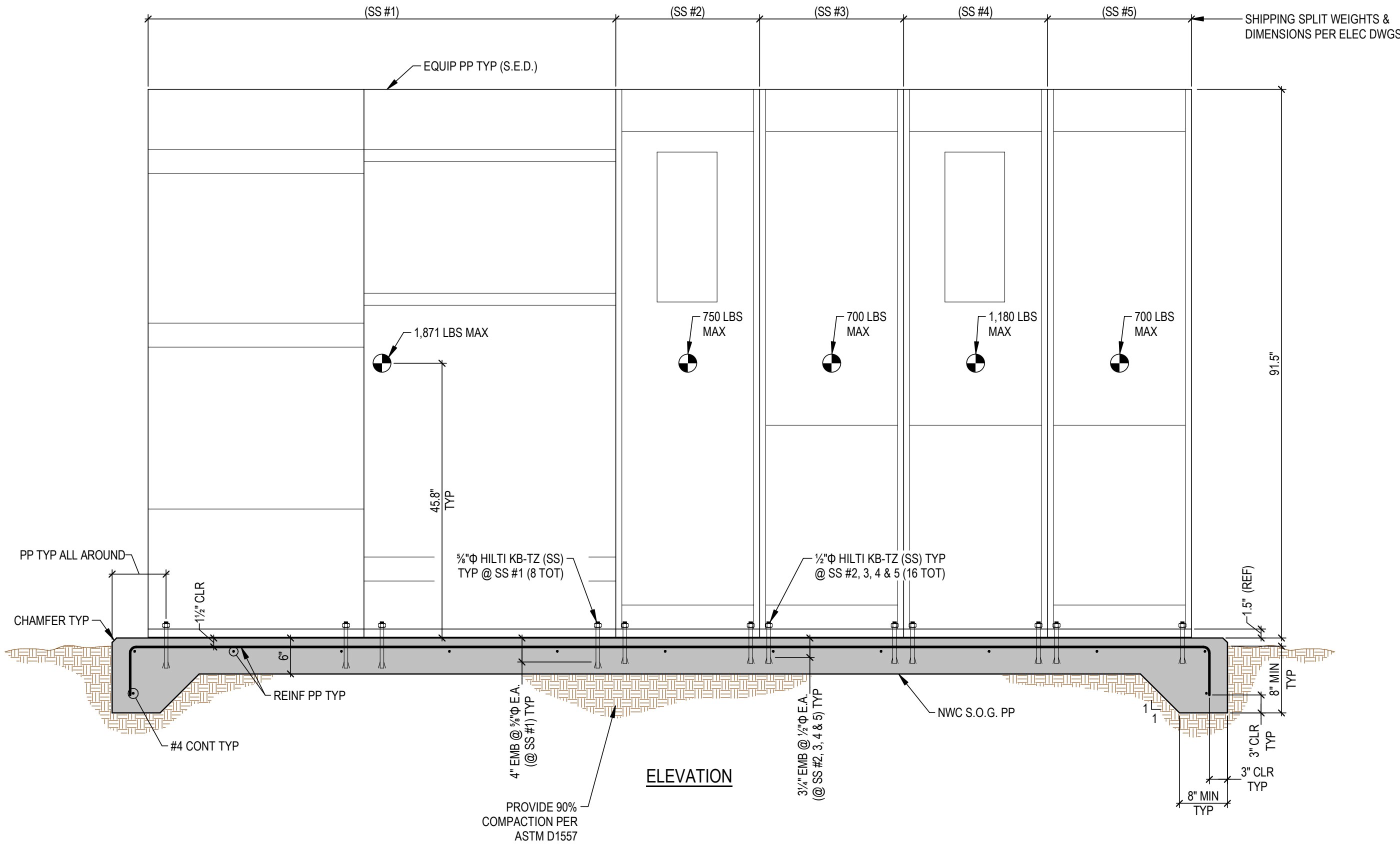
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S001



PLAN VIEW @ EQUIP BASE

NOTES:
1. S.E.D. FOR EQUIP LOCATION & ADDL INFO.
2. CONTRACTOR TO VERIFY DIMENSIONS w/ MFR PRIOR TO CONSTRUCTION.



ELEVATION

SWITCHBOARD PAD & ANCHORAGE

(MS) SCALE: NONE

1

CITY OF ORANGE

KILLEFER PARK
(615 N LEMON ST, ORANGE, CA 92867)

DETAILS

APPROVED:	APPROVED:
DATE	DATE
CITY ENGINEER	PUBLIC WORKS DIRECTOR
SCALE: HORIZ. AS NOTED VERT. AS NOTED	F.B. PG. SHEET 2 OF 2 SHEETS

FOR ENGINEER'S USE

NAME	DATE
DRAWN BTM	10/11/19
DESIGNED HZ	10/11/19
CHECKED JCW	10/11/19

FOR CITY USE ONLY

NAME	DATE
STREETS	
SEWER	
DRAINAGE	
WATER	
ST. SUPT.	
TRAFFIC	

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S002

UNDER THE SUPERVISION OF:

DATE

REVISIONS

DATE	DESCRIPTION

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JOB#: 18P2S03

ENG: HZ





October 9, 2019

STRUCTURAL DESIGN CALCULATIONS

***City of Orange
Killefer Park***

Spire Job #: 18P2S03
615 N. Lemon Street
Orange, CA 92867

Project Description:

Provide anchorage design for a switchboard that sits on an existing concrete pad.

Page 1.	Design Maps Summary Report
Page 2.	Anchorage to Topside of Concrete - Hilti KB-TZ (ESR-1917)
Page 3-6.	Switchboard Anchorage
Page 7.	Switchboard FTG
Page A1-A2.	Reference Equipment Info



10.09.19

Job:	18P2S03 City of Orange Killefer Park			1
Calc By:	HZ	Date:	10/07/19	

City of Orange Killefer Park

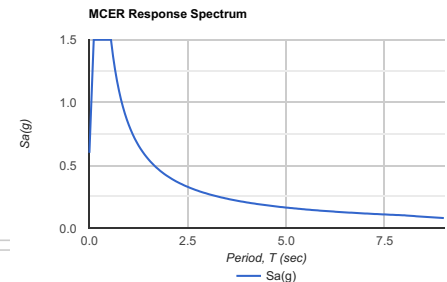
615 N Lemon St, Orange, CA 92867, USA

Latitude, Longitude: 33.7971379, -117.8548156

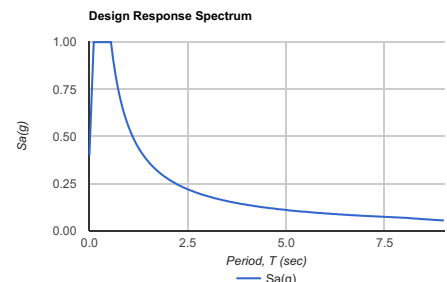


Date	10/7/2019, 5:24:21 PM
Design Code Reference Document	ASCE7-10
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description
S_S	1.5	MCE_R ground motion. (for 0.2 second period)
S_1	0.548	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.5	Site-modified spectral acceleration value
S_{M1}	0.822	Site-modified spectral acceleration value
S_{DS}	1	Numeric seismic design value at 0.2 second SA
S_{D1}	0.548	Numeric seismic design value at 1.0 second SA



Type	Value	Description
SDC	D	Seismic design category
F_a	1	Site amplification factor at 0.2 second
F_v	1.5	Site amplification factor at 1.0 second
PGA	0.503	MCE_G peak ground acceleration
F_{PGA}	1	Site amplification factor at PGA
PGA_M	0.503	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
S_{sRT}	1.504	Probabilistic risk-targeted ground motion. (0.2 second)
S_{sUH}	1.44	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
S_{sD}	1.5	Factored deterministic acceleration value. (0.2 second)
S_{1RT}	0.548	Probabilistic risk-targeted ground motion. (1.0 second)
S_{1UH}	0.509	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S_{1D}	0.6	Factored deterministic acceleration value. (1.0 second)
PGA _d	0.503	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	1.044	Mapped value of the risk coefficient at short periods
C_{R1}	1.076	Mapped value of the risk coefficient at a period of 1 s



Job:	18P2S03 City of Orange Killefer Park			2
Calc By:	HZ	Date:	10/09/19	

Anchorage to Topside of Concrete - Hilti KB-TZ (ESR-1917)

Mark =	1	2			
Conc =	NWC	NWC			
Metal deck =	No	No			
f'_c =	2,500	2,500			psi
Anchor =	SS 1/2 (3 1/4)	SS 5/8 (4)			
Steel Type =	Stainless	Stainless			
d_o =	1/2	5/8			in
h_{ef} =	3 1/4	4			in
h =	6	6			in
h_{min} =	6	6			in
s =	0.75	0.75			
c =	1.0	1.0			
k_{cr} =	17	17			
k_{cp} =	2	2			
$N_{p,eq}$ =	NA	5,840			Lbs
$N_{p,cr}$ =	NA	5,840			Lbs
N_b =	4,980	6,800			Lbs
s_{min} =	2	2 3/8			in
s =	3.0	3.0			in
c_{min} =	3 1/4	4 1/4			in
c =	6.0	6.0			in
V_{cb} =	N/A	N/A			
ed,N =	1.00	1.00			
A_n =	62	90			in ²
A_{no} =	95	144			in ²
N_{sa} =	11,554	17,880			lbs
V_{sa} =	6,880	9,350			lbs
t_{conc} =	0.65	0.65			
v_{conc} =	0.70	0.70			
t_{steel} =	0.75	0.75			
v_{steel} =	0.65	0.65			
$P_{n,conc}$ =	1,587	1,779			Lbs
$V_{n,conc}$ =	4,559	5,950			Lbs
$P_{n,steel}$ =	8,666	13,410			Lbs
$V_{n,steel}$ =	4,472	6,078			Lbs

Normal or lightweight concrete

Concrete over metal deck?

Concrete compressive strength

Hilti KB-TZ anchor

Carbon steel or Stainless steel

Anchor O.D.

Effective min anchor embedment

Concrete thickness

Min member thickness

Seismic reduction per ACI Ch. 17

LWC reduction per ACI Ch. 17

Effectiveness factor

Coefficient for pryout strength

Adjusted by $(f'_c/2500)^{0.5}$

Adjusted by $(f'_c/2500)^{0.5}$

$= k_{cr} \cdot (f'_c)^{0.5} \cdot h_{ef}^{1.5}$

Min anchor spacing

Anchor spacing

Min. edge distance

Edge distance

$= \sqrt{c} (7(h_{ef}/d_o)^{0.2} \cdot d_o^{0.5}) \cdot f'_c^{0.5} \cdot c^{1.5}$

$= 0.7 + 0.3c/(1.5h_{ef}) \leq 1.0$

$= 3h_{ef} \cdot (\min(1.5h_{ef}, s/2) + \min(1.5h_{ef}, c))$

$= 9 \cdot h_{ef}^2$

Steel strength in tension

Steel strength in shear

$= s \cdot t_{conc} \cdot \min(N_{p,eq}, N_{p,cr}, N_b) \cdot (A_n/A_{no})$

$= v_{conc} \cdot k_{cp} \cdot N_b \cdot (A_n/A_{no})$

$= t_{steel} \cdot N_{sa}$

$= v_{steel} \cdot V_{sa}$

Job:	18P2S03 City of Orange Killefer Park			3
Calc By:	HZ	Date:	10/09/19	

Floor Mounted Equipment - NEMA 3R Switchboard (SS#1)

Seismic Loads (ASCE 7-10, Chapter 13)

Design =	City	
a_p =	2.5	ASCE 7 Table 13.5-1 & Table 13.6-1
R_p =	6.0	ASCE 7 Table 13.5-1 & Table 13.6-1
o =	2.5	ASCE 7 Table 13.5-1 & Table 13.6-1
S_{DS} =	1.00	g See USGS sheet
I_p =	1.00	ASCE Table 11.5-1
z/h =	0.00	
F_{ph} =	0.30	W_p $F_{ph} = \frac{0.4S_{DS}a_p}{R_p/I_p} \left(1 + 2\frac{z}{h}\right) W_p$
F_{pv} =	0.20	W_p $F_{pv} = 0.2 \cdot S_{DS} \cdot W_p$
W_p =	1,871	Lbs Equipment weight
F_{ph} =	561	Lbs (ULT) $o \cdot F_{ph} =$ 1,403 Lbs (ULT)
F_{pv} =	374	Lbs (ULT)

Wind Loads (ASCE 7-10, Section 29.5.1)

V =	110	mph	Basic wind velocity
Exp =	C		Exposure category
W =	78.0	in	Equipment width
D =	36.0	in	Equipment depth
H =	91.5	in	Equipment height
A_r =	50	ft ²	Vertical area exposed to wind
A_f =	20	ft ²	Horizontal area exposed to wind
K_d =	0.85		Table 26.6-1
K_z =	0.85		Table 29.3-1
K_{zt} =	1.00		Assumed
q_z =	22.4	psf	$= 0.00256 \cdot K_z \cdot K_{zt} \cdot K_d \cdot V^2$
G =	0.85		Section 26.9.1, rigid
C_f =	1.55		Figure 29.4-1
F_h =	1,459	Lbs (ULT)	$= q_z \cdot G \cdot C_f \cdot A_f$
F_v =	436	Lbs (ULT)	$= q_z \cdot A_r$

Unit Data

B =	72.0	in	Distance between anchors
D =	21.0	in	Distance between anchors
CG =	45.8	in	Height to centroid

Job:	18P2S03 City of Orange Killefer Park			4
Calc By:	HZ	Date:	10/09/19	

Floor Mounted Equipment - NEMA 3R Switchboard (SS#1)

Anchorage to NWC Conc. Pad (ULT)

* See "Anchorage to Topside of Concrete - Hilti KB-TZ (ESR-1917)" calculation sheet for additional info.

Anchor =	SS 5/8 (4)	5/8" ϕ Hilti KB-TZ (Stainless Steel) w/ 4" Embedment
n =	8	No. of anchors (total)
n _x =	8	No. of anchors resisting horizontal loads in one direction (min)
n _y =	2	No. of anchors resisting vertical loads from overturning (min)

Seismic

ϕP_u =	1,365	Lbs	Tension per anchor w/ Ω_o	=	$\phi F_{ph} \cdot CG / [\min(B,D) \cdot n_y] - (0.9W_p - F_{pv})/n$
ϕV_u =	175	Lbs	Shear per anchor w/ Ω_o	=	$\phi F_{ph}/n_x$
	Concrete	Steel			
P_n =	1,779	13,410	Lbs	(Concrete tension capacity has been multiplied by 0.75 for seismic)	
V_n =	5,950	6,078	Lbs		
DCR_p =	0.77	0.10	$\phi P_u / P_n$		
DCR_v =	0.03	0.03	$\phi V_u / V_n$		
DCR_{p+v} =	0.65		$(DCR_{p,max})^{5/3} + (DCR_{v,max})^{5/3} \leq 1.0$		

Wind (Governs)

P_u =	1,434	Lbs	Tension per anchor	= $F_h \cdot CG / [\min(B,D) \cdot n_y] - (0.9W_p - F_v)/n$
V_u =	182	Lbs	Shear per anchor	= F_h/n_x
	Concrete	Steel		
P_n =	2,372	13,410	Lbs	
V_n =	5,950	6,078	Lbs	
DCR_p =	0.60	0.11	P_u / P_n	
DCR_v =	0.03	0.03	V_u / V_n	
DCR_{p+v} =	0.44		$(DCR_{p,max})^{5/3} + (DCR_{v,max})^{5/3} \leq 1.0$	

Job:	18P2S03 City of Orange Killefer Park			5
Calc By:	HZ	Date:	10/09/19	

Floor Mounted Equipment - NEMA 3R Switchboard (SS#2-#5)

Seismic Loads (ASCE 7-10, Chapter 13)

Design =	City	
a_p =	2.5	ASCE 7 Table 13.5-1 & Table 13.6-1
R_p =	6.0	ASCE 7 Table 13.5-1 & Table 13.6-1
o =	2.5	ASCE 7 Table 13.5-1 & Table 13.6-1
S_{DS} =	1.00	g See USGS sheet
I_p =	1.00	ASCE Table 11.5-1
z/h =	0.00	
F_{ph} =	0.30	W_p $F_{ph} = \frac{0.4S_{DS}a_p}{R_p/I_p} \left(1 + 2\frac{z}{h}\right) W_p$
F_{pv} =	0.20	W_p $F_{pv} = 0.2 \cdot S_{DS} \cdot W_p$
W_p =	1,180	Lbs (max) Equipment weight
F_{ph} =	354	Lbs (ULT) $o \cdot F_{ph} = 885$ Lbs (ULT)
F_{pv} =	236	Lbs (ULT)

Wind Loads (ASCE 7-10, Section 29.5.1)

V =	110	mph	Basic wind velocity
Exp =	C		Exposure category
W =	24.0	in	Equipment width
D =	24.0	in	Equipment depth
H =	91.5	in	Equipment height
A_f =	15	ft ²	Vertical area exposed to wind
A_r =	4	ft ²	Horizontal area exposed to wind
K_d =	0.85		Table 26.6-1
K_z =	0.85		Table 29.3-1
K_{zt} =	1.00		Assumed
q_z =	22.4	psf	$= 0.00256 \cdot K_z \cdot K_{zt} \cdot K_d \cdot V^2$
G =	0.85		Section 26.9.1, rigid
C_f =	1.65		Figure 29.4-1
F_h =	478	Lbs (ULT)	$= q_z \cdot G \cdot C_f \cdot A_f$
F_v =	89	Lbs (ULT)	$= q_z \cdot A_r$

Unit Data

B =	21.0	in	Distance between anchors
D =	21.0	in	Distance between anchors
CG =	45.8	in	Height to centroid

Job:	18P2S03 City of Orange Killefer Park			6
Calc By:	HZ	Date:	10/09/19	

Floor Mounted Equipment - NEMA 3R Switchboard (SS#2-#5)

Anchorage to NWC Conc. Pad (ULT)

* See "Anchorage to Topside of Concrete - Hilti KB-TZ (ESR-1917)" calculation sheet for additional info.

