



**CONTRACT FOR REPAIRS, MAINTENANCE OR CONSTRUCTION SERVICES
UNDER \$75,000 AWARDED PURSUANT TO CUPCCAA**

PROPOSAL FORM

Thank you for your interest in proposing on this project.
Please fill out, sign and return this form as your proposal
along with any requested attachments.

**Due on or before: Wednesday, February 11, 2026
by end of business day (5:00 p.m.)
Email your proposal or questions to: yle@chualarusd.org**

Project Name: Emergency Backup Generator Installation for Walk-In Refrigerator & Freezer.

Work must be completed within 60 calendar days from issuance of fully signed contract

Description of Project: The scope, insurance requirements, schedule and liquidated damages shall be per the attached Form of Contract. Description of work is Exhibit A in the Form of Contract.

Note: The project scope, schedule, terms and conditions of the attached Form of Contract for this proposal apply to this proposal without exclusions or exceptions.

Prevailing wages apply.

Projects over \$25k must include Payment Bond. A Performance Bond is also required.

By submitting a proposal, you are agreeing to enter into an agreement to perform the work as provided therein, including providing all certifications, proof of insurance, Payment and Performance Bonds if so indicated, within 5 working days of request.

Contact the District via the email above with any questions at least 3 working days prior to the proposal submission due date.

Do not fill out the proposed Contract. It is for reference only during this proposal period. If you are selected to do the work a contract will be forwarded to you for finalization.

BASE CONTRACT (In Dollars\$) – Lump sum/Fixed Fee:

0	0		0	0	0		0	0
Dollars		,				.	Cents	

The above amount includes all scope, labor, materials, taxes and other associated costs to complete and deliver the Services or Work as defined and described in this RFP and the Contract Package provided for this work. Price shall remain valid for 30 days.

Print Name & Title		Legal Firm Name	
Communication Phone # - This Proposal:		Signature:	
Communication Email – This Proposal		Date:	
License #:	DIR Reg. #:	License Classification – This Project	

Designated Subcontractor List – You must provide the below information for **each subcontractor** who will perform work or labor or render service on this project in an amount **in excess of one-half of one percent (1/2 of 1%) of Base Contract proposed** as per Public Contract Code section 4100, et seq. No proposal will be accepted nor any contract or subcontract entered into without proof that the contractor and all subcontractors are registered with DIR. (*Labor Code §1773.2*)

Proposer Firm Name: _____ Copy page if more lines are needed.

Portion of Work	Subcontractor Name (%DVBE if Applicable)	City/State	CA License #	DIR Reg #

End of Proposal Form



CONTRACT FOR REPAIRS, MAINTENANCE OR CONSTRUCTION SERVICES UNDER \$75,000 AWARDED PURSUANT TO CUPCCAA

THIS CONTRACT is made and entered into as of the last date of signature hereto (“**Contract**”), by and between **TBD** (“**Contractor**”) and **CHUALAR UNION SCHOOL DISTRICT** (“**District**”). Contractor and District may be referred to herein individually as a “**Party**” or collectively as the “**Parties**.”

1. Contract Price & Services.

a. After the District has issued a Notice to Proceed or a fully executed Contract, the Contractor shall furnish to the District the repairs, maintenance or construction services identified below and as more fully described in **Exhibit A** attached hereto (“**Services**” or “**Work**”) subject to the conditions below and for the price indicated below.

Project: Emergency Backup Generator Installation for the Nutrition Services Department.

(“**Contract Price**”):

BASE CONTRACT (In Dollars\$):

0	0	,	0	0	0	.	0	0
Dollars			Cents					

Allowance to _____ [LIST SCOPE OF ALLOWANCE, IF APPLICABLE]	\$ _____ Dollars
Allowance to _____ [LIST SCOPE OF ALLOWANCE, IF APPLICABLE]	\$ _____ Dollars
Contract Price	\$ “Awarded Total” Dollars

b. **Allowances:** If this Contract includes allowances, an allowance is a value added to the Base Contract amount for scope items defined by the district. **Allowance items shall only be used by Contractor with the District’s prior written permission.** Contractor shall use the change order provisions of this Contract to apply for the use of an Allowance item. All unused allowance values at the end of the Project shall be retained by the District.

1. **Payment.** Payment for the Work shall be made in accordance with the Terms and Conditions to Contract (“**Terms and Conditions**”) attached hereto.

2. **Site and Work Time/Noise.** Contractor shall perform the Work at 24285 Lincoln Street, Chualar, CA 93925. The “**Project**” is the scope of Work performed at the Site. Construction work is limited to weekdays between the hours from 8:00 a.m. to 5:00 p.m. Exceptions shall only be granted by written permission from the District Representative at least 48 hours in advance.
3. **Site Access and Security.** In addition to any requirements herein, Contractors’ representatives driving motor vehicles on school grounds must use extreme caution during the times when school is in session or when children are on the playground. Drivers entering school premises when school is not in session will lock any gate or door to which they have access both when entering and/or leaving grounds. Any unusual Condition noted by drivers such as gates or doors found unlocked and/or opened, evidence of vandalism, etc., must be reported to the District Representative immediately.
4. **Contract Time & Liquidated Damages.** Work shall be completed by or before _____ (“**Contract Time**”). Contractor agrees that if the Work is not completed within the Contract Time and/or pursuant to the completion schedule, construction schedule, or project milestones developed pursuant to provisions of the Contract, it is understood, acknowledged, and agreed that the District will suffer damage which is not capable of being calculated. Pursuant to Government Code section 53069.85, Contractor shall pay to the District, as fixed and liquidated damages for these incalculable damages, the sum of **\$150.00** per day for each and every calendar day of delay beyond the Contract Time or beyond any completion schedule, construction schedule, or Project milestones established pursuant to the Contract.
5. **Bonds & Insurance.**
- a. **Payment Bond & Performance Bond:**
- ☐ **IS NOT REQUIRED – PROJECT SIZE IS DETERMINED TO BE BELOW \$25K**
- ☒ **IS REQUIRED:** Contractor shall not commence the Work until it has provided to the District, a Payment (Labor and Material) Bond and a Performance Bond, in the forms attached hereto, each in an amount equivalent to one hundred percent (100%) of the Contract Price issued by a surety admitted to issue bonds in the State of California and otherwise acceptable to the District. The District reserves to waive this requirement in writing at its sole discretion and negotiate a deduction of the cost from the base proposal in the event the Contract Price is below \$25,000.
- b. **Insurance:** Contractor shall have and maintain in force during the term of this Contract, with the minimum indicated limits, the following insurance:

Commercial General Liability, with Products and Completed Operations Coverage	\$1,000,000 each occurrence \$2,000,000 aggregate
Automobile Liability, Any Auto, Combined Single Limit	\$1,000,000 each occurrence \$2,000,000 aggregate
Workers Compensation	Statutory limits pursuant to State law
Employers’ Liability	\$1,000,000 each incident, disease

	\$2,000,000 policy limit
Sexual Abuse / Molestation	~~\$1,000,000 each incident~~ ~~\$2,000,000 policy limit~~
Builder's Risk (Course of Construction)	N/A

DISTRICT MAY ADJUST THESE LIMITS AT THE DISTRICT'S SOLE DISCRETION BASED ON SIZE AND SCOPE OF THE CONTRACT.

Contractor shall provide the District certificate(s) of insurance and endorsements satisfactory to the District. The policy(ies) shall not be amended or modified, and the coverage amounts shall not be reduced without thirty (30) days written notice to the District prior to cancellation. Except for worker's compensation insurance, the District, the Architect, and the Project Manager shall be named as additionally insureds on all policies. Contractor's policy(ies) shall be primary; any insurance carried by the District shall only be secondary and supplemental. Contractor shall not allow any subcontractor, employee, or agent to commence Work on this Contract or any subcontract until the insurance required of Contractor, subcontractor, or agent has been obtained, and the certificate(s) of insurance and endorsements have been provided to the District; provided, however, that the District reserves the right to reject an insurance policy(ies) if they do not conform with the above insurance requirements.

6. **Project Oversight.** The District representative for the Project is Yen Le, Business Manager. Contact Information: Desk: 831-679-2504 x 108; email: yle@chualarusd.org
7. ☐ **This box will be checked by the district if Federal Funding requirements apply.** If the Project is funded in whole or part by federal funding, including, without limitation, any funds from any component or iteration of the Elementary and Secondary School Emergency Relief ("ESSER") programs, Contractor acknowledges that this Project is subject to federal procurement/contracting requirements. Contractor agrees to fully comply with all federal requirements, including, without limitation, the federally required contract provisions attached hereto as **Exhibit C**.
8. **Terms & Conditions.** The Contractor agrees to comply with the Terms and Conditions attached hereto.
9. **Contract Documents.** The Contract Documents include only the following documents, as indicated:

_____ Proposal Form _____ Notice to Proceed _____ Terms and Conditions to Contract _____ Non Collusion Declaration _____ Certifications to be Completed by Contractor _____ Criminal Background Investigation Certification _____ Insurance Certificates and Endorsements	_____ Performance Bond _____ Payment Bond _____ Exhibit A (Scope of Work & Specifications) _____ Map _____ Work Specifications _____ [Other] _____ Exhibit B (Federal Procurement Provisions)
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10. **Notice.** Any notice required or permitted to be given under this Agreement shall be deemed to have been given, served, and received if given in writing and either personally delivered or sent by overnight delivery service addressed as follows:

District:

Chualar Union School District
 24285 Lincoln St., PO BOX 188,
 Chualar, CA 93925-0188
 Attn: Yen Le, Business Manager

Contractor:

“Contractor”
 “Contractor_address”
 “Contractor_City_State_Zip”
 Attn: _____

Any notice personally given shall be effective upon receipt. Any notice sent by overnight delivery service shall be effective the business day next following delivery thereof to the overnight delivery service.

ACCEPTED AND AGREED on the date indicated below. By signing this Contract, Contractor certifies, under penalty of perjury, that all the information provided in the Contract Documents is true, complete, and correct:

_____ Contractor	_____ CHUALAR UNION SCHOOL DISTRICT District
_____ Date	_____ Date
_____ Signature	_____ Signature
_____ Print Name	_____ RUBEN PULIDO Print Name
_____ Print Title	_____ SUPERINTENDENT/PRINCIPAL Print Title
License #: _____	
DIR Registration # _____	

NOTE: If the Contractor is a corporation, Contractor must attach a certified copy of the corporation's by-laws, or of the resolution of the Board of Directors of the corporation, authorizing the above person to execute this Agreement and the bonds required by the Contract Documents.

END OF AGREEMENT

Information regarding Contractor:

Type of Business Entity:

- ☐ Individual
☐ Sole Proprietorship
☐ Partnership
☐ Limited Partnership
☐ Corporation
☐ Limited Liability
 Company
☐ Other:

**Employer Identification Number or
Social Security Number:**

NOTE: United States Code, title 26, sections 6041 and 6109 require non-corporate recipients of \$600 or more to furnish their taxpayer identification number to the payer. The United States Code also provides that a penalty may be imposed for failure to furnish the taxpayer identification number. In order to comply with these rules, the District requires your federal tax identification number or Social Security number, whichever is applicable.

Contractor representative for onsite work:**Name:****Title:****Mobile:****Email:**

TERMS AND CONDITIONS TO CONTRACT

1. NOTICE TO PROCEED: District shall provide a Notice to Proceed to Contractor pursuant to the Contract at which time Contractor shall proceed with the Work.

2. SITE EXAMINATION: Contractor has examined the Site and certifies that it accepts all measurements, specifications and conditions affecting the Work to be performed at the Site. By submitting its bid/proposal and signing this Contract, Contractor warrants that it has made all Site examination(s) that it deems necessary as to the condition of the Site, its accessibility for materials, workers and utilities, and Contractor's ability to protect existing surface and subsurface improvements. No claim for allowance of time or money will be allowed as to any other undiscovered condition on the Site.

3. CONSTRUCTION SCHEDULE /

SUBCONTRACTOR LIST: Contractor shall provide the District a Construction Schedule for the Work and a Subcontractor List as indicated in this Contract. Both the Construction Schedule and Subcontractor List are subject to the District's approval.

4. EQUIPMENT AND LABOR: The Contractor shall furnish all tools, equipment, apparatus, facilities, transportation, labor, and material necessary to furnish the Services, the Services to be performed at such times and places as directed by and subject to the approval of the authorized District representative indicated in the Work specifications attached hereto. All equipment onsite must be compliant with the California Air Resources Board (CARB) regulations as appropriate and certifications shall be available upon request.

5. SUBCONTRACTORS: Contractor shall comply with the Subletting and Subcontracting Fair Practices Act (Public Contract Code, section 4100 et. seq.) Contractor shall identify by name and location of the place of business of each subcontractor who will perform work or labor or render service in or about the construction of the Project in an amount in excess of one-half of 1 percent of the Contractor's contract price or ten thousand dollars (\$10,000) whichever is greater. Subcontractors, if any, engaged by the Contractor for any Service or Work under this Contract shall be subject to the approval of the District. Contractor agrees to bind every subcontractor by the terms of the Contract as far as such terms are applicable to subcontractor's work, including, without limitation, all indemnification, insurance, bond, and warranty requirements. If Contractor subcontracts any part of this Contract, Contractor shall be fully responsible to the District for acts and omissions of its subcontractor and of persons either directly or indirectly employed by

itself. Nothing contained in the Contract Documents shall create any contractual relations between any subcontractor and the District.

6. TERMINATION: If Contractor fails to perform the Services and Contractor's duties to the satisfaction of the District, or if Contractor fails to fulfill in a timely and professional manner Contractor's obligations under this Contract, or if Contractor violates or otherwise breaches any of the Terms or Provisions of this Contract, the District shall have the right to terminate this Contract effective immediately upon the District giving written notice thereof to the Contractor. District shall also have the right in its sole discretion to terminate the Contract for its own convenience. Termination shall have no effect upon any of the rights and obligations of the Parties arising out of any transaction occurring prior to the effective date of termination. Upon termination, Contractor shall provide the District with all documents produced maintained or collected by Contractor pursuant to this Contract, whether or not such documents are final or draft documents.

7. SAFETY AND SECURITY: Contractor is responsible for maintaining safety in the performance of this Contract. Contractor shall be responsible for complying with the District's rules and regulations pertaining to safety, security, and driving on school grounds, particularly when children are present.

8. CHANGE IN SCOPE OF WORK:

8.1. No Change Without Authorization: Any change in the scope of the Work, method of performance, nature of materials or price thereof, the time for performance, or any other matter materially affecting the performance or nature of the Work shall not be paid for or accepted by the District unless that change, addition, or deletion is approved in advance and in writing by a valid change order executed by the District.

8.2. District Right to Request Changes: Contractor specifically understands, acknowledges, and agrees that the District shall have the right to request any alterations, deviations, reductions, or additions to the Project or Work, and the cost thereof shall be added to or deducted from the amount of the Contract Price by fair and reasonable valuations. The District may accomplish any of the foregoing, in its discretion, by issuing a unilateral change order.

8.3. Proposed Change Order:

8.3.1. **Submission / Time to Submit:**

Contractor may seek an adjustment to the Contract Time or Contract Price only by submitting a proposed change

order to the District within five (5) days of the date Contractor discovers, or reasonably should discover, the circumstances giving rise to the proposed change order, unless additional time to submit a proposed change order is granted in writing by the District.

8.3.2. **Content of Proposed Change Order:**

Contractor and subcontractors shall include the following in any proposed change order:

8.3.2.1. **Labor:** Labor breakdown by trade classification, wage rates, and estimated hours. Wages shall not exceed current prevailing wages in the locality for performance of the changes. The Contractor's or subcontractors' (including second-tier subcontractors') labor burden and Workers' Compensation premium shall only be charged at 20% of the total charge for labor costs. In no event shall Contractor include any other charges than as indicated herein without the District's prior written approval.

8.3.2.2. **Material:** Material quantities, and types of products, and transportation costs, if applicable.

8.3.2.3. **Equipment:** Equipment breakdown by make, type, size, rental rates (if not owned), equipment hours and transportation costs, if applicable. The equipment costs shall not exceed one hundred percent (100%) of the Association of Equipment Distributors (AED) rental rates and delay factors or Caltrans rates and delay factors, whichever is less. Hourly, daily, or weekly rates shall be used, whichever is lower. Hourly rates including operator shall not be used. The time to be paid for equipment shall be the actual time that the equipment is in (1) productive operation on the Work or (2) idled because of the event or circumstance giving rise to the proposed change order.

8.3.2.4. **Mark-Up for Overhead and Profit:** Mark-up for overhead and profit in a proposed change order shall be calculated as follows:

8.3.2.4.1. **Subcontractor-Performed Work:** Subcontractors shall be entitled to a total cumulative mark-up for overhead and profit of 8% on the total of Labor (including labor burden and Workers' Compensation premium), Material, and Equipment **only** for both the subcontractor and the subcontractor's subcontractor(s) (e.g., all "lower-tier" subcontractors) performed Work. Contractor shall be entitled to a 6% mark-up on the same items, **excluding subcontractor's mark-up for overhead and profit.**

8.3.2.4.2. **Contractor-Performed Work:** Contractor shall be entitled to a mark-up for overhead and profit of 6% of the total of the Labor (including labor burden and Workers' Compensation

premium), Material, and Equipment for Contractor performed Work.

8.3.3. **Contract Time:** Any request for an adjustment to the Contract Time must be supported by a time impact analysis identifying critical schedule activities delayed by an event beyond the Contractor's reasonable control.

8.4. **Determination of Change Order Cost:** The District shall use any reasonable means to calculate the cost of a change order in its sole discretion, including, without limitation: the acceptance of a proposed change order; agreement between the District and Contractor; and, the actual and necessary costs incurred by Contractor based on cost records produced to the District and based on the District's reasonable evaluation of the Work and market research.

8.5. **Contractor Obligation to Substantiate:** Contractor agrees to provide the District with all information requested to substantiate the cost of any change order and to inform the District whether the Work will be done by the Contractor or a subcontractor. If Contractor fails to reasonably substantiate any requested change in the scope of work, or Contractor fails to timely cooperate with the District to provide substantiation for the costs of any change order, Contractor waives any claim for additional compensation. In addition to any other information requested, Contractor shall submit, prior to approval of any change order, its request for a time extension (if any), as well as all information necessary to substantiate Contractor's belief that such change will delay the completion of the Work.

8.6. **Waiver:** If Contractor fails to submit its request for a time extension or the necessary supporting information, it shall be deemed to have waived its right to request such extension. Contractor waives any claim for additional compensation for any change in the scope of work if Contractor performs the work without written approval of the District.

9. TRENCH SHORING: If this Contract is in excess of \$25,000 and is for the excavation of any trench deeper than five (5) feet, Contractor must submit and obtain District's approval and acceptance, in advance of excavation, of a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If the plan varies from the shoring system standards, the plan shall be prepared by a registered civil or structural engineer.

10. EXCAVATIONS OVER FOUR FEET: If this Contract includes excavations over four (4) feet,

Contractor shall promptly, and before the following conditions are disturbed, notify the District, in writing, of any: (1) Material that the Contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law; (2) Subsurface or latent physical conditions at the Site differing from those indicated; or (3) Unknown physical conditions at the Site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract. The District shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the Work shall issue a change order under the procedures described in the Contract. In the event that a dispute arises between the District and the Contractor regarding whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the work, the Contractor shall not be excused from any scheduled completion date provided for by the Contract, but shall proceed with all Work. Contractor shall retain any and all rights provided either by Contract or by law which pertain to the resolution of disputes and protests between the contracting parties.

11. LEAD-BASED PAINT: Pursuant to the Lead-Safe Schools Protection Act (Education Code Section 32240 et seq.) and other applicable law, no lead-based paint, lead plumbing and solders, or other potential sources of lead contamination shall be utilized on this Project, and only trained and state-certified contractors, inspectors and workers shall undertake any action to abate existing risk factors for lead. Contractor must execute the Lead-Based Paint Certification, if applicable.

12. WORKERS: Contractor shall at all times enforce strict discipline and good order among its employees and the employees of its subcontractors and shall not employ or work any unfit person or anyone not skilled in work assigned to him or her. Any person in the employ of the Contractor or a subcontractor whom the District may deem incompetent or unfit shall be dismissed from the Site and shall not again be employed at the Site without written consent from the District.

13. DRUG-FREE / TOBACCO FREE / SMOKE FREE POLICY: No drugs, alcohol, tobacco, and/or smoking are allowed at any time in any buildings and/or

grounds on District property. No students, staff, visitors, consultants or contractors are to use drugs on these sites.

14. FINGERPRINTING: Contractor shall comply with and provide to the District a fully executed Criminal Background Investigation /Fingerprinting Certification, attached hereto, prior to mobilizing at the Site.

15. CORRECTION OF ERRORS: Contractor shall perform, at its own cost and expense and without reimbursement from the District, any work necessary to correct errors or omissions that are caused by the Contractor's failure to comply with the standard of care required herein. If Contractor fails to correct any those errors, the District reserves the right to deduct the value of the work from any payment(s) owed to Contractor, or to perform the work itself and deduct from any payment(s) owed to contractor the cost to perform the work.

16. FAILURE TO PERFORM. If the District at any time believes that the Contractor is behind schedule, is failing to construct the Project pursuant to the Contract Documents, or is otherwise failing to perform any provisions of this Contract, the District, after FORTY-EIGHT (48) hours written notice to the Contractor, may take any action necessary or beneficial to the District to complete the Project, takeover the Work of the Contract, terminate or suspend the Contract as indicated herein, or any combination or portion of those actions. The Contractor shall be liable to the District for any cost incurred by the District in those actions and the District has the right to deduct the cost thereof from any payment then or thereafter due the Contractor.

17. SUBSTITUTIONS: No substitutions of material from those specified in the Work Specifications shall be made without the prior written approval of the District.

18. CONTRACTOR SUPERVISION: Contractor shall provide competent supervision of personnel employed on the job Site to monitor the use of equipment and the quality of workmanship.

19. PERSONNEL: Contractor, Contractor's employees, Subcontractors, Subcontractors' employees, or any person associated with the Work shall conduct themselves in a manner appropriate for a school site. The District will not permit any (1) verbal or physical contact with neighbors, students, and faculty; (2) profanity, or inappropriate attire or behavior; (3) photographing, videoing, or audio recording of any neighbors, students, and faculty or any posting of any photographs, videos, or audio recordings of any neighbors, students, and faculty on any internet site, social media platform of any kind, regardless of source of any photograph, video, or audio recording. District

may require Contractor to permanently remove noncomplying persons from Project Site

20. CLEAN UP: Debris shall be removed from the Premises. The Site shall be in order at all times when work is not actually being performed and shall be maintained in a reasonably clean condition. Onsite trash bins shall not be used.

21. ACCESS TO WORK: District representatives shall at all times have access to the Work wherever it is in preparation or in progress. Contractor shall provide safe and proper facilities for such access.

22. PROTECTION OF WORK AND PROPERTY: Contractor shall erect and properly maintain at all times, as required by conditions and progress of the Work, all necessary safeguards, signs, barriers, lights, and security persons for protection of workers and the public and shall post danger signs warning against hazards created by the Work. In an emergency affecting life and safety of life or of Work or of adjoining property, Contractor, without special instruction or authorization from District, is permitted to act at his discretion to prevent such threatened loss or injury. Contractor shall provide stormwater control protections, hazardous materials controls, air quality controls and comply with those and similar regulations.

23. ASSIGNMENT OF CONTRACT: Contractor shall not assign or transfer in any way any or all of its rights, burdens, duties, or obligations under this Contract without the prior written consent of the District.

24. TIME IS OF THE ESSENCE: Time is of the essence in the performance of and compliance with each of the provisions and conditions of this Contract.

25. OCCUPANCY: There is no "Substantial Completion" or "Beneficial Occupancy" for this Project, although the District reserves the right to occupy buildings at any time before formal Contract completion and that occupancy shall not constitute final acceptance or approval of any part of the Work covered by this Contract, nor shall that occupancy extend the date specified for completion of the Work.