Anchor =	SS 1/2 (3 1/4)	1/2" ϕ Hilti KB-TZ (Stainless Steel) w/ 3 1/4" Embedment
n =	4	No. of anchors (total)
n _x =	4	No. of anchors resisting horizontal loads in one direction (min)
n _y =	2	No. of anchors resisting vertical loads from overturning (min)

Seismic (Governs)

$\phi \cdot P_u$ =	758	Lbs	Tension per anchor w/ Ω_o	=	$\phi \cdot F_{ph} \cdot CG / [\min(B,D) \cdot n_y] - (0.9W_p - F_{pv})/n$	
$\phi \cdot V_u$ =	221	Lbs	Shear per anchor w/ Ω_o	=	$\phi \cdot F_{ph}/n_x$	
	Concrete	Steel				
P_n =	1,587	8,666	Lbs	(Concrete tension capacity has been multiplied by 0.75 for seismic)		
V_n =	4,559	4,472	Lbs			
DCR_p =	0.48	0.09	$\phi P_u / P_n$			
DCR_v =	0.05	0.05	$\phi V_u / V_n$			
DCR_{p+v} =	0.30	$(DCR_{p,max})^{5/3} + (DCR_{v,max})^{5/3} \leq 1.0$				

Wind

P_u =	278	Lbs	Tension per anchor	= $F_h \cdot CG / [\min(B,D) \cdot n_y] - (0.9W_p - F_v)/n$
V_u =	120	Lbs	Shear per anchor	= F_h/n_x
	Concrete	Steel		
P_n =	2,116	8,666	Lbs	
V_n =	4,559	4,472	Lbs	
DCR_p =	0.13	0.03	P_u / P_n	
DCR_v =	0.03	0.03	V_u / V_n	
DCR_{p+v} =	0.04		$(DCR_{p,max})^{5/3} + (DCR_{v,max})^{5/3} \leq 1.0$	

Job:	18P2S03 City of Orange Killefer Park			7
Calc By:	HZ	Date:	10/09/19	

Footing Design - NEMA 3R Switchboard

Design =	City
a_p =	2.5
R_p =	6
S_{DS} =	1.00 g
I_p =	1.00
z/h =	0.00

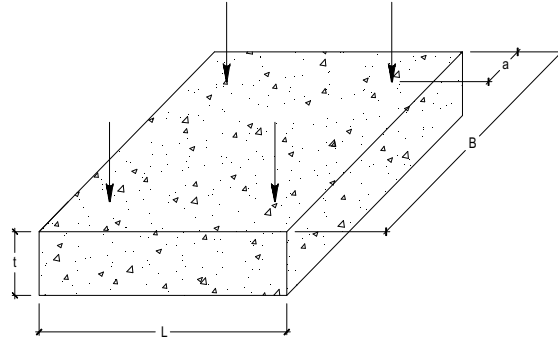
ASCE 7 T-13.5-1 & T-13.6-1
ASCE 7 T-13.5-1 & T-13.6-1
See USGS sheet
ASCE 7 Table 11.5-1

$$F_{ph} = 0.30 W_p$$

$$F_{pv} = 0.20 W_p$$

Weight & Dimensions

W_p =	5,200 lbs	Equip weight
CG_z =	45.8 in	Dist to centroid (vertical)
L =	14.5 ft (min)	Length of footing
B =	5.9 ft (min)	Width of footing
t =	0.5 ft (min)	Thickness of footing
a =	3.0 ft	Cantilever length (max)
b =	3.0 ft	Backspan length (max)
W_{FTG} =	6,434 lbs	Footing weight



	ASD	ULT	
F_{ph} =	1,092 lbs	1,560 lbs	(From Equipment)
F_{pv} =	1,629 lbs	2,327 lbs	(Includes Footing)

Soil Bearing: (ASD)

SB_{allow} = 500 psf (CBC Table 1806.2, Item 5)

CASE A: 0.9D+0.7E (ASD)	CASE B: D+0.7E (ASD)
P = 8,842 lbs $0.9 \cdot (W_p + W_{FTG}) - F_{pv}$	P = 13,263 lbs $W_p + W_{FTG} + F_{pv}$
M = 4,714 lb-ft $F_{ph}(CG_z + t)$	M = 4,714 lb-ft $F_{ph}(CG_z + t)$
e = 0.5 ft $< L/6$ ($L/6 = 2.4$ ft)	e = 0.4 ft $< L/6$ ($L/6 = 2.4$ ft)
→ Full Soil Bearing $SB = P/(BL) + 6M/(BL^2)$	→ Full Soil Bearing $SB = P/(BL) + 6M/(BL^2)$
SB = 126 psf < 500 psf (OK)	SB = 177 psf < 500 psf (OK)

Footing Reinforcing Design: (ULT)

F_y =	60 ksi
f'_c =	2,500 psi
Reinf =	#4 @ 18" oc (18" oc max)
A_s =	0.14 in ² /ft (10 bars total)
d =	2.2 in
a =	0.3 in $= A_s \cdot F_y / (0.85 \cdot f'_c \cdot b)$
bot cover =	3.0 in
top cover =	1.5 in

CASE A: 0.9D+E (ULT)	CASE B: 1.2D+E (ULT)
P = 8,144 lbs $0.9(W_p + W_{FTG}) - F_{pv}$	P = 16,288 lbs $1.2(W_p + W_{FTG}) + F_{pv}$
M = 6,734 lb-ft $F_{ph}(CG_z + t)$	M = 6,734 lb-ft $F_{ph}(CG_z + t)$
e = 0.8 ft $< L/6$ ($L/6 = 2.4$ ft)	e = 0.4 ft $< L/6$ ($L/6 = 2.4$ ft)
w = 127 plf/ft $= P/(BL) + 6M/(BL^2)$	w = 222 plf/ft $= P/(BL) + 6M/(BL^2)$

M_u^- =	0.3 kip-ft/ft	$= w \cdot b^2 / 8$	V_u =	1.6 k/ft	$= w \cdot L / 2$
M_u^+ =	1.0 kip-ft/ft	$= w \cdot a^2 / 2$	V_c =	2.0 k/ft	$= [2(f'_c)^{1/2}(12") \cdot d]$
$M_{u,max}$ =	1.0 kip-ft/ft		DCR =	0.81 (OK)	$= V_u / V_c \leq 1.0$
M_n =	1.3 kip-ft/ft	$= 0.9 A_s \cdot F_y (d - a / 2)$			
DCR =	0.79 (OK)	$= M_u / M_n \leq 1.0$			

Job:	18P2S03 City of Orange Killefer Park			A1
Calc By:	HZ	Date:	10/08/19	

SWITCHBOARD GENERAL NOTES PRODUCT DESCRIPTION & RATINGS

Power System Data

480Y/277V 3Ph 4W 60Hz / 3 Phase Wye
Solidly Grounded
System Short Circuit Current Rating: 42KA RMS
Incoming Section 1 Cable Through the Bottom Left of Lineup

Bus System Data

400A Tin Plated Copper Main Bus
(2) .25x1.50 IN/6x38 mm Cu Bus Bar Per Phase/Neutral
(1) .25x.875 IN/6x22 mm Cu Ground Bus

Enclosure Data

Type 3R Free Standing
Exterior Paint Color: ANSI 49
Front Accessibility Only Required
Handling: Rollers
Rodent barriers
1.5H Corrosion Resist Base Channels
Interior Lights - All Sections
Strip Heater w. Thermostat
Stainless Steel Base Channels
Utility sealing hardware installed for unmetrated bus compartment:
GFCI Receptacle

Estimated Shipping Weight

Shipping Split 1 1871.00 lbs
Shipping Split 2 750.00 lbs
Shipping Split 3 700.00 lbs
Shipping Split 4 1180.00 lbs
Shipping Split 5 700.00 lbs
Complete Lineup 5,200 lbs

Code Standards

U.L. Deadfront and suitable for use as Service Entrance
when not more than six (6) disconnecting means are provided.

PRODUCT INFORMATION

Wiring

All wiring to be Machine Tool Wire type

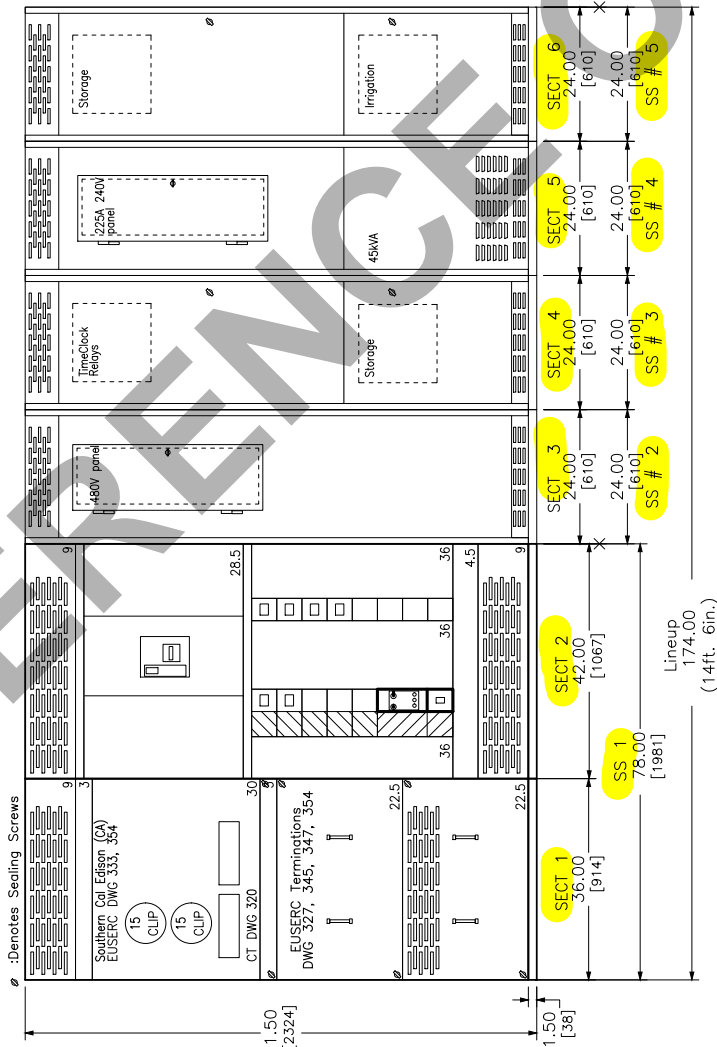
Product Accessories/Options

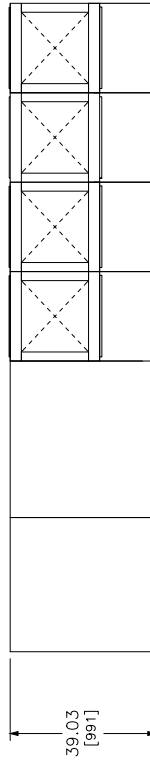
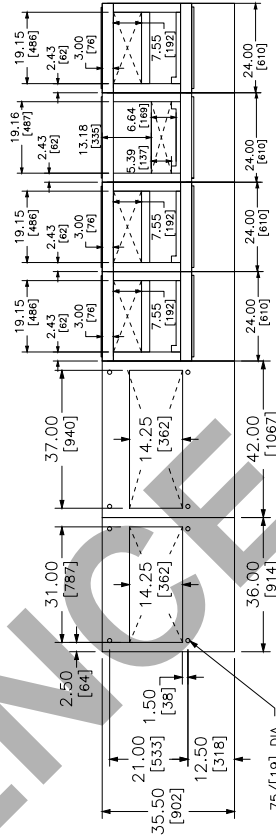
PANELBOARD DATA (ITEM - 32396087) SYSTEM: 480Y/277V 3Ph 4W 60Hz
DESIGNATION: 480V panel
LOCATION: Top Single PANEL FEED: Through the Bottom
Main Lugs 42KA 100A
PANELBOARD DATA (ITEM - 32396112)
DESIGNATION: 225A 240V panel SYSTEM: 120/240V 1Ph 3W 60Hz
LOCATION: Top Single PANEL FEED: Through the Bottom
Single Main 10KA 225A
TRANSFORMER DATA
DESIGNATION: 45KVA
LOCATION: Bottom Single
TYPE: Energy Efficient 50KVA
VOLTAGE: 480V-120/240V WINDING MATERIAL: Copper
TEMPERATURE RISE: 150C

DUAL DIMENSIONS: INCHES
MILLIMETERS

JOB NAME:	Killefer Park City of Orange
JOB LOCATION:	
DRAWN BY:	(QZC)
ENGINEER:	
DATE:	October 02 2019
DRAWING STATUS:	QUOTE
EQUIPMENT DESIGNATION:	MS 400A 480V N3R
EQUIPMENT TYPE:	QED-2 Switchboard
DRAWING VIEW:	ELEVATION VIEW
REVISION:	
DWG NO:	DWG-FQ-1247670-32396077-01
PG 1	OF 2

DESCRIPTION	BY	DATE



[illegible][illegible]

FLOOR PLAN - FRONT

NOTE:
A MINIMUM OF 2.00/[51]
CLEARANCE BEHIND THE
SWITCHBOARD IS REQUIRED
FOR TOP COVER OVERHANG.

NOTE: ALL DEVICES REQUIRING DRILLING OR INSERTION IN MOUNTING PAD SUCH AS CONDUIT, ANCHORING STUDS, SLEEVE INSERTS, ETC. SHOULD BE INSTALLED BEFORE SETTING EQUIPMENT IN PLACE.

DUAL DIMENSIONS:
INCHES
MILLIMETER

JOB NAME:	Killefer Park City of Orange	EQUIPMENT DESIGNATION:	MS 400A 480V N3R
JOB LOCATION:		EQUIPMENT TYPE:	OED-2 Switchboard
DRAWN BY:	(Q2C)	DRAWING TYPE:	SIDE, TOP VIEW & FLOOR PLAN
ENGR:			
DATE:	October 02 2019		
DRAWING STATUS:	QUOTE		
DATE:			
NOT FOR CONSTRUCTION			
DWG# FO-1247670-32396077-01			
PG. 2			

PG 2 OF 2

LEGEND

SYMBOL	DESCRIPTION
	NOTE CALLOUT
	DETAIL CALLOUT - NUMBER ON TOP DENOTES DETAIL NUMBER - NUMBER ON BOTTOM DENOTES SHEET DETAIL IS SHOWN
	NEW LINework
	EXISTING LINework
	DEMOLISHED LINework
	CONDUIT CONCEALED IN WALL OR ABOVE CEILING
	CONDUIT TURNED UP
	CONDUIT CONCEALED UNDERGROUND OR BELOW FLOOR
	BRANCH CIRCUIT HOMERUN TO PANELBOARD AND CIRCUITS AS INDICATED
	CIRCUIT BREAKER
	SWITCH
	GROUND CONNECTION
	METER
	JUNCTION BOX

ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
1/C	SINGLE CONDUCTOR	KVA	KILOVOLT-AMPERES
AND		KW	KILOWATT
@	AT	LF	LINEAR FEET
A OR AMP	AMPERES	LS	LOAD INTERRUPTER SWITCH
ABV	ABOVE	LOC	LOCATION
A.C.	ASPHALT CONCRETE	LTG	LIGHTING
AFF	ABOVE FINISHED FLOOR	LV	LOW VOLTAGE
AFG	ABOVE FINISH GRADE	MAX	MAXIMUM
AIC	AMPERE INTERRUPTING CAPACITY	MCC	MOTOR CONTROL CENTER
AL	ALUMINUM	MCP	MOTOR CIRCUIT PROTECTOR
APPROX.	APPROXIMATE	MFGR	MANUFACTURER
ARCH.	ARCHITECT; ARCHITECTURAL	MH	MANHOLE
ATC	AIR TERMINAL CHAMBER	MI	MECHANICAL INTERLOCK
ATS	AUTOMATIC TRANSFER SWITCH	MRCT	MULTI-RATIO CURRENT TRANSFORMER
AUTO	AUTOMATIC	MTD	MOUNTED
AUX	AUXILIARY	MTG	MOUNTING
AWG	AMERICAN WIRE GAUGE	MV	MEDIUM VOLTAGE
BAT	BATTERY	N	NORTH
BEL	BELOW	NAC	NOTIFICATION APPLIANCE CIRCUIT
BKBD	BACKBOARD	NC	NORMALLY CLOSED
BKR	BREAKER	NEC	NATIONAL ELECTRICAL CODE
BLDG	BUILDING	NF	NON-FUSED
B.S.	BARE STRANDED	NIC	NOT IN CONTRACT
C	CONDUIT	NL	NIGHT LIGHT- 24HRS ON
CB	CIRCUIT BREAKER	NO.	NUMBER
CC	CONSTANT CURRENT	OC	ON CENTER
CKT	CIRCUIT	OD	OUTSIDE DIAMETER
CL	CENTER LINE	OE	OVERHEAD ELECTRICAL
CLG	CEILING	OFC	OIL FUSED CUTOUT
CMU	CONCRETE MASONRY UNIT	OH	OVERHEAD
C.O.	CONDUIT ONLY WITH PULL WIRE	OL	OIL LEVER SWITCH
COL	COLUMN	P	POLE
CP	COMMUNICATION PROCESSOR	PB	PULL BOX
CPT	CONTROL POWER TRANSFORMER	PC	PHOTOCELL
CR	CONTROL RELAY	PCB	POLYCHLORINATED BIPHENYL
CSU	CALIFORNIA STATE UNIVERSITY	PDS	PRESSURE DIFFERENTIAL SWITCH
CSFD	COMBINATION SMOKE FIRE DAMPER	PF	POWER FACTOR
CT	CURRENT TRANSFORMER	PH OR Ø	PHASE
CW	COLD WATER	PILC	PAPER INSULATED, LEAD COVER
CU	COPPER	PIV	POST INDICATING VALVE
DIAG	DIAGRAM	PL	PLATE
DL	DAMP LOCATION LISTING	PNL	PANEL
DM	DIGITAL METER	POC	POINT OF CONNECTION
DP	DISTRIBUTION PANEL	PRI	PRIMARY
DIST.	DISTANCE	PVC	POLY-VINYL CHLORIDE
DWG	DRAWING	PWR	POWER
DWP	DEPARTMENT OF WATER & POWER	REC/RECEPT	RECEPTACLE
EA	EACH	REQD	REQUIRED
ELEC.	ELECTRICAL	RGS	RIGID GALVANIZED STEEL
EMH	ELECTRICAL MANHOLE	REDBP	REDUCED PRESSURE BACK FLOW PREVENTER
EMT	ELECTRICAL METALLIC TUBING	RM	ROOM
EPO	EMERGENCY POWER OFF	SCE	SOUTHERN CALIFORNIA EDISON
EPR	ETHYLENE PROPYLENE RUBBER	SF	SQUARE FEET
EQUIP	EQUIPMENT	SHT	SHEET
EXIST/(E)	EXISTING	SIG.	SIGNAL
EXP	EXPLOSION PROOF	SP	SPARE
FA	FIRE ALARM	SPECS	SPECIFICATIONS
FFE	FINISHED FLOOR ELEVATION	ST	STREET
FIN.	FINISH	STD	STANDARD
FIP	FIELD INTERFACE PANEL	SW	SWITCH
FIXT	FIXTURE	SWBD	SWITCHBOARD
FLA	FULL LOAD AMPS	SWGR	SWITCHGEAR
FLR	FLOOR	SWST	SWITCHING STATION
FLUOR	FLUORESCENT	TB	TERMINAL BLOCK
FT	FEET	TEL/TELE	TELEPHONE
FACP	FIRE ALARM CONTROL PANEL	TMH	TELEPHONE MANHOLE
FATC	FIRE ALARM TERMINAL CABINET	T.O.D.	TOP OF DUCTBANK
FO	FIBER OPTIC	T.O.M.	TOP OF MANHOLE
FTP	FOOTING	TPS	TWISTED SHIELDED PAIR
GFI	GROUND FAULT INTERRUPTER	TRANSF/XFMR	TRANSFORMER
GFR	GROUND FAULT RELAY	TS	TAMPER SWITCH
GG	GREEN GROUND	TYP	TYPICAL
GND	GROUND	UG	UNDERGROUND
HOA	HAND-OFF-AUTOMATIC	UON	UNLESS OTHERWISE NOTED
HP	HORSEPOWER	V	VOLTS
HT	HEIGHT	VA	VOLT-AMPERES
ISC	SHORT CIRCUIT CURRENT	W/	WITH
JB	JUNCTION BOX	WP	WEATHERPROOF
KCMIL	THOUSAND CIRCULAR MILS	Z	IMPEDANCE
KV	KILOVOLT		

IN THE EVENT ABBREVIATIONS NOT MENTIONED HEREIN ARE USED, REFERENCE WILL BE MADE TO ANSI Y1.1, MILITARY STANDARD ABBREVIATIONS, AND OTHER STANDARD INDUSTRY CONVENTIONS.

SCOPE OF WORK:

- REPLACE AND UPGRADE EXISTING SWITCHBOARD .
- NO LOAD INCREASE.