26. FORCE MAJEURE CLAUSE: Contractor shall be excused from performance hereunder during the time and to the extent that it is prevented from obtaining delivery, or performing by act of God, fire, strike, loss, or shortage of transportation facilities, lock-out, commandeering of materials, pandemic, product, plant, or facilities by the government, when satisfactory evidence thereof is presented to the District, provided that it is satisfactorily established that the non-performance is not due to the fault or neglect of Contractor. Any delay associated with Covid-19, or any

derivative or similar strain thereof, or any federal, state, or local order relating thereto, shall not be considered a Force Majeure Event unless it renders Contractor's performance of the Work impossible, and that event was not reasonably foreseeable at the time of the execution of the Contract.

27. INDEMNIFICATION / HOLD HARMLESS CLAUSE: To the furthest extent permitted by California law, Contractor shall defend, indemnify, and hold free and harmless the District, its agents, representatives, officers, Contractors, employees, trustees, and volunteers ("the indemnified parties") from any and all claims, demands, causes of action, costs, expenses, liability, loss, damage or injury of any kind, in law or equity, including without limitation the payment of all consequential damages, arising out of, pertaining to or relating to, in whole or in part, the negligence, recklessness, errors or omissions, or willful misconduct of Contractor, its officials, officers, employees, subcontractors, Contractors, or agents directly or indirectly arising out of, connected with, or resulting from the performance of the Services or from any activity, work, or thing done, permitted, or suffered by the Contractor in conjunction with this Contract, unless the claims are caused wholly by the sole negligence or willful misconduct of the indemnified parties. The District shall have the right to accept or reject any legal representation that Contractor proposes to defend the indemnified parties.

28. PAYMENT: On a monthly basis, Contractor shall submit an application for payment based upon the estimated value for materials delivered or Services performed under the Contract as of the date of submission ("**Application for Payment**"). Within thirty (30) days after District's approval of the Application for Payment, Contractor shall be paid a sum equal to ninety-five percent (95%) of the value of the Work performed (as verified by Architect and Inspector and certified by Contractor) up to the last day of the previous month, less the aggregate of previous payments and amount to be withheld. The District may deduct from any payment an amount necessary to protect the District from loss because of: (1) liquidated damages which have accrued as of the date of the application for payment; (2) any sums expended by the District in performing any of Contractor's obligations under the Contract which Contractor has failed to perform or has performed inadequately; (3) defective Work not remedied; (4) stop notices as allowed by state law; (5) reasonable doubt that the Work can be completed for the unpaid balance of the total Contract Price or by the scheduled completion date; (6) unsatisfactory prosecution of the Work by Contractor;

(7) unauthorized deviations from the Contract; (8) failure of the Contractor to maintain or submit on a timely basis proper and sufficient documentation as required by the Contract or by District during the prosecution of the Work; (9) erroneous or false estimates by the Contractor of the value of the Work performed; (10) any sums representing expenses, losses, or damages, as determined by the District, incurred by the District for which Contractor is liable under the Contract; and (11) any other sums which the District is entitled to recover or withhold from Contractor under the terms of the Contract or pursuant to state law, including section 1727 of the California Labor Code. The failure by the District to deduct any of these sums from a progress payment shall not constitute a waiver of the District's right to recover those sums. The District shall retain five percent (5%) from all amounts owing as retention. Retention shall be paid pursuant to Public Contract Code sections 7107 and 7200.

29. PERMITS AND LICENSES: Contractor and all of its employees, agents, and subcontractors shall secure and maintain in force, at Contractor's sole cost and expense, all licenses and permits as are required by law, in connection with the furnishing of materials, supplies, or Services herein listed.

30. INDEPENDENT CONTRACTOR STATUS: While engaged in carrying out the Services of this Contract, the Contractor is an independent contractor, and not an officer, employee, agent, partner, or joint venture of the District. Contractor shall be solely responsible for its own Worker's Compensation insurance, taxes, and other similar charges or obligations. Contractor shall be liable for its own actions, including its negligence or gross negligence, and shall be liable for the acts, omissions, or errors of its agents or employees.

31. ANTI-DISCRIMINATION: It is the policy of the District that in connection with all work performed under contracts there be no discrimination against any employee engaged in the work because of race, color, ancestry, national origin, or religious creed, and therefore the Contractor agrees to comply with applicable Federal and California laws including, but not limited to the California Fair Employment Practice Act beginning with Government Code Section 12900 and Labor Code Section 1735. In addition, the Contractor agrees to require like compliance by all its subcontractor(s).

32. DISABLED VETERAN BUSINESS ENTERPRISES: Section 17076.11 of the Education Code requires school districts using funds allocated pursuant to the State of California School Facility Program for the construction or modernization of a

school building (SFP Funds) to have a participation of at least three percent (3%), per year, of the overall dollar amount expended each year by the school district, for disabled veteran business enterprises (DVBE). If this Contract uses School Facilities Program Funds, Contractor must submit, with its executed Contract, appropriate documentation to the District identifying the steps Contractor has taken to solicit DVBE participation in conjunction with this Contract.

33. WARRANTY/QUALITY: Unless a longer warranty is called for elsewhere in the Contract, Contractor, manufacturer, or their assigned agents shall guarantee the workmanship, product or Services performed against defective workmanship, defects or failures of materials for a minimum period of one (1) year from District's written acceptance of the Work. All workmanship and merchandise must be warranted to be in compliance with applicable California energy, conservation, environmental, and educational standards.

34. CONFIDENTIALITY: Contractor shall maintain the confidentiality of all information, documents, programs, procedures, and all other items that Contractor encounters while performing the Contractor's Services to the extent allowed by law. This requirement shall be ongoing and shall survive the expiration or termination of this Contract and specifically includes all student, parent, and disciplinary information.

35. COMPLIANCE WITH LAWS: Contractor shall give all notices and comply with all laws, ordinance, rules and regulations bearing on conduct of the Work as indicated or specified. If Contractor observes that any of the Work required by this Contract is at variance with any such laws, ordinance, rules or regulations, Contractor shall notify the District, in writing, and, at the sole option of the District, any necessary changes to the scope of the Work shall be made and this Contract shall be appropriately amended in writing, or this Contract shall be terminated effective upon Contractor's receipt of a written termination notice from the District. If Contractor performs any work that is in violation of any laws, ordinances, rules or regulations, without first notifying the District of the violation, Contractor shall bear all costs arising therefrom. Any fines levied resulting from Contractor's or Contractor's personnel or subcontractors actions or lack thereof shall be the responsibility of the Contractor.

36. DISPUTES/CLAIMS: Public Contract Code § 9204. Claims between the District and the Contractor shall be resolved in accordance with the procedures established in Public Contract Code § 9204.

36.1. Claim. The term “**Claim**” means a written demand by the Contractor sent by registered mail or certified mail with return receipt requested for:

36.1.1. An extension of the Contract Time, including relief from damages or penalties assessed by the District for delay;

36.1.2. Payment of money or damages arising from work done by, or on behalf of, the Contractor pursuant to the Contract and payment that is not otherwise expressly provided for in the Contract Documents or to which the Contractor is not otherwise entitled; or

36.1.3. Payment of an amount that is disputed by the District.

36.2. Submission of Claim. A Claim arises upon the District’s rejection of a request by the Contractor for a change order. The Contractor shall submit the Claim by registered mail or certified mail with return receipt requested to the District’s Director of construction and Modernization, with a copy to the Project Manager/Construction Manager. The Contractor shall submit its Claim in writing, together with all Supporting Documentation no later than the earlier of either: (1) thirty (30) days after the date the Claim arises; or (2) sixty (60) days after the date of completion. It is the intent of the District to evaluate and resolve Claims with the Contractor as close to the events giving rise to such Claims as possible and to avoid stale or late Claims, including late notice and documenting of Claims, and to timely mitigate the issue, event, condition, circumstance and/or cause of the Claim and any adverse impacts or damages related thereto.

36.3. Contents of Claim. A Claim must include all Supporting Documentation and a statement identifying it as a Claim signed by an authorized agent or officer of the Contractor under penalty of perjury and including the following language immediately above or before the Contractor’s signature: “I declare under penalty of perjury under the laws of the State of California that the information provided and statements made in this Claim are true and correct, substantiated and of merit.” The Contractor recognizes and acknowledges that this requirement is not a mere formality but is intended to ensure that the Contractor only submits Claims that it believes are true and correct, substantiated and have merit.

36.4. Subcontractor Claims. Pursuant to Public Contract Code § 9204(d)(5), a Subcontractor may request in writing, either on its own behalf or on behalf of a lower tier Subcontractor, that the Contractor submit to the District 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 submitted to the District shall furnish reasonable documentation to support the claim.

Regardless of whether or not the Contractor decides to submit the Subcontractor’s claim to the District, Contractor shall provide a copy of the Subcontractor’s written request, including all supporting documentation, to the Project Manager/Construction Manager within ten (10) days of Contractor’s receipt of the request. In the event the Contractor agrees to submit a Subcontractor’s claim to the District, the Contractor shall submit such claim as a request for a change order, unless such claim was previously submitted to the District as a request for a change order. Within forty-five (45) days of receipt of the Subcontractor’s written request, the Contractor shall notify the Subcontractor in writing as to whether the Contractor submitted the claim to the District and, if the Contractor did not submit the claim, the Contractor shall provide the Subcontractor with a written statement of the reasons for not having done so and shall concurrently provide a copy of such written statement to the Project Manager/Construction Manager. In the event the Contractor includes supporting documentation with such written statement, the Contractor shall concurrently provide a copy of such supporting documentation to the Project Manager/Construction Manager. If the Contractor submits a Claim on behalf of a Subcontractor, the Claim shall include a statement in writing and signed by an authorized agent or officer of the Contractor under penalty of perjury that includes the following language immediately above or before the Contractor’s signature: “I declare under penalty of perjury under the laws of the State of California that [insert name of Contractor] has thoroughly evaluated the claim of [insert name of Subcontractor] and determined that the information provided and statements made in the claim are true and correct, substantiated and of merit.”

36.5. District Review of Claim. Upon receipt of a Claim, the District shall review the Claim and, within a period not to exceed forty-five (45) days, shall provide Contractor a written statement identifying what portion of the Claim is disputed and what portion is undisputed. Upon receipt of a Claim, the District and the Contractor may, by mutual written agreement, extend the forty-five (45) day time period. The District shall process and make payment of any undisputed portion of a Claim within sixty (60) days after the District issues its written statement. Failure by the District to provide a written statement in response to a Claim from the Contractor within the forty-five (45) day time period, or within an

agreed upon extended time period, shall result in the Claim being deemed rejected in its entirety. A Claim that is rejected by reason of the District's failure to respond, or failure to timely respond, to the Claim shall not constitute an adverse finding regarding the merits of the Claim or the claimant's responsibility or qualifications.

36.6. Meet and Confer Meeting. If the Contractor disputes the District's written response, or if the District fails to respond within the time frame prescribed above, the Contractor, within fifteen (15) days of the District's written response or, if the District fails to respond, within fifteen (15) days after the District's response was due, may demand, in a writing sent to the District's Superintendent by registered mail or certified mail, return receipt requested, with a copy to the District's Director of Construction and Modernization, and Project Manager/Construction Manager, an informal conference to meet and confer for settlement of the issues in dispute. The District shall schedule a meet and confer conference within thirty (30) days of its receipt of the Contractor's written demand.

36.7. Mediation. Within ten (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 District shall provide the Contractor 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 sixty (60) days after the District issues its written statement. Any disputed portion of the Claim, as identified by the Contractor in writing, shall be submitted to nonbinding mediation. The expenses and fees of the mediator and the administrative fees shall be divided among the parties equally. Each party shall pay its own legal fees, witness fees, and other expenses. The District and the Contractor shall mutually agree to a mediator within ten (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. The foregoing notwithstanding, pursuant to Public Contract Code § 9204(f), the parties may mutually agree in writing to waive mediation.

36.8. Pending resolution of the dispute, Contractor agrees it will neither rescind the Contract nor stop the progress of the Work but will allow determination by the

court of the State of California, in the county in which the District's administration office is located, having competent jurisdiction of the dispute.

36.9. Nothing in this Article shall prevent the Parties from resolving any disputes or claims pursuant to Public Contract Code section 20104, et seq., if applicable.

36.10. Nothing in this Contract, waives, modifies or tolls the Contractor's obligation to present a timely claim under Government Code § 910, et seq. Therefore, in addition to complying with the contractual Claims procedures, the Contractor is required to present claims to the District pursuant to Government Code § 910, et seq.

37. LABOR CODE REQUIREMENTS: Provided that the Contract Price is more than \$1,000, and the Work is a "public works" under the Labor Code, the parties agree as follows:

37.1. The Work is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

37.2. District hereby provides notice of the requirements described in Labor Code § 1771.1(a) that a contractor or subcontractor shall not be qualified to bid or propose on, be listed in a bid or proposal, or engage in the performance of any contract for public work, unless currently registered and qualified to perform public work pursuant to Labor Code § 1725.5.

37.3. Contractor acknowledges that all or a portion of the Services under this Contract are a public work, and that it and its subcontractors have complied with Labor Code § 1725.5, including, without limitation, the registration requirements thereof.

37.4. Contractor shall post all required job site notices and shall comply with all applicable requirements prescribed thereby, including but not limited to Labor Code § 1771.4.

37.5. Contractor shall comply with all applicable provisions of the Labor Code, Division 3, Part 7, Chapter 1, Articles 1-5, including, without limitation, the payment of the general prevailing per diem wage rates for public work projects of more than one thousand dollars (\$1,000).

37.6. Copies of the prevailing rate of per diem wages are on file with the District.

37.7. Contractor and each subcontractor shall comply with Chapter 1 of Division 2, Part 7 of the Labor Code, beginning with § 1720, and including §§ 1735, 1777.5 and 1777.6, forbidding discrimination, and §§ 1776, 1777.5 and 1777.6 concerning the employment of apprentices by Contractor or subcontractors. Willful failure to comply may result in penalties, including loss

of the right to bid on or receive public works contracts. Contractor shall comply with Labor Code § 1777.5 pertaining to prevailing wage compensation to apprentices for preemployment activities.

38. PAYROLL RECORDS: Contractor and its subcontractor(s) shall keep accurate certified payroll records of employees and make them available to the District immediately upon request.

39. AUDIT: Contractor shall establish and maintain books, records, and systems of account, in accordance with generally accepted accounting principles, reflecting all business operations of Contractor transacted under this Contract. Contractor shall retain these books, records, and systems of account during the Term of this Contract. Contractor shall permit the District, its agent, other representatives, or an independent auditor to audit, examine, and make excerpts, copies, and transcripts from all books and records, and to make audit(s) of all billing statements, invoices, records, and other data related to the Services covered by this Contract. Audit(s) may be performed at any time, provided that the District shall give reasonable prior notice to Contractor and shall conduct audit(s) during Contractor's normal business hours, unless Contractor otherwise consents.

40. ANTI-TRUST CLAIM: Contractor and its subcontractor(s) agree to assign to the District all rights, title, and interest in and to all causes of action they may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the Contract or a subcontract. This assignment shall be made and become effective at the time the District tenders final payment to the Contractor, without further acknowledgment by the Parties.

41. GOVERNING LAW: This Contract shall be governed by and construed in accordance with the laws of the State of California with venue of any action in a in the county in which the District's administration office is located.

42. PROVISIONS REQUIRED BY LAW

DEEMED INSERTED: Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and this Contract shall be read and enforced as though it were included therein.

43. BINDING CONTRACT: This Contract shall be binding upon the Parties hereto and upon their successors and assigns, and shall inure to the benefit of the Parties and their successors and assigns.

44. DISTRICT WAIVER: District's waiver of any term, condition, covenant or waiver of a breach of any term, condition or covenant shall not constitute the waiver of any other term, condition or covenant or the waiver of a breach of any other term, condition or covenant.

45. INVALID TERM: If any provision of this Contract is declared or determined by any court of competent jurisdiction to be illegal, invalid or unenforceable, the legality, validity or enforceability of the remaining parts, terms and provisions shall not be affected thereby, and said illegal, unenforceable or invalid part, term or provision will be deemed not to be a part of this Contract.

46. ENTIRE CONTRACT: This Contract sets forth the entire Contract between the Parties hereto and fully supersedes any and all prior agreements, understanding, written or oral, between the Parties hereto pertaining to the subject matter thereof. This Contract may be modified only by a writing evidencing the Parties' mutual consent.

CERTIFICATIONS TO BE COMPLETED BY CONTRACTOR

THE UNDERSIGNED MUST CHECK ONE OR MORE BOXES IN EACH SECTION AND EXECUTE THIS FORM AND HEREBY CERTIFIES TO THE GOVERNING BOARD OF THE DISTRICT THAT:

- He/she is a representative of the Contractor,
- He/she is familiar with the facts herein certified and acknowledged,
- He/she is authorized and qualified to execute this Agreement and these certifications on behalf of Contractor and that by executing this Agreement he/she is certifying the following items.

☐ Labor Code Sections 1860-1861 (Workers' Compensation). In accordance with Labor Code section 3700, every contractor will be required to secure the payment of compensation to his or her employees. I acknowledge and certify under penalty of perjury that 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.

☐ Government Code Sections 8355-8357 (Drug-Free Workplace). I acknowledge and certify under penalty of perjury that I will provide a drug-free workplace by doing all of the following:

- (1) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited in the person's or organization's workplace and specifying the actions that will be taken against employees for violations of the prohibition.
- (2) Establishing a drug-free awareness program to inform employees about all of the following:
 - (A) The dangers of drug abuse in the workplace.
 - (B) The person's or organization's policy of maintaining a drug-free workplace.
 - (C) Any available drug counseling, rehabilitation, and employee assistance programs.
 - (D) The penalties that may be imposed upon employees for drug abuse violations.
- (3) Requiring that each employee engaged in the performance of the contract or grant be given a copy of the statement required by subdivision (a) and that, as a condition of employment on the contract or grant, the employee agrees to abide by the terms of the statement.

I also acknowledge that this Contract may be subject to suspension of payments under the contract or grant or termination of the contract or grant, or both, and the contractor or grantee thereunder may be subject to debarment, in accordance with the requirements of the above-referenced statute, if the contracting or granting agency determines that any of the following has occurred:

- (1) The contractor or grantee has made a false certification under Section 8355.
- (2) The contractor or grantee violates the certification by failing to carry out the requirements of subdivisions (a) to (c), inclusive, of Section 8355.

I also acknowledge that the Department of General Services shall establish and maintain a list of individuals and organizations whose contracts or grants have been canceled due to failure to comply with the above-referenced statute. This list shall be updated monthly and published each month. No state agency shall award a contract or grant to a person or organization on the published list until that person or organization has complied with the above-referenced statute.

☐ Tobacco-Free Environment. Pursuant to, without limitation, 20 U.S.C. section 6083, Labor Code section 6400 et seq., Health & Safety Code section 104350 et seq. and District Board Policies, all District sites, including the Project site, are tobacco-free environments. Smoking and the use of tobacco products by all persons is prohibited on or in District property. District property includes school buildings, school grounds, school owned vehicles and vehicles owned by others while on District property.

I acknowledge and certify under penalty of perjury that I am aware of the District's policy regarding tobacco-free environments at District sites, including the Project site and acknowledge and certify that I will adhere to the requirements of that policy and not permit any of my firm's employees, agents, subcontractors, or my firm's subcontractors' employees or agents to use tobacco and/or smoke on the Project site. The District also prohibits electronic cigarettes, "vaping" or similar product uses on District sites.

☐ No Hazardous Materials. I acknowledge and certify under penalty of perjury that no Asbestos, or Asbestos-Containing Materials, polychlorinated biphenyl (PCB), or any material listed by the federal or state Environmental Protection Agency or federal or state health agencies as a hazardous material, or any other material defined as being hazardous under federal or state laws, rules, or regulations ("**New Hazardous Material**"), shall be furnished, installed, or incorporated in any way into the Project or in any tools, devices, clothing, or equipment used to affect any portion of Contractor's work on the Project for District. I have instructed our employees with respect to the above-mentioned standards, hazards, risks, and liabilities.

- (i) Asbestos and/or asbestos-containing material shall be defined as all items containing but not limited to chrysotile, crocidolite, amosite, anthophyllite, tremolite, and actinolite. Any or all material containing greater than one-tenth of one percent (.1%) asbestos shall be defined as asbestos-containing material. Any disputes involving the question of whether or not material is New Hazardous Material shall be settled by electron microscopy or other appropriate and recognized testing procedure, at the District's determination. The costs of any such tests shall be paid by Contractor if the material is found to be New Hazardous Material.
- (ii) All Work or materials found to be New Hazardous Material or Work or material installed with equipment containing "New Hazardous Material," will be immediately rejected and this Work will be removed at Contractor's expense at no additional cost to the District.

The Contractor must immediately notify the District within two (2) Business Days, if the Contractor finds and before it disturbs, any material that the Contractor believes may be hazardous waste, as defined in section 25117 of the Health and Safety Code, and requires removal to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law

I acknowledge and certify under penalty of perjury that this certification provides notice to the Contractor that:

- (1) The Contractor's work may disturb lead-containing building materials.
 - (2) The Contractor must notify the District if any work may result in the disturbance of lead-containing building materials.
-

☐ Lead as a Health Hazard. Lead poisoning is recognized as a serious environmental health hazard facing children today. Even at low levels of exposure, much lower than previously believed, lead can impair the development of a child's central nervous system, causing learning disabilities, and leading to serious behavioral problems. Lead enters the environment as tiny lead particles and lead dust disburse when paint chips, chalks, peels, wears away over time, or is otherwise disturbed. Ingestion of lead dust is the most common pathway of childhood poisoning; lead dust gets on a child's hands and toys and then into a child's mouth through common hand-to-mouth activity. Exposures may result from construction or remodeling activities that disturb lead paint, from ordinary wear and tear of windows and doors, or from friction on other surfaces.

Ordinary construction and renovation or repainting activities carried out without lead-safe work practices can disturb lead-based paint and create significant hazards. Improper removal practices, such as dry scraping, sanding, or water blasting painted surfaces, are likely to generate high volumes of lead dust.

Because the Contractor and its employees will be providing services for the District, and because the Contractor's work may disturb lead-containing building materials, **Contractor is hereby notified** of the potential presence of lead-containing materials located within certain buildings utilized by the District. All

school buildings built prior to 1993 are presumed to contain some lead-based paint until sampling proves otherwise.

(i) **Overview of California Law**

Education Code section 32240 et seq. is known as the Lead Safe Schools Protection Act. Under this act, the Department of Health Services ("DHS") is to conduct a sample survey of schools in the State of California for the purpose of developing risk factors to predict lead contamination in public schools. (Ed. Code, § 32241.)

Any school that undertakes any action to abate existing risk factors for lead is required to utilize trained and state-certified contractors, inspectors, and workers. (Ed. Code, § 32243, subd. (b).) Moreover, lead-based paint, lead plumbing, and solders, or other potential sources of lead contamination, shall not be utilized in the construction of any new school facility or the modernization or renovation of any existing school facility. (Ed. Code, § 32244.)

Both the Federal Occupational Safety and Health Administration ("OSHA") and the California Division of Occupational Safety and Health ("Cal/OSHA") have implemented safety orders applicable to all construction work where a contractor's employee may be occupationally exposed to lead.

The OSHA Regulations apply to all construction work where a contractor's employee may be occupationally exposed to lead. The OSHA Regulations contain specific and detailed requirements imposed on contractors subject to that regulation. The OSHA Regulations define construction work as work for construction, alteration, and/or repair, including painting and decorating. It includes, but is not limited to, the following:

- a. Demolition or salvage of structures where lead or materials containing lead are present;
- b. Removal or encapsulation of materials containing lead;
- c. New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contain lead, or materials containing lead;
- d. Installation of products containing lead;
- e. Lead contamination/emergency cleanup;
- f. Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed; and
- g. Maintenance operations associated with the construction activities described in the subsection.