GENERAL NOTES

- WORK SHALL COMPLY WITH THE 2016 EDITION OF THE CALIFORNIA ELECTRICAL CODE AND OTHER APPLICABLE FEDERAL, STATE, AND LOCAL AGENCY CODES. WHERE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS, THE CONSTRUCTION DOCUMENTS SHALL GOVERN BUT THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE OR REGULATION.
- APPLICABLE CODES:

2015 IBC AND 2016 CALIFORNIA AMENDMENTS
(2016 CALIFORNIA BUILDING CODE - PART 2, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR))
2014 NEC AND 2016 CALIFORNIA AMENDMENTS
(2016 CALIFORNIA ELECTRICAL CODE (CEC) - PART 3, TITLE 24, CCR)
2015 UMC AND 2016 CALIFORNIA AMENDMENTS
(2016 CALIFORNIA MECHANICAL CODE - PART 4, TITLE 24, CCR)
2015 UPC AND 2016 CALIFORNIA AMENDMENTS
(2016 CALIFORNIA PLUMBING CODE - PART 5, TITLE 24, CCR)-(PUBLISHER:INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS (IAPMO))
2015 IFC AND 2016 CALIFORNIA AMENDMENTS
(2016 CALIFORNIA FIRE CODE - PART 9, TITLE 24, CCR)
- OBTAIN BUILDING AND LICENSING PERMITS, AND PAY ASSOCIATED COSTS AND EXPENSES REQUIRED BY FEDERAL, STATE, AND LOCAL AGENCIES.
- IDENTIFY, CONTACT, AND COORDINATE WORK WITH THE SERVING UTILITY (POWER). PAY FEES ASSOCIATED WITH UTILITY COORDINATION AND INSTALLATION. PROVIDE INSTALLATIONS COMPLAINT WITH THE CONTRACT DOCUMENTS AND THE SERVING UTILITY'S REQUIREMENTS.
- VISIT THE SITE, INCLUDING AREAS INDICATED ON THE DRAWINGS. OBTAIN AND INSPECT CONTRACT DOCUMENTS IMMEDIATELY UPON RECEIPT INCLUDING CONTRACT DOCUMENTS OF OTHER DISCIPLINES. NOTIFY OWNER OF DISCREPANCIES WITHIN 24 HOURS.
- SUBMIT A CHANGE ORDER TO THE OWNER DETAILING AND SPECIFYING REQUIRED WORK, AND OBTAIN APPROVAL BEFORE PROCEEDING WITH WORK. WHERE CONDITIONS DEVELOP NOT COVERED BY THE CONTRACT DOCUMENTS OR WHERE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR).

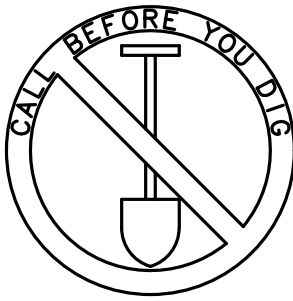
AMERICAN SOCIETY OF TESTING MATERIALS (ASTM)
INSULATED POWER CABLE ENGINEERS ASSOCIATION (IPCEA)
NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
AMERICAN STANDARD ASSOCIATION (ASA)
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
CALIFORNIA CODE OF REGULATIONS TITLE 24 (CCR)
INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
ILLUMINATION ENGINEERING SOCIETY OF NORTH AMERICA (IESNA)

COMPLY WITH THE MOST STRINGENT REQUIREMENT WHERE DIFFERENT REQUIREMENTS ARE SPECIFIED IN THE PLANS AND SPECIFICATIONS.
- COORDINATE AND SCHEDULE WORK WITH OTHER TRADES AND THE OWNER. BEFORE PROCEEDING WITH THE INSTALLATION.

A. ORANGE COLOR FOR HIGH-LEG OF DELTA-CONNECTED SYSTEM WHERE THE MIDPOINT OF ONE PHASE WINDING IS GROUNDED PER CEC 110.15
B. ARC-FLASH HAZARD WARNING PER CEC 110.16
C. IDENTIFICATION OF DISCONNECTING MEANS PER CEC 110.22
D. AVAILABLE FAULT CURRENT PER CEC 110.24
E. PANELBOARD CIRCUIT DIRECTORY PER CEC 408.4(A)
F. SOURCE OF SUPPLY FOR SWITCHBOARDS, SWITCHGEAR, AND PANELBOARDS PER CEC 408.4(B)
G. IDENTIFICATION OF BRANCH CIRCUITS PER CEC 210.5
H. POSTING OF IDENTIFICATION MEANS LISTING THE FEEDER POWER SOURCE PER CEC 210.5(C)(1)(b).
- NOTIFY OWNER 48 HOURS PRIOR TO PROJECT COMPLETION TO ALLOW FOR OWNER'S INSPECTION OF WORK. PROVIDE COMPETENT PERSONNEL TO ASSIST AND DEMONSTRATE EQUIPMENT OR SYSTEM OPERATION. FINAL ACCEPTANCE OF WORK BY THE OWNER WILL BE AFTER APPROVAL AND ACCEPTANCE BY AHJ.
- FURNISH A ONE-YEAR WRITTEN GUARANTEE FOR MATERIALS AND WORKMANSHIP FROM THE DATE OF SUBSTANTIAL COMPLETION, UNLESS OTHERWISE NOTED FOR A LONGER TERM IN THE EQUIPMENT SPECIFICATION.
- PROVIDE AND MAINTAIN REQUIRED WORKING SPACE, DEDICATED EQUIPMENT SPACE, AND EGRESS REQUIREMENTS PER CEC 110.26.
- INSTALL CONDUIT 24 INCHES MINIMUM BELOW FINISHED GRADE WHERE SUBJECT TO VEHICULAR TRAFFIC. INSTALL PVC CONDUIT 24 INCHES MINIMUM BELOW FINISHED GRADE IN CLASSIFIED LOCATIONS AND 18 INCHES MINIMUM OTHERWISE. COMPLY WITH MINIMUM COVER REQUIREMENTS SPECIFIED IN CEC TABLE 300.5
- INSTALL CONDUITS AND EQUIPMENT PLUMB AND LEVEL.
- PROVIDE SAWCUTTING, TRENCHING, BACKFILLING, COMPACTION, AND PATCHING OF CONCRETE AND ASPHALT FOR UNDERGROUND INSTALLATIONS. OBTAIN THE SERVICES OF DIG ALERT PRIOR TO EXCAVATION. REPAIR UNDERGROUND INSTALLATIONS AND EQUIPMENT DAMAGED DURING EXCAVATION TO MATCH THE QUALITY OF THE ORIGINAL INSTALLATION.
- PROVIDE FIELD BENDS FOR EMT AND RIGID CONDUIT 1 INCH AND SMALLER. DO NOT KINK CONDUIT OR REDUCE CROSS SECTIONAL AREA. USE BENDING EQUIPMENT APPROVED BY CONDUIT MANUFACTURER. REPAIR SCRATCHES AND MARKS WITH CONDUIT MANUFACTURER APPROVED PRODUCT.
- PROVIDE EQUIPMENT GROUNDING CONDUCTOR, WITH FEEDERS AND BRANCH CIRCUITS, SIZED PER CEC 250.122.
- PROVIDE COPPER CONDUCTORS. USE TYPE XHHW-2 CONDUCTOR INSULATION UNDERGROUND EXTERIOR TO BUILDING. USE TYPE THHN/THWN-2 CONDUCTOR INSULATION ABOVE GRADE EXTERIOR TO BUILDING AND UNDERGROUND INTERIOR TO BUILDING. USE TYPE THHN/THWN CONDUCTOR INSULATION ABOVE GRADE INTERIOR TO BUILDING.

SHEET INDEX

SHEET	DESCRIPTION
E001	GENERAL NOTES, LEGEND, ABBREVIATIONS AND SHEET INDEX
E101	SITE PLAN
E201	TEMPORARY/NEW POWER PLAN
E501	SINGLE LINE DIAGRAM
E601	DETAILS AND ELEVATIONS
E602	DETAIL
E701	SPECIFICATIONS
S001	GENERAL NOTES AND DETAILS

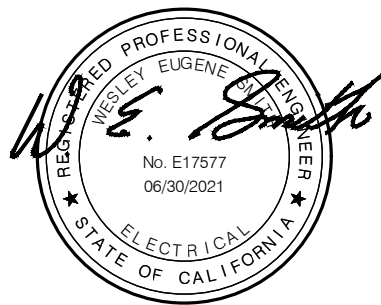


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		NAME	DATE					
	DRAWN	MN	8/30/19					
	DESIGNED	MN	8/30/19					
	CHECKED	WS	8/30/19					
DATE	FOR CITY USE ONLY							
REVISIONS				NAME	DATE			
DATE	DESCRIPTION		STREETS					
			SEWER					
			DRAINAGE					
			WATER					
			ST. SUPT.					
			TRAFFIC					
			100% CD SUBMITTAL			E001		

APPROVED:		APPROVED:	
DATE		DATE	
CITY ENGINEER		PUBLIC WORKS DIRECTOR	
SCALE:	HORIZ. AS NOTED	F.B. _____ PG. _____	SHEET 1 OF 7
	VERT. AS NOTED		

GENERAL NOTES

- COORDINATE CONSTRUCTION WITH SOUTHERN CALIFORNIA EDISON. CALL SANTA ANA SERVICE PLANNING OFFICE AT (714) 973-5653.
- PROVIDE TEMPORARY POWER TO AFFECTED FEEDER CIRCUITS DURING CONSTRUCTION. PROVIDE TEMPORARY GENERATOR WITH 12-HOURS MINIMUM FUEL. CHECK AND REFILL FUEL DAILY. REFERENCE DETAIL 1/E201 AND DETAIL 1/E501.
- PROVIDE TEMPORARY POWER FOR CONSTRUCTION.
- PROVIDE PROTECTIVE CHAIN-LINK FENCING WITH VISUAL BLOCKING MATERIAL AROUND CONSTRUCTION SITE AND GENERATOR. REFERENCE DETAIL 1/E201.
- PROVIDE CABLE PROTECTION AT PATHWAYS PER CEC 590.4(H).
- REFERENCE SINGLE LINE DIAGRAM FOR CONDUIT AND FEEDER SIZES.
- PROVIDE TEMPORARY POWER CABLES RATED FOR EXTRA-HARD USAGE AND WET LOCATIONS.
- CAP SPARE CONDUITS AND SEAL FEEDER CONDUITS WITHIN NEW SWITCHBOARD.

NOTES

- COORDINATE SPRINKLER AND SPRINKLER PIPING RELOCATION TO FACILITATE SERVICE REPLACEMENT WITH CITY REPRESENTATIVE.
- DEMOLISH EXISTING SERVICE EQUIPMENT PAD. PROTECT EXISTING UTILITY CONDUIT AND FEEDER CONDUCTORS FOR REUSE. EXTEND EXISTING UTILITY FEEDER CONDUIT TO THREE (3) INCHES ABOVE NEW PAD. CONCEAL UTILITY CONDUCTORS FROM VIEW TO PREVENT THEFT.



2 SWITCHBOARD "MS"
NO SCALE

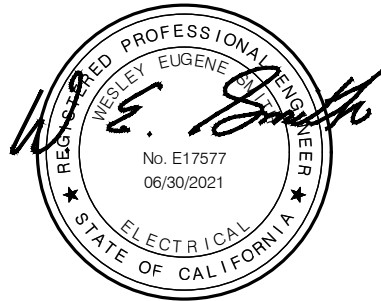


1 SITE PLAN
1/8" = 1'-0"



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UNDER THE SUPERVISION OF: DATE _____		FOR ENGINEER'S USE		CITY OF ORANGE McPHERSON PARK (333 S. PROSPECT ST, ORANGE, CA 92869) SITE PLAN	
		NAME	DATE		
		DRAWN MN 8/30/19			
		DESIGNED MN 8/30/19			
CHECKED WS 8/30/19		FOR CITY USE ONLY			
		NAME	DATE		
REVISIONS					
DATE	DESCRIPTION				
		STREETS			
		SEWER			
		DRAINAGE			
		WATER			
		ST. SUPT.			
		TRAFFIC			
		100% CD SUBMITTAL		E101	

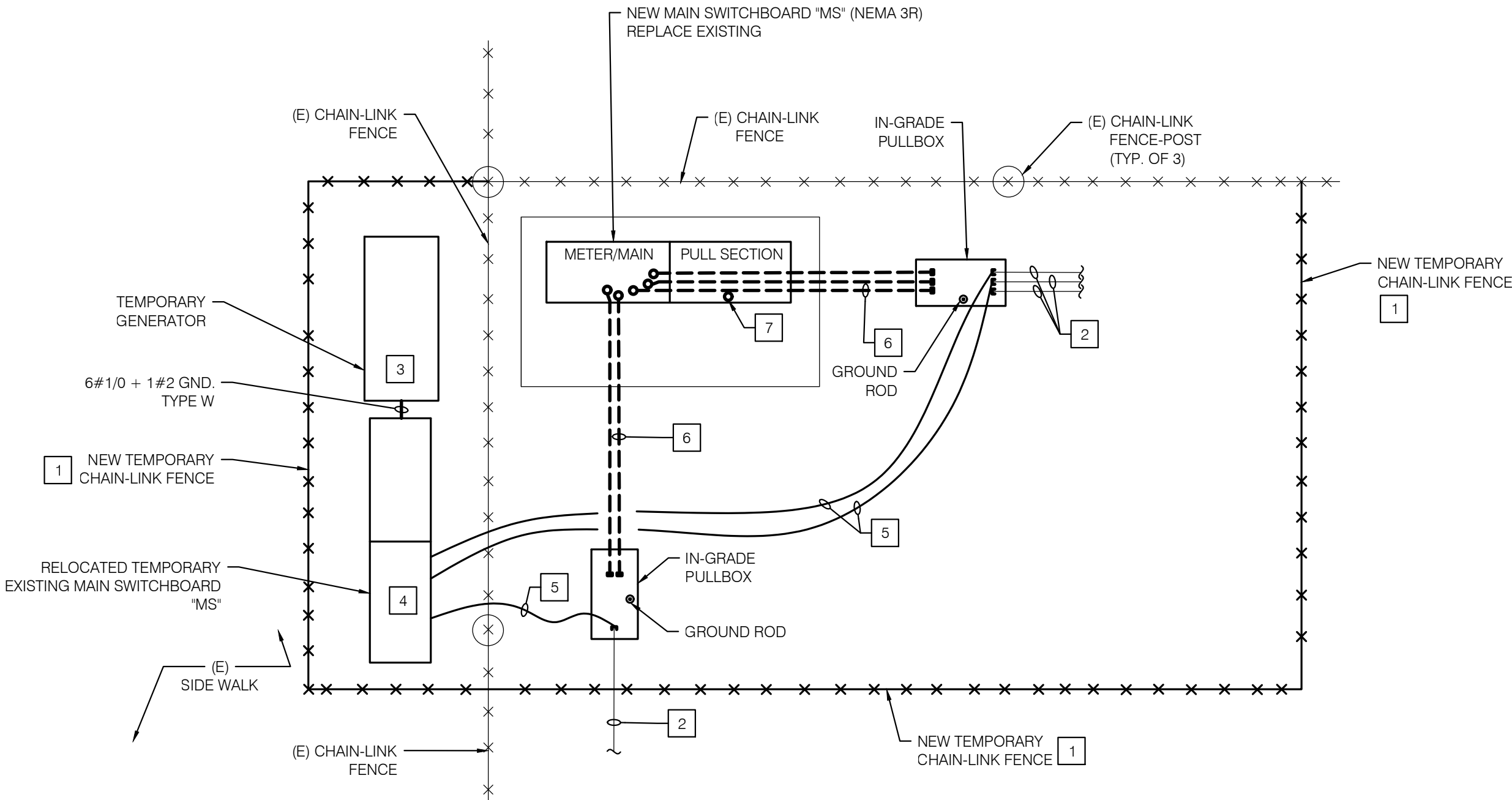
APPROVED:		APPROVED:	
DATE _____ CITY ENGINEER		DATE _____ PUBLIC WORKS DIRECTOR	
SCALE: HORIZ. AS NOTED	VERT. AS NOTED	F.B. _____ PG. _____	SHEET 2 OF 7

GENERAL NOTES

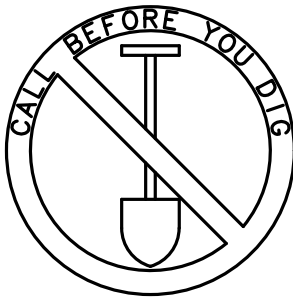
- COORDINATE CONSTRUCTION WITH SOUTHERN CALIFORNIA EDISON. CALL SANTA ANA SERVICE PLANNING OFFICE AT (714) 973-5693.
- PROVIDE TEMPORARY POWER TO AFFECTED FEEDER CIRCUITS DURING CONSTRUCTION. PROVIDE TEMPORARY GENERATOR WITH 12-HOURS MINIMUM FUEL. CHECK AND REFILL FUEL DAILY. REFERENCE DETAIL 1/E201 AND DETAIL 1/E501.
- PROVIDE TEMPORARY POWER FOR CONSTRUCTION.
- PROVIDE PROTECTIVE CHAIN-LINK FENCING WITH VISUAL BLOCKING MATERIAL AROUND CONSTRUCTION SITE AND GENERATOR. REFERENCE DETAIL 1/E201.
- PROVIDE CABLE PROTECTION AT PATHWAYS PER CEC 590.4(H).
- REFERENCE SINGLE LINE DIAGRAM FOR CONDUIT AND FEEDER SIZES.
- PROVIDE TEMPORARY POWER CABLES RATED FOR EXTRA-HARD USAGE AND WET LOCATIONS.
- CAP SPARE CONDUITS AND SEAL FEEDER CONDUITS WITHIN NEW SWITCHBOARD.

NOTES

- PROVIDE PROTECTIVE TEMPORARY FENCING TO FACILITATE EQUIPMENT REPLACEMENT. PROVIDE ALTERNATE SIGNAGE EVERY 10 FEET MAXIMUM STATING "DANGER HIGH VOLTAGE" AND "NO TRESPASSING".
- LOCATE AND INTERCEPT EXISTING FEEDERS AND REROUTE TO NEW IN-GRADE TRAFFIC RATED PULL BOXES LOCATED SIX FEET MINIMUM FROM EXISTING SERVICE EQUIPMENT PAD. REFERENCE DETAILS/E601
- PROVIDE 80KW, 120/240V, 1P, 3W, EMERGENCY GENERATOR WITH FUEL TANK CONTAINING 12-HOURS MINIMUM FUEL.
- REMOVE EXISTING SERVICE EQUIPMENT AND RELOCATE TO TEMPORARY LOCATION FOR USE AS TEMPORARY SWITCHBOARD. PROVIDE GENERATOR CONNECTION. PROVIDE LUGS OR 400A/2P CIRCUIT BREAKER FOR TEMPORARY GENERATOR CONNECTION TO TEMPORARY SWITCHBOARD.
- EXTEND EXISTING FEEDERS FROM IN-GRADE PULL BOXES TO TEMPORARY SWITCHBOARD TO MAINTAIN POWER TO EXISTING FACILITIES.
- PROVIDE SPARE 3" CONDUIT TO EACH PULL BOX.
- DEMOLISH EXISTING SERVICE EQUIPMENT PAD. PROTECT EXISTING UTILITY CONDUIT AND SERVICE CONDUCTORS FOR REUSE. EXTEND EXISTING UTILITY FEEDER CONDUIT TO THREE (3) INCHES ABOVE NEW PAD. CONCEAL UTILITY CONDUCTORS FROM VIEW TO PREVENT THEFT DURING CONSTRUCTION SERVICE.



1 TEMPORARY/NEW POWER PLAN
NO SCALE

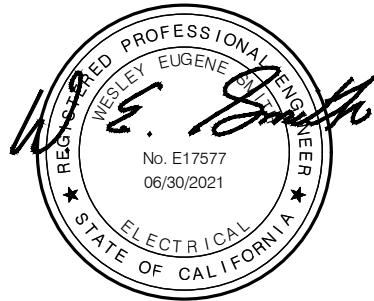


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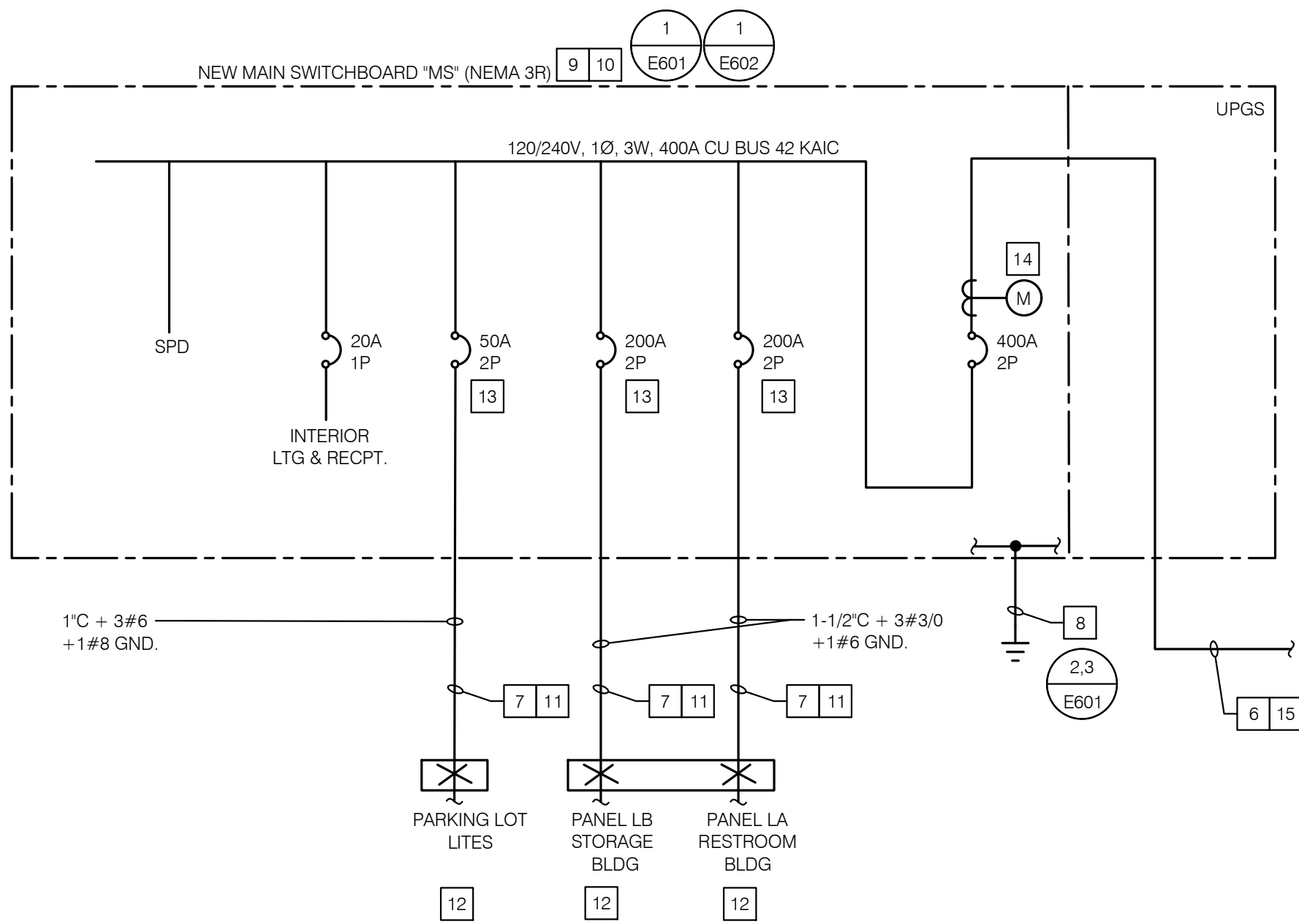
UNDER THE SUPERVISION OF:		FOR ENGINEER'S USE		CITY OF ORANGE	
		NAME	DATE	McPHERSON PARK (333 S. PROSPECT ST, ORANGE, CA 92869)	
DATE		DRAWN	MN		
REVISIONS		DESIGNED	MN	8/30/19	
DATE		CHECKED	WS	8/30/19	
DATE		FOR CITY USE ONLY		TEMPORARY/NEW POWER PLAN	
DATE		NAME	DATE	APPROVED:	
DATE		STREETS		DATE	
DATE		SEWER		CITY ENGINEER	
DATE		DRAINAGE		DATE	
DATE		WATER		PUBLIC WORKS DIRECTOR	
DATE		ST. SUPT.		SCALE:	
DATE		TRAFFIC		HORIZ. AS NOTED	
DATE				VERT. AS NOTED	
DATE				F.B. PG.	
DATE				SHEET 3 OF 7	
DATE				100% CD SUBMITTAL	
DATE				E201	

GENERAL NOTES

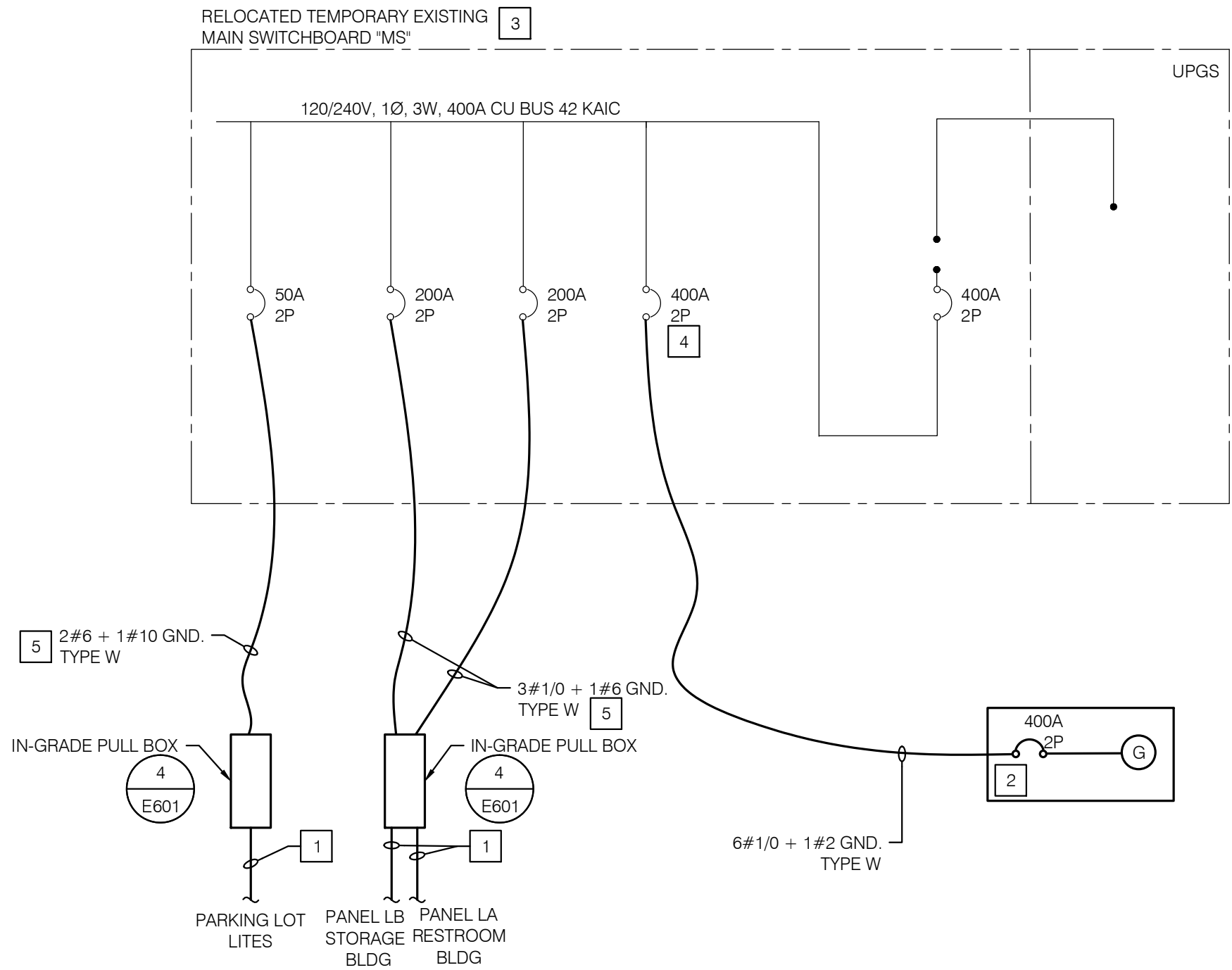
- COORDINATE CONSTRUCTION WITH SOUTHERN CALIFORNIA EDISON. CALL SANTA ANA SERVICE PLANNING OFFICE AT (714) 973-5653.
- PROVIDE TEMPORARY POWER TO AFFECTED FEEDER CIRCUITS DURING CONSTRUCTION. PROVIDE TEMPORARY GENERATOR WITH 12-HOURS MINIMUM FUEL. CHECK AND REFILL FUEL DAILY. REFERENCE DETAIL 1/E201 AND DETAIL 1/E501.
- PROVIDE TEMPORARY POWER FOR CONSTRUCTION.
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- PROVIDE CABLE PROTECTION AT PATHWAYS PER CEC 590.4(H).
- REFERENCE SINGLE LINE DIAGRAM FOR CONDUIT AND FEEDER SIZES.
- PROVIDE TEMPORARY POWER CABLES RATED FOR EXTRA-HARD USAGE AND WET LOCATIONS.
- CAP SPARE CONDUITS AND SEAL FEEDER CONDUITS WITHIN NEW SWITCHBOARD.

NOTES

- LOCATE AND INTERCEPT EXISTING FEEDERS AND REROUTE TO NEW IN-GRADE TRAFFIC RATED PULL BOXES LOCATED SIX FEET MINIMUM FROM EXISTING SERVICE EQUIPMENT PAD. REFERENCE DETAIL 4/E601.
- PROVIDE 80KW, 120/240V, 1P, 3W, EMERGENCY GENERATOR WITH FUEL TANK CONTAINING 12-HOURS MINIMUM FUEL.
- REMOVE EXISTING SERVICE EQUIPMENT AND RELOCATE TO TEMPORARY LOCATION FOR USE AS TEMPORARY SWITCHBOARD.
- PROVIDE GENERATOR CONNECTION. PROVIDE 400A/2P CIRCUIT BREAKER FOR TEMPORARY GENERATOR CONNECTION TO TEMPORARY SWITCHBOARD.
- EXTEND EXISTING FEEDERS FROM IN-GRADE PULL BOXES TO TEMPORARY SWITCHBOARD TO MAINTAIN POWER TO EXISTING FACILITIES.
- DEMOLISH EXISTING SERVICE EQUIPMENT PAD. PROTECT EXISTING UTILITY CONDUIT AND FEEDER CONDUCTORS FOR REUSE. EXTEND EXISTING UTILITY FEEDER CONDUIT TO THREE (3) INCHES ABOVE NEW PAD. CONCEAL UTILITY CONDUCTORS FROM VIEW TO PREVENT THEFT.
- EXTEND EXISTING FEEDER CONDUITS FROM IN-GRADE PULL BOXES TO NEW SERVICE DISTRIBUTION SECTION LOCATION.
- PROVIDE NEW GROUNDING ELECTRODE SYSTEM. REFERENCE DETAILS 2 AND 3/E601.
- PROVIDE NEW CONCRETE SERVICE EQUIPMENT PAD. REFERENCE SHEET S001.
- PROVIDE NEW NEMA 3R, 400A, 240/120V, 1P, 3W, METERED MAIN WITH DISTRIBUTION AND UTILITY PULL-SECTION. REFERENCE SHEET E602.
- EXTEND EXISTING CONDUCTORS FROM NEW IN-GRADE PULL BOXES TO NEW SERVICE. USE WET LOCATION RATED HIGH PRESSURE SPLICES WITHIN IN-GRADE PULL BOXES.
- LOCATE EACH FEEDER LOAD TERMINATION LOCATION AND DISCONNECT FEEDER FROM LOAD PRIOR TO TESTING OF FEEDER CONDUCTORS. TEST EXISTING FEEDER CONDUCTORS PER ANSI/NETA ACCEPTANCE TESTING SPECIFICATIONS (ATS) 7.3.2. TERMINATE AND TEST PER SERVICE EQUIPMENT PER ATS 7.1.
- PROVIDE BLACK LABELS WITH WHITE ENGRAVED LETTERS FOR IDENTIFICATION OF EACH FEEDER. VERIFY CIRCUIT NAMES WITH CITY REPRESENTATIVE.
- PROVIDE RED LABEL WITH WHITE LETTERS BELOW METER LISTING THE AVAILABLE SHORT CIRCUIT CURRENT AND DATE. OBTAIN WRITTEN DOCUMENTATION OF UTILITY'S CONTRIBUTION TO THE AVAILABLE SHORT CIRCUIT CURRENT FROM THE SERVICE PLANNER. REFERENCE CEC 110.24
- COORDINATE AND REESTABLISH UTILITY POWER TO NEW SERVICE.



2 RENOVATION - SINGLE LINE DIAGRAM
NO SCALE



1 TEMPORARY POWER - SINGLE LINE DIAGRAM
NO SCALE

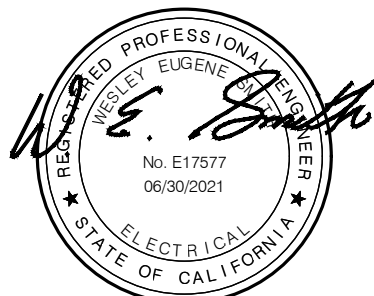


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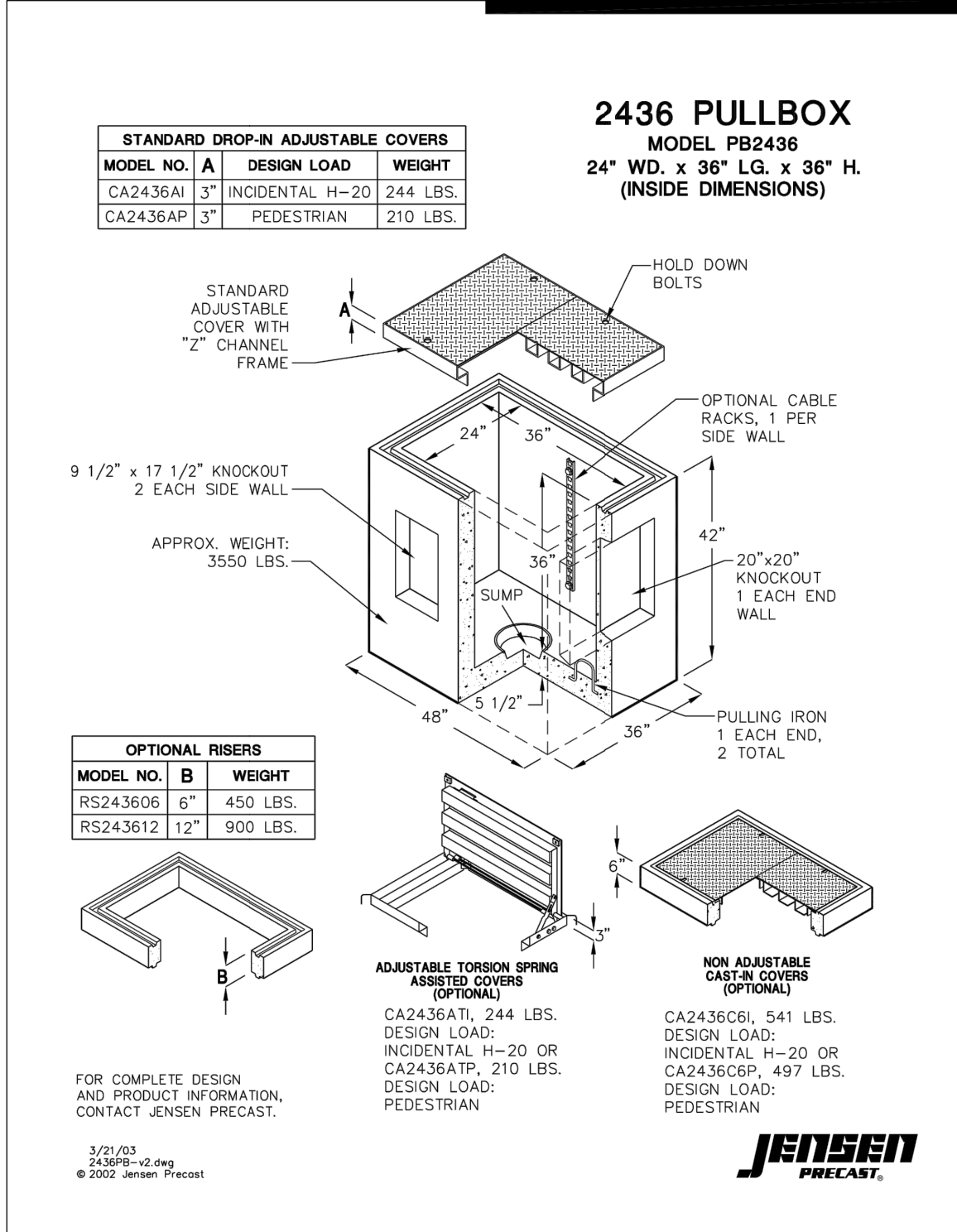
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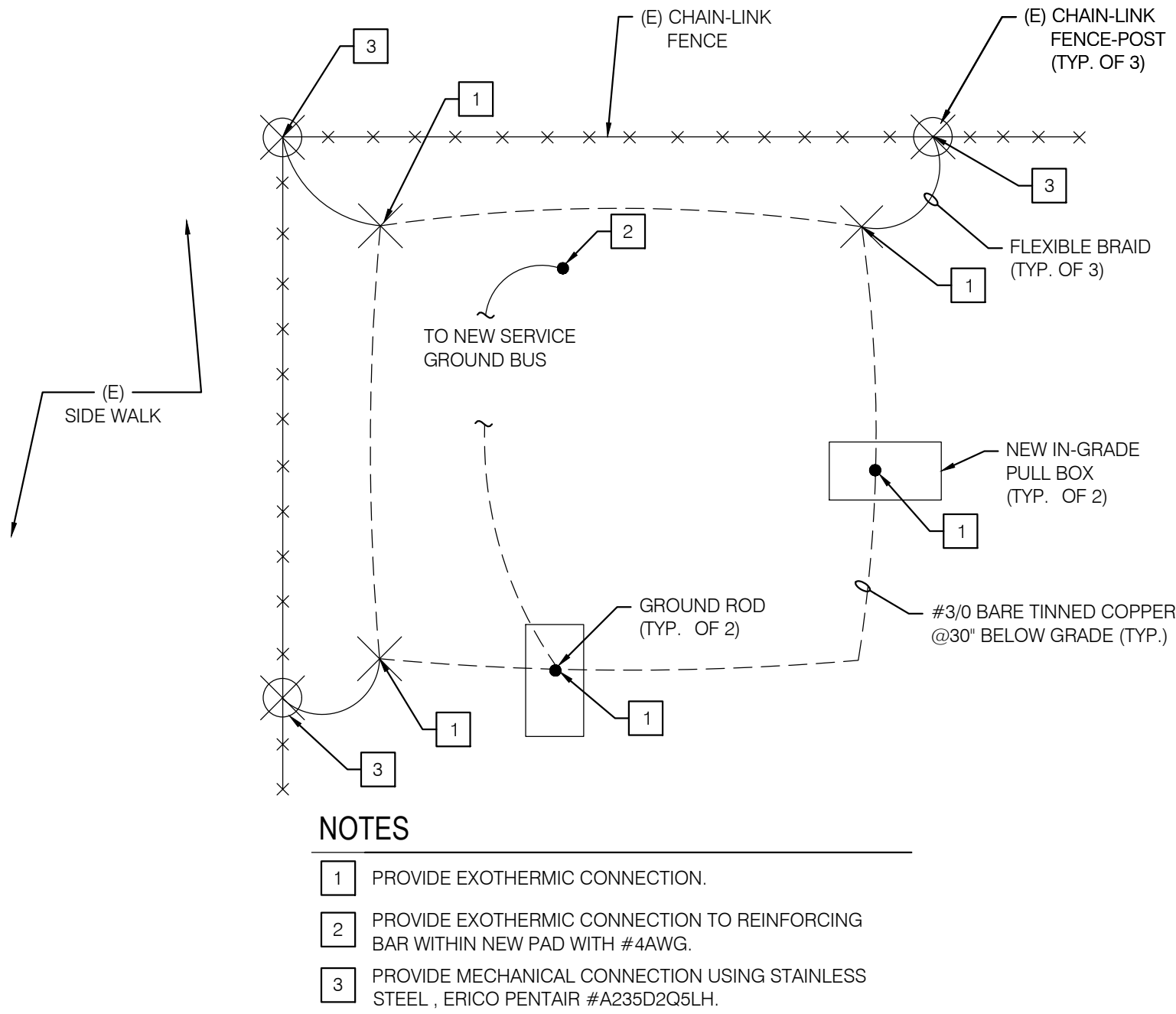
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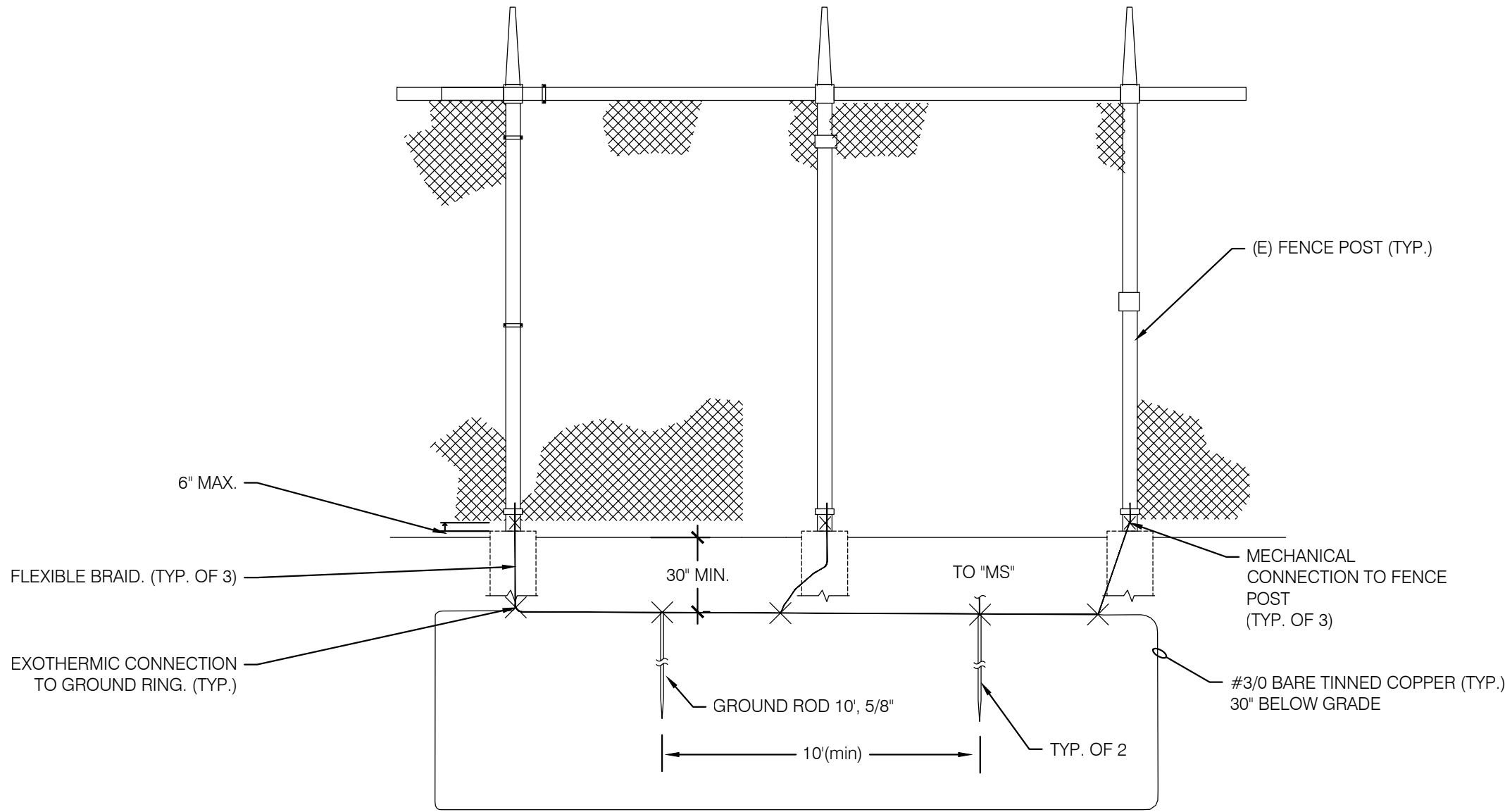
UNDER THE SUPERVISION OF: DATE		FOR ENGINEER'S USE		CITY OF ORANGE McPHERSON PARK (333 S. PROSPECT ST, ORANGE, CA 92869) SINGLE LINE DIAGRAM																																					
		DRAWN DESIGNED CHECKED	NAME MN WS DATE 8/30/19 8/30/19 8/30/19																																						
REVISIONS <table><thead><tr><th>DATE</th><th>DESCRIPTION</th></tr></thead><tbody><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr></tbody></table>		DATE	DESCRIPTION													FOR CITY USE ONLY <table><thead><tr><th>NAME</th><th>DATE</th></tr></thead><tbody><tr><td>STREETS</td><td> </td></tr><tr><td>SEWER</td><td> </td></tr><tr><td>DRAINAGE</td><td> </td></tr><tr><td>WATER</td><td> </td></tr><tr><td>ST. SUPT.</td><td> </td></tr><tr><td>TRAFFIC</td><td> </td></tr></tbody></table>		NAME	DATE	STREETS		SEWER		DRAINAGE		WATER		ST. SUPT.		TRAFFIC		APPROVED: <table><thead><tr><th>DATE</th><th>CITY ENGINEER</th><th>DATE</th><th>PUBLIC WORKS DIRECTOR</th></tr></thead><tbody><tr><td> </td><td> </td><td> </td><td> </td></tr></tbody></table>		DATE	CITY ENGINEER	DATE	PUBLIC WORKS DIRECTOR				
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DATE	CITY ENGINEER	DATE	PUBLIC WORKS DIRECTOR																																						
SCALE: HORIZ. AS NOTED VERT. AS NOTED		F.B. PG.		SHEET 4 OF 7 E501																																					
100% CD SUBMITTAL																																									