Because it is assumed by the District that all painted surfaces (interior as well as exterior) within the District contain some level of lead, it is imperative that the Contractor, its workers and subcontractors fully and adequately comply with all applicable laws, rules and regulations governing lead-based materials (including title 8, California Code of Regulations, section 1532. 1).

The Contractor must notify the District if any Work may result in the disturbance of lead-containing building materials. Any and all Work that may result in the disturbance of lead-containing building materials must be coordinated through the District. A signed copy of this Certification must be on file prior to beginning Work on the Project, along with all current insurance certificates.

(ii) **Renovation, Repair and Painting Rule, Section 402(c)(3) of the Toxic Substances Control Act**

In 2008, the U.S. Environmental Protection Agency, issued a rule pursuant to the authority of Section 402(c)(3) of the Toxic Substances Control Act, requiring lead safe work practices to reduce exposure to lead hazards created by renovation, repair and painting activities that disturb lead-based paint (Renovation, Repair and Painting Rule). Renovations in homes, childcare facilities, and schools built prior to 1978 must be conducted by certified renovations firms, using renovators with accredited training, and following the work practice requirements to reduce human exposures to lead.

Contractor, its workers and subcontractors must fully and adequately comply with all applicable laws, rules and regulations governing lead-based materials, including those rules and regulations appearing within title 40 of the Code of Federal Regulations as part 745 (40 CFR 745).

The requirements apply to all contractors who disturb lead-based paint in a six-square-foot area or greater indoors or a 20-square-foot area outdoors. If a DPH-certified inspector or risk assessor determines that a home constructed before 1978 is lead-free, the federal certification is not required for anyone working on that particular building.

(iii) Contractor's Liability

If the Contractor fails to comply with any applicable laws, rules, or regulations, and that failure results in a site or worker contamination, the Contractor will be held solely responsible for all costs involved in any required corrective actions, and shall defend, indemnify, and hold harmless the District, pursuant to the indemnification provisions of the Contract, for all damages and other claims arising therefrom.

If lead disturbance is anticipated in the Work, only persons with appropriate accreditation, registrations, licenses, and training shall conduct this Work.

It shall be the responsibility of the Contractor to properly dispose of any and all waste products, including, but not limited to, paint chips, any collected residue, or any other visual material that may occur from the prepping of any painted surface. It will be the responsibility of the Contractor to provide the proper disposal of any hazardous waste by a certified hazardous waste hauler. This company shall be registered with the Department of Transportation (DOT) and shall be able to issue a current manifest number upon transporting any hazardous material from any school site within the District.

The Contractor shall provide the District with any sample results prior to beginning Work, during the Work, and after the completion of the Work. The District may request to examine, prior to the commencement of the Work, the lead training records of each employee of the Contractor.

I acknowledge and certify under penalty of perjury, that:

1. I have received notification of potential lead-based materials on the District's property;
2. I am knowledgeable regarding and will comply with all applicable laws, rules, and regulations governing work with, and disposal of, lead.

☐ Imported Materials. All soils, aggregate, or related materials ("Fill") that Contractor, a Subcontractor, agent or supplier, in any way, provides or delivers and/or supplies to the Project Site shall be free of any and all hazardous material as defined in section 25260 of the Health and Safety Code, shall satisfy the requirements of any environmental review of the Project performed pursuant to the statutes and guidelines of the California Environmental Quality Act, sections 21000 et seq. of the Public Resources Code ("CEQA"), and shall comply with the requirements of sections 17210 et seq. of the Education Code, including requirements for a Phase I environmental assessment acceptable to the State of California Department of Education and Department of Toxic Substances Control. I acknowledge that, to the furthest extent permitted by California law, the indemnification provisions in the Contract Documents apply to, without limitation, any claim(s) connected with providing, delivering, and/or supplying Fill.

Roofing Contract Financial Interest Certification (Public Contract Code § 3006)

For Projects without substantive roofing components, check the following box and execute this certification:

- ☐ The Work on the Contract (1) does not include the replacement or repair of a roof or (2) is a repair of twenty five percent (25%) or less of the roof, (3) or is a repair project that has a total cost of twenty-one thousand dollars (\$21,000) or less.

For all other Projects complete this section:

☐ By signature below I certify that I have not offered, given, or agreed to give, received, accepted, or agreed to accept, any gift, contribution, or any financial incentive whatsoever to or from any person in connection with a roof project contract or subcontract on the Project. As used in this certification, “person” means any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

And CHECK ONLY 1 of the following 2 options:

☐ By signature below I certify that I do not have, and throughout the duration of the Contract, I will not have, any financial relationship in connection with the performance of the Contract with any architect, engineer, roofing consultant, materials manufacturer, distributor, or vendor that is not disclosed below.

OR

☐ By signature below I certify that I have the following financial relationships with an architect, engineer, roofing consultant, materials manufacturer, distributor, or vendor, or other person in connection with the following roof project contract:

_____	_____
Firm Name	Address
_____	_____
	City/State/Zip
_____	_____
Address of branch office used for this Project if applicable	City/State/Zip of branch office
_____	_____
If subsidiary, name of parent company	Address of parent company
_____	_____
	City/State/Zip of parent company

☐ **CARB CA Air Resources Board Compliance:** I hereby certify that any in-use off-road diesel-fueled fleet, inclusive of rented, owned or sub-contractor provided, shall at all times be in compliance with CARB regulations and that Certificates of Reported Compliance shall be provided to the District and be available onsite for inspection.

☐ Russian Sanctions Certification

On February 21, 2022, President Biden issued Executive Order 14065 (<https://www.whitehouse.gov/briefing->

room/presidential-actions/2022/02/21/executive-order-on-blocking-property-of-certain-persons-and-prohibiting-certain-transactions-with-respect-to-continued-russian-efforts-to-undermine-the-sovereignty-and-territorial-integrity-of-ukraine/; “**Federal Order**”) imposing economic sanctions and prohibiting many activities including, but not limited to, investing in, importing to, exporting from, and contracting with, areas of Ukraine and in Russia. On March 4, 2022, California Governor Newsom issued Executive Order N-6-22 requiring state agencies to take steps to ensure any agency and entity under contract with state agencies comply with the Federal Order (<https://www.gov.ca.gov/wp-content/uploads/2022/03/3.4.22-Russia-Ukraine-Executive-Order.pdf>; “**State Order**”).

The District requires the Consultant, as a vendor with the District, to comply with the economic sanctions imposed in response to Russia’s actions in Ukraine, including the orders and sanctions identified on the U.S. Department of the Treasury website (<https://home.treasury.gov/policy-issues/financial-sanctions/sanctions-programs-and-country-information/ukraine-russia-related-sanctions>).

If your Firm’s contract with the District has a cumulative value of \$5 million or more, your certification here is constitutes your written response to the District, indicating:

- (1) that your Firm is in compliance with the required economic sanctions of the Federal and State Orders;
- (2) the steps your Firm has taken in response to Russia's actions in Ukraine, including, but not limited to, desisting from making new investments in, or engaging in financial transactions with, Russian entities, not transferring technology to Russia or Russian entities, and directly providing support to the government and people of Ukraine.

I ACKNOWLEDGE AND CERTIFY UNDER PENALTY OF PERJURY THAT I AM DULY AUTHORIZED TO LEGALLY BIND THE CONTRACTOR TO ALL PROVISIONS AND ITEMS INCLUDED IN THESE CERTIFICATIONS, THAT THE CONTENTS OF THESE CERTIFICATIONS ARE TRUE, AND THAT THESE CERTIFICATIONS ARE MADE UNDER THE LAWS OF THE STATE OF CALIFORNIA.

Date

Proper Name of Contractor

Signed

Print Name / Title

END OF CONTRACTOR CERTIFICATIONS

CRIMINAL BACKGROUND INVESTIGATION /FINGERPRINTING CERTIFICATION

The undersigned does hereby certify to the governing board of the District that he/she is a representative of the Contractor, is familiar with the facts herein certified, is authorized and qualified to execute this certificate on behalf of Contractor; and that the information in this Criminal Background Investigation / Fingerprinting Certification is true and correct.

1. **Education Code.** Contractor has taken *at least one* of the following actions (**check all that apply**):

☐ **All Workers Fingerprinted.** The Contractor has complied with the fingerprinting requirements of Education Code section 45125.1 with respect to all Contractor's employees and all of its subcontractors' employees who interact with pupils, outside of the immediate supervision and control of the pupil's parent or guardian or a school employee, has a valid criminal records summary as described in Education Code Section 44237 (Contractor shall "require each applicant for employment in a position requiring contact with minor pupils to submit two sets of fingerprints prepared for submittal by the employer to the Department of Justice for the purpose of obtaining criminal record summary information from the Department of Justice and the Federal Bureau of Investigation."). A complete and accurate list of Contractor's employees and of all of its subcontractors' employees who may interact with District pupils during the course and scope of the Contract is attached hereto; and/or

☐ **Physical Barrier.** Pursuant to Education Code section 45125.2, Contractor has installed or will install, prior to commencement of work, a physical barrier at the Project site, that will limit contact between Contractor's employees and District pupils at all times; and/or

☐ **Continual Supervision by Fingerprinted Employee.** Pursuant to Education Code section 45125.2, Contractor certifies that all employees will be under the continual supervision of, and monitored by, an employee of the Contractor who the California Department of Justice has ascertained has not been convicted of a violent or serious felony. The name and title of the employee who will be supervising Contractor's employees and its subcontractors' employees is:

Name: _____ **Title:** _____

☐ **Unoccupied Site.** The Work on the Contract is at an unoccupied school site and no employee and/or subcontractor or supplier of any tier of Contract shall come in contact with the District pupils.

2. **Megan's Law (Sex Offenders).** I have verified and will continue to verify that the employees of Contractor that will be on the Project site and the employees of the Subcontractor(s) that will be on the Project site are **not** listed on California's "Megan's Law" Website (<http://www.meganslaw.ca.gov/>).

Contractor's responsibility for background clearance extends to all of its employees, subcontractors, and employees of subcontractors coming into contact with District pupils regardless of whether they are designated as employees or acting as independent contractors of the Contractor.

I certify that to the best of my knowledge, the contents of this disclosure are true, or are believed to be true.

Date

Proper Name of Contractor

Signed

Print Name / Title

PERFORMANCE BOND**PERFORMANCE BOND (100% of Contract Price)****(Note: Contractors must use this form, NOT a surety company form.)**

WHEREAS, the governing board (“Board”) of the _____ (“District”) and _____, (“Principal”) have entered into a contract for the furnishing of all materials and labor, services and transportation, necessary, convenient, and proper to perform the following project: “**Project-Name**” (“**Project**” or “**Contract**”) which Contract dated _____, 20____, and all of the Contract Documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof, and

WHEREAS, the Principal is required under the terms of the Contract to furnish a bond for the faithful performance of the Contract;

NOW, THEREFORE, the Principal and _____ (“Surety”) are held and firmly bound unto the District in the penal sum of: \$ _____ Dollars, lawful money of the United States, for payment to the District and will and truly be made pursuant to the provisions herein. Principal and Surety, each of us, bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally to:

- Perform all the work required to complete the Project; and
- Pay to the District all damages the District incurs as a result of the Principal’s failure to perform all the Work required to complete the Project.

In the event the Principal is declared by the District to be in breach or default in the performance of the Contract, then, after written notice from the District to the Surety, as provided for herein, the Surety shall either remedy the default or breach of the Principal or shall take charge of the Work of the Contract and complete the Contract with a Contractor other than the Principal at its own expense; provided, however, that the procedure by which the Surety undertakes to discharge its obligations under this Bond shall be subject to the advance written approval of the District.

The condition of the obligation is such that, if the above bounden Principal, his or its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions, and agreements in the Contract and any alteration thereof made as therein provided, on his or its part to be kept and performed at the time and in the intent and meaning, including all contractual guarantees and warranties of materials and workmanship, and shall indemnify and save harmless the District, its trustees, officers and agents, as therein stipulated, then this obligation shall become null and void, otherwise it shall be and remain in full force and effect.

As a condition precedent to the satisfactory completion of the Contract, the above obligation shall hold good for a period equal to the warranty and/or guarantee period of the Contract, during which time Surety’s obligation shall continue if Contractor shall fail to make full, complete, and satisfactory repair, replace, and totally protect the District from loss or damage resulting from or caused by defective materials or faulty workmanship. The obligations of Surety hereunder shall continue so long as any obligation of Contractor remains. Nothing herein shall limit the District’s rights or the Contractor’s or Surety’s obligations under the Contract, law or equity, including, but not limited to, California Code of Civil Procedure section 337.15.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the

terms of the Contract or to the Work to be performed thereunder shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the Contract Documents or to the Work.

Any claims under this bond may be addressed to the Surety at the following address. This cannot be the Contractor's broker for this bond, but must be an employee of the Surety or the Surety's legal counsel:

Surety's Representative / Legal Counsel

Attention

Direct Telephone Number

Email Address

Mailing Address

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on _____, 20____.

Principal

Surety

(Name of Principal)

(Name of Surety)

(Signature of Person with Authority)

(Signature of Person with Authority)

(Print Name)

(Print Name)

(Name of California Agent of Surety)

(Address of California Agent of Surety)

(Telephone Number of California Agent of Surety)

Contractor must attach a Notarial Acknowledgment for all Surety's signatures and a Power of Attorney and Certificate of Authority for Surety. The California Department of Insurance must authorize the Surety to be an admitted surety insurer.

PAYMENT BOND**PAYMENT BOND -- Contractor's Labor & Material Bond (100% of Contract Price)****(Note: Contractors must use this form, NOT a surety company form.)**

WHEREAS, the governing board ("Board") of the **CHUALAR UNION SCHOOL DISTRICT**, ("District") and _____, ("Principal") have entered into a contract for the furnishing of all materials and labor, services and transportation, necessary, convenient, and proper to perform the following project: _____ which Contract dated _____, and all of the Contract Documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof, and

WHEREAS, pursuant to law and the Contract, the Principal is required, before entering upon the performance of the work, to file a good and sufficient bond with the body by which the Contract is awarded in an amount equal to 100 percent (100%) of the Contract price, to secure the claims to which reference is made in the Civil Code of California, including section 9100, and the Labor Code of California, including section 1741.

NOW, THEREFORE, the Principal and _____

_____ ("Surety") are held and firmly bound unto all laborers, material men, and other persons referred to in said statutes in the penal sum of:

\$ _____ **Dollars**, lawful money of the United States, being a sum not less than the total amount payable by the terms of Contract, for the payment of which sum well and truly to be made pursuant to all applicable statutes and laws applicable to the provisions herein. Principal and Surety, each of us, bind ourselves, our heirs, executors, administrators, successors, or assigns, jointly and severally, to those applicable statutes and laws, and to the provisions herein.

The condition of this obligation is that if the Principal or any of his or its subcontractors, of the heirs, executors, administrators, successors, or assigns of any, all, or either of them shall fail to pay for any labor, materials, provisions, equipment, or other supplies, used in, upon, for or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Act with respect to that work or labor, that the Surety will pay the same in an amount not exceeding the amount herein above set forth, and also in case suit is brought upon this bond, will pay a reasonable attorney's fee to be awarded and fixed by the Court, and to be taxed as costs and to be included in the judgment therein rendered.

It is hereby expressly stipulated and agreed that this bond shall inure to the benefit of any and all persons, companies, and corporations entitled to file claims under sections 9000 through 9566 of the Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void; otherwise it shall be and remain in full force and affect.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract or to the Work to be performed thereunder shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the Contract Documents or to the Work.

Any claims under this bond may be addressed to the Surety at the following address. This cannot be the Contractor's broker for this bond, but must be an employee of the Surety or the Surety's legal counsel:

Surety's Representative / Legal Counsel

Attention

Direct Telephone Number

Email Address

Mailing Address

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on _____, 20____.

Principal

 (Name of Principal)

 (Signature of Person with Authority)

 (Print Name)

Surety

 (Name of Surety)

 (Signature of Person with Authority)

 (Print Name)

 (Name of California Agent of Surety)

 (Address of California Agent of Surety)

 (Telephone Number of California Agent of Surety)

Contractor must attach a Notarial Acknowledgment for all Surety's signatures and a Power of Attorney and Certificate of Authority for Surety. The California Department of Insurance must authorize the Surety to be an admitted surety insurer.

EXHIBIT A**DESCRIPTION OF WORK**

A. The Work consists of any and all labor, materials, goods, supplies, equipment, tools, utilities, temporary facilities, transportation, delivery services, and other services and things of any nature whatsoever as are expressly and impliedly necessary to fully and satisfactorily complete the Project: (i) in strict accordance with the Contract Documents; and (ii) within the Contract Time and not later than the Required Completion Date specified in the Project Schedule. The Work consists generally of the following:

The contractor shall be responsible for installation of an Owner Furnished Contractor Installed emergency backup Generac generator for the School Walk-In Refrigerator & Freezer, inclusive of all elements stipulated in the proposal specifications and drawings.

The District purchased a Generac industrial gaseous engine-driven generator, included in this RFP.

The District obtained the permit from the Monterey Bay Air Resources District.

B. The Project Site: Chualar School – Walk-In Refrigerator
24285 Lincoln Street
Chualar, CA 93925

END OF EXHIBIT A

[DELETE the body and AND INSERT an “X” for “RESERVED” IF NOT APPLICABLE]

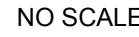
**EXHIBIT B
FEDERAL CONTRACTING PROVISIONS**

☒ **RESERVED – NOT APPLICABLE**

END OF EXHIBIT B

DRAFT

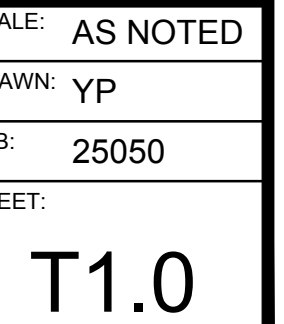
24285 LINCOLN ST, CHUALAR, CA 93925
CHUALAR UNION SCHOOL DISTRICT

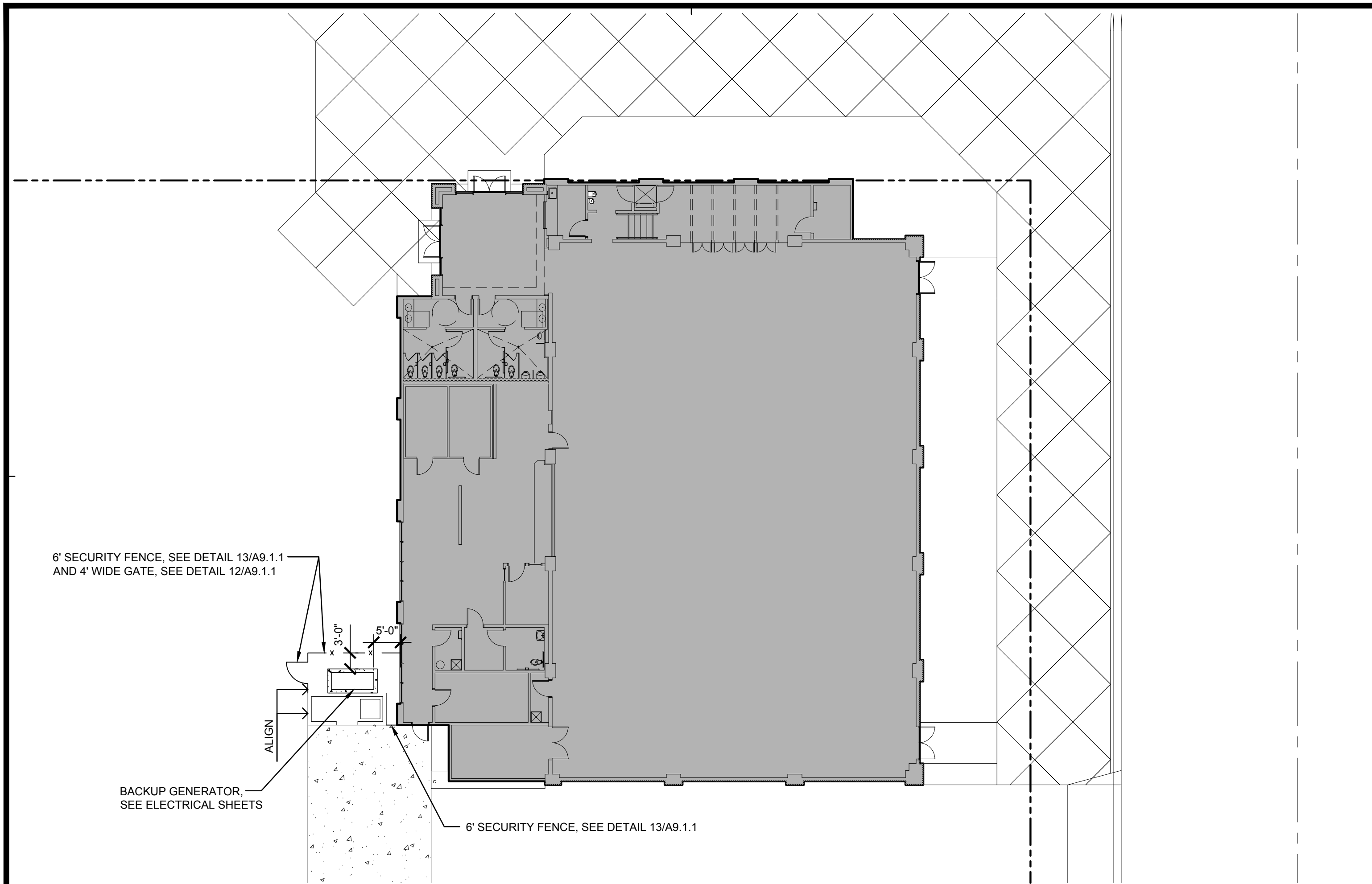


(E)	EXISTING	EXT	EXTERIOR	NTS	NOT TO SCALE
(N)	NEW	FA	FIRE ALARM	OC	ON CENTER
AC	ASPHALTIC CONCRETE	FD	FLOOR DRAIN	OCFI	OWNER FURNISHED
ALDG	ALUMINUM BUILDING	FE	FIRE EXTINGUISHER		OWNER INSTALLED
BLK	BLOCK	FEC	FIRE EXTINGUISHER CABINET	OFOI	OWNER FURNISHED
BLKG	BLOCKING	FIN	FINISH		OWNER INSTALLED
BOT	BOTTOM	FL	FLOOR	PLAM	PLASTIC LAMINATE
BWIN	BETWEEN	FOF	FACE OF FINISH	PLYWOOD	PLYWOOD
CLG	CEILING	FT	FOOT OR FEET	PSI	POUNDS PER SQUARE INCH
CLR	CLEAR	GA	GAUGE	RD	ROOF DRAIN
COL	COLUMN	GALV	GALVANIZED	REQ	REQUIRED
CONC	CONCRETE	GYPBD	GYPSPUM BOARD	RM	ROOM
CONT	CONTINUOUS	HDR	HEADER	RO	ROUGH OPENING
DBL	DOUBLE	HM	HOLLOW METAL	RR	RESTROOM
DEPT	DEPARTMENT	HR	HOUR	SF	SQUARE FEET
DA	DIAMETER	IN	INCH	SIM	SIMILAR
DM	DIMENSION	INT	INTERIOR	SPEC	SPECIFICATION
DS	DOWNSPOUT	LAV	LAVATORY	TY	TYPICAL
DWG	DRAWING	MAX	MAXIMUM	UNO	UNLESS OTHERWISE NOTED
EACH	EACH	MECH	MECHANICAL	W/	W/ WITH
ELEC	ELECTRICAL	MIN	MINIMUM	W/	W/ WITH
EQ	EQUAL	MISC	MISCELLANEOUS	WC	WATER CLOSET
EW	EACH WAY	NOT IN CONTRACT			W/OUT WITHOUT