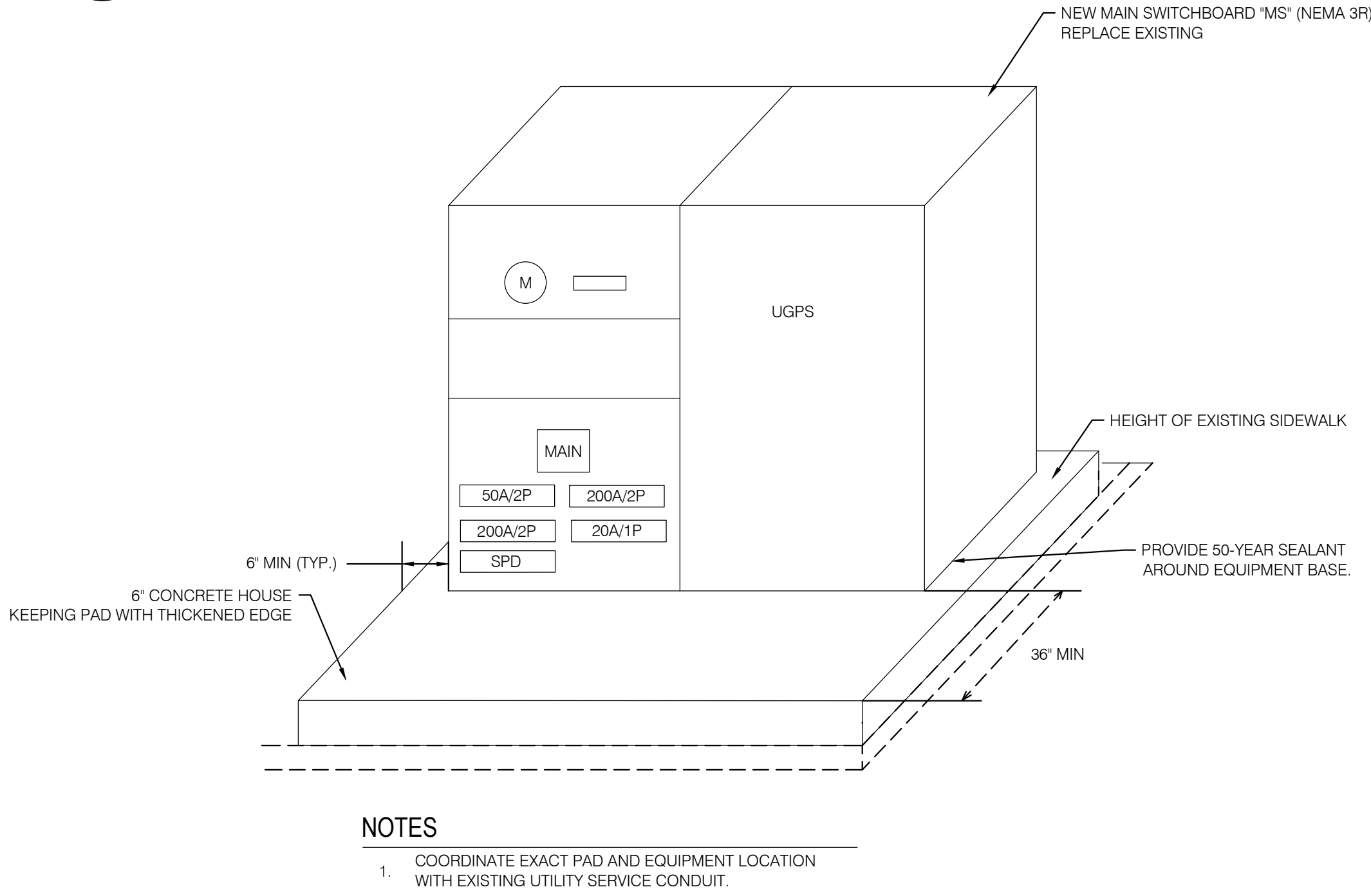
4 IN-GRADE PULL BOX
NO SCALE



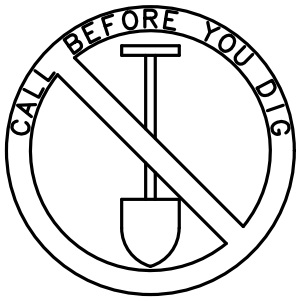
3 GROUNDING ELECTRODE SYSTEM
NO SCALE



2 TYPICAL FENCE GROUNDING
NO SCALE

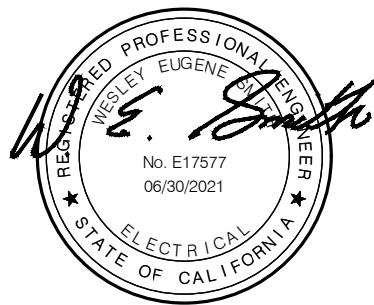


1 SWITCHBOARD EQUIPMENT MOUNTING ELEVATION
NO SCALE



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		NAME	DATE		
DATE		DRAWN	MN	8/30/19	McPHERSON PARK (333 S. PROSPECT ST, ORANGE, CA 92869) DETAILS AND ELEVATION
DESIGNED		MN	8/30/19		
CHECKED		WS	8/30/19		
REVISIONS		FOR CITY USE ONLY		APPROVED:	
DATE	DESCRIPTION	NAME	DATE	DATE	
				CITY ENGINEER	
				PUBLIC WORKS DIRECTOR	
		STREETS		SCALE: HORIZ. AS NOTED	
		SEWER		VERT. AS NOTED	
		DRAINAGE		F.B. PG.	
		WATER		SHEET 5 OF 7	
		ST. SUPT.		E601	
		TRAFFIC		100% CD SUBMITTAL	

FOR REFERENCE ONLY

REV		DESCRIPTION	BY	DATE																		
<p style="text-align: center;">POWER STYLE QED-2 SWITCHBOARD</p>																						
SECT NO		QTY	IND /O/D CONG	DEVICE / FRAME RATING	TRIP AMP	FUSE / TRIP	#P	DESIGNATION	N/P	LUG/WIRE INFORMATION				ACCESSORIES / NOTES								
										QTY	PHASE	WIRE RANGE	QTY	NEUT WIRE RANGE								
1	—	—	—	Strip Header	—	—	—	—	—	—	—	—	—	—	SR							
1	M1	FIX	—	400A	400A	—	2P	—	—	—	—	—	—	—	PLA							
1	1	3 in	—	BC	50A	—	2P	—	—	No	1	#14 - 1/0 AWG	1	#14 - 1/0 AWG	—							
1	2	3 in	—	GC	200A	—	2P	—	—	No	1	#4 - 300 kcmil	1	#4 - 300 kcmil	—							
1	3	3 in	—	GC	200A	—	2P	—	—	No	1	#4 - 300 kcmil	1	#4 - 300 kcmil	—							
1	4	3 in	—	GC	20A	—	1P	—	—	No	1	#14 - 12	1	#14 - 12	SPS							
1	—	13.5 in	—	200A SPD	—	—	—	—	—	—	—	—	—	—	—							
2	UCT	—	—	400A	—	—	—	Southern Cal Edison (CA)	No	1	Pair Studs	—	Pair Studs	—	—							

LEGEND

PLA Podlock Attachment—Fixed

SHR Strip Header

SPD Surge Protection Device

JOB NAME	Dec 2018 projects	EQUIPMENT ORIGINATOR	MS 400A 320 1ph
JOB LOCATION		EQUIPMENT TYPE	QED-2 Switchboard
DESIGN BY	CGG	DESIGN TYPE	SCHEMATIC
DATE	August 30 2019		
DRAWING STATUS	COG		

Pg 2 of 2

DESCRIPTION	BY	DATE	REV	DESCRIPTION	BY	DATE	REV	DESCRIPTION

T-bus
19.5 in

T-bus
19.5 in

SWITCHBOARD GENERAL NOTES

PRODUCT DESCRIPTION & RATINGS

Power System Data

100kV (19.3MVA) / 1 Phase
Solidly grounded/Metal Frame Grounded
System Short Circuit Current Rating: 40kA RMS
Incoming Section 2 Cable Through the Bottom Right of Linup

Bus System Data

400A 19 Phase Copper Main Bus
(2) 25x1.50 IN6036 mm Cu Bus Bar Per Phase
(1) 25x.915 IN6022 mm Cu Ground Bus

Enclosure Data

Type 3R Cold Rolled Steel Free Standing
Exterior Paint Color: ANSI 49 painted steel with stainless steel base channels
Front Accessibility Only Required
Handling: Rollers
Robot barriers
1.91 Corrosion Resistant Base Channels
Interior Lights - All Sections
1200 square GFCI receptacle - Rush mounted in section 1
Utility sealing hardware installed for unretired bus compartments

Estimated Shipping Weight

Shipping S&H 11694.00 lbs / 763.86 kgs
Complete Linup 1684.00 lbs / 763.86 kgs

Code Standards

UL1 Definition and suitable for use as Service Entrance when not more than six (6) disconnecting means are provided.

Rating Nameplates

871- Service Entrance - Section Bus 400A
872- Deadfront - Section Bus 400A

PRODUCT INFORMATION

Wiring

All wiring to be Machine Tool Wire type

Instruction Bulletins

Reference B004-050 For Handling, Installation, Anchoring, Inspection And Maintenance Information

Product Accessories/Options

Seismic Qualified

DUAL DIMENSIONS: INCHES
MILLIMETER

REV _____ DESCRIPTION _____ BY _____ DATE _____

TOP VIEW - FRONT

39.03 [991]

50 [13] 35.50 [902] 3.03 [77]

24.00 [610] 11.00 [279]

REAR COVER
HANDLES USED
ON DAYS UNDER
THAN 42.00/(1087)

91.50 [2332]

90.00 [2286]

LEFT SIDE VIEW

21.00 [533] 1.50 [38] 35.50 [902]

12.50 [318]

31.00 [787] 31.00 [787]

14.25 [362] 14.25 [362]

36.00 [914] 36.00 [914]

FLOOR PLAN - FRONT

75/(19) DIA
W/2 HOLES OFFSET
3.00/(76) TIP
FROM SIDE

NOTE: ALL DIMENSIONS REQUIRE DRILLING OR BOREHOLE IN MOUNTING PAD
SUCH AS CONDUIT, ANCHORING STUDS, SLEEVE HOLE, ETC.
SHOULD BE INSTALLED BEFORE SETTING EQUIPMENT IN PLACE.

DUAL DIMENSIONS: INCHES
MILLIMETERS

FOR NAME:	Mar 2019 projects	EQUIPMENT DESIGNATION:	MS 2400 2407 1th
FOR LOCATION:		EQUIPMENT TYPE:	MS 2400 2407 1th
DESIGN NO:	0001	DESIGN TYPE:	MS 2400 2407 1th
DATE:	March 30 2019		
DESIGN STATUS:	0001	NOT FOR CONSTRUCTION	Design No: 0001

FIG 2 OF 2

REV

DESCRIPTION

BY

DATE

</

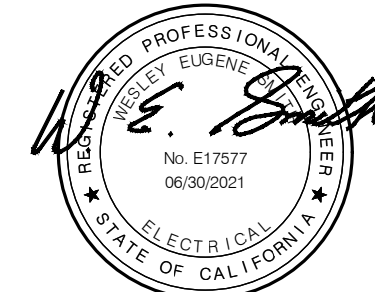


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UNDER THE SUPERVISION OF: <div style="border-bottom: 1px solid black; height: 20px; width: 100%;"></div>		FOR ENGINEER'S USE		CITY OF ORANGE															
			NAME	DATE	<div style="font-size: 18pt; font-weight: bold;">McPHERSON PARK</div> <div style="font-size: 14pt;">(333 S. PROSPECT ST, ORANGE, CA 92869)</div>														
		DRAWN	MN	8/30/19															
		DESIGNED	MN	8/30/19															
		CHECKED	WS	8/30/19															
<div style="text-align: center; font-weight: bold;">REVISIONS</div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%;">DATE</th> <th style="width: 90%;">DESCRIPTION</th> </tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>		DATE	DESCRIPTION													FOR CITY USE ONLY		<div style="font-size: 18pt; font-weight: bold;">DETAIL</div>	
		DATE	DESCRIPTION																
	NAME	DATE																	
STREETS																			
SEWER																			
DRAINAGE																			
WATER																			
ST. SUPT.																			
TRAFFIC				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; font-weight: bold;">APPROVED:</td> <td style="width: 40%;"></td> <td style="width: 30%; font-weight: bold;">APPROVED:</td> <td style="width: 40%;"></td> </tr> <tr> <td style="font-weight: bold;">DATE</td> <td style="text-align: center;">CITY ENGINEER</td> <td style="font-weight: bold;">DATE</td> <td style="text-align: center;">PUBLIC WORKS DIRECTOR</td> </tr> </table>		APPROVED:		APPROVED:		DATE	CITY ENGINEER	DATE	PUBLIC WORKS DIRECTOR						
		APPROVED:				APPROVED:													
DATE	CITY ENGINEER	DATE	PUBLIC WORKS DIRECTOR																
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; font-weight: bold;">SCALE:</td> <td style="width: 20%;"> HORIZ. <u>AS NOTED</u> VERT. <u>AS NOTED</u> </td> <td style="width: 20%;">F.B. _____ PG. _____</td> <td style="width: 30%; text-align: center; font-weight: bold;">SHEET 6 OF 7</td> </tr> </table>		SCALE:	HORIZ. <u>AS NOTED</u> VERT. <u>AS NOTED</u>	F.B. _____ PG. _____	SHEET 6 OF 7												
SCALE:	HORIZ. <u>AS NOTED</u> VERT. <u>AS NOTED</u>	F.B. _____ PG. _____	SHEET 6 OF 7																
100% CD SUBMITTAL				E602															

P2S ENG



UNDER THE SUPERVISION OF: _____ DATE _____		FOR ENGINEER'S USE		CITY OF ORANGE				
			NAME					DATE
		DRAWN	MN					8/30/19
		DESIGNED	MN					8/30/19
		CHECKED	WS	8/30/19	McPHERSON PARK (333 S. PROSPECT ST, ORANGE, CA 92869) SPECIFICATIONS			
FOR CITY USE ONLY								
STREETS	NAME	DATE						
SEWER								
REVISIONS		DRAINAGE			APPROVED: _____ DATE _____ CITY ENGINEER _____ SCALE: HORIZ. AS NOTED VERT. AS NOTED F.B. _____ PG. _____			
		WATER						
		ST. SUPT.						
		TRAFFIC						
DATE	DESCRIPTION				APPROVED: _____ DATE _____ PUBLIC WORKS DIRECTOR _____ SHEET 7 OF 7			
		100% CD SUBMITTAL			E701			



August 7, 2019

STRUCTURAL DESIGN CALCULATIONS

City of Orange McPherson Park

Spire Job #: 18P2S02
333 S. Prospect Street
Orange, CA 92869

Project Description:

Provide anchorage design for a switchboard that sits on a new concrete pad.



08.07.19



Job:	18P2S02 City of Orange McPherson Pk			1
Calc By:	HZ	Date:	08/07/19	

Table of Contents

General:

Table of Contents	Sheet 1
USGS Design Maps Summary Report	2
Anchorage to Topside of Concrete - Hilti KB-TZ (ESR-1917)	3

Equipment Anchorage:

McPherson Switchboard Anchorage	4-6
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Appendix A: Reference Equipment Info

A1-A2

Job:	18P2S02 City of Orange McPherson Pk			2
Calc By:	HZ	Date:	08/07/19	

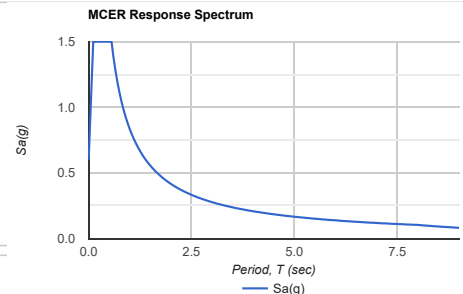
333 S. Prospect St, Orange, CA 92869

Latitude, Longitude: 33.7834176, -117.8177253

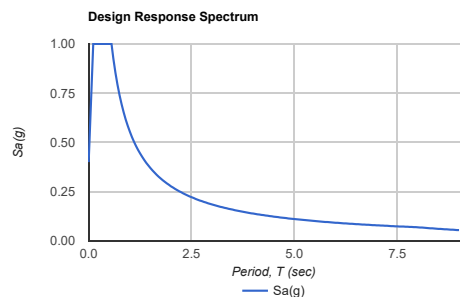


Date	8/7/2019, 11:46:45 AM
Design Code Reference Document	ASCE7-10
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description
S_S	1.5	MCE_R ground motion. (for 0.2 second period)
S_1	0.555	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.5	Site-modified spectral acceleration value
S_{M1}	0.832	Site-modified spectral acceleration value
S_{DS}	1	Numeric seismic design value at 0.2 second SA
S_{D1}	0.555	Numeric seismic design value at 1.0 second SA



Type	Value	Description
SDC	D	Seismic design category
F_a	1	Site amplification factor at 0.2 second
F_v	1.5	Site amplification factor at 1.0 second
PGA	0.523	MCE_G peak ground acceleration
F_{PGA}	1	Site amplification factor at PGA
PGA_M	0.523	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
S_{sRT}	1.52	Probabilistic risk-targeted ground motion. (0.2 second)
S_{sUH}	1.461	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
S_{sD}	1.5	Factored deterministic acceleration value. (0.2 second)
S_{1RT}	0.555	Probabilistic risk-targeted ground motion. (1.0 second)
S_{1UH}	0.518	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S_{1D}	0.6	Factored deterministic acceleration value. (1.0 second)
PGA_d	0.523	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	1.04	Mapped value of the risk coefficient at short periods
C_{R1}	1.07	Mapped value of the risk coefficient at a period of 1 s



Job:	18P2S02 City of Orange McPherson Pk			3
Calc By:	HZ	Date:	08/07/19	

Anchorage to Topside of Concrete - Hilti KB-TZ (ESR-1917)

Mark =	1					
Conc =	NWC					
Metal deck =	No					
f'_c =	2,500				psi	Normal or lightweight concrete
Anchor =	SS 5/8 (3 1/8)					Concrete over metal deck?
Steel Type =	Stainless					Concrete compressive strength
d_o =	5/8				in	Hilti KB-TZ anchor
h_{ef} =	3 1/8				in	Carbon steel or Stainless steel
h =	6				in	Anchor O.D.
h_{min} =	5				in	Effective min anchor embedment
ϕ_s =	0.75					Concrete thickness
λ =	1.0					Min member thickness
k_{cr} =	17					Seismic reduction per ACI Ch. 17
k_{cp} =	2					LWC reduction per ACI Ch. 17
$N_{p,eq}$ =	NA				Lbs	Effectiveness factor
$N_{p,cr}$ =	NA				Lbs	Coefficient for pryout strength
N_b =	4,696				Lbs	Adjusted by $(f'_c/2500)^{0.5}$
s_{min} =	2 3/4				in	Adjusted by $(f'_c/2500)^{0.5}$
s =	5.0				in	$= k_{cr} \cdot (f'_c)^{0.5} \cdot h_{ef}^{1.5}$
c_{min} =	4 1/8				in	Min anchor spacing
c =	6.0				in	Anchor spacing
ϕV_{cb} =	N/A					Min. edge distance
$\psi_{ed,N}$ =	1.00					Edge distance
A_n =	67				in ²	$= \alpha \lambda \phi_{vc} (7(h_{ef}/d_o)^{0.2} \cdot d_o^{0.5}) \cdot f'_c^{0.5} \cdot c^{1.5}$
A_{no} =	88				in ²	$= 0.7 + 0.3c/(1.5h_{ef}) \leq 1.0$
N_{sa} =	17,880				lbs	$= 3h_{ef} \cdot (\min(1.5h_{ef}, s/2) + \min(1.5h_{ef}, c))$
V_{sa} =	9,350				lbs	$= 9 \cdot h_{ef}^2$
$\phi_{t,conc}$ =	0.65					Steel strength in tension
$\phi_{v,conc}$ =	0.70					Steel strength in shear
$\phi_{t,steel}$ =	0.75					
$\phi_{v,steel}$ =	0.65					
$\phi P_{n,conc}$ =	1,755				Lbs	$= \phi_s \lambda \phi_{t,conc} \cdot \min(N_{p,eq}, N_{p,cr}, N_b) \cdot (A_n/A_{no})$
$\phi V_{n,conc}$ =	5,040				Lbs	$= \lambda \phi_{v,conc} \cdot k_{cp} \cdot N_b \cdot (A_n/A_{no})$
$\phi P_{n,steel}$ =	13,410				Lbs	$= \phi_{t,steel} \cdot N_{sa}$
$\phi V_{n,steel}$ =	6,078				Lbs	$= \phi_{v,steel} \cdot V_{sa}$

Job:	18P2S02 City of Orange McPherson Pk			4
Calc By:	HZ	Date:	08/07/19	

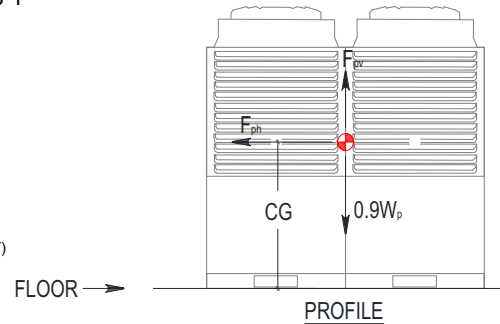
Floor Mounted Equipment - McPherson Switchboard

Seismic Loads (ASCE 7-10, Chapter 13)

(ULT)

Design = City

a_p	2.5	ASCE 7 Table 13.5-1 & Table 13.6-1
R_p	6.0	ASCE 7 Table 13.5-1 & Table 13.6-1
o	2.5	ASCE 7 Table 13.5-1 & Table 13.6-1
S_{DS}	1.00	g See USGS sheet
I_p	1.00	ASCE Table 11.5-1
z/h	0.00	
F_{ph}	0.30	W_p $F_{ph} = \frac{0.4S_{DS}a_p}{R_p/I_p} \left(1 + 2\frac{z}{h}\right) W_p$
F_{pv}	0.20	W_p $F_{pv} = 0.2 \cdot S_{DS} \cdot W_p$
W_p	1,700	Lbs Equipment weight & curb
F_{ph}	510	Lbs (ULT) $o \cdot F_{ph} = 1,275$ Lbs (ULT)
F_{pv}	340	Lbs (ULT)



Wind Loads (ASCE 7-10, Section 29.5.1)

V	110	mph	Basic wind velocity
Exp	C		Exposure category
W	66.0	in	Equipment width
D	35.5	in	Equipment depth
H	91.5	in	Equipment height
A_f	42	ft ²	Vertical area exposed to wind
A_r	16	ft ²	Horizontal area exposed to wind
K_d	0.85		Table 26.6-1
K_z	0.85		Table 29.3-1
K_{zt}	1.00		Assumed
q_z	22.4	psf	$= 0.00256 \cdot K_z \cdot K_{zt} \cdot K_d \cdot V^2$
G	0.85		Section 26.9.1, rigid
C_f	1.55		Figure 29.4-1
F_h	1,235	Lbs (ULT)	$= q_z \cdot G \cdot C_f \cdot A_f$
F_v	364	Lbs (ULT)	$= q_z \cdot A_r$

Unit Data

B	60.0	in	Distance between anchors
D	21.0	in	Distance between anchors
CG	45.8	in	Height to centroid

Job:	18P2S02 City of Orange McPherson Pk			5
Calc By:	HZ	Date:	08/07/19	

Floor Mounted Equipment - McPherson Switchboard

Anchorage to NWC Conc. Pad (ULT)

* See "Anchorage to Topside of Concrete - Hilti KB-TZ (ESR-1917)" calculation sheet for additional info.

Anchor = **SS 5/8 (3 1/8)** 5/8" ϕ Hilti KB-TZ (Stainless Steel) w/ 3 1/8" Embedment
 $n = 8$ No. of anchors (total)
 $n_x = 4$ No. of anchors resisting horizontal loads in one direction (min)
 $n_y = 2$ No. of anchors resisting vertical loads from overturning (min)

Seismic (Governs)

${}_oP_u = 1,242$ Lbs Tension per anchor w/ $\Omega_o = {}_oF_{ph} \cdot CG / [\min(B,D) \cdot n_y] - (0.9W_p - F_{pv})/n$
 ${}_oV_u = 319$ Lbs Shear per anchor w/ $\Omega_o = {}_oF_{ph}/n_x$

	Concrete	Steel	
$P_n =$	1,755	13,410	Lbs
$V_n =$	5,040	6,078	Lbs
$DCR_p =$	0.71	0.09	
$DCR_v =$	0.06	0.05	
$DCR_{p+v} =$	0.57		

(Concrete tension capacity has been multiplied by 0.75 for seismic)

$${}_oP_u / P_n$$

$${}_oV_u / V_n$$

$$(DCR_{p,max})^{5/3} + (DCR_{v,max})^{5/3} \leq 1.0$$

Wind

$P_u = 1,199$ Lbs Tension per anchor $= F_h \cdot CG / [\min(B,D) \cdot n_y] - (0.9W_p - F_v)/n$
 $V_u = 154$ Lbs Shear per anchor $= F_h/n_x$

	Concrete	Steel	
$P_n =$	2,340	13,410	Lbs
$V_n =$	5,040	6,078	Lbs
$DCR_p =$	0.51	0.09	
$DCR_v =$	0.03	0.03	
$DCR_{p+v} =$	0.33		

$$P_u / P_n$$

$$V_u / V_n$$

$$(DCR_{p,max})^{5/3} + (DCR_{v,max})^{5/3} \leq 1.0$$

Job:	18P2S02 City of Orange McPherson Pk		
Calc By:	HZ	Date:	08/07/19
			6

Footing Analysis - McPherson Switchboard

Design =	City
a_p =	2.5
R_p =	6
S_{DS} =	1.00 g
I_p =	1.00
z/h =	0.00

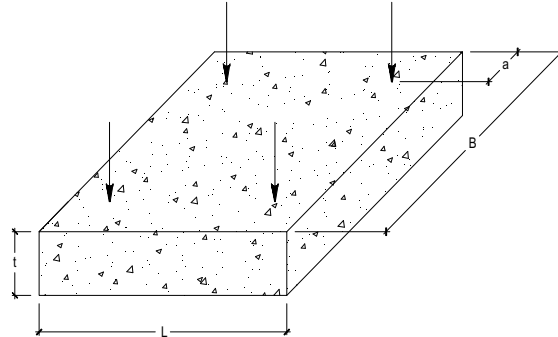
ASCE 7 T-13.5-1 & T-13.6-1
ASCE 7 T-13.5-1 & T-13.6-1
See USGS sheet
ASCE 7 Table 11.5-1

$$F_{ph} = 0.30 W_p$$

$$F_{pv} = 0.20 W_p$$

Weight & Dimensions

W_p =	1,700 lbs	Equip weight
CG_z =	45.8 in	Dist to centroid (vertical)
L =	6.5 ft (min)	Length of footing
B =	6.5 ft (min)	Width of footing
t =	0.5 ft	Thickness of footing
a =	3.0 ft	Cantilever length (max)
b =	5.5 ft	Backspan length (max)
W_{FTG} =	3,144 lbs	Footing weight



	ASD	ULT	
F_{ph} =	357 lbs	510 lbs	(From Equipment)
F_{pv} =	678 lbs	969 lbs	(Includes Footing)

Soil Bearing: (ASD)

$SB_{allow} = 1,500$ psf (CBC Table 1806.2, Item 5)

CASE A: 0.9D+0.7E (ASD)	CASE B: D+0.7E (ASD)
$P = 3,682$ lbs $0.9 \cdot (W_p + W_{FTG}) - F_{pv}$	$P = 5,523$ lbs $W_p + W_{FTG} + F_{pv}$
$M = 1,541$ lb-ft $F_{ph}(CG_z + t)$	$M = 1,541$ lb-ft $F_{ph}(CG_z + t)$
$e = 0.4$ ft $< L/6$ ($L/6 = 1.1$ ft)	$e = 0.3$ ft $< L/6$ ($L/6 = 1.1$ ft)
→ Full Soil Bearing $SB = P/(BL) + 6M/(BL^2)$	→ Full Soil Bearing $SB = P/(BL) + 6M/(BL^2)$
$SB = 122$ psf $< 1,500$ psf (OK)	$SB = 166$ psf $< 1,500$ psf (OK)

Footing Reinforcing Design: (ULT)

F_y =	60 ksi
f'_c =	2,500 psi
Reinf =	#4 @ 18" oc (18" oc max)
A_s =	0.12 in ² /ft (4 bars total)
d =	2.2 in
a =	0.3 in $= A_s \cdot F_y / (0.85 \cdot f'_c \cdot b)$
bot cover =	3.0 in
top cover =	1.5 in

CASE A: 0.9D+E (ULT)	CASE B: 1.2D+E (ULT)
$P = 3,391$ lbs $0.9(W_p + W_{FTG}) - F_{pv}$	$P = 6,782$ lbs $1.2(W_p + W_{FTG}) + F_{pv}$
$M = 2,202$ lb-ft $F_{ph}(CG_z + t)$	$M = 2,202$ lb-ft $F_{ph}(CG_z + t)$
$e = 0.6$ ft $< L/6$ ($L/6 = 1.1$ ft)	$e = 0.3$ ft $< L/6$ ($L/6 = 1.1$ ft)
$w = 129$ plf /ft $= P/(BL) + 6M/(BL^2)$	$w = 210$ plf /ft $= P/(BL) + 6M/(BL^2)$

$M_u^- = 0.8$ kip-ft /ft	$= w \cdot b^2 / 8$	$V_u = 0.7$ k /ft	$= w \cdot L / 2$
$M_u^+ = 0.9$ kip-ft /ft	$= w \cdot a^2 / 2$	$V_c = 2.0$ k /ft	$= [2(f'_c)^{1/2}(12") \cdot d]$
$M_{u,max} = 0.9$ kip-ft /ft		DCR = 0.35 (OK)	$= V_u / V_c \leq 1.0$
$M_n = 1.1$ kip-ft /ft	$= 0.9 A_s \cdot F_y (d - a/2)$		
DCR = 0.83 (OK)	$= M_u / M_n \leq 1.0$		

[illegible]

PRODUCT DESCRIPTION & RATINGS

120/240V 1Ph 3W 60Hz / 1 Phase

120/240V 1Ph 3W 60Hz / 1 Phase
Solidly grounded/Mid Point Grounded
System Short Circuit Current Rating: 42kA RMS
Incoming Section 2 Cable Through the Bottom Right of Lineup

400A Tin Plated Copper Main Bus
(2) .25x1.50 IN/6x38 mm Cu Bus Bar Per Phase
(1) .25x.875 IN/6x22 mm Cu Ground Bus

Type 3R Stainless Steel Free Standing
 Exterior Point Color: ANSI 49 painted stainless steel
 Front Accessibility Only Required
 Handling: Rollers
 Rodent barriers
 1.5H Corrosion Resist Base Channels
 Interior Lights – All Sections
 120V duplex GFCI receptacle – flush mounted in section 1
 Utility sealing hardware installed for unmetred bus compartments

Shipping Split 1	1684.00 lbs	/	763.86 kgs
Complete Lineup	1684.00 lbs	/	763.86 kgs

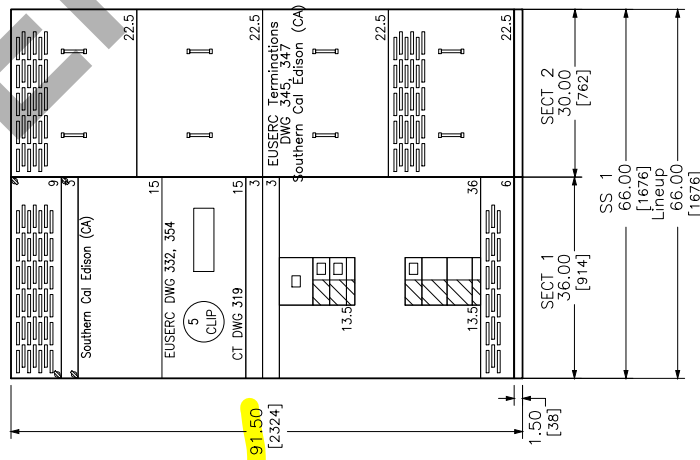
U.L. Deadfront and suitable for use as Service Entrance when not more than six (6) disconnecting means are provided.

ST1- Service Entrance - Section Bus 400A
ST2- Deadfront - Section Bus 400A

Wiring

Instructional Concepts
Reference 80043-055 For Handling, Installation,
Anchoring, Inspection And Maintenance Information

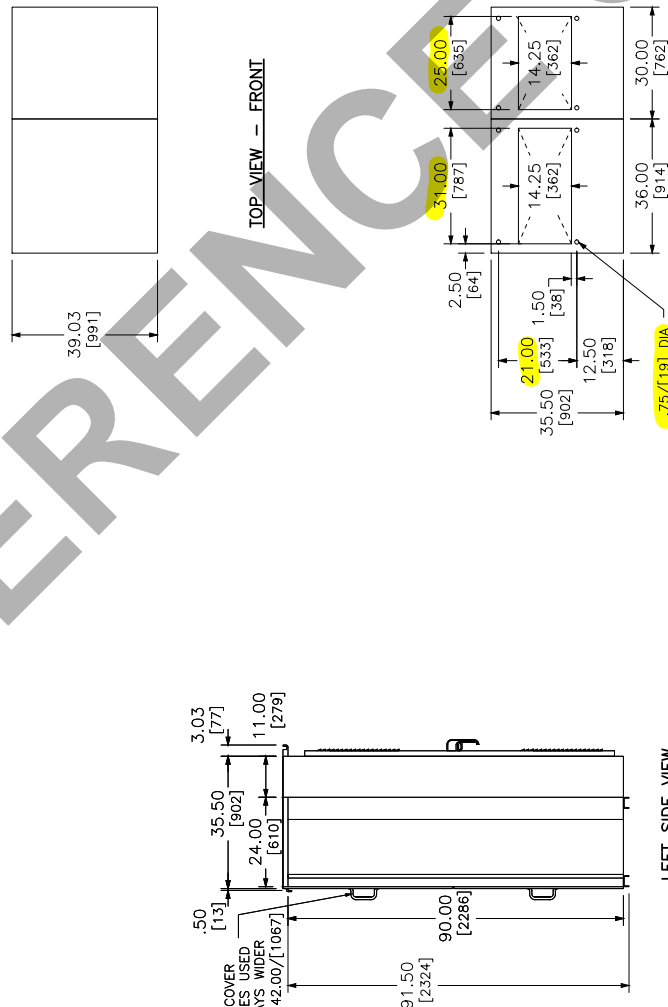
Seismic Qualified



DUAL DIMENSIONS:

JOB NAME:	Misc 2019 projects
JOB LOCATION:	
DRAWN BY:	(Q2C)
ENGR:	
DATE:	July 30, 2019
DRAWING STATUS:	CHECKED
EQUIPMENT DESIGNATION:	MS 400A 1ph NBR
EQUIPMENT TYPE:	QED-2 Switchboard
DRAWING VIEW:	ELEVATION VIEW
<div style="text-align: center;"> SQUARE </div>	
DWG# EQ-6067-A1-28745712-01	DWG# OF 2
NOT FOR CONSTRUCTION	

Job:	18P2S02 City of Orange McPherson Pk			A2
Calc By:	HZ	Date:	08/07/19	

[illegible]

NOTE: ALL DEVICES REQUIRING DRILLING OR INSERTION IN MOUNTING PAD SUCH AS CONDUIT, ANCHORING STUDS, SLEEVE INSERTS, ETC., SHOULD BE INSTALLED BEFORE SETTING EQUIPMENT IN PLACE.