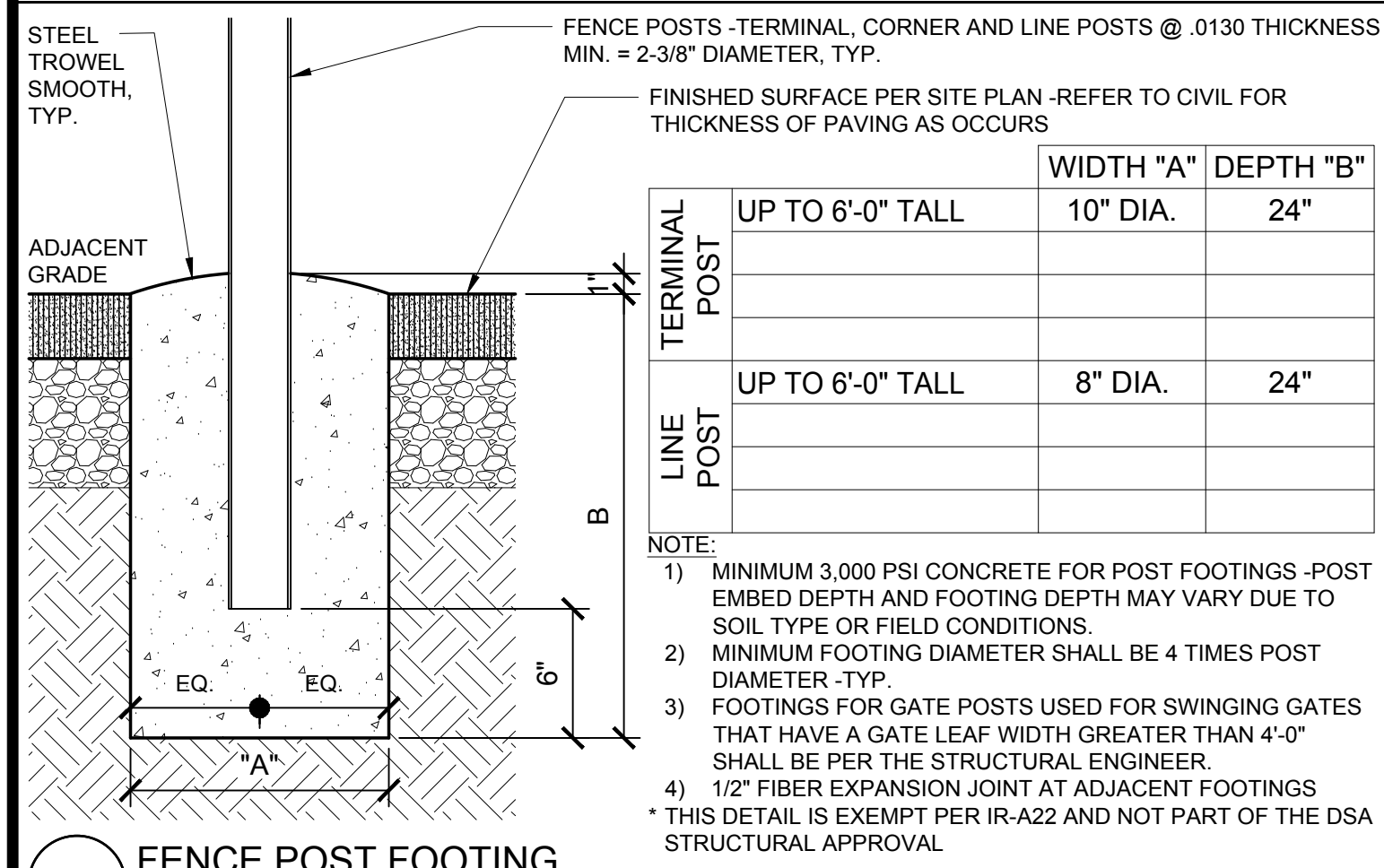
1. TITLE 24, PARTS 1-5 MUST BE KEPT ON THE SITE DURING CONSTRUCTION.
2. SUBSTITUTIONS AFFECTING DSA REGULATED ITEMS WILL BE CONSIDERED AS CHANGES TO APPROVED PLANS OR SPECIFICATIONS. THEY ARE TO BE TREATED AS ADDENDA OR CONSTRUCTION CHANGE DOCUMENTS, AND WILL REQUIRE DSA'S APPROVAL PRIOR TO FABRICATION AND INSTALLATION. (SEC. 4-336 (c), PART 1, TITLE 24 AND MR 4-6)
3. ADDENDA MUST BE STAMPED AND SIGNED BY A/E ON RECORD AND DELEGATED DESIGN PROFESSIONAL WHEN APPLICABLE, AND APPROVED BY DSA. (SEC. 4-338 (SEC. 4-338(b)), PART 1, TITLE 24).
4. CHANGES TO THE STRUCTURAL, ACCESSIBILITY, OR FIRE AND LIFE SAFETY PORTIONS OF THE APPROVED PLANS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR CONSTRUCTION CHANGE DOCUMENT (CCD, DSA FORM 140) AND SHALL BE SUBMITTED TO AND APPROVED BY DSA PRIOR TO COMMENCEMENT OF THE WORK. CHANGES TO THE CONCRETE SHALL BE MADE BY A CONSTRUCTION CHANGE DOCUMENT AS REQUIRED IN SECTION 4-338, PART 1, TITLE 24, AND SHALL BE SUBMITTED TO AND APPROVED BY DSA PRIOR TO COMMENCEMENT OF THE WORK. ADDENDUMS AND CONSTRUCTION CHANGE DOCUMENTS SHALL BE PREPARED BY THE ARCHITECT AND ENGINEERS IN RESPONSIBLE CHARGE AND SUBMITTED TO DSA IN COMPLIANCE WITH DSA INTERPRETATION OF REGULATION 1-A-6.
5. SUPERVISION OF CONSTRUCTION BY DSA SHALL BE IN ACCORDANCE WITH SECTION 4-334, PART 1, TITLE 24.
6. DSA SHALL BE NOTIFIED AT THE START OF CONSTRUCTION AND PRIOR TO THE PLACEMENT OF THE CONCRETE PER SECTION 4-331, PART 1, TITLE 24.
7. CONTRACTOR, INSPECTOR, ARCHITECT AND ENGINEERS SHALL SUBMIT VERIFIED REPORTS (FORM DSA-6) IN ACCORDANCE WITH SECTION 4-336 AND 4-343, PART 1, TITLE 24.
8. GRADING PLANS, DRAINAGE IMPROVEMENT, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONCERNS SHALL COMPLY WITH ALL LOCAL ORDINANCES.
9. PRIOR TO OCCUPANCY OF ANY BUILDING THE FIRE ALARM SYSTEM SHALL BE TESTED AND ACCEPTED BY THE LOCAL FIRE AUTHORITY.
10. CONTRACTOR, INSPECTOR, ARCHITECT, AND ENGINEERS SHALL SUBMIT VERIFIED REPORTS IN ACCORDANCE WITH SECTION 4-336 AND 4-343, PART 1, TITLE 24.

SIGNATURE  DATE 06/13/2025

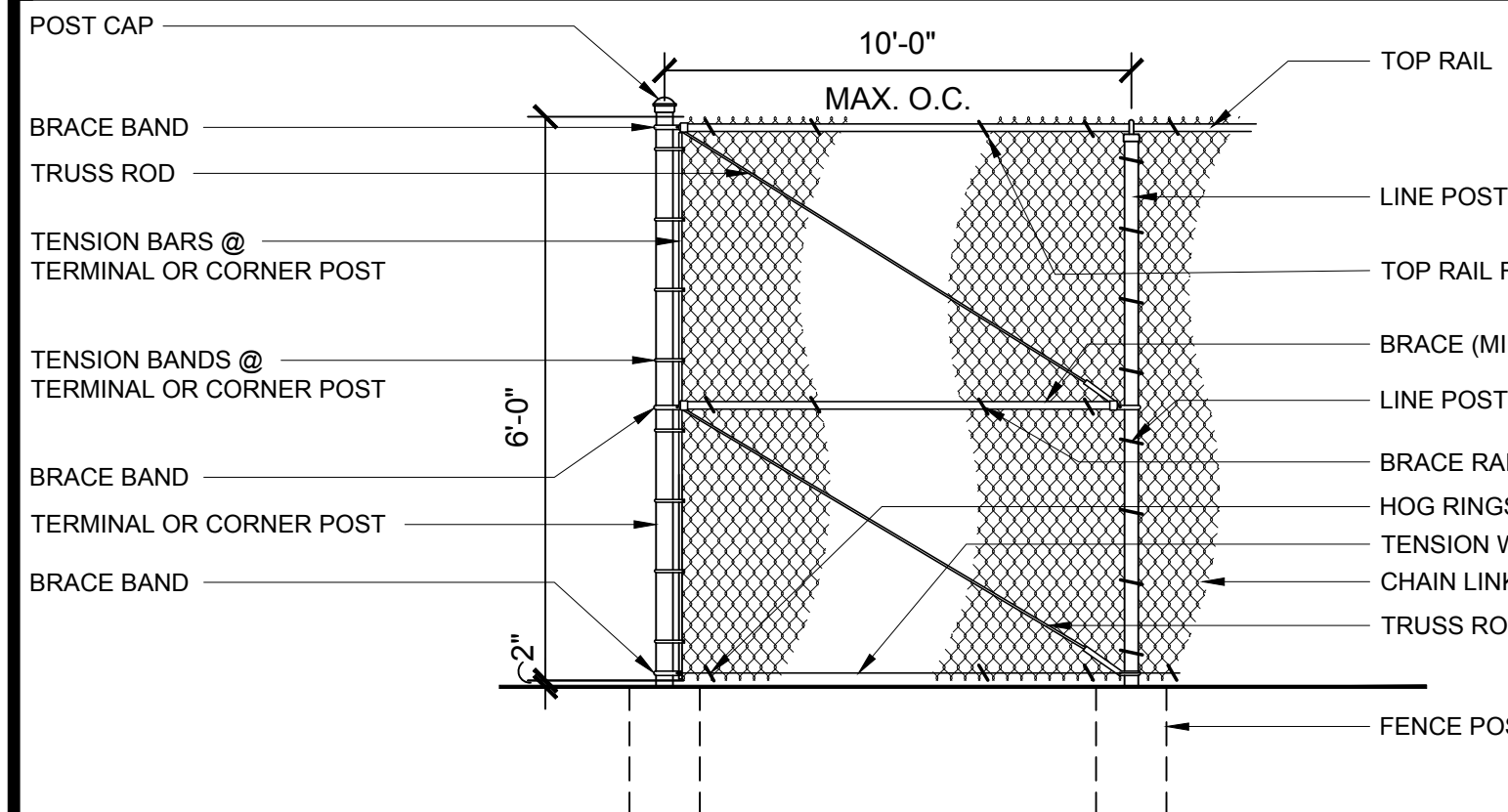




5 ENLARGED SITE PLAN
SCALE: 1/16" = 1'-0"

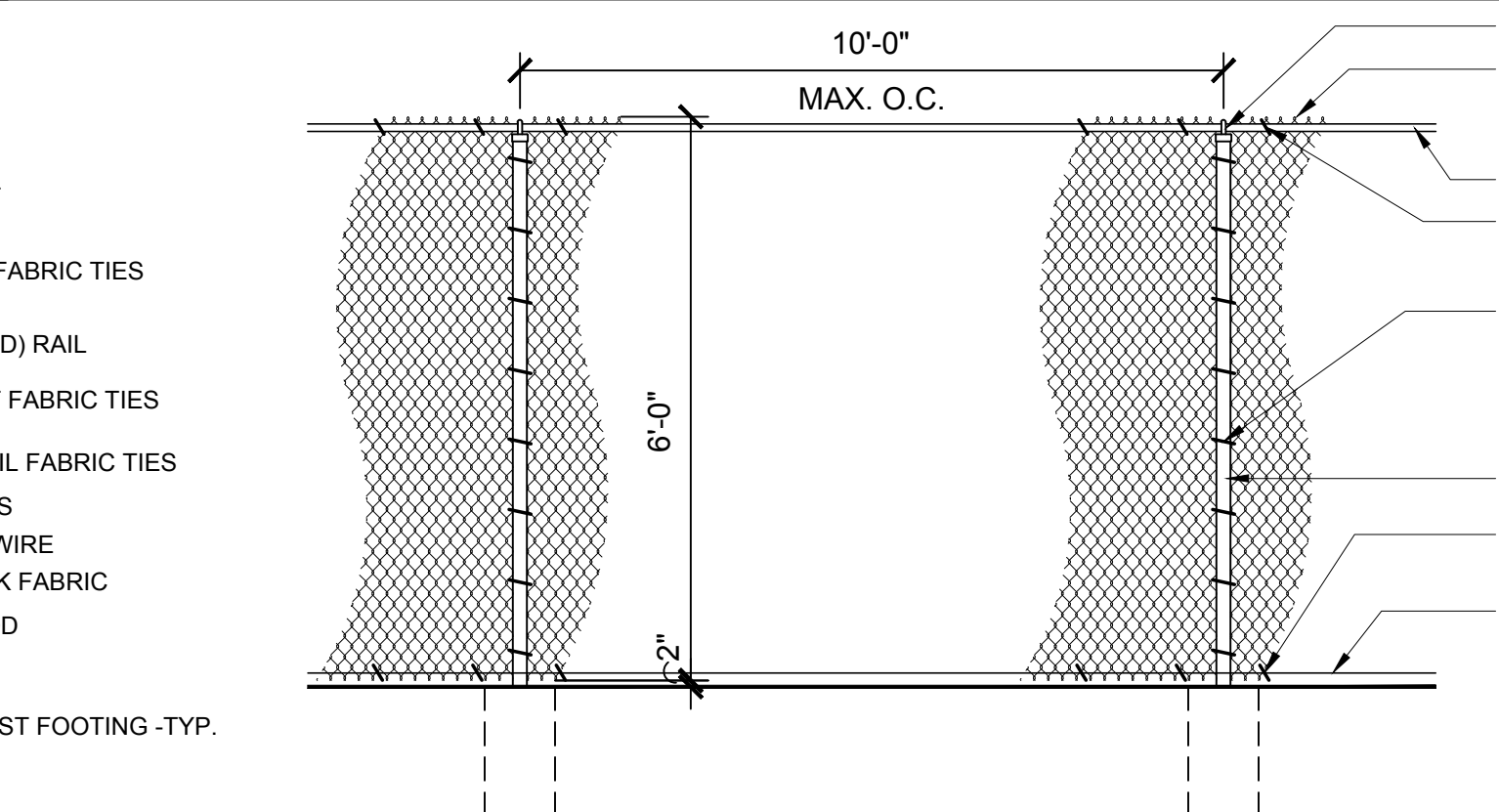


9 FENCE POST FOOTING
SCALE: 1-1/2" = 1'-0"

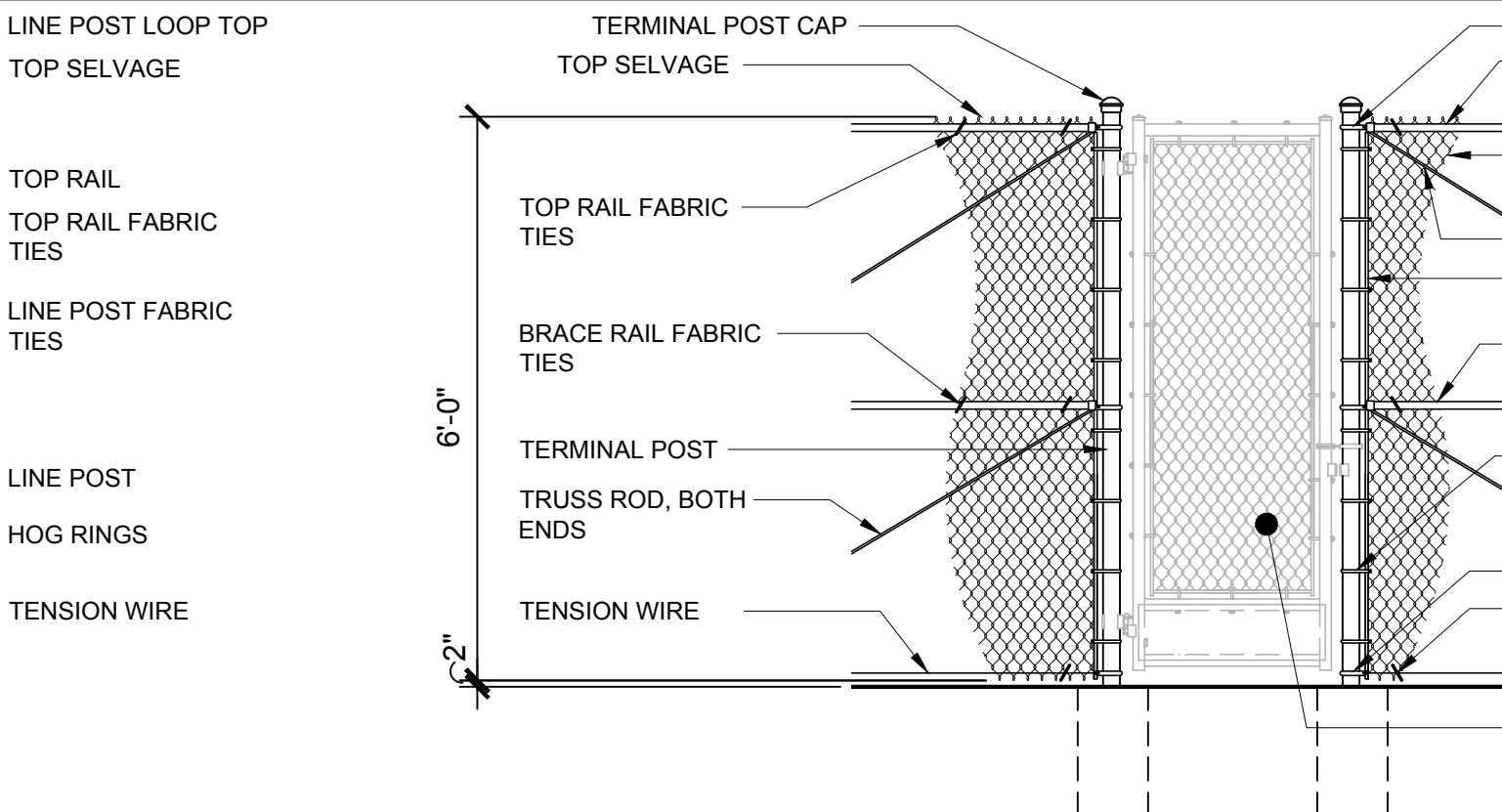


TYPICAL CORNER POSTS

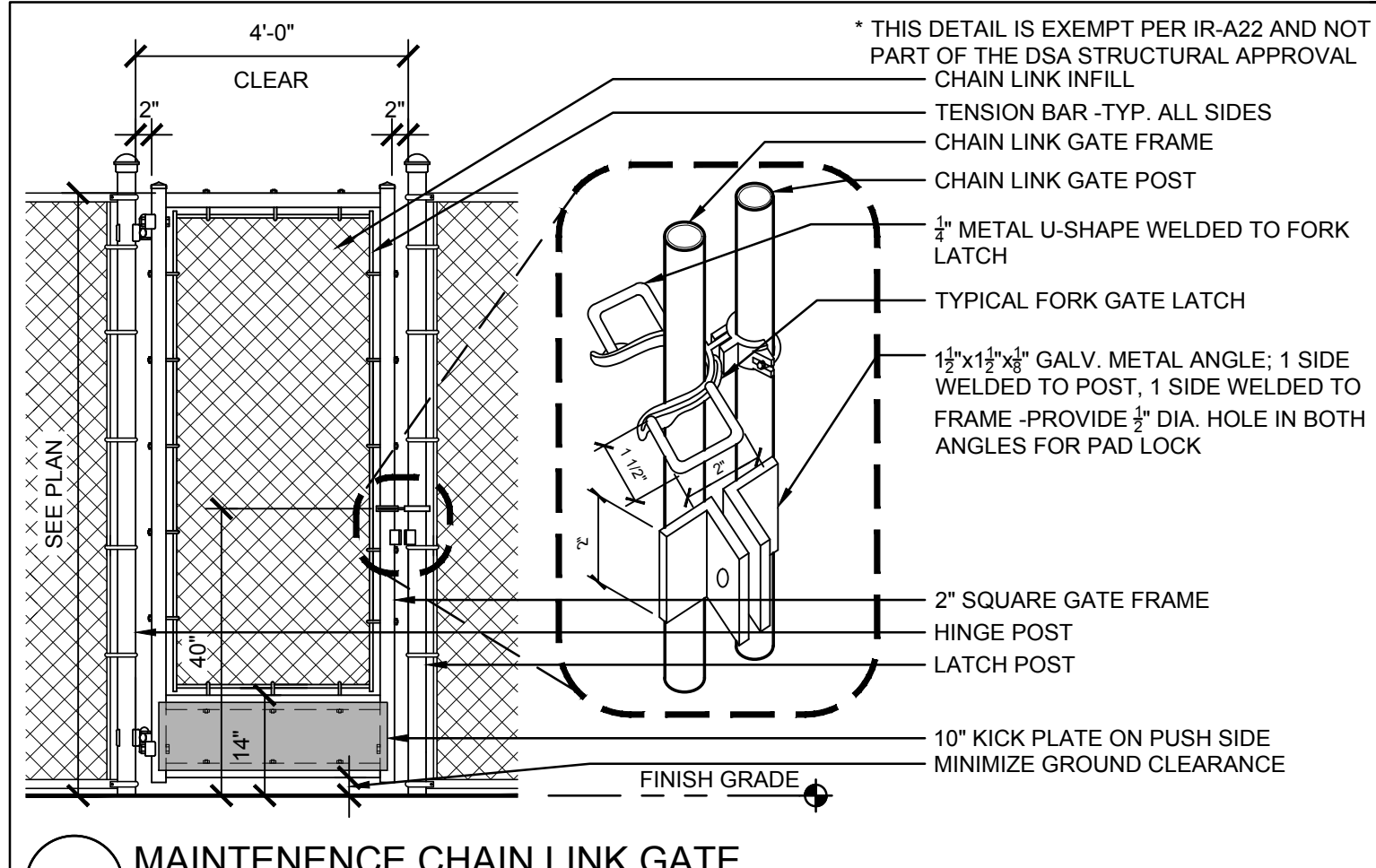
13 CHAIN LINK FENCING
SCALE: 3/8" = 1'-0"



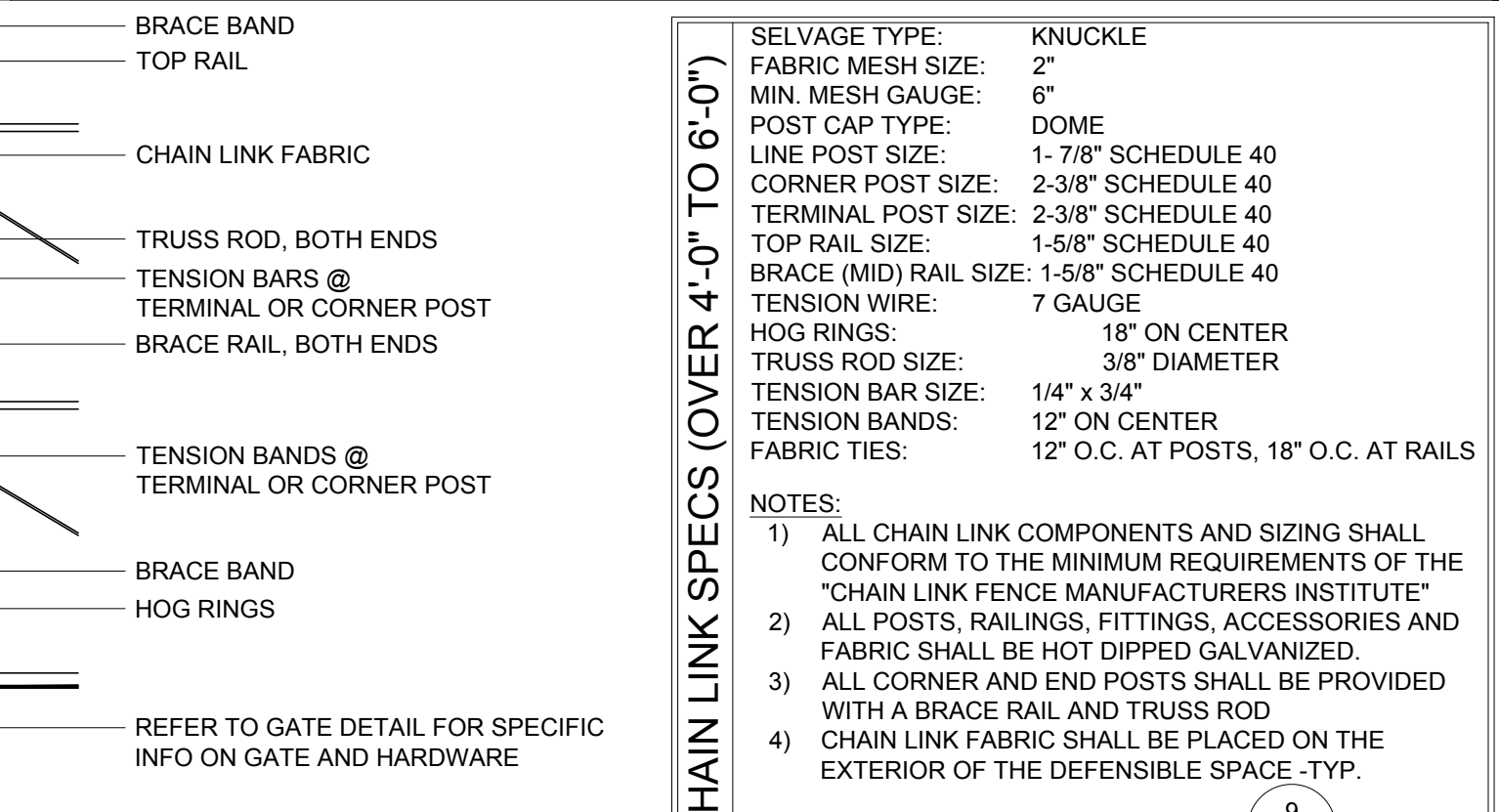
TYPICAL LINE POSTS



TERMINAL POSTS AT GATE

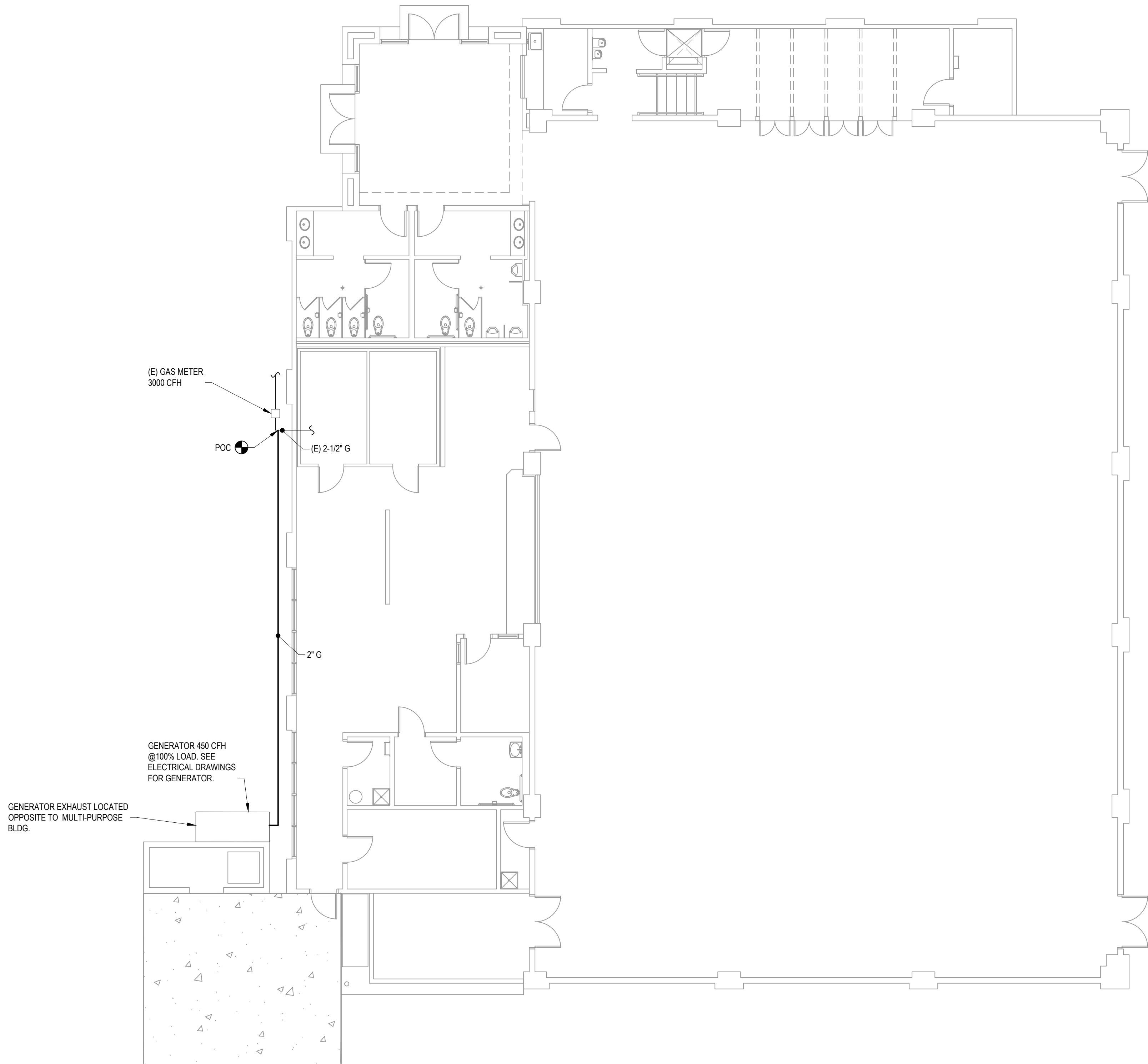


12 MAINTENANCE CHAIN LINK GATE
SCALE: 1/2" = 1'-0"



CHAIN LINK SPECS (OVER 4'-0" TO 6'-0")

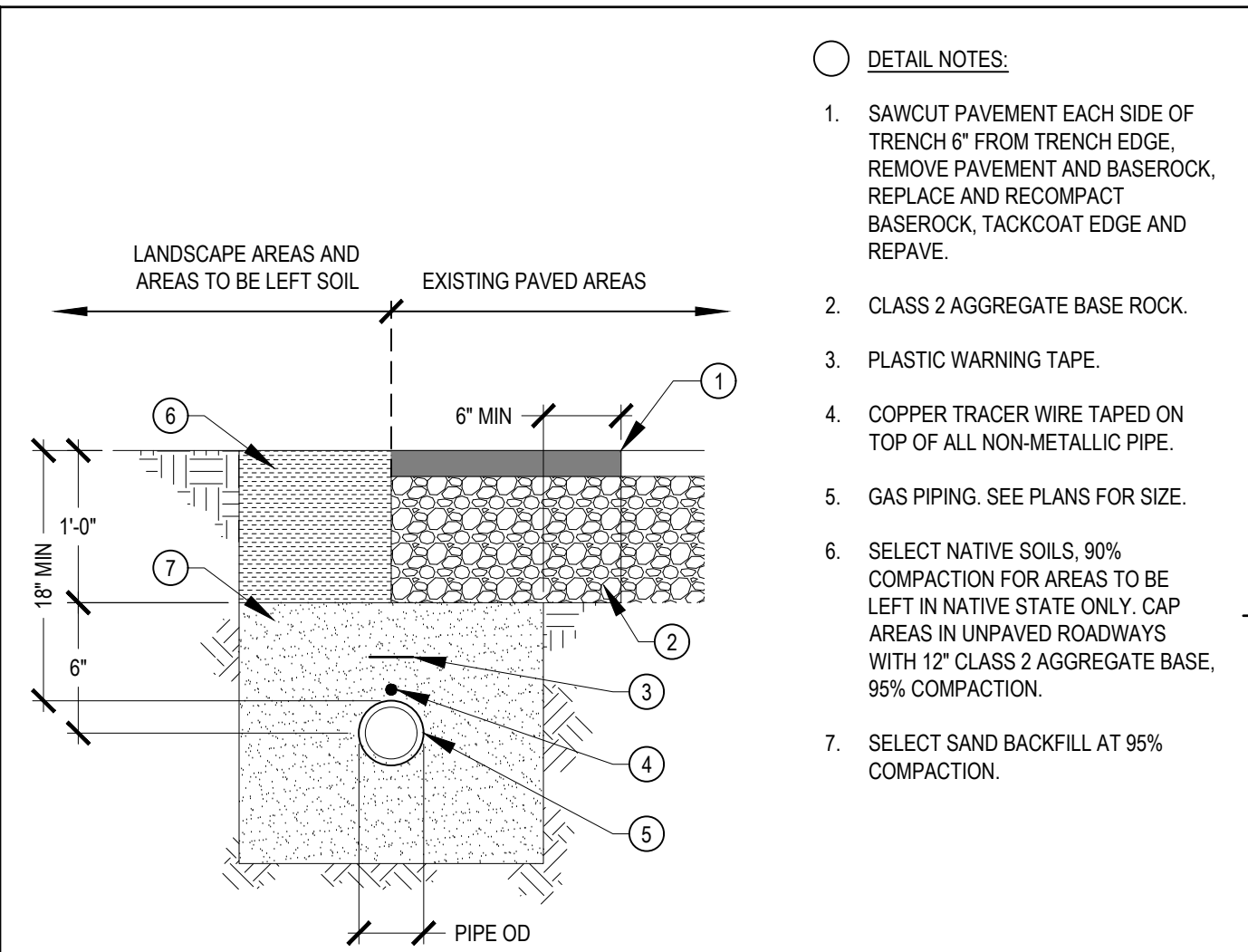
SYMBOL LEGEND				ABBREVIATIONS				LIST OF GOVERNING CODES				GENERAL NOTES			
SYMBOL	ABBRV.	IDENTIFICATION	SYMBOL	ABBRV.	IDENTIFICATION	& F	AND	ESP	EXTERNAL STATIC PRESSURE	NO	NORMALLY OPEN NOT TO SCALE	2022 CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE, PART 1, TITLE 24, C.C.R. 2022 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24, C.C.R. 2022 CALIFORNIA ELECTRICAL CODE, PART 3, TITLE 24, C.C.R. 2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24, C.C.R. 2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24, C.C.R. 2022 CALIFORNIA ENERGY CODE (CEC), PART 6, TITLE 24, C.C.R. 2022 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24, C.C.R. 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE, PART 11, TITLE 24, C.C.R. 2022 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24, C.C.R. TITLE 19, C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS. ALL SECTION NUMBERS BELOW REFER TO GROUP 1, CHAPTER 4, PART 1, TITLE 24, C.C.R. 1. ADDENDA, CONSTRUCTION CHANGES PER SECTION 4-338. 2. INSPECTOR APPROVED BY DSA. INSPECTOR AND CONTINUOUS INSPECTION OF WORK PER SECTION 4-333(b) AND 4-342. 3. TESTS AND TESTING LABORATORY PER SECTION 4-335. 4. SPECIAL INSPECTION PER SECTION 4-333(c). 5. CONTRACTOR SHALL SUBMIT VERIFIED REPORTS PER SECTION 4-336 AND 4-343(c). 6. ADMINISTRATION OF CONSTRUCTION PER PART 1, TITLE 24, C.C.R. - DUTIES OF ARCHITECT, STRUCTURAL ENGINEER OR PROFESSIONAL ENGINEER PER SECTION 4-333(a) AND 4-341. 7. GOVERNING CODES: TITLE 24. 8. A COPY OF PARTS 1, 2, 3, 4, AND 5 OF TITLE 24 SHALL BE KEPT AVAILABLE IN THE FIELD DURING CONSTRUCTION. 9. DSA SHALL BE NOTIFIED OF START OF CONSTRUCTION PER SECTION 4-331. 10. SUPERVISION BY THE DIVISION OF THE STATE ARCHITECT PER SECTION 4-334.			
SYMBOL	ABBRV.	IDENTIFICATION	SYMBOL	ABBRV.	IDENTIFICATION	AC	AIR CONDITIONER	EWB	ENTERING WET BULB	OA	OUTSIDE AIR				
----	CW	COLD WATER (DOMESTIC)		P.O.C.	POINT OF CONNECTION	AD	ACCESS DOOR	EWT	ENTERING WET TEMPERATURE	OC	ON CENTER	1. CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMISSION OF FINAL BID TO VERIFY ALL EXISTING SITE CONDITIONS WHICH MAY AFFECT THE COMPLETION OF THE INSTALLATION. ALL METHODS AND REQUIREMENTS FOR INSTALLATION SHALL BE DETERMINED PRIOR TO BID DATE. CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER OF RECORD OF ANY REQUIRED MODIFICATIONS WHICH ARE NOT REFERENCED ON THESE PLANS PRIOR TO SUBMITTING BID. SUBMITTAL OF THE CONTRACTOR'S BID DEMONSTRATES THE CONTRACTOR'S AWARENESS OF ALL SITE CONDITIONS AND REQUIRED WORK TO BE PERFORMED.			
-----	HW	HOT WATER			REMOVE EXISTING	AN	PIPE ANCHOR			OC	OWNER FURNISHED				
-----	HW	HOT WATER RETURN			LINE BREAK	AP	ACCESS PANEL	EXT	EXTERIOR	OC	CONTRACTOR INSTALLED	2. CONTRACTOR SHALL INCLUDE AND PROVIDE IN BID ALL LABOR AND MATERIALS NECESSARY FOR A COMPLETE AND OPERATIONAL INSTALLATION OF ALL SYSTEMS.			
-----	V	VENT			TEE DOWN	AFF	ABOVE FINISH FLOOR	FD	FLOOR DRAIN	PD	PRESSURE DROP				
-----	TP	TRAP PRIMER LINE			90 DOWN	AFUE	ANNUAL FUEL UTILIZATION	FFE	FINISHED FLOOR ELEVATION	PH	PHASE	3. THE DRAWINGS INCLUDED IN THIS SET ARE DIAGRAMMATIC. THEY ARE REPRESENTATIVE OF THE ENGINEER OF RECORD'S DESIGN INTENT FOR ALL EQUIPMENT AND RELATED PIPING ETC. INDIVIDUAL POWER NEEDS, CONTROLS AND OTHER CONNECTIONS SHALL BE COORDINATED AND COMPLETED/ PROVIDED FOR COMPLETE SYSTEM OPERATION BY CONTRACTOR.			
-----	S OR W	SOIL OR WASTE ABOVE GRADE			CONCENTRIC & ECCENTRIC REDUCERS	AL	ACoustically LINED	FLA	FULL LOAD AMPS	PRV	PRESSURE REDUCING VALVE				
-----	S OR W	SOIL OR WASTE BELOW GRADE		AD, AP	ACCESS DOOR, ACCESS PANEL	AMP	AMPERE	FEET	PER MINUTE FPM	PSI	POUNDS PER SQUARE INCH	4. EQUIPMENT/FIXTURE LOCATIONS AND PIPE ROUTING ARE NOT PRECISE AND SHALL BE COORDINATED, VERIFIED, AND DETERMINED IN THE FIELD. REFER TO ARCHITECTURAL DRAWINGS FOR FIXTURE HEIGHTS. CONTRACTOR SHALL INSTALL ALL EQUIPMENT/FIXTURES AND ROUTE PIPING IN LOCATIONS WHICH MEET CODE REQUIREMENTS FOR ACCESSIBILITY/MOUNTING AND DO NOT INTERFERE WITH ANY BUILDING STRUCTURES, UTILITIES, OR OTHER TRADE EQUIPMENT.			
-----	AW	ACID WASTE		MAV	MANUAL AIR VENT	APPROX	APPROXIMATE	FS	FLOOR SINK	PIT	PRESSURE/TEMPERATURE				
-----	GW	GREASE WASTE		T	THERMOSTAT MOUNTED @ 48\"/>	ARCH	ARCHITECT/ARCHITECTURAL	FT	FEET	QTY	QUANTITY	5. (E) PIPING AND ITEMS TO BE REMOVED ARE SHOWN HATCHED. SEE LEGEND. COORDINATE CLOSELY WITH (N) PIPING AND P.O.C.'S SHOWN. ALL OTHER (E) PIPING, ETC. TO REMAIN.			
-----	RWL	RAIN WATER LEADER		CO2	CARBON DIOXIDE (CO2) SENSOR	AW	ACID WASTE	FT HD	FEET HEAD	RA	RETURN AIR				
-----	OD	OVERFLOW DRAIN			CAP	BFP	BACKFLOW PREVENTER	FTR	FLUE THRU ROOF	RM	ROOM	6. UNLESS OTHERWISE NOTED OR REFERENCED ON THE DRAWINGS, EVERYTHING IS NEW.			
-----	CD	CONDENSATE DRAIN			SWITCH	BHP	BRAKE HORSEPOWER	GM	GALLONS PER MINUTE	RP	REDUCED PRESSURE				
	CONT	CONTINUATION		AD	AREA DRAIN	BULD	BUILDING	GPM	GALLONS PER MINUTE	RM	REDUCED PRESSURE	7. ALL EQUIPMENT, EQUIPMENT CONNECTIONS, PIPING, MOUNTING LOCATIONS ETC. ARE TO BE VERIFIED WITH OWNER'S REPRESENTATIVE AND EQUIPMENT SUPPLIER PRIOR TO BEGINNING OF THE ROUGH-IN.			
		BALL VALVE		FD	FLOOR DRAIN	BTU	BRITISH THERMAL UNIT	GPR	GAS PRESSURE REGULATOR	RV	RELIEF VALVE				
		VALVE		FS	FLOOR SINK	BTUH	BRITISH THERMAL UNITS PER HOUR	HP	HORSEPOWER	SA	SUPPLY AIR	8. ALL WORK SHALL BE PERFORMED TO STATE, LOCAL, NATIONAL AND DISTRICT STANDARDS AND CODES. COORDINATE SPECIFIC REQUIREMENTS WITH DISTRICT STANDARDS AND AUTHORITY HAVING JURISDICTION.			
	CKV	CHECK VALVE		VB	VALVE IN BOX	CA	COMBUSTION AIR	HR	HOUR	SEER	SEASONAL ENERGY				
	T&PRV	TEMP. & PRESS. RELIEF VALVE				CPH	CUBIC FEET PER HOUR	HTG	HEATING	SOV	SHUT-OFF VALVE	9. ALL EQUIPMENT SHALL BE NEW AND CLEARLY LABELED AND IDENTIFIED. LABELS SHALL NOT BE COVERED BY OTHER CONSTRUCTION ELEMENTS.			
	GPR	GAS PRESSURE REGULATOR				CPM	CUBIC FEET PER MINUTE	HZ	HERTZ	SP	STATIC PRESSURE				
		CIRCULATION PUMP (DOMESTIC)				C	CENTER LINE	IN	INCH	SPEC	SPECIFICATION	10. UNLESS OTHERWISE NOTED IN CONTRACT DOCUMENTS, CONTRACTOR SHALL GUARANTEE ALL EQUIPMENT AND WORK FOR A PERIOD OF ONE YEAR.			
	WHA	WATER HAMMER ARRESTOR				CLG	CEILING	INV	INVERT	SQ	SQUARE				
	TP	TRAP PRIMER ACCESS PANEL				CONC	CONCRETE	KW	KILOWATTS	STRUCT	STRUCTURAL	11. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED SAW CUTTING, CORE DRILLING, PATCHING, REFINISHING, ETC. AS REQUIRED FOR INSTALLATION OF SYSTEMS. ANY PENETRATIONS OR OPENINGS MADE IN WALLS OR STRUCTURES SHALL BE PATCHED AND/OR SEALED AS REQUIRED TO MAINTAIN THE INTEGRITY OF THE WALL OR STRUCTURE.			
	GCO/FCO	GRADE CLEAN-OUT/FLOOR CLEAN-OUT				CONN	CONNECTION	LAT	LEAVING AIR TEMPERATURE	TC	TOTAL COOLING				
	WCO	WALL CLEAN-OUT				CONT	CONTINUED, CONTINUATION	LBS	POUNDS	TDH	TOTAL DYNAMIC HEAD	12. STRUCTURAL WORK: ALL CORE DRILLING, BOLT ANCHOR INSERTION, OR CUTTING OF EXISTING STRUCTURAL CONCRETE SHALL BE APPROVED PRIOR TO EXECUTION OF ANY CONSTRUCTION. AT ALL STRUCTURAL CONCRETE TO BE DRILLED, CUT OR BOLT ANCHORS INSERTED, THE CONTRACTOR SHALL FIND AND MARK ALL REINFORCING IN BOTH FACES LOCATED BY MEANS OF X-RAY, PACH-OMETER, OR PROF-OMETER. SUBMIT SKETCH SHOWING LOCATION OF REBAR AND PROPOSED CUTS, CORES, OR BOLT ANCHOR LOCATIONS FOR APPROVAL.			
	HB	HOSE BIBB				COOL	COOLING	LWT	LEAVING WATER TEMPERATURE	TEMP	TEMPERATURE				
		UNION				COP	COEFFICIENT OF PERFORMANCE	LWB	LEAVING WET BULB	TSP	TOTAL STATIC PRESSURE	13. CONTRACTOR IS RESPONSIBLE FOR COMPLETING ALL FINAL CONNECTIONS TO OWNER FURNISHED EQUIPMENT AND SHALL INCLUDE THE PRICE OF INSTALLING ALL CONNECTIONS AS REQUIRED IN THEIR BIDS.			
	AN	PIPE ANCHOR				DB	DRY BULB	MAX	MAXIMUM	TV	TURNING VANES				
		FLEXIBLE CONNECTOR				DCV	DOUBLE CHECK VALVE	MBH	1000 BTU PER HOUR	TYP	TYPICAL	14. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE APPROVAL OF THE ENGINEER OF RECORD. ALL APPROVALS BY THE ENGINEER OF RECORD MUST BE SECURED PRIOR TO COMPLETION OF ANY PURCHASE ORDERS OR ROUGH-IN WORK.			
						DIF	DRINKING FOUNTAIN	MCA	MECHANICAL CIRCUIT AMPS	UL	UNDERWRITER'S				
						DIL	DOOR LOUVER	MCP	MECHANICAL CONTROL PANEL	UON	UNLESS OTHERWISE NOTED	15. THESE DRAWINGS AND ASSOCIATED SPECIFICATIONS ARE TO BE CONSIDERED CONTRACT DOCUMENTS FOR AGENCY REVIEW/APPROVAL AND CONTRACTOR BIDDING PURPOSES.			
						DWGS	DRAWINGS	MECH	MECHANICAL	V	VOLT				
						(E)	EXISTING	MFR	MANUFACTURER	VB	VALVE IN VALVE BOX	16. AT THE COMPLETION OF THE PROJECT THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A COMPLETE SET OF AS-BUILT DRAWINGS.			
						EA	EXHAUST AIR	MG	GAS - MEDIUM PRESSURE	VTR	VENT THROUGH ROOF				
						EAT	ENTERING AIR	MIN	MINIMUM	W	WITH	17. ANY AND ALL WORK THAT REQUIRES AN INTERRUPTION TO BUILDING SERVICES(S) (ELECTRICAL/ HVAC/ PLUMBING ETC.) MUST BE COORDINATED WITH THE DISTRICT A MINIMUM OF 48 HOURS IN ADVANCE. ANY SERVICE DOWNTIME SHALL NOT OCCUR DURING SCHOOL OPERATION HOURS.			
						EER	ENERGY EFFICIENCY RATIO	MOC	MECHANICAL OVERCURRENT	WB	WET BULB				
						ELEV	ELEVATION	(N)	NEW	WC	WATER COLUMN	18. IN INSTANCES WHERE A CONFLICT BETWEEN THE DRAWINGS AND THE SPECIFICATIONS AND INSTALLATION MANUALS FOR THE PROJECT EXISTS, THE CONTRACTOR SHALL ADHERE TO THE MORE STRINGENT REQUIREMENT.			
						EQUIP	EQUIPMENT	NC	NORMALLY CLOSED	WH	WATER HEATER				
								NIC	NOT IN CONTRACT	WT	WEIGHT	19. ANY EXISTING BUILDING STRUCTURES OR SURFACES DAMAGED BY DEMOLITION OR DURING INSTALLATION ACTIVITIES SHALL BE REPAIRED, PATCHED, AND/OR REFINISHED TO THE SATISFACTION OF THE OWNER.			
												20. ALL PIPING, CONDUITS, BOXES, SURFACE MOUNTED RACEWAYS, SUPPORT DEVICES, AND ASSOCIATED FITTINGS SHALL BE MOUNTED IN CONCEALED LOCATIONS ABOVE CEILINGS, DUCTS, TRUSSES, BEAMS, ETC. WHERE WORK HAS TO BE INSTALLED IN EXPOSED LOCATIONS, IT SHALL BE PAINTED TO MATCH THE ADJACENT SURFACES OR PER ARCHITECT'S DIRECTION.			
												21. CONTRACTOR SHALL PREPARE AND SUBMIT THE CALIFORNIA ENERGY COMMISSION TITLE 24 CERTIFICATE OF ACCEPTANCE FORMS RELATED TO INSTALLED EQUIPMENT AND SYSTEMS.			
												22. SAFETY: IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.			
												23. CONTRACTOR'S EQUIPMENT: COORDINATE WITH OWNER'S REPRESENTATIVE FOR APPROVED LOCATION OF JOB SITE ACCESS, PARKING, AND LOCATION OF CONTRACTOR'S EQUIPMENT AND MATERIAL STORAGE AREA. COORDINATE WITH OWNER FOR LOCATION AND PROCEDURES.			
												24. ALL BUILDING MATERIALS MUST BE ASBESTOS FREE.			
												25. CONSTRUCTION SCHEDULING: CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION OPERATIONS WITH OWNER'S REPRESENTATIVE PRIOR TO SCHEDULING AND START OF THE WORK. CONTRACTOR SHALL PROVIDE PROTECTION TO ALL EXISTING SPACES AND SYSTEMS WHICH ARE IN USE, ADJOINING THE PROJECT, AND NOT PART OF THE PROJECT.			
												26. TITLE 24 COMPLIANCE: THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK IS TO BE IN ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS (2022 CBC). SHOULD ANY CONDITIONS BE DISCOVERED NOT COVERED BY THE CONTRACT DOCUMENTS WHERE IN THE FINISHED WORK DOES NOT COMPLY WITH 2022 CBC, A CONSTRUCTION CHANGE DOCUMENT OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK, SHALL BE SUBMITTED TO AND APPROVED BY THE DSA BEFORE PROCEEDING WITH THE WORK.			
												27. THESE DOCUMENTS MAKE NO REPRESENTATION AS TO THE EXISTENCE OR LOCATION OF EXISTING HAZARDOUS MATERIALS (INCLUDING ASBESTOS CONTAINING MATERIALS) AT THE SITE. SHOULD CONTRACTOR DISCOVER SUSPECTED HAZARDOUS MATERIALS AT THE SITE HE SHALL IMMEDIATELY BRING IT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO STARTING OR CONTINUING WORK INVOLVING THOSE MATERIALS.			
												DRAWING INDEX			
												P0.1 SYMBOL LEGENDS, ABBREVIATIONS, NOTES - PLUMBING P2.1 FLOOR PLAN - PLUMBING			
								</							