MTG HOLES OFFSET
3.00/[76] TYP
FROM SIDE

NOTE: A MINIMUM OF 2.00' [51"] CLEARANCE BEHIND THE SWITCHBOARD IS REQUIRED FOR TOP COVER OVERHANG.	JOB NAME:	Misc 2019 projects	EQUIPMENT DESIGNATION:	MS 400A 1ph N3R
	JOB LOCATION:		EQUIPMENT TYPE:	QEO-2 Switchboard
	DRAWN BY:	(Q2C)	DRAWING TYPE:	SIDE, TOP VIEW & FLOOR PLAN
	ENGR:			
	DATE:	July 30, 2019		
DRAWING STATUS: QUOTE			DWG# FO-696747-28715712-01	
NOT FOR CONSTRUCTION			PG 2 OF 2	

ATTACHMENT NO. 1

[Behind this page.]

ATTACHMENT NO. 1

CALIFORNIA LABOR CODE

SECTIONS 1725.5, 1771, 1771.1, 1771.4, 1775, 1776, 1777.5, 1813 and 1815

Section 1725.5. Registration of contractors; mandatory registration; qualifications and application; fees; exempt contractors

A contractor shall be registered pursuant to this section to be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any public work contract that is subject to the requirements of this chapter. For the purposes of this section, "contractor" includes a subcontractor as defined by Section 1722.1.

(a) To qualify for registration under this section, a contractor shall do all of the following:

(1)(A) Register with the Department of Industrial Relations in the manner prescribed by the department and pay an initial nonrefundable application fee of four hundred dollars (\$400) to qualify for registration under this section and an annual renewal fee on or before July 1 of each year thereafter. The annual renewal fee shall be in a uniform amount set by the Director of Industrial Relations, and the initial registration and renewal fees may be adjusted no more than annually by the director to support the costs specified in Section 1771.3.

(B) Beginning June 1, 2019, a contractor may register or renew according to this subdivision in annual increments up to three years from the date of registration. Contractors who wish to do so will be required to prepay the applicable nonrefundable application or renewal fees to qualify for the number of years for which they wish to preregister.

(2) Provide evidence, disclosures, or releases as are necessary to establish all of the following:

(A) Workers' compensation coverage that meets the requirements of Division 4 (commencing with Section 3200) and includes sufficient coverage for any worker whom the contractor employs to perform work that is subject to prevailing wage requirements other than a contractor who is separately registered under this section. Coverage may be evidenced by a current and valid certificate of workers' compensation insurance or certification of self-insurance required under Section 7125 of the Business and Professions Code.

(B) If applicable, the contractor is licensed in accordance with Chapter 9 (commencing with Section 7000) of the Business and Professions Code.

(C) The contractor does not have any delinquent liability to an employee or the state for any assessment of back wages or related damages, interest, fines, or penalties pursuant to any final judgment, order, or determination by a court or any federal, state, or local administrative agency, including a confirmed arbitration award. However, for purposes of this paragraph, the contractor shall not be disqualified for any judgment, order, or determination that is under appeal, provided that the contractor has secured the payment of any amount eventually found due through a bond or other appropriate means.

(D) The contractor is not currently debarred under Section 1777.1 or under any other federal or state law providing for the debarment of contractors from public works.

(E) The contractor has not bid on a public works contract, been listed in a bid proposal, or engaged in the performance of a contract for public works without being lawfully registered in accordance with this section, within the preceding 12 months or since the effective date of the requirements set forth in subdivision (e), whichever is earlier. If a contractor is found to be in violation of the requirements of this paragraph, the period of disqualification shall be waived if both of the following are true:

- (i) The contractor has not previously been found to be in violation of the requirements of this paragraph within the preceding 12 months.
- (ii) The contractor pays an additional nonrefundable penalty registration fee of two thousand dollars (\$2,000).
- (b) Fees received pursuant to this section shall be deposited in the State Public Works Enforcement Fund established by Section 1771.3 and shall be used only for the purposes specified in that section.
- (c) A contractor who fails to pay the renewal fee required under paragraph (1) of subdivision (a) on or before the expiration of any prior period of registration shall be prohibited from bidding on or engaging in the performance of any contract for public work until once again registered pursuant to this section. If the failure to pay the renewal fee was inadvertent, the contractor may renew its registration retroactively by paying an additional nonrefundable penalty renewal fee equal to the amount of the renewal fee within 90 days of the due date of the renewal fee.
- (d) If, after a body awarding a contract accepts the contractor's bid or awards the contract, the work covered by the bid or contract is determined to be a public work to which Section 1771 applies, either as the result of a determination by the director pursuant to Section 1773.5 or a court decision, the requirements of this section shall not apply, subject to the following requirements:
- (1) The body that awarded the contract failed, in the bid specification or in the contract documents, to identify as a public work that portion of the work that the determination or decision subsequently classifies as a public work.
- (2) Within 20 days following service of notice on the awarding body of a determination by the Director of Industrial Relations pursuant to Section 1773.5 or a decision by a court that the contract was for public work as defined in this chapter, the contractor and any subcontractors are registered under this section or are replaced by a contractor or subcontractors who are registered under this section.
- (3) The requirements of this section shall apply prospectively only to any subsequent bid, bid proposal, contract, or work performed after the awarding body is served with notice of the determination or decision referred to in paragraph (2).
- (e) The requirements of this section shall apply to any bid proposal submitted on or after March 1, 2015, to any contract for public work, as defined in this chapter, executed on or after April 1, 2015, and to any work performed under a contract for public work on or after January 1, 2018, regardless of when the contract for public work was executed.
- (f) This section does not apply to work performed on a public works project of twenty-five thousand dollars (\$25,000) or less when the project is for construction, alteration, demolition, installation, or repair work or to work performed on a public works project of fifteen thousand dollars (\$15,000) or less when the project is for maintenance work.

Section 1771. Payment of general prevailing rate

Except for public works projects of one thousand dollars (\$1,000) or less, not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the public work is performed, and not less than the general prevailing rate of per diem wages for holiday and overtime work fixed as provided in this chapter, shall be paid to all workers employed on public works.

This section is applicable only to work performed under contract, and is not applicable to work carried out by a public agency with its own forces. This section is applicable to contracts let for maintenance work.

Section 1771.1. Registration as a contractor or subcontractor required prior to bid submission; exceptions; violations; penalties

(a) A contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to Section 1725.5. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.

(b) Notice of the requirement described in subdivision (a) shall be included in all bid invitations and public works contracts, and a bid shall not be accepted nor any contract or subcontract entered into without proof of the contractor or subcontractor's current registration to perform public work pursuant to Section 1725.5.

(c) An inadvertent error in listing a subcontractor who is not registered pursuant to Section 1725.5 in a bid proposal shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive, provided that any of the following apply:

(1) The subcontractor is registered prior to the bid opening.

(2) Within 24 hours after the bid opening, the subcontractor is registered and has paid the penalty registration fee specified in subparagraph (E) of paragraph (2) of subdivision (a) of Section 1725.5.

(3) The subcontractor is replaced by another registered subcontractor pursuant to Section 4107 of the Public Contract Code.

(d) Failure by a subcontractor to be registered to perform public work as required by subdivision (a) shall be grounds under Section 4107 of the Public Contract Code for the contractor, with the consent of the awarding authority, to substitute a subcontractor who is registered to perform public work pursuant to Section 1725.5 in place of the unregistered subcontractor.

(e) The department shall maintain on its Internet Web site a list of contractors who are currently registered to perform public work pursuant to Section 1725.5.

(f) A contract entered into with any contractor or subcontractor in violation of subdivision (a) shall be subject to cancellation, provided that a contract for public work shall not be unlawful, void, or voidable solely due to the failure of the awarding body, contractor, or any subcontractor to comply with the requirements of Section 1725.5 or this section.

(g) If the Labor Commissioner or his or her designee determines that a contractor or subcontractor engaged in the performance of any public work contract without having been registered in accordance with this section, the contractor or subcontractor shall forfeit, as a civil penalty to the state, one hundred dollars (\$100) for each day of work performed in violation of the registration requirement, not to exceed an aggregate penalty of eight thousand dollars (\$8,000) in addition to any penalty registration fee assessed pursuant to clause (ii) of subparagraph (E) of paragraph (2) of subdivision (a) of Section 1725.5.

(h)(1) In addition to, or in lieu of, any other penalty or sanction authorized pursuant to this chapter, a higher tiered public works contractor or subcontractor who is found to have entered into a subcontract with an unregistered lower tier subcontractor to perform any public work in violation of the requirements of Section 1725.5 or this section shall be subject to forfeiture, as a civil penalty to the state, of one hundred dollars (\$100)

for each day the unregistered lower tier subcontractor performs work in violation of the registration requirement, not to exceed an aggregate penalty of ten thousand dollars (\$10,000).

(2) The Labor Commissioner shall use the same standards specified in subparagraph (A) of paragraph (2) of subdivision (a) of Section 1775 when determining the severity of the violation and what penalty to assess, and may waive the penalty for a first time violation that was unintentional and did not hinder the Labor Commissioner's ability to monitor and enforce compliance with the requirements of this chapter.

(3) A higher tiered public works contractor or subcontractor shall not be liable for penalties assessed pursuant to paragraph (1) if the lower tier subcontractor's performance is in violation of the requirements of Section 1725.5 due to the revocation of a previously approved registration.

(4) A subcontractor shall not be liable for any penalties assessed against a higher tiered public works contractor or subcontractor pursuant to paragraph (1). A higher tiered public works contractor or subcontractor may not require a lower tiered subcontractor to indemnify or otherwise be liable for any penalties pursuant to paragraph (1).

(i) The Labor Commissioner or his or her designee shall issue a civil wage and penalty assessment, in accordance with the provisions of Section 1741, upon determination of penalties pursuant to subdivision (g) and subparagraph (B) of paragraph (1) of subdivision (h). Review of a civil wage and penalty assessment issued under this subdivision may be requested in accordance with the provisions of Section 1742. The regulations of the Director of Industrial Relations, which govern proceedings for review of civil wage and penalty assessments and the withholding of contract payments under Article 1 (commencing with Section 1720) and Article 2 (commencing with Section 1770), shall apply.

(j)(1) Where a contractor or subcontractor engages in the performance of any public work contract without having been registered in violation of the requirements of Section 1725.5 or this section, the Labor Commissioner shall issue and serve a stop order prohibiting the use of the unregistered contractor or the unregistered subcontractor on all public works until the unregistered contractor or unregistered subcontractor is registered. The stop order shall not apply to work by registered contractors or subcontractors on the public work.

(2) A stop order may be personally served upon the contractor or subcontractor by either of the following methods:

(A) Manual delivery of the order to the contractor or subcontractor personally.

(B) Leaving signed copies of the order with the person who is apparently in charge at the site of the public work and by thereafter mailing copies of the order by first class mail, postage prepaid to the contractor or subcontractor at one of the following:

(i) The address of the contractor or subcontractor on file with either the Secretary of State or the Contractors' State License Board.

(ii) If the contractor or subcontractor has no address on file with the Secretary of State or the Contractors' State License Board, the address of the site of the public work.

(3) The stop order shall be effective immediately upon service and shall be subject to appeal by the party contracting with the unregistered contractor or subcontractor, by the unregistered contractor or subcontractor, or both. The appeal, hearing, and any further review of the hearing decision shall be governed by the procedures, time limits, and other requirements specified in subdivision (a) of Section 238.1.

(4) Any employee of an unregistered contractor or subcontractor who is affected by a work stoppage ordered by the commissioner pursuant to this subdivision shall be paid at his or her regular hourly prevailing wage rate by that employer for any hours the employee would have worked but for the work stoppage, not to exceed 10 days.

(k) Failure of a contractor or subcontractor, owner, director, officer, or managing agent of the contractor or subcontractor to observe a stop order issued and served upon him or her pursuant to subdivision (j) is guilty of a misdemeanor punishable by imprisonment in county jail not exceeding 60 days or by a fine not exceeding ten thousand dollars (\$10,000), or both.

(l) This section shall apply to any bid proposal submitted on or after March 1, 2015, and any contract for public work entered into on or after April 1, 2015. This section shall also apply to the performance of any public work, as defined in this chapter, on or after January 1, 2018, regardless of when the contract for public work was entered.

(m) Penalties received pursuant to this section shall be deposited in the State Public Works Enforcement Fund established by Section 1771.3 and shall be used only for the purposes specified in that section.

(n) This section shall not apply to work performed on a public works project of twenty-five thousand dollars (\$25,000) or less when the project is for construction, alteration, demolition, installation, or repair work or to work performed on a public works project of fifteen thousand dollars (\$15,000) or less when the project is for maintenance work.

Section 1771.4. Additional requirements when bidding and awarding public works contracts

(a) All of the following are applicable to all public works projects that are otherwise subject to the requirements of this chapter:

(1) The call for bids and contract documents shall specify that the project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

(2) The awarding body shall post or require the prime contractor to post job site notices, as prescribed by regulation.

(3) Each contractor and subcontractor shall furnish the records specified in Section 1776 directly to the Labor Commissioner, in the following manner:

(A) At least monthly or more frequently if specified in the contract with the awarding body.

(B) In a format prescribed by the Labor Commissioner.

(4) If the contractor or subcontractor is not registered pursuant to Section 1725.5 and is performing work on a project for which registration is not required because of subdivision (f) of Section 1725.5, the unregistered contractor or subcontractor is not required to furnish the records specified in Section 1776 directly to the Labor Commissioner but shall retain the records specified in Section 1776 for at least three years after completion of the work.

(5) The department shall undertake those activities it deems necessary to monitor and enforce compliance with prevailing wage requirements.

(b) The Labor Commissioner may exempt a public works project from compliance with all or part of the requirements of subdivision (a) if either of the following occurs:

(1) The awarding body has enforced an approved labor compliance program, as defined in Section 1771.5, on all public works projects under its authority, except those deemed exempt pursuant to subdivision (a) of Section 1771.5, continuously since December 31, 2011.

(2) The awarding body has entered into a collective bargaining agreement that binds all contractors performing work on the project and that includes a mechanism for resolving disputes about the payment of wages.

(c) The requirements of paragraph (1) of subdivision (a) shall only apply to contracts for public works projects awarded on or after January 1, 2015.

(d) The requirements of paragraph (3) of subdivision (a) shall apply to all contracts for public work, whether new or ongoing, on or after January 1, 2016.

Section 1775. Penalties for violations

(a)(1) The contractor and any subcontractor under the contractor shall, as a penalty to the state or political subdivision on whose behalf the contract is made or awarded, forfeit not more than two hundred dollars (\$200) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rates as determined by the director for the work or craft in which the worker is employed for any public work done under the contract by the contractor or, except as provided in subdivision (b), by any subcontractor under the contractor.

(2)(A) The amount of the penalty shall be determined by the Labor Commissioner based on consideration of both of the following:

(i) Whether the failure of the contractor or subcontractor to pay the correct rate of per diem wages was a good faith mistake and, if so, the error was promptly and voluntarily corrected when brought to the attention of the contractor or subcontractor.

(ii) Whether the contractor or subcontractor has a prior record of failing to meet its prevailing wage obligations.

(B)(i) The penalty may not be less than forty dollars (\$40) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rate, unless the failure of the contractor or subcontractor to pay the correct rate of per diem wages was a good faith mistake and, if so, the error was promptly and voluntarily corrected when brought to the attention of the contractor or subcontractor.

(ii) The penalty may not be less than eighty dollars (\$80) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rate, if the contractor or subcontractor has been assessed penalties within the previous three years for failing to meet its prevailing wage obligations on a separate contract, unless those penalties were subsequently withdrawn or overturned.

(iii) The penalty may not be less than one hundred twenty dollars (\$120) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rate, if the Labor Commissioner determines that the violation was willful, as defined in subdivision (c) of Section 1777.1.

(C) If the amount due under this section is collected from the contractor or subcontractor, any outstanding wage claim under Chapter 1 (commencing with Section 1720) of Part 7 of Division 2 against that contractor

or subcontractor shall be satisfied before applying that amount to the penalty imposed on that contractor or subcontractor pursuant to this section.

(D) The determination of the Labor Commissioner as to the amount of the penalty shall be reviewable only for abuse of discretion.

(E) The difference between the prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing wage rate shall be paid to each worker by the contractor or subcontractor, and the body awarding the contract shall cause to be inserted in the contract a stipulation that this section will be complied with.

(b) If a worker employed by a subcontractor on a public works project is not paid the general prevailing rate of per diem wages by the subcontractor, the prime contractor of the project is not liable for any penalties under subdivision (a) unless the prime contractor had knowledge of that failure of the subcontractor to pay the specified prevailing rate of wages to those workers or unless the prime contractor fails to comply with all of the following requirements:

(1) The contract executed between the contractor and the subcontractor for the performance of work on the public works project shall include a copy of the provisions of this section and Sections 1771, 1776, 1777.5, 1813, and 1815.

(2) The contractor shall monitor the payment of the specified general prevailing rate of per diem wages by the subcontractor to the employees, by periodic review of the certified payroll records of the subcontractor.

(3) Upon becoming aware of the failure of the subcontractor to pay his or her workers the specified prevailing rate of wages, the contractor shall diligently take corrective action to halt or rectify the failure, including, but not limited to, retaining sufficient funds due the subcontractor for work performed on the public works project.

(4) Prior to making final payment to the subcontractor for work performed on the public works project, the contractor shall obtain an affidavit signed under penalty of perjury from the subcontractor that the subcontractor has paid the specified general prevailing rate of per diem wages to his or her employees on the public works project and any amounts due pursuant to Section 1813.

(c) The Division of Labor Standards Enforcement shall notify the contractor on a public works project within 15 days of the receipt by the Division of Labor Standards Enforcement of a complaint of the failure of a subcontractor on that public works project to pay workers the general prevailing rate of per diem wages.

Section 1776. Payroll records; retention; inspection; redacted information; agencies entitled to receive nonredacted copies of certified records; noncompliance penalties; rules

(a) Each contractor and 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 public work. Each payroll record shall contain or be verified by a written declaration that it is made under penalty of perjury, stating both of the following:

(1) The information contained in the payroll record is true and correct.

(2) The employer has complied with the requirements of Sections 1771, 1811, and 1815 for any work performed by his or her employees on the public works project.

(b) The payroll records enumerated under subdivision (a) shall be certified and shall be available for inspection at all reasonable hours at the principal office of the 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 enumerated in subdivision (a) shall be made available for inspection or furnished upon request to a representative of the body awarding the contract and the Division of Labor Standards Enforcement of the Department of Industrial Relations.

(3) A certified copy of all payroll records enumerated in subdivision (a) shall be made available upon request by the public for inspection or for copies thereof. However, a request by the public shall be made through either the body awarding the contract or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to paragraph (2), the requesting party shall, prior to being provided the records, reimburse the costs of preparation by the contractor, subcontractors, and the entity through which the request was made. The public may not be given access to the records at the principal office of the contractor.