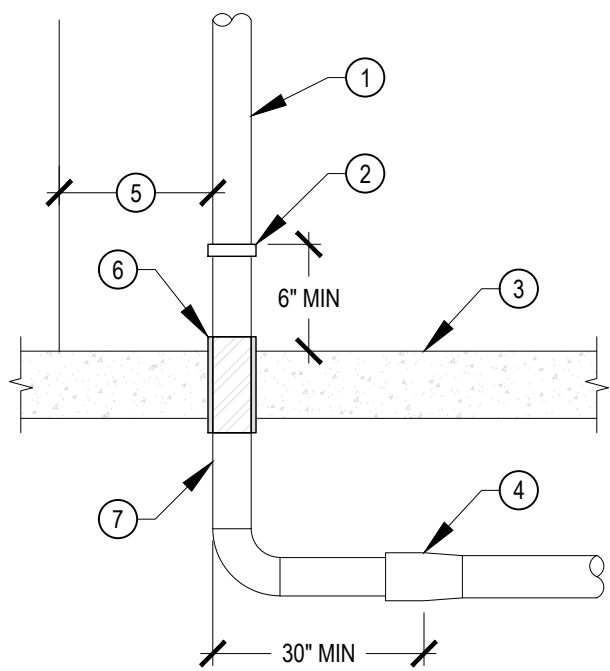
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P2.1
NEW FLOOR PLAN - PLUMBING
SCALE: 1/8" = 1'-0"

GENERAL NOTES

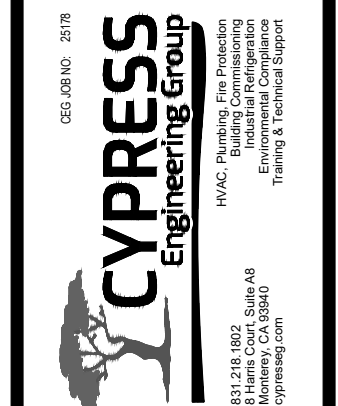
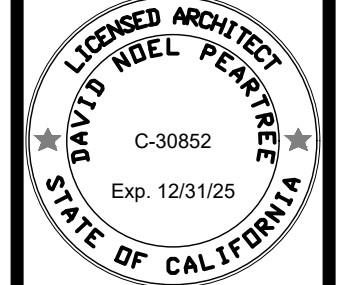
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING AND NEW BUILDING STRUCTURES, SERVICES, AND OWNER'S PROPERTY DURING THE ENTIRE PERIOD OF CONSTRUCTION.
- COORDINATE THE LOCATIONS OF ROOF/WALL OPENINGS, PENETRATIONS, DUCTWORK, PIPING, AND ALL MECHANICAL AND PLUMBING EQUIPMENT WITH RESPECT TO BUILDING STRUCTURE AND OTHER BUILDING SERVICES TO AVOID CONFLICT.
- SEE ARCHITECT'S DRAWINGS FOR PATCHING AND REPAIR OF ROOF, WALL, AND FLOOR PENETRATIONS.
- INFORMATION SHOWN IS BASED ON AVAILABLE AS-BUILTS AND THE LOCATION OF ALL EQUIPMENT, DUCTS, PENETRATIONS, PIPING, AND OTHER PROJECTIONS SHOWN ON THE PLANS IS APPROXIMATE. NOT ALL EXISTING ITEMS ARE IDENTIFIED OR SHOWN ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING CONDITIONS, INCLUDING ALL RELEVANT DIMENSIONS, EQUIPMENT COUNTS, AND LOCATIONS PRIOR TO SUBMITTING A BID.
- SEE PLANS AND SPECIFICATIONS FOR ALL OTHER DISCIPLINES FOR ADDITIONAL SCOPE OF WORK THAT MAY NOT BE SHOWN HERE. COORDINATE WITH GENERAL CONTRACTOR TO CONFIRM ENTIRE SCOPE OF WORK HAS BEEN INCLUDED.
- GAS PIPE ROUTING IS DIAGRAMMATIC, COORDINATE WITH (E) FIELD CONDITIONS. LOCATE AND AVOID EXISTING UNDERGROUND UTILITIES.



1 TRENCH DETAIL N.T.S.



2 GAS RISER N.T.S.



FLOOR PLAN - PLUMBING
BACK-UP GENERATOR FOR:
CHUALAR UNION ELEMENTARY SCHOOL
24285 LINCOLN ST., CHUALAR, CA 95925
CHUALAR UNION SCHOOL DISTRICT

REV.	DATE	DESCRIPTION

SCALE: AS NOTED
DRAWN: MS
JOB: 25050
SHEET:

P2.1

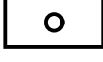
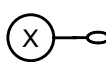
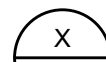
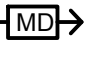
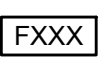
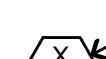
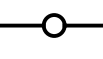
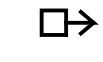
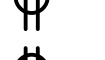
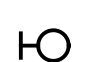
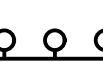
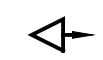
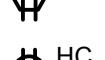
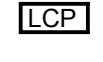
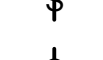
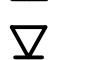
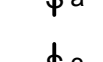
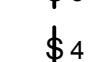
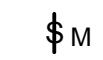
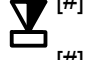
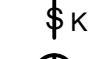
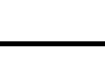
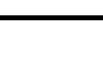
THE USE OF THESE PLANS AND SPECIFICATIONS SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY WERE PREPARED AND PUBLICATION THEREOF IS EXPRESSLY LIMITED TO SUCH USE. REUSE, REPRODUCTION, OR PUBLICATION BY ANY METHOD, IN WHOLE OR IN PART, IS PROHIBITED. TITLE TO THE PLANS AND SPECIFICATIONS REMAINS WITH THE ARCHITECT, AND VISUAL CONTACT WITH THEM CONSTITUTES PRIMA FACIE EVIDENCE OF THE ACCEPTANCE OF THESE RESTRICTIONS.

GENERAL CONSTRUCTION NOTES

- CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS. MATERIALS AND EQUIPMENT SHALL BE U.L. LISTED AND LABELED FOR THE APPLICATION.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES AND INSPECTION FEES REQUIRED BY THIS CONTRACT WORK.
- CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO BIDDING AND ALLOW FOR ALL FIELD CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL WORK NOTED AND CALLED OUT ON ALL CONTRACT DOCUMENTS. THE CONTRACTOR SHALL OBTAIN INFORMATION AND BE FAMILIAR WITH ALL OTHER TRADES WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN OTHER TRADES ON PROJECT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONS AND PROPERTY AND SHALL PROVIDE INSURANCE COVERAGE AS NECESSARY FOR LIABILITY AND PERSONAL PROPERTY DAMAGE. TO FULLY PROTECT THE OWNER, ARCHITECT AND ENGINEER FROM ANY AND ALL CLAIMS RESULTING FROM THIS WORK.
- CONTRACTOR SHALL MAINTAIN RECORD DRAWINGS AT THE PROJECT SITE INDICATING ALL MODIFICATIONS TO ELECTRICAL SYSTEMS. THE CONTRACTOR SHALL AT THE CONCLUSION OF THE PROJECT PROVIDE ACCURATE "AS-BUILT" DRAWINGS ACCEPTABLE TO THE ARCHITECT.
- ALL MATERIALS PROVIDED TO THE PROJECT SHALL BE NEW. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND INSTALL ALL INCIDENTAL MATERIALS REQUIRED FOR A COMPLETE INSTALLATION.
- CONTRACTOR SHALL PROVIDE TO THE ARCHITECT A CONSTRUCTION SCHEDULE OF ELECTRICAL WORK. THE CONSTRUCTION SCHEDULE SHALL IDENTIFY ALL SIGNIFICANT MILESTONES WITH COMPLETION DATES.
- CONTRACTOR SHALL PROVIDE ALL REQUIRED "CUTTING, PATCHING, EXCAVATION, BACKFILL AND REPAIRS" NECESSARY TO RESTORE DAMAGED SURFACES TO EQUAL OR BETTER THAN ORIGINAL CONDITIONS EXISTING AT START OF WORK.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PAINTING ALL EXPOSED CONDUITS AND ELECTRICAL EQUIPMENT. REFER TO ARCHITECTS PAINTING SECTION FOR REQUIREMENTS.
- ALL ELECTRICAL EQUIPMENT INSTALLED OUTDOORS SHALL BE WEATHERPROOF. EXTERIOR CONDUITS RUN INTO BUILDINGS SHALL BE INSTALLED WITH FLASHING, CAULKED AND SEALED. CONDUITS FOR EXTERIOR ELECTRICAL DEVICES SHALL BE RUN INSIDE BUILDING UNLESS OTHERWISE NOTED ON DRAWINGS.
- ALL CONDUITS UNLESS OTHERWISE NOTED ON DRAWINGS SHALL HAVE AS A MINIMUM TWO (2) #12s WITH ONE (1) #12 GROUND. "TICK" MARKS SHOWN ON CIRCUITRY ARE FOR ROUGH ESTIMATING ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WIRES AND WIRE SIZES REQUIRED BY LATEST CODE.
- ALL BRANCH CIRCUITS SHALL HAVE INDIVIDUAL NEUTRALS. SHARED NEUTRALS ON MULTIWIRED CIRCUITS IS NOT ALLOWED.
- COORDINATE ALL CONDUIT RUNS, ELECTRICAL EQUIPMENT AND PANELS WITH ALL OTHER WORK TO AVOID CONFLICTS.
- CONTRACTOR SHALL, PRIOR TO BID, FIELD VERIFY ALL REQUIREMENTS FOR MODIFYING THE EXISTING CLOCK, DATA, AND INTERCOM SYSTEMS TO ACCOMMODATE ADDITIONS NOTED. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS NEEDED TO MAKE A FULLY OPERATIONAL SYSTEM AT THE CONCLUSION OF PROJECT WORK.
- CONTRACTOR SHALL PROVIDE IN EVERY NEW EMPTY CONDUIT A DRAW STRING FOR USE IN FUTURE CONSTRUCTION.
- ALL CONDUIT SHALL BE CONCEALED WHERE POSSIBLE. CUT AND PATCH EXISTING WALLS WHERE NECESSARY. WHERE IT IS NECESSARY TO CUT OR BORE EXISTING STRUCTURAL WALLS FOR NEW ELECTRICAL WORK OBTAIN PERMISSION FROM THE ARCHITECT PRIOR TO STARTING WORK. REUSE EXISTING CONDUIT WHERE POSSIBLE.
- WHERE IT IS NOT POSSIBLE TO REUSE EXISTING CONDUIT OR RUN NEW CONCEALED CONDUIT USE NON-METALLIC SURFACE RACEWAY AND BOXES. ROUTING OF ALL NON-METALLIC RACEWAYS SHALL BE APPROVED BY THE ARCHITECT OR OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
- EXTENSION RINGS OR RESET BOXES TO BE FLUSH WITH NEW WALL THICKNESS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO EXISTING UNDERGROUND SYSTEMS (GAS, WATER, TELEPHONE, ELECTRICAL, SEWER, ETC.). THE CONTRACTOR SHALL REPAIR & PAY ALL EXPENSES FOR DAMAGE TO EXISTING UNDERGROUND SYSTEMS AS A RESULT OF NEW WORK. REPAIR TO DAMAGED UNDERGROUND SYSTEMS SHALL BE TO THE OWNERS SATISFACTION WITHOUT EXTRA EXPENSE TO THE OWNER
- EXISTING WIRING SHOWN HAS BEEN TAKEN FROM OLD PLANS AND IS ASSUMED TO BE CORRECT. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS AND MAKE ADJUSTMENTS TO SUIT ACTUAL CONDITIONS AND TO MEET THE INTENT OF THE CONTRACT DOCUMENTS.
- WHERE NON-METALLIC SHEATHED CONDUCTORS ARE FOUND, THE CONTRACTOR SHALL REMOVE TO FULLEST EXTENT PER THE GENERAL DEMOLITION NOTES AND REPLACE WITH CONDUIT. METAL CLAD CABLE WILL BE PERMITTED ON A CASE-BY-CASE BASIS ONLY BY WRITTEN APPROVAL FROM THE ARCHITECT.
- ALL INSTALLATION OF EXPOSED SURFACE MOUNTED RACEWAY IN PUBLIC AREAS SHALL BE REVIEWED BY [ARCHITECT] [ELECTRICAL ENGINEER] BEFORE ROUGH-IN. CONTRACTOR IS TO DETERMINE THE ACCESSIBILITY OF ATTIC, FURRED SPACE, HOLLOW MULLIONS, ETC. IN EACH AREA AND REVIEW WITH ARCHITECT. IF SYSTEM CAN BE ROUTED CONCEALED EITHER BY FISHING OR ACCESSIBILITY, CONTRACTOR IS TO DO SO. IF INACCESSIBILITY IS DETERMINED, CONTRACTOR SHALL INSTALL SURFACE MOUNTED RACEWAY IN THE MOST AESTHETICALLY PLEASING MEANS AS DETERMINED BY THE ARCHITECT. NO ALLOWANCE FOR ADDITIONAL COMPENSATION DUE TO ROUTING AS DIRECTED BY THE ARCHITECT WILL BE MADE.

ELECTRICAL SYMBOLS & ABBREVIATIONS

SYMBOLS & ABBREVIATIONS SHOWN ARE FOR GENERAL USE. DISREGARD THOSE WHICH DO NOT APPEAR ON THE PLANS.

	FLUORESCENT OR LED LUMINAIRE - SEE SCHEDULE		SECURITY DOOR CONTACTS		PANELBOARD - FLUSH MOUNTED		DETAIL NOTE REFERENCE SYMBOL SEE ASSOCIATED NOTE ON SAME DETAIL		DETAIL NUMBER DETAIL OR SECTION REFERENCE SHEET NUMBER
	EMERGENCY OR NIGHT LIGHT		CCTV CAMERA		PANELBOARD - SURFACE MOUNTED		FEEDER DESIGNATION; SEE ASSOCIATED NOTE ON SAME DETAIL		INDICATES QUANTITY OF TELEPHONE OUTLETS
	STRIP FLUORESCENT OR LED LUMINAIRE - SEE SCHEDULE		SECURITY SYSTEM KEYPAD		EQUIPMENT PANEL - SURFACE MOUNTED				INDICATES QUANTITY OF DATA OUTLETS
	LUMINAIRE - RECESSED - SEE SCHEDULE		DOOR BELL PUSHBUTTON		METER W/ CURRENT TRANSFORMER				
	RECESSED WALL WASHER		DOOR CHIME WITH LED		JUNCTION BOX - CEILING OR WALL MOUNTED, SIZE PER CODE, TAPE AND TAG WIRES				
	LUMINAIRE - SURFACE MOUNTED - SEE SCHEDULE		RECEPTACLE - DUPLEX *		SURGE PROTECTIVE DEVICE				
	LUMINAIRE - POLE OR POST MOUNTED - SEE SCHEDULE		DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER - FIELD VERIFY HEIGHT		MOTOR CONNECTION				
	LUMINAIRE - WALL MOUNTED SEE SCHEDULE		GFCI CONVENIENCE RECEPTACLE - DUPLEX *		NON-FUSED DISCONNECT SWITCH				
	BOLLARD OR PATH LIGHT - SEE SCHEDULE		GFCI CONVENIENCE DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER - FIELD VERIFY HEIGHT		FUSED DISCONNECT SWITCH; FUSED WITH DUAL-ELEMENT FUSES SIZED PER EQUIPMENT MFG'S NAMEPLATE DATA				
	EXIT LIGHT - DIRECTIONAL ARROWS AS INDICATED - SEE SCHEDULE		RECEPTACLE - DOUBLE DUPLEX *		COMBINATION STARTER/FUSED DISCONNECT SWITCH; FUSED DISCONNECT SWITCH ELEMENT FUSES SIZED PER EQUIPMENT MFG'S NAMEPLATE DATA				
	TRACK LIGHTING - SEE SCHEDULE		HALF SWITCHED DUPLEX RECEPTACLE *		MAGNETIC STARTER - NEMA SIZE INDICATED NEMA 3R ENCLOSURE UNLESS OTHERWISE SPECIFIED				
	EMERGENCY LIGHT		SINGLE RECEPTACLE *		CIRCUIT BREAKER				
	DIGITAL DUAL TECHNOLOGY OCC. SENSOR		DUPLEX RECEPTACLE - CEILING MOUNTED		GROUND ROD WITH GROUNDWELL BOX				
	LIGHTING CONTROL OCCUPANCY SENSOR CORNER MOUNTED		LETTER INDICATES DUPLEX HALF CONTROLLED RECEPTACLE *		GROUND ELECTRODE				
	DIMMER ROOM CONTROLLER		LETTER INDICATES DUPLEX FULLY CONTROLLED RECEPTACLE *		NORMALLY OPEN CONTACT				
	PLUG LOAD CONTROLLER		FLOOR MOUNTED DUPLEX RECEPTACLE		NORMALLY CLOSED CONTACT				
	ROOM LIGHTING CONTROLLER		FLOOR MOUNTED BOX		TRANSFORMER - SEE SINGLE LINE FOR SIZE				
	LIGHTING CONTROL PANEL		POWER OUTLET - SEE PLANS FOR NEMA TYPE*		PULLBOX				
	DIGITAL DAYLIGHT SENSOR		VOICE/OUTLET - SEE PLANS FOR NEMA TYPE*		FLEX CONDUIT WITH CONNECTION				
	SINGLE POLE SWITCH **		POWER POLE		CONDUIT - UP				
	SINGLE POLE SWITCH, ** a = CIRCUIT CONTROLLED		WALL TELEPHONE OUTLET **		CONDUIT - DOWN				
	THREE WAY SWITCH**		VOICE/DATA WALL OUTLET *		CONDUIT EMERGENCY SYSTEM				
	FOUR WAY SWITCH**		VOICE/DATA OUTLET MOUNTED ABOVE COUNTER - FIELD VERIFY HEIGHT		LOW VOLTAGE WIRING				
	MANUAL MOTOR STARTER		SURFACE MOUNTED VOICE/DATA WALL OUTLET *		SURFACE METAL OR NON-METALLIC RACEWAY				
	KEY OPERATED SWITCH **		SURFACE MOUNTED VOICE/DATA OUTLET MOUNTED ABOVE COUNTER - FIELD VERIFY HEIGHT		CONDUIT - CONCEALED IN WALLS OR CEILING				
	LIGHTING DIMMER**		WIRELESS ACCESS POINT (WAP) - CEILING MOUNTED		CONDUIT - EXISTING				
	DIGITAL ON/OFF SWITCH **		WIRELESS ACCESS POINT (WAP) - WALL MOUNTED - FIELD VERIFY HEIGHT		CONDUIT - BELOW SLAB OR UNDERGROUND: 3/4" MIN.				
	DIGITAL DIMMER SWITCH **		VOICE/DATA OUTLET - FLOOR MOUNTED		CAPPED OR STUB-OUT CONDUIT				
	DIGITAL MULTI SCENE LIGHTING SWITCH **		TV OUTLET *		CONDUIT CONTINUATION				
	DIGITAL DUAL TECHNOLOGY WALL OCC. SENSOR **		VOICE/DATA OUTLET - CEILING MOUNTED		CONDUIT - HOME RUN TO PANEL, TERMINAL CABINET, ETC. RUNS MARKED WITH CROSSHATCHES INDICATE NUMBER OF #12 AWG WIRES WHEN MORE THAN TWO. SIZE CONDUIT ACCORDING TO SPECIFICATIONS AND APPLICABLE CODE. CROSS HATCHES WITH NUMBER ADJACENT INDICATES WIRE SIZE OTHER THAN #12 AWG.				
	WALL OCCUPANCY SENSOR **		INTERIOR SPEAKERS CEILING MOUNTED		SHEET NOTE REFERENCE SYMBOL; SEE ASSOCIATED NOTE ON SAME SHEET				
	DOUBLE SWITCHED WALL OCCUPANCY SENSOR **		INTERIOR SPEAKERS WALL MOUNTED		SCHEDULE SYMBOL; SEE ASSOCIATED NOTE ON SAME SHEET				
	DIMMING DUAL TECHNOLOGY WALL SWITCH OCCUPANCY SENSOR **		CLOCK +8'-0" AFF U.O.N. VERIFY BEFORE INSTALLATION						
	2-BUTTON DIMMING DUAL TECHNOLOGY WALL SWITCH OCCUPANCY SENSOR **								

EQUIPMENT ANCHORAGE

ME/P COMPONENT ANCHORAGE NOTES:

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA-APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

- ALL PERMANENT EQUIPMENT AND COMPONENTS.
- TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (e.g. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110 / 220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
- TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT BE DETAILED IN THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS.