(c) Unless required to be furnished directly to the Labor Commissioner in accordance with paragraph (3) of subdivision (a) of Section 1771.4, the certified payroll records shall be on forms provided by the Division of Labor Standards Enforcement or shall contain the same information as the forms provided by the division. The payroll records may consist of printouts of payroll data that are maintained as computer records, if the printouts contain the same information as the forms provided by the division and the printouts are verified in the manner specified in subdivision (a).

(d) A contractor or subcontractor shall file a certified copy of the records enumerated in subdivision (a) with the entity that requested the records within 10 days after receipt of a written request.

(e) Except as provided in subdivision (f), any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the awarding body or the Division of Labor Standards Enforcement shall be marked or obliterated to prevent disclosure of an individual's name, address, and social security number. The name and address of the contractor awarded the contract or the subcontractor performing the contract shall not be marked or obliterated. Any copy of records made available for inspection by, or furnished to, a multiemployer Taft-Hartley trust fund (29 U.S.C. Sec. 186(c)(5)) that requests the records for the purposes of allocating contributions to participants shall be marked or obliterated only to prevent disclosure of an individual's full social security number, but shall provide the last four digits of the social security number. Any copy of records made available for inspection by, or furnished to, a joint labor-management committee established pursuant to the federal Labor Management Cooperation Act of 1978 (29 U.S.C. Sec. 175a) shall be marked or obliterated only to prevent disclosure of an individual's social security number.

(f)(1) Notwithstanding any other provision of law, agencies that are included in the Joint Enforcement Strike Force on the Underground Economy established pursuant to Section 329 of the Unemployment Insurance Code and other law enforcement agencies investigating violations of law shall, upon request, be provided nonredacted copies of certified payroll records. Any copies of records or certified payroll made available for inspection and furnished upon request to the public by an agency included in the Joint Enforcement Strike Force on the Underground Economy or to a law enforcement agency investigating a violation of law shall be marked or redacted to prevent disclosure of an individual's name, address, and social security number.

(2) An employer shall not be liable for damages in a civil action for any reasonable act or omission taken in good faith in compliance with this subdivision.

(g) The contractor shall inform the body awarding the contract of the location of the records enumerated under subdivision (a), including the street address, city, and county, and shall, within five working days, provide a notice of a change of location and address.

(h) The contractor or subcontractor has 10 days in which to comply subsequent to receipt of a written notice requesting the records enumerated in subdivision (a). In the event that the contractor or subcontractor fails to comply within the 10-day period, he or she shall, as a penalty to the state or political subdivision on whose behalf the contract is made or awarded, forfeit one hundred dollars (\$100) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due. A contractor is not subject to a penalty assessment pursuant to this section due to the failure of a subcontractor to comply with this section.

(i) The body awarding the contract shall cause to be inserted in the contract stipulations to effectuate this section.

(j) The director shall adopt rules consistent with the California Public Records Act (Chapter 3.5 (commencing with Section 6250) of Division 7 of Title 1 of the Government Code) and the Information Practices Act of 1977 (Title 1.8 (commencing with Section 1798) of Part 4 of Division 3 of the Civil Code) governing the release of these records, including the establishment of reasonable fees to be charged for reproducing copies of records required by this section.

Section 1777.5. Employment of registered apprentices; wages; standards; number; apprenticeable craft or trade; exemptions; contributions; compliance program

(a)(1) This chapter does not prevent the employment upon public works of properly registered apprentices who are active participants in an approved apprenticeship program.

(2) For purposes of this chapter, “apprenticeship program” means a program under the jurisdiction of the California Apprenticeship Council established pursuant to Section 3070.

(b)(1) Every apprentice employed upon public works shall be paid the prevailing rate of per diem wages for apprentices in the trade to which he or she is registered and shall be employed only at the work of the craft or trade to which he or she is registered.

(2) Unless otherwise provided by a collective bargaining agreement, when a contractor requests the dispatch of an apprentice pursuant to this section to perform work on a public works project and requires the apprentice to fill out an application or undergo testing, training, an examination, or other preemployment process as a condition of employment, the apprentice shall be paid for the time spent on the required preemployment activity, including travel time to and from the required activity, if any, at the prevailing rate of per diem wages for apprentices in the trade to which he or she is registered. Unless otherwise provided by a collective bargaining agreement, a contractor is not required to compensate an apprentice for the time spent on preemployment activities if the apprentice is required to take a preemployment drug or alcohol test and he or she fails to pass that test.

(c) Only apprentices, as defined in Section 3077, who are in training under apprenticeship standards that have been approved by the Chief of the Division of Apprenticeship Standards and who are parties to written

apprentice agreements under Chapter 4 (commencing with Section 3070) of Division 3 are eligible to be employed at the apprentice wage rate on public works. The employment and training of each apprentice shall be in accordance with either of the following:

- (1) The apprenticeship standards and apprentice agreements under which he or she is training.
- (2) The rules and regulations of the California Apprenticeship Council.

(d) If the contractor to whom the contract is awarded by the state or any political subdivision, in performing any of the work under the contract, employs workers in any apprenticeable craft or trade, the contractor shall employ apprentices in at least the ratio set forth in this section and may apply to any apprenticeship program in the craft or trade that can provide apprentices to the site of the public work for a certificate approving the contractor under the apprenticeship standards for the employment and training of apprentices in the area or industry affected. However, the decision of the apprenticeship program to approve or deny a certificate shall be subject to review by the Administrator of Apprenticeship. The apprenticeship program or programs, upon approving the contractor, shall arrange for the dispatch of apprentices to the contractor. A contractor covered by an apprenticeship program's standards shall not be required to submit any additional application in order to include additional public works contracts under that program. "Apprenticeable craft or trade," as used in this section, means a craft or trade determined as an apprenticeable occupation in accordance with rules and regulations prescribed by the California Apprenticeship Council. As used in this section, "contractor" includes any subcontractor under a contractor who performs any public works not excluded by subdivision (o).

(e) Before commencing work on a contract for public works, every contractor shall submit contract award information to an applicable apprenticeship program that can supply apprentices to the site of the public work. The information submitted shall include an estimate of journeyman hours to be performed under the contract, the number of apprentices proposed to be employed, and the approximate dates the apprentices would be employed. A copy of this information shall also be submitted to the awarding body, if requested by the awarding body. Within 60 days after concluding work on the contract, each contractor and subcontractor shall submit to the awarding body, if requested, and to the apprenticeship program a verified statement of the journeyman and apprentice hours performed on the contract. The information under this subdivision shall be public. The apprenticeship programs shall retain this information for 12 months.

(f) The apprenticeship program supplying apprentices to the area of the site of the public work shall ensure equal employment and affirmative action in apprenticeship for women and minorities.

(g) The ratio of work performed by apprentices to journeymen employed in a particular craft or trade on the public work may be no higher than the ratio stipulated in the apprenticeship standards under which the apprenticeship program operates if the contractor agrees to be bound by those standards. However, except as otherwise provided in this section, in no case shall the ratio be less than one hour of apprentice work for every five hours of journeyman work.

(h) This ratio of apprentice work to journeyman work shall apply during any day or portion of a day when any journeyman is employed at the jobsite and shall be computed on the basis of the hours worked during the day by journeymen so employed. Any work performed by a journeyman in excess of eight hours per day or 40 hours per week shall not be used to calculate the ratio. The contractor shall employ apprentices for the number of hours computed as above before the end of the contract or, in the case of a subcontractor, before the end of the subcontract. However, the contractor shall endeavor, to the greatest extent possible, to employ apprentices during the same time period that the journeymen in the same craft or trade are employed at the jobsite. When an hourly apprenticeship ratio is not feasible for a particular craft or trade, the Administrator

of Apprenticeship, upon application of an apprenticeship program, may order a minimum ratio of not less than one apprentice for each five journeymen in a craft or trade classification.

(i) A contractor covered by this section who has agreed to be covered by an apprenticeship program's standards upon the issuance of the approval certificate, or who has been previously approved for an apprenticeship program in the craft or trade, shall employ the number of apprentices or the ratio of apprentices to journeymen stipulated in the applicable apprenticeship standards, but in no event less than the 1-to-5 ratio required by subdivision (g).

(j) Upon proper showing by a contractor that he or she employs apprentices in a particular craft or trade in the state on all of his or her contracts on an annual average of not less than one hour of apprentice work for every five hours of labor performed by journeymen, the Administrator of Apprenticeship may grant a certificate exempting the contractor from the 1-to-5 hourly ratio, as set forth in this section for that craft or trade.

(k) An apprenticeship program has the discretion to grant to a participating contractor or contractor association a certificate, which shall be subject to the approval of the Administrator of Apprenticeship, exempting the contractor from the 1-to-5 ratio set forth in this section when it finds that any one of the following conditions is met:

(1) Unemployment for the previous three-month period in the area exceeds an average of 15 percent.

(2) The number of apprentices in training in the area exceeds a ratio of 1 to 5.

(3) There is a showing that the apprenticeable craft or trade is replacing at least one-thirtieth of its journeymen annually through apprenticeship training, either on a statewide basis or on a local basis.

(4) Assignment of an apprentice to any work performed under a public works contract would create a condition that would jeopardize his or her life or the life, safety, or property of fellow employees or the public at large, or the specific task to which the apprentice is to be assigned is of a nature that training cannot be provided by a journeyman.

(l) If an exemption is granted pursuant to subdivision (k) to an organization that represents contractors in a specific trade from the 1-to-5 ratio on a local or statewide basis, the member contractors shall not be required to submit individual applications for approval to local joint apprenticeship committees, if they are already covered by the local apprenticeship standards.

(m)(1) A contractor to whom a contract is awarded, who, in performing any of the work under the contract, employs journeymen or apprentices in any apprenticeable craft or trade shall contribute to the California Apprenticeship Council the same amount that the director determines is the prevailing amount of apprenticeship training contributions in the area of the public works site. A contractor may take as a credit for payments to the council any amounts paid by the contractor to an approved apprenticeship program that can supply apprentices to the site of the public works project. The contractor may add the amount of the contributions in computing his or her bid for the contract.

(2)(A) At the conclusion of the 2002-03 fiscal year and each fiscal year thereafter, the California Apprenticeship Council shall distribute training contributions received by the council under this subdivision, less the expenses of the Department of Industrial Relations for administering this subdivision, by making grants to approved apprenticeship programs for the purpose of training apprentices. The grant funds shall be distributed as follows:

(i) If there is an approved multiemployer apprenticeship program serving the same craft or trade and geographic area for which the training contributions were made to the council, a grant to that program shall be made.

(ii) If there are two or more approved multiemployer apprenticeship programs serving the same craft or trade and county for which the training contributions were made to the council, the grant shall be divided among those programs based on the number of apprentices from that county registered in each program.

(iii) All training contributions not distributed under clauses (i) and (ii) shall be used to defray the future expenses of the Department of Industrial Relations for the administration and enforcement of apprenticeship and preapprenticeship standards and requirements under this code.

(B) An apprenticeship program shall only be eligible to receive grant funds pursuant to this subdivision if the apprenticeship program agrees, prior to the receipt of any grant funds, to keep adequate records that document the expenditure of grant funds and to make all records available to the Department of Industrial Relations so that the Department of Industrial Relations is able to verify that grant funds were used solely for training apprentices. For purposes of this subparagraph, adequate records include, but are not limited to, invoices, receipts, and canceled checks that account for the expenditure of grant funds. This subparagraph shall not be deemed to require an apprenticeship program to provide the Department of Industrial Relations with more documentation than is necessary to verify the appropriate expenditure of grant funds made pursuant to this subdivision.

(C) The Department of Industrial Relations shall verify that grants made pursuant to this subdivision are used solely to fund training apprentices. If an apprenticeship program is unable to demonstrate how grant funds are expended or if an apprenticeship program is found to be using grant funds for purposes other than training apprentices, then the apprenticeship program shall not be eligible to receive any future grant pursuant to this subdivision and the Department of Industrial Relations may initiate the process to rescind the registration of the apprenticeship program.

(3) All training contributions received pursuant to this subdivision shall be deposited in the Apprenticeship Training Contribution Fund, which is hereby created in the State Treasury. Upon appropriation by the Legislature, all moneys in the Apprenticeship Training Contribution Fund shall be used for the purpose of carrying out this subdivision and to pay the expenses of the Department of Industrial Relations.

(n) The body awarding the contract shall cause to be inserted in the contract stipulations to effectuate this section. The stipulations shall fix the responsibility of compliance with this section for all apprenticeable occupations with the prime contractor.

(o) This section does not apply to contracts of general contractors or to contracts of specialty contractors not bidding for work through a general or prime contractor when the contracts of general contractors or those specialty contractors involve less than thirty thousand dollars (\$30,000).

(p) An awarding body that implements an approved labor compliance program in accordance with subdivision (b) of Section 1771.5 may, with the approval of the director, assist in the enforcement of this section under the terms and conditions prescribed by the director.

Section 1813. Forfeiture for violations; contract stipulation; report of violations

The contractor or subcontractor shall, as a penalty to the state or political subdivision on whose behalf the contract is made or awarded, forfeit twenty- five dollars (\$25) for each worker employed in the execution of

the contract by the respective contractor or subcontractor for each calendar day during which the worker is required or permitted to work more than 8 hours in any one calendar day and 40 hours in any one calendar week in violation of the provisions of this article. In awarding any contract for public work, the awarding body shall cause to be inserted in the contract a stipulation to this effect. The awarding body shall take cognizance of all violations of this article committed in the course of the execution of the contract, and shall report them to the Division of Labor Standards Enforcement.

Section 1815. Overtime

Notwithstanding the provisions of Sections 1810 to 1814, inclusive, of this code, and notwithstanding any stipulation inserted in any contract pursuant to the requirements of said sections, work performed by employees of contractors in excess of 8 hours per day, and 40 hours during any one week, shall be permitted upon public work upon compensation for all hours worked in excess of 8 hours per day at not less than 1 ½ times the basic rate of pay.

ATTACHMENT NO. 2

[Behind this page.]

ATTACHMENT NO. 2

CALIFORNIA PUBLIC CONTRACT CODE SECTION 9204

Section 9204. Legislative findings and declarations regarding timely and complete payment of contractors for public works projects; claims process (Eff: January 1, 2017)

(a) The Legislature finds and declares that it is in the best interests of the state and its citizens to ensure that all construction business performed on a public works project in the state that is complete and not in dispute is paid in full and in a timely manner.

(b) Notwithstanding any other law, including, but not limited to, Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2, Chapter 10 (commencing with Section 19100) of Part 2, and Article 1.5 (commencing with Section 20104) of Chapter 1 of Part 3, this section shall apply to any claim by a contractor in connection with a public works project.

(c) For purposes of this section:

(1) "Claim" means a separate demand by a contractor sent by registered mail or certified mail with return receipt requested, for one or more of the following:

(A) A time extension, including, without limitation, for relief from damages or penalties for delay assessed by a public entity under a contract for a public works project.

(B) Payment by the public entity of money or damages arising from work done by, or on behalf of, the contractor pursuant to the contract for a public works project and payment for which is not otherwise expressly provided or to which the claimant is not otherwise entitled.

(C) Payment of an amount that is disputed by the public entity.

(2) "Contractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who has entered into a direct contract with a public entity for a public works project.

(3)(A) "Public entity" means, without limitation, except as provided in subparagraph (B), a state agency, department, office, division, bureau, board, or commission, the California State University, the University of California, a city, including a charter city, county, including a charter county, city and county, including a charter city and county, district, special district, public authority, political subdivision, public corporation, or nonprofit transit corporation wholly owned by a public agency and formed to carry out the purposes of the public agency.

(B) "Public entity" shall not include the following:

(i) The Department of Water Resources as to any project under the jurisdiction of that department.

(ii) The Department of Transportation as to any project under the jurisdiction of that department.

(iii) The Department of Parks and Recreation as to any project under the jurisdiction of that department.

(iv) The Department of Corrections and Rehabilitation with respect to any project under its jurisdiction pursuant to Chapter 11 (commencing with Section 7000) of Title 7 of Part 3 of the Penal Code.

(v) The Military Department as to any project under the jurisdiction of that department.

(vi) The Department of General Services as to all other projects.

(vii) The High-Speed Rail Authority.

(4) "Public works project" means the erection, construction, alteration, repair, or improvement of any public structure, building, road, or other public improvement of any kind.

(5) "Subcontractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who either is in direct contract with a contractor or is a lower tier subcontractor.

(d)(1)(A) Upon receipt of a claim pursuant to this section, the public entity to which the claim applies shall conduct a reasonable review of the claim and, within a period not to exceed 45 days, shall provide the claimant a written statement identifying what portion of the claim is disputed and what portion is undisputed. Upon receipt of a claim, a public entity and a contractor may, by mutual agreement, extend the time period provided in this subdivision.

(B) The claimant shall furnish reasonable documentation to support the claim.

(C) If the public entity needs approval from its governing body to provide the claimant a written statement identifying the disputed portion and the undisputed portion of the claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of a claim sent by registered mail or certified mail, return receipt requested, the public entity shall have up to three days following the next duly publicly noticed meeting of the governing body after the 45-day period, or extension, expires to provide the claimant a written statement identifying the disputed portion and the undisputed portion.

(D) Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the public entity issues its written statement. If the public entity fails to issue a written statement, paragraph (3) shall apply.

(2)(A) If the claimant disputes the public entity's written response, or if the public entity fails to respond to a claim issued pursuant to this section within the time prescribed, the claimant may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the public entity shall schedule a meet and confer conference within 30 days for settlement of the dispute.

(B) Within 10 business days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, the public entity shall provide the claimant a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the public entity issues its written statement. Any disputed portion of the claim, as identified by the contractor in writing, shall be submitted to nonbinding mediation, with the public entity and the claimant sharing the associated costs equally. The public entity and claimant shall mutually agree to a mediator within 10 business days after the disputed portion of the claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the claim remaining in dispute shall be subject to applicable procedures outside this section.

(C) For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.

(D) Unless otherwise agreed to by the public entity and the contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Section 20104.4 to mediate after litigation has been commenced.

(E) This section does not preclude a public entity from requiring arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program, if mediation under this section does not resolve the parties' dispute.

(3) Failure by the public entity to respond to a claim from a contractor within the time periods described in this subdivision or to otherwise meet the time requirements of this section shall result in the claim being deemed rejected in its entirety. A claim that is denied by reason of the public entity's failure to have responded to a claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the claim or the responsibility or qualifications of the claimant.

(4) Amounts not paid in a timely manner as required by this section shall bear interest at 7 percent per annum.

(5) If a subcontractor or a lower tier subcontractor lacks legal standing to assert a claim against a public entity because privity of contract does not exist, the contractor may present to the public entity a claim on behalf of a subcontractor or lower tier subcontractor. A subcontractor may request in writing, either on their own behalf or on behalf of a lower tier subcontractor, that the contractor present a claim for work which was performed by the subcontractor or by a lower tier subcontractor on behalf of the subcontractor. The subcontractor requesting that the claim be presented to the public entity shall furnish reasonable documentation to support the claim. Within 45 days of receipt of this written request, the contractor shall notify the subcontractor in writing as to whether the contractor presented the claim to the public entity and, if the original contractor did not present the claim, provide the subcontractor with a statement of the reasons for not having done so.

(e) The text of this section or a summary of it shall be set forth in the plans or specifications for any public works project that may give rise to a claim under this section.

(f) A waiver of the rights granted by this section is void and contrary to public policy, provided, however, that (1) upon receipt of a claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable; and (2) a public entity may prescribe reasonable change order, claim, and dispute resolution procedures and requirements in addition to the provisions of this section, so long as the contractual provisions do not conflict with or otherwise impair the timeframes and procedures set forth in this section.

(g) This section applies to contracts entered into on or after January 1, 2017.

(h) Nothing in this section shall impose liability upon a public entity that makes loans or grants available through a competitive application process, for the failure of an awardee to meet its contractual obligations.

(i) This section shall remain in effect only until January 1, 2027, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2027, deletes or extends that date.