- COMPONENTS WEIGHTING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
- COMPONENTS WEIGHTING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT OF THE APPROVAL OF THE DESIGN PROFESSIONAL. IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

MEP DISTRIBUTION SYSTEM BRACING NOTE FOR PIPING, DUCTWORK, AND ELECTRICAL CONDUIT

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7 SECTION 13.3 AS DEFINED IN ASCE 7 SECTION 13.6.5, 13.6.6, 13.6.7, 13.6.8 AND 2022 CBC SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. THE MEP DESIGN PROFESSIONAL ENGINEER RESPONSIBLE FOR CONTENT ON THESE SHEETS HAS VERIFIED THAT THE DESIGN METHODS IDENTIFIED BELOW ARE IN ACCORDANCE WITH DSA IR 16-13.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP □ MD □ PP □ E ■ - OPTION 1: PROJECT-SPECIFIC DESIGN.

MP □ MD □ PP □ E □ - OPTION 2: DESIGN BASED ON OSHPOD OPM, WITHIN PROJECT SUBMITTAL.

MP □ MD □ PP □ E □ - OPTION 3: DESIGN BASED ON OSHPOD OPM, DEFERRED SUBMITTAL.

APPLICABLE CODES & STANDARDS

CODES:

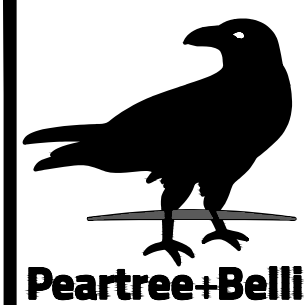
- 2022 CALIFORNIA ADMINISTRATIVE CODE C.A.C., PART 1, TITLE 24, C.C.R.
- 2022 CALIFORNIA BUILDING CODE (CBC) C.C.R., TITLE 24, VOL. 1 & 2 BASED ON THE 2021 INTERNATIONAL BUILDING CODE (IBC) WITH CALIFORNIA AMENDMENTS.
- 2022 CALIFORNIA RESIDENTIAL CODE C.C.R., TITLE 24, PART 2.5 BASED ON THE 2021 INTERNATIONAL RESIDENTIAL CODE WITH CALIFORNIA AMENDMENTS.
- 2022 CALIFORNIA ELECTRICAL CODE (CEC) C.C.R., TITLE 24, PART 3 BASED ON THE 2020 NATIONAL ELECTRICAL CODE (NEC) WITH CALIFORNIA AMENDMENTS.
- 2022 CALIFORNIA MECHANICAL CODE (CMC) C.C.R., TITLE 24, PART 4 BASED ON THE 2021 UNIFORM MECHANICAL CODE (UMC) WITH CALIFORNIA AMENDMENTS.
- 2022 CALIFORNIA PLUMBING CODE (CPC) C.C.R., TITLE 24, PART 5 BASED ON THE 2021 UNIFORM PLUMBING CODE (UPC) WITH CALIFORNIA AMENDMENTS.
- 2022 CALIFORNIA ENERGY CODE C.C.R., TITLE 24, PART 6.
- 2022 CALIFORNIA FIRE CODE (CFC) C.C.R., TITLE 24, PART 9 BASED ON THE 2021 INTERNATIONAL FIRE CODE (IFC) WITH CALIFORNIA AMENDMENTS.
- 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE C.C.R., TITLE 24, PART 11.
- 2022 CALIFORNIA REFERENCED STANDARDS CODE C.C.R., TITLE 24, PART 12.
- TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.
- NATIONAL FIRE ALARM CODE (NFPA 72) 2022.

STANDARDS:

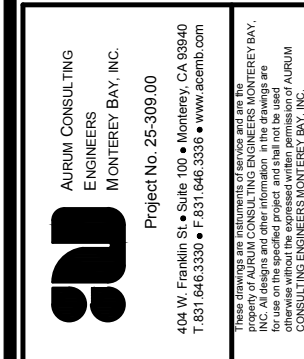
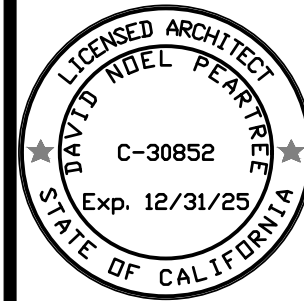
- AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
- ELECTRONICS INDUSTRIES ASSOCIATION (EIA)
- INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
- NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
- NATIONAL ELECTRICAL TESTING ASSOCIATION (NETA)
- UNDERWRITER LABORATORIES (UL)
- CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ACT STANDARDS (CAL/OSHA)

SHEET INDEX

E001	SYMBOLS, ABBREVIATIONS, GENERAL CONSTRUCTION NOTES, EQUIPMENT ANCHORAGE NOTES, CODES & SHEET INDEX.
E101	ELECTRICAL SINGLE LINE DIAGRAM & PANELBOARD SCHEDULE.
E201	ELECTRICAL SITE PLAN.
E401	POWER & SYSTEMS PLAN.
E601	ELECTRICAL DETAILS.
E701	ELECTRICAL SPECIFICATIONS.



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SYMBOLS, ABBREVIATIONS, GENERAL CONSTRUCTION NOTES, CODES & SHEET INDEX
BACKUP GENERATOR FOR:
CHUALAR UNION ELEMENTARY SCHOOL
24285 LINCOLN ST., CHUALAR, CA 93925
CHUALAR UNION SCHOOL DISTRICT

REV.	DATE	DESCRIPTION

SCALE: AS NOTED

DRAWN: CADD

JOB: 25050

SHEET:

E001

PANEL SCHEDULES																
Voltage:	120/208V, 3ø											Bussing:	125A			
Wire:	4W											Feed:	TOP			
Type:	NEMA 1											Mounting:	SURFACE			
Mains:	100/3 M.B.											A.I.C.	22,000			
1 2 PANEL FE																
Load	A	B	C	Brkr	Ck	abc	2	Brkr	A	B	C	Load				
BATTERY CHARGER	1800			20/1	1	1	2		1920							
JACKET WATER		1800		20/1	3	4	4	20/3		1920		FREEZER CONDENSER				
FREEZER LIGHTS			500	20/1	5	6					1920					
REFRIGERATOR LIGHTS	500			20/1	7	8			1920							
REFRIGERATOR EVAP		1800		20/1	9	10		20/3		1920		REFRIGERATOR CONDENSER				
SPARE				20/1	11	12					1920					
SPARE				20/1	13	14			2496							
SPARE				20/1	15	16		30/2		2496		FREEZER EVAP				
SPARE				20/1	17	18	20/1					SPARE				
SPACE ONLY				-	19	20	-					SPACE ONLY				
SPACE ONLY				-	21	22	-					SPACE ONLY				
SPACE ONLY				-	23	24	-					SPACE ONLY				
	2300	3600	500						6336	6336	3840					
1 SUBMITTAL SHALL MATCH EXACT BREAKER LOCATIONS SHOWN. 2 LABEL PANEL FOR SHORT CIRCUIT AMPS AVAILABLE PER NEC 110-24.																
KVA Phase A	8.6															
KVA Phase B	9.9															
KVA Phase C	4.3															
										Total Connected Load KVA	22.9					
										Total Load Amperes	64					

3 STAND-BY GENERATOR ELECTRICAL DETAIL

NO SCALE

2 GROUND ROD BOX DETAIL WITH SEALANT.

NO SCALE

4 GENERATOR MOUNTING DETAIL

NO SCALE

1 ELECTRICAL SINGLE LINE DIAGRAM

NO SCALE

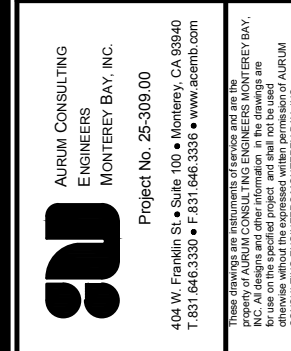
SINGLE LINE DIAGRAM LEGEND	
	(EXISTING)
	(NEW)
	(N) FLOOR/PAD MOUNTED EQUIPMENT

FEEDER SCHEDULE		
DESIGNATION	AMPACITY	CONDUIT & CONDUCTORS SIZES
F201	20	3/4" C., 2 #12 & 1 #12 GND.
F404	100	1 1/2" C., 4 #2 & 1 #8 GND.

DETAIL NOTES:

1. PROVIDE & INSTALL A RED LAMICOID SIGN WITH WHITE LETTERS READING "PANEL IS FED FROM AN ALTERNATE POWER SOURCE".
2. PROVIDE & INSTALL NEW GROUND CONNECTION TO NEW GROUND ROD.
3. FOR WATER JACKET HEATER; 120V.
4. FOR BATTERY CHARGER; 120V.
5. PROVIDE & INSTALL 1" C. WITH CABLES TO ANNUNCIATOR PANEL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
6. LOCATE ANNUNCIATOR PER DISTRICT DIRECTION.
7. BOTH CIRCUITS MAY BE INSTALLED IN (1) 1" C SHARED.
8. CONTRACTOR SHALL BOND GENERATOR FRAME TO GROUND. DO NOT BOND GENERATOR NEUTRAL.
9. FOR ENGINE START TO AUTOMATIC TRANSFER SWITCH. INSTALL 1" CONDUIT AND CABLES.
10. PROVIDE AND INSTALL NEW BREAKER AND ALL NECESSARY MOUNTING HARDWARE; NEW BREAKER SHALL MATCH EXISTING IN TYPE AND RATING.

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ELECTRICAL SINGLE LINE DIAGRAM

BACK-UP GENERATOR FOR:

CHUALAR UNION ELEMENTARY SCHOOL

24285 LINCOLN ST, CHUALAR, CA 93925

CHUALAR UNION SCHOOL DISTRICT

REV.	DATE	DESCRIPTION
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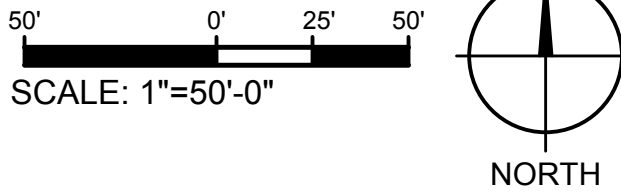
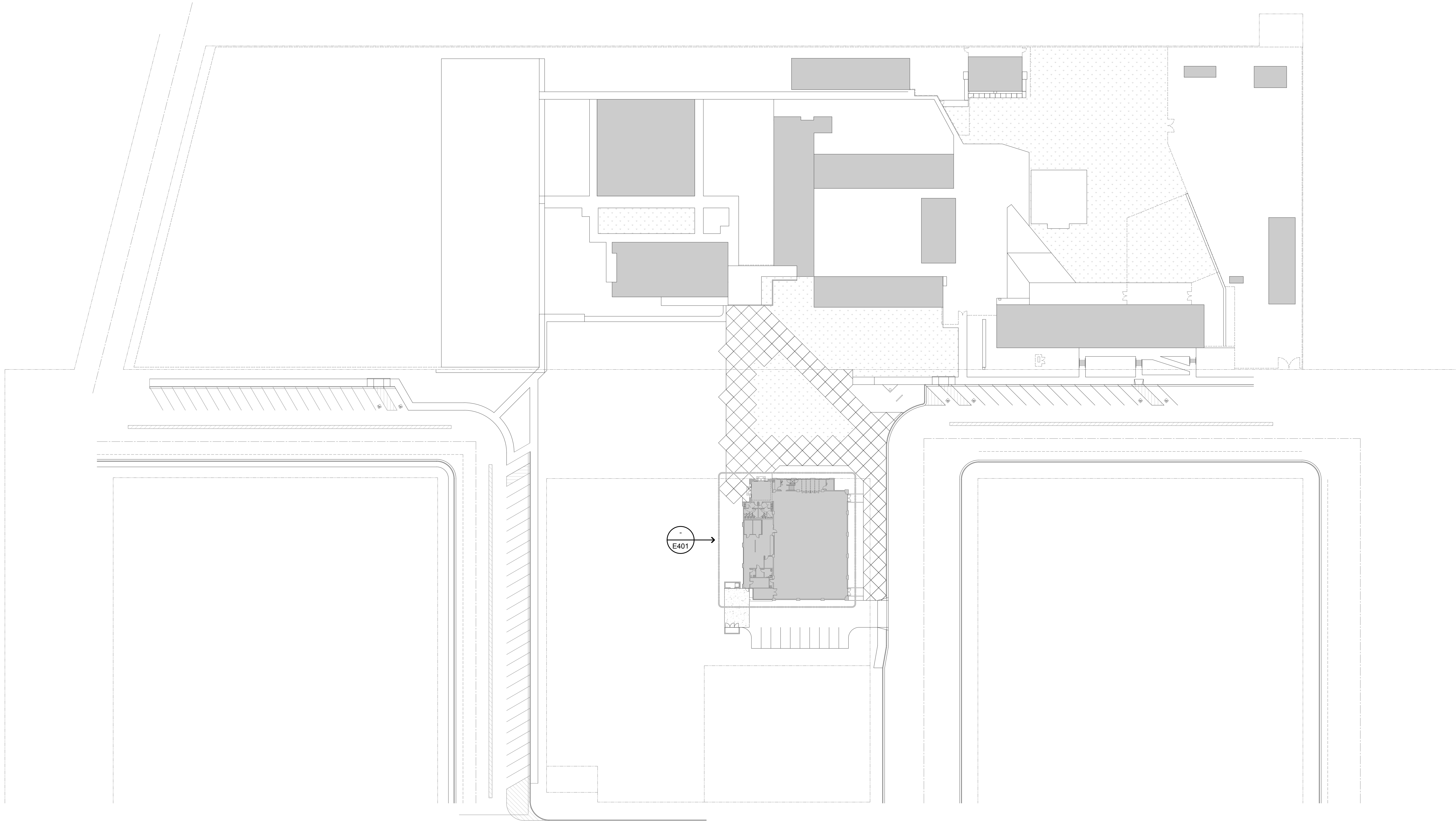
SCALE: AS NOTED

DRAWN: CADD

JOB: 25050

SHEET:

E101



REV.	DATE	DESCRIPTION

SCALE: AS NOTED

DRAWN: CADD

JOB: 25050

SHEET:

E201

ELECTRICAL SITE PLAN
BACK-UP GENERATOR FOR:
CHUALAR UNION ELEMENTARY SCHOOL
24285 LINCOLN ST., CHUALAR, CA 93925
CHUALAR UNION SCHOOL DISTRICT



GENERAL NOTES:

- A. SEAL ALL EXTERIOR/INTERIOR BUILDING PENETRATIONS. CUT AND PATCH WALLS/CEILINGS FOR CONDUIT ROUTING AS NECESSARY. PAINT/FINISH EXPOSED CONDUITS/BOXES TO MATCH BUILDING FINISH. COORDINATE WITH DISTRICT & ARCHITECT FOR EXACT REQUIREMENTS.
- B. CONTRACTOR SHALL LOCATE ALL (E) UNDERGROUND UTILITIES PRIOR TO TRENCHING AND TAKE CAUTION TO AVOID DAMAGE DURING TRENCHING. HAND TRENCH IF NECESSARY. CONTRACTOR SHALL MAKE ALL REPAIRS TO DAMAGED UTILITIES AT NO CHARGE TO OWNER.

BRANCH CIRCUIT CONDUCTOR SIZING TABLE

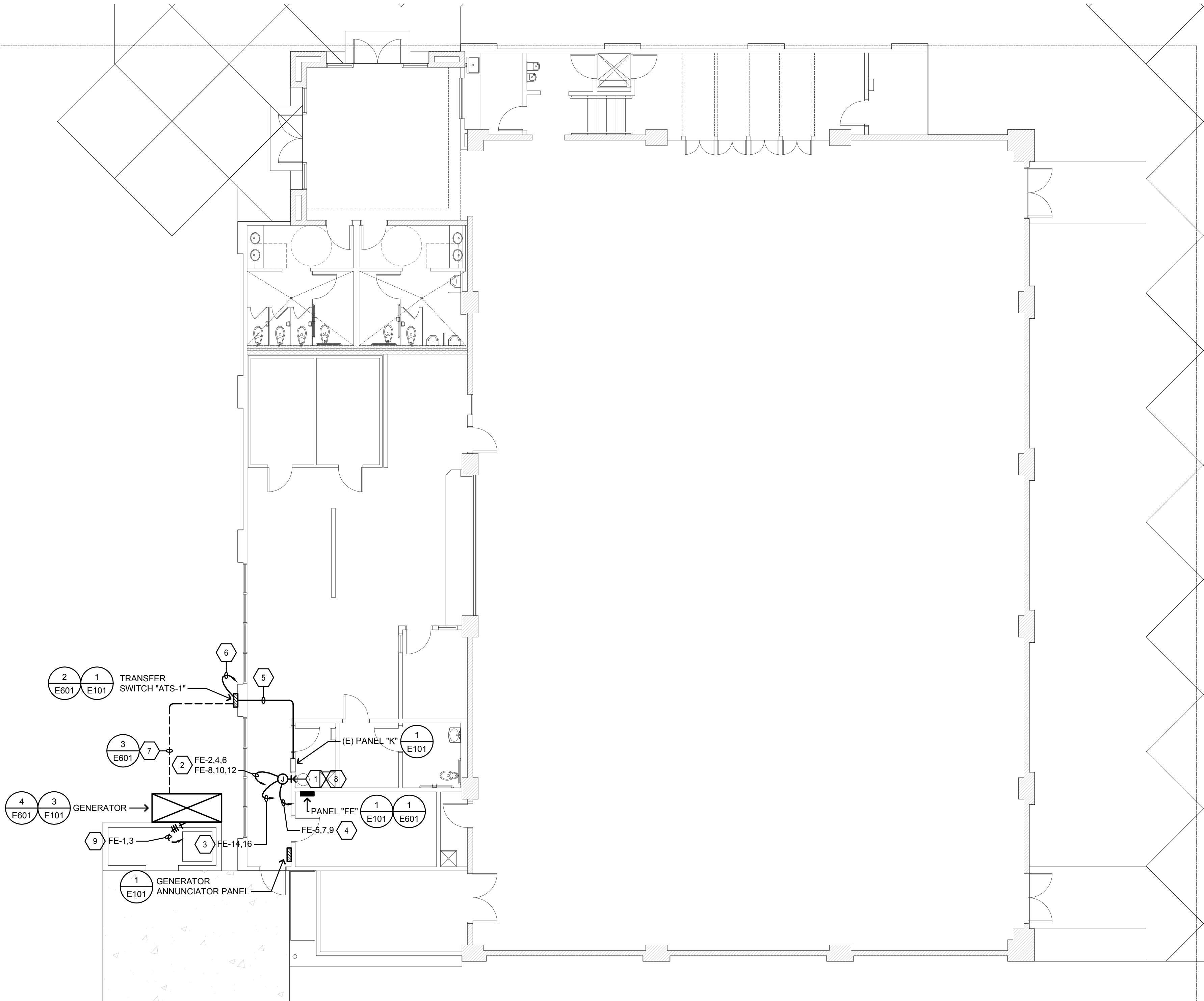
CIRCUIT AMPACITY/VOLTAGE	CIRCUIT LENGTH	REQUIREMENT
20/120	56'-90'	½" C., 2 #10 & 1 #10 GND.
20/120	91'-140'	½" C., 2 #8 & 1 #8 GND.
20/277	131'-205'	½" C., 2 #10 & 1 #10 GND.
20/277	206'-330'	½" C., 2 #8 & 1 #8 GND.

NOTE:

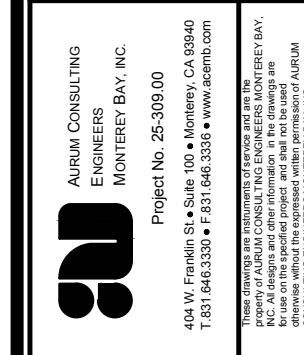
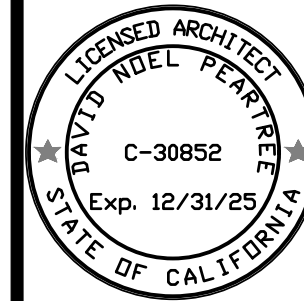
- A. CONTRACTOR SHALL SIZE BRANCH CIRCUIT CONDUCTORS PER THE TABLE ABOVE AS DETERMINED BY THE CIRCUIT CONDUCTOR LENGTH, U.O.N. CONTRACTOR SHALL SPLICE TO #12 AWG WITHIN TERMINATION BOX FOR DEVICE CONNECTION IF NECESSARY.
- B. WHERE THE UNGROUNDED CONDUCTORS IS INCREASED IN SIZE, INCLUDING FOR VOLTAGE DROP, THE GROUNDED CONDUCTOR SHALL BE INCREASED IN SIZE PROPORTIONATELY PER CEC 250.122(B)

SHEET NOTES

- CONTRACTOR SHALL PROVIDE AND INSTALL 8" SQ x 4" DEEP ABOVE PANEL FOR INTERCEPT OF (E) FREEZER & COOLER CIRCUITS.
- PROVIDE AND INSTALL ¾" C., 6 #10 & 2 #10 GND FOR FREEZER AND REFRIGERATOR CONDENSERS.
- PROVIDE AND INSTALL ½" C., 2 #10 & 1 #10 GND FOR FREEZER EVAP.
- PROVIDE AND INSTALL ¾" C., 6 #10 & 3 #10 GND FOR REFRIGERATOR EVAP, REFRIGERATOR LIGHTS AND FREEZER LIGHTS.
- PROVIDE AND INSTALL FEEDERS FROM (E) PANEL "K" TO TRANSFER SWITCH "ATS-1". FOR FEEDER SIZE AND REQUIREMENTS SEE 1/E101.
- PROVIDE AND INSTALL FEEDERS FROM TRANSFER SWITCH "ATS-1" TO NEW PANEL "FE". FOR FEEDER SIZE AND REQUIREMENTS SEE 1/E101.
- PROVIDE AND INSTALL FEEDERS FROM NEW GENERATOR TO TRANSFER SWITCH "ATS-1". FOR FEEDER SIZE AND REQUIREMENTS SEE 1/E101.
- SPLICE AND INTERCEPT (E) FREEZER & REFRIGERATOR CIRCUITS AT (E) PANEL K.
- PROVIDE & INSTALL FEEDERS FOR WATER JACKET HEATER & BATTERY CHARGER FROM GENERATOR TO DISTRIBUTION PANEL "FE". FOR FEEDER SIZE AND REQUIREMENTS SEE 1/E1.1.



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POWER & SYSTEMS PLAN
BACK-UP GENERATOR FOR:
CHUALAR UNION ELEMENTARY SCHOOL
24285 LINCOLN ST., CHUALAR, CA 93925
CHUALAR UNION SCHOOL DISTRICT

REV.	DATE	DESCRIPTION
1		
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SCALE: AS NOTED

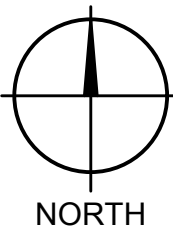
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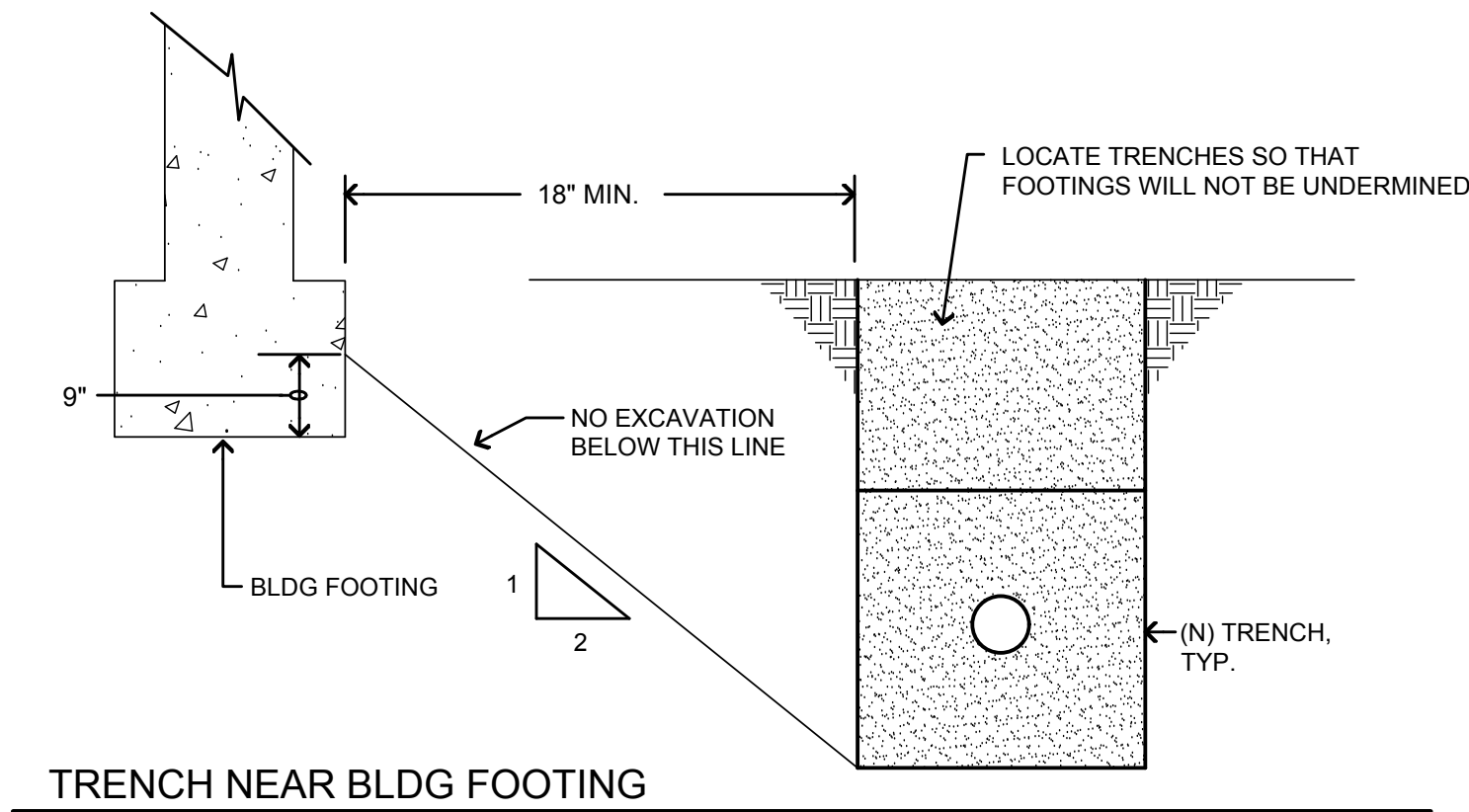
JOB: 25050

SHEET:

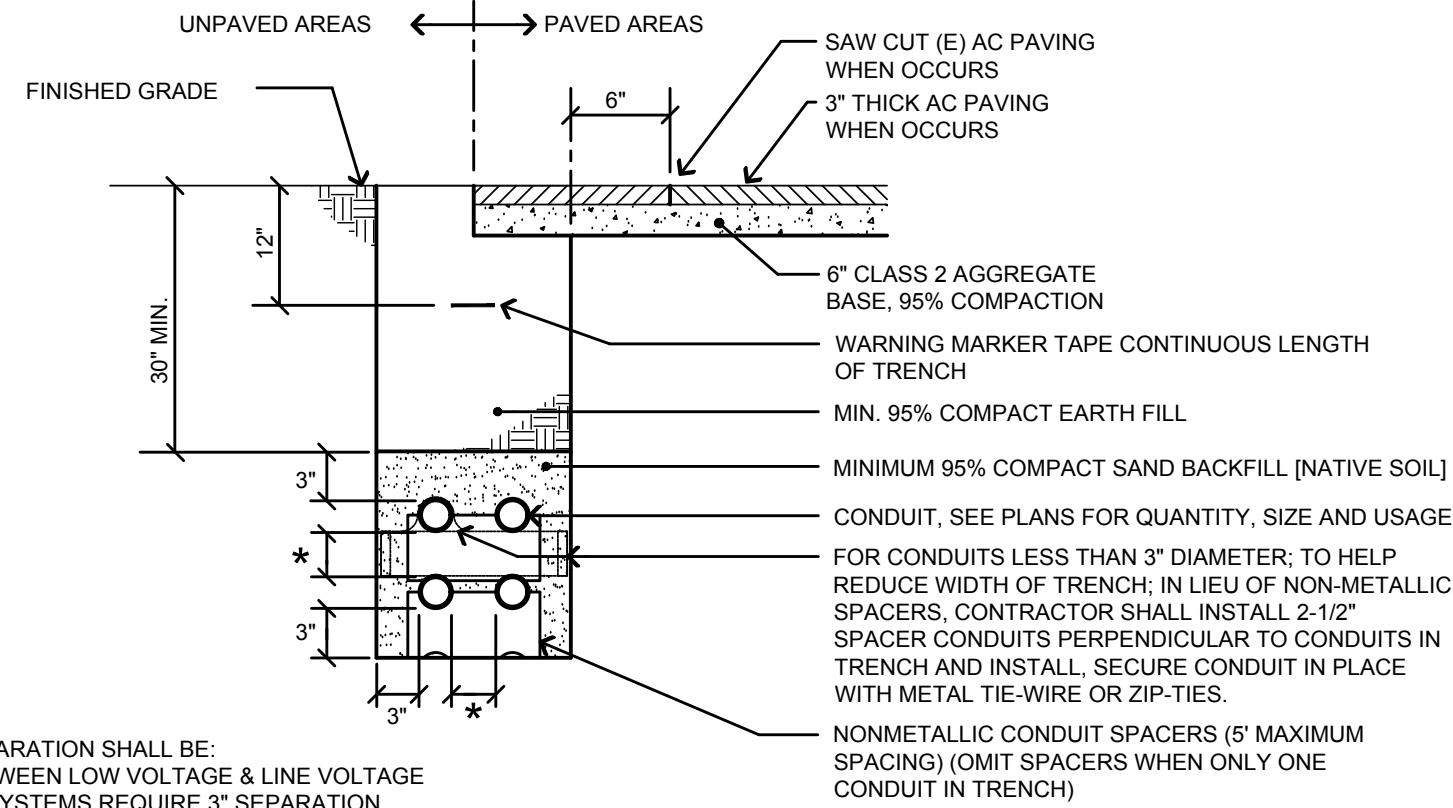
E401

8' 0' 2' 4' 6' 8'
SCALE: 1/8"=1'-0"





TRENCH NEAR BLDG FOOTING

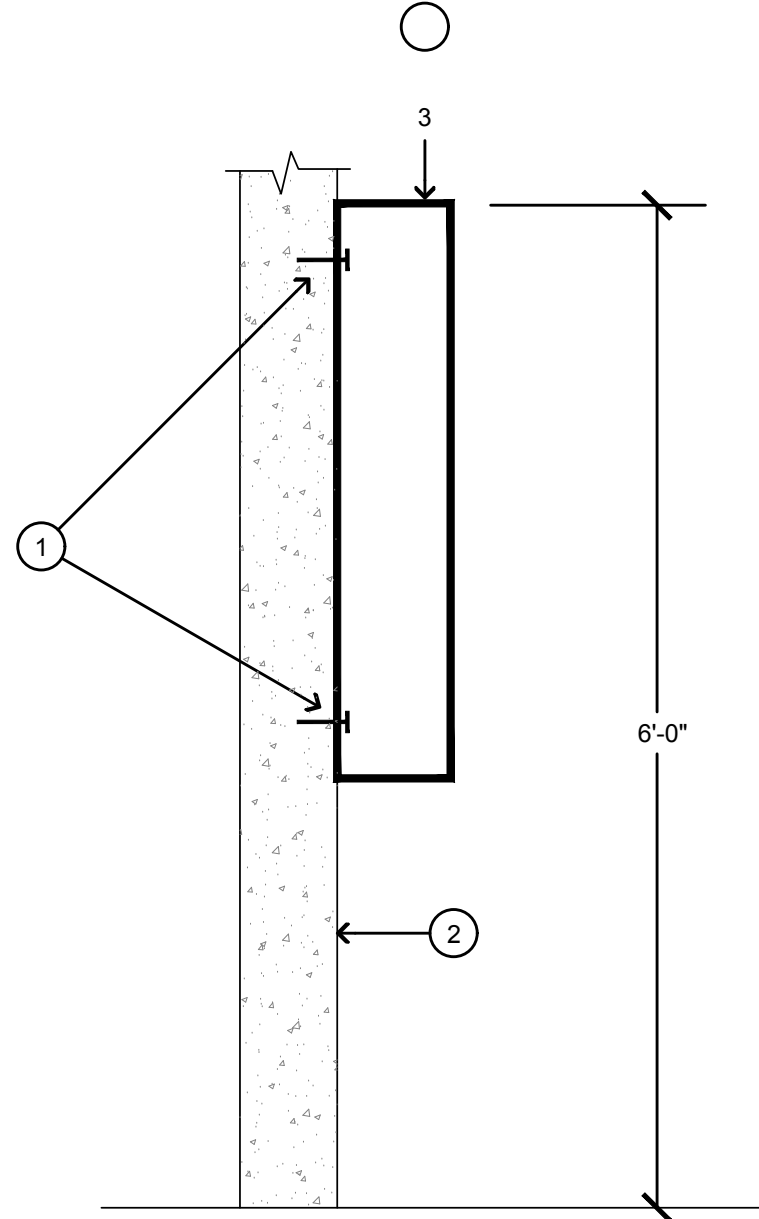


* = REQUIRED SEPARATION SHALL BE:
12" MINIMUM BETWEEN LOW VOLTAGE & LINE VOLTAGE
CONDUITS LIKE SYSTEMS REQUIRE 3" SEPARATION

- NOTES FOR CLEARANCES:**
- THE MINIMUM RECOMMENDED SEPARATIONS BETWEEN TELECOMMUNICATIONS CONDUIT SYSTEMS AND OUTSIDE SURFACES OF FOREIGN STRUCTURES VARY IN ACCORDANCE WITH REGIONAL STANDARDS, CODES, AND REGULATIONS:
 - 6" MIN. WHEN CROSSING PIPES (E.G., GAS, WATER, OIL)
 - 12" MIN. WHEN PARALLEL TO PIPES (E.G., GAS, WATER, OIL)
 - 3" MIN. CONCRETE FOREIGN CONDUIT (POWER OR OTHER)
 - 4" MIN. MASONRY (POWER OR OTHER)
 - 12" MIN. OF WELL-TAMPED EARTH (POWER OR OTHER)
 - THE TOP OF CONDUIT SHOULD BE LOCATED AT A SUFFICIENT DEPTH (NORMALLY 24"-30") BELOW SURFACE GRADE SO BOTH LIVE OR DYNAMIC AND DEAD (STATIC) OR EARTH LOADS CAN BE SUSTAINED BY THE CONDUIT STRUCTURE.

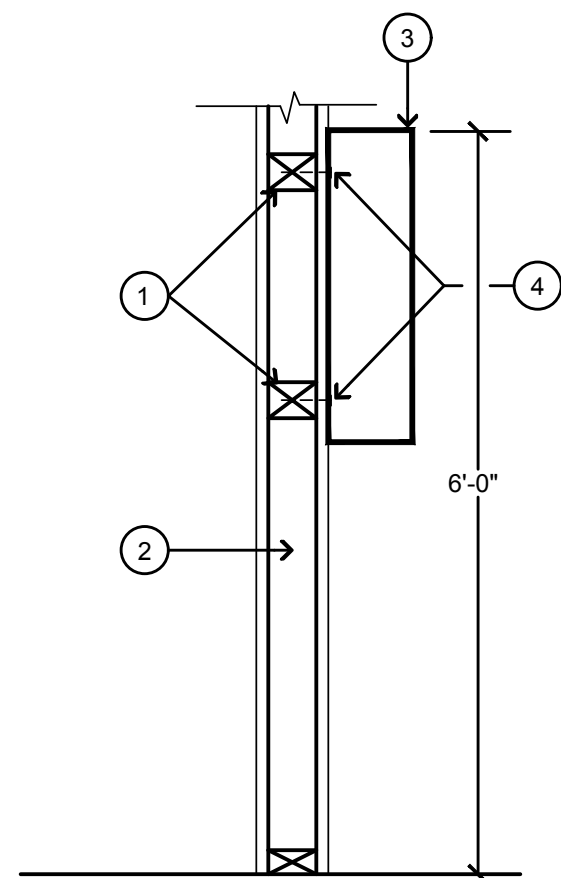
- NOTES:**
- SAW CUT, TRENCH & BACKFILL FOR NEW CONDUITS. PATCH WALKWAY TO MATCH (E) SURROUNDING SURFACES. CARE SHALL BE TAKEN TO PROTECT EXISTING TREES. RESEED OR RESOD (E) DISTURBED PLANTED AREAS TO ARCHITECT'S SATISFACTION.
 - BASE MATERIAL TO BE REPLACED TO THE DEPTH OF EXISTING BASE AND COMPACTED TO A MIN. 95% RELATIVE COMPACTION. A.C. MAY BE SUBSTITUTED FOR BASE MATERIAL. WHEN USED AS BACKFILL, CLASS 100-E-100 P.C.C. MAY BE SUBSTITUTED FOR BASE MATERIAL.

3 TYPICAL TRENCH SECTION
NO SCALE



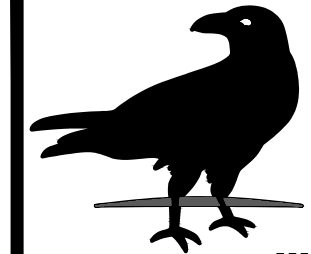
- DETAIL NOTES:**
- 1/2" DIA. HILTI KWIK-BOLT 3 (ICC ESR-1385, TYP. OF 4). MINIMUM 3/4" EMBEDMENT. TEST IN TENSION 1500 LBS.
 - EXISTING CONCRETE WALL.
 - ELECTRICAL PANEL (WEIGHT 480 LBS MAX).

2 SURFACE MOUNTED PANEL DETAIL
NO SCALE

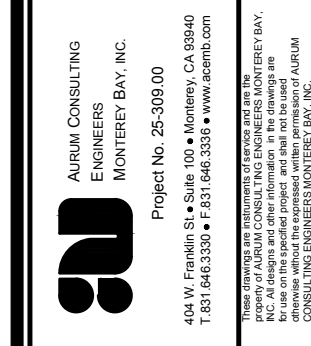
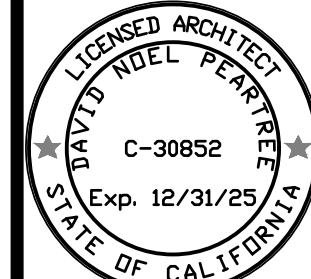


- DETAIL NOTES:**
- 4" x 4" BLOCKING BETWEEN STUDS WITH SIMPSON STRONG-TIE FRAMING CLIP A35. TOP AND BOTTOM EACH END
 - WALL STUDS
 - PANEL
 - 1/2" DIA. LAG SCREW INTO BLOCKING MIN. 2 1/2" PENETRATION, PER-DRILL TO AVOID SPLITTING; TYP. (4) PER PANEL AT CORNERS

1 SURFACE MOUNTED PANEL DETAIL
NO SCALE



Peartree+Bell
ARCHITECTS
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ELECTRICAL DETAILS
BACK-UP GENERATOR FOR:
CHUALAR UNION ELEMENTARY SCHOOL
24285 LINCOLN ST., CHUALAR, CA 93925
CHUALAR UNION SCHOOL DISTRICT

REV.	DATE	DESCRIPTION
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SCALE: AS NOTED
DRAWN: CADD
JOB: 25050
SHEET:

E601

SECTION 26 05 73

GENERAL ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

- 1.01 Description of Work:
- A. Furnish and install all required in-place equipment, conduits, conductors, cables and any miscellaneous materials for the satisfactory interconnection and operation of all associated electrical systems.
- 1.02 Submittals:
- A. As specified in Division 1. Submit to the Facilities Manager & Architect shop drawings, manufacturer's data and certificates for equipment, materials and finish, and pertinent details for each system specified. Information to be submitted includes manufacturer's descriptive literature of cataloged products, equipment, drawings, diagrams, performance and characteristic curves as applicable, test data and catalog cuts. Obtain written approval before procurement, fabrication, or delivery of the items to the job site.
- B. Proposed substitutions of products will not be reviewed or approved prior to awarding of the Contract.
- C. Substitutions shall be proven to the Facilities Manager & Architect to be equal or superior to the specified product. Facilities Manager & Architect's decision is final. The Contractor shall pay all costs incurred by the Facilities Manager & Architect in reviewing and processing any proposed substitutions whether or not a proposed substitution is accepted.
- D. If a proposed substitution is rejected, the contractor shall furnish the specified product at no increase in contract price.
- E. If a proposed substitution is accepted, the contractor shall be completely responsible for all dimensional changes, electrical changes, or changes to other work which are a result of the substitution. The accepted substitution shall be made at no additional cost to the owner or design consultants.
- 1.03 Quality Assurance:
- A. Codes: All electrical equipment and materials, including installation and testing, shall conform to the latest editions of the following applicable codes:
1. California Electrical Code (CEC)
 2. Occupational Safety and Health Act (OSHA) standards.
 3. All applicable local codes, rules and regulations.
 4. Electrical Contractor shall possess a C-10 and D-21 license and all other licenses as may be required. Licenses shall be in effect at start of this contract and be maintained throughout the duration of this contract.
- B. Variances: In instances where two or more codes are at variance, the most restrictive requirement shall apply.
- C. Standards: Equipment shall conform to applicable standards of American National Standards Institute (ANSI), Electronics Industries Association (EIA), Institute of Electrical and Electronics Engineers (IEEE), and National Electrical Manufacturers Association (NEMA).
- D. Underwriter Laboratories (UL) listing is required for all equipment and materials where such listing is offered by the Underwriters Laboratories. Provide service entrance labels for all equipment required by the NEC to have such labels.
- E. The electrical contractor shall guarantee all work and materials installed under this contract for a period of one (1) year from date of acceptance by owner.
- F. All work and materials covered by this specification shall be subject to inspection at any and all times by representatives of the owner. Work shall not be closed in or covered before inspection and approval by the owner or his representative. Any material found not conforming with these specifications shall, within 3 days after being notified by the owner, be removed from premises; if said material has been installed, entire expense of removing and replacing same, including any cutting and patching that may be necessary, shall be borne by the contractor.
- 1.04 Contract Documents:
- A. Drawings: The Electrical Drawings shall govern the general layout of the completed construction.
1. Locations of equipment, panels, pullboxes, conduits, stub-ups, ground connections are approximate unless dimensioned; verify locations with the Facilities Manager & Architect prior to installation.
 2. The general arrangement and location of existing conduits, piping, apparatus, etc., is approximate. The drawings and specifications are for the assistance and guidance of the contractor, exact locations, distances and elevations are governed by actual field conditions. Accuracy of data given herein and on the drawings is not guaranteed. Minor changes may be necessary to accommodate work. The contractor is responsible for verifying existing conditions. Should it be necessary to deviate from the design due to interference with existing conditions or work in progress, claims for additional compensation shall be limited to those for work required by unforeseen conditions as determined by the Facilities Manager & Architect.
 3. All drawings and divisions of these specifications shall be considered as whole. The contractor shall report any apparent discrepancies to the Facilities Manager & Architect prior to submitting bids.
 4. The contractor shall be held responsible to have examined the site and compared it with the specifications and plans and to have satisfied himself as to the conditions under which the work is to be performed. He shall be held responsible for knowledge of all existing conditions, whether or not accurately described. No subsequent allowance shall be made for any extra expense due to failure to make such examination.
- 1.05 Closeout Submittals:
- A. Manuals: Furnish manuals for equipment where manuals are specified in the equipment specifications or are specified in Division 1.
- 1.06 Coordination:
- A. Coordinate the electrical work with the other trades, code authorities, utilities and the Facilities Manager & Architect.
- B. Contractor shall pay all inspection and other applicable fees and procure all permits necessary for the completion of this work.
- C. Where connections must be made to existing installations, properly schedule all the required work, including the power shutdown periods.
- D. When two trades join together in an area, make certain that no electrical work is omitted.
- 1.07 Job Conditions:
- A. Operations: Perform all work in compliance with Division 1
1. Keep the number and duration of power shutdown periods to a minimum.
 2. Show all proposed shutdowns and their expected duration on the construction schedule. Schedule and carry out shutdowns so as to cause the least disruption to operation of the Owner's facilities.
 3. Carry out shutdown only after the schedule has been approved, in writing, by the owner. Submit power interruption schedule 15 days prior to date of interruption.
- B. Construction Power: Unless otherwise noted in Division 1 of these specifications, contractor shall make all arrangements and provide all necessary facilities for temporary construction power from the owner's on site source. Energy costs shall be paid for by the Owner.
- 1.08 Safety and Indemnity:
- A. The Contractor is solely and completely responsible for conditions of the job site including safety of all persons and property during performance of the work. This requirement will apply continually and not be limited to normal working hours. The contractor shall provide and maintain throughout the work site proper safeguards including, but not limited to, enclosures, barriers, warning signs, lights, etc. to prevent accidental injury to people or damage to property.
- B. The Contractor performing work under this Division of the Specifications shall hold harmless, indemnify, and defend the Owner, the Engineer, their consultants, and each of their officers, agents and employees from any and all liability claims, losses, or damage arising out of or alleged to arise from bodily injury, sickness, or death of a person or persons and for all damages arising out of injury to or destruction of property arising directly or indirectly out of or in connection with the performance of the work under this Division of the Specifications, and from the Contractor's negligence in the performance of the work described in the construction contract documents, but not including liability that may be due to the sole negligence of the Owner, the Engineer, their Consultants or their officers, agents and employees.
- C. If a work area is encountered that contains hazardous materials, the contractor is advised to coordinate with the owner and it's abatement consultant for abatement of hazardous material by the Owner's Representative. "Hazardous materials" means any toxic substance regulated or controlled by OSHA, EPA, State of California or local rules, regulations and laws. Nothing herein shall be construed to create a liability for Asbestos Consulting Engineers regarding hazardous materials abatement measures, or discovery of hazardous materials.
- 1.09 Access Doors:
- A. The contractor shall install access panels as required where floors, walls or ceilings must be penetrated for access to electrical, control, fire alarm or other specified electrical devices. The minimum size panel shall be 14" x 14" in usable opening. Where access by a service person is required, minimum usable opening shall be 18" x 24".
- 1.10 Arc Flash:
- A. The contractor shall install a clearly visible arc flash warning to the inside door of all panelboards and industrial control panels, as well as to the front of all switchboards and motor control centers that are a part of this project.
- B. The warning shall have the following wording: line 1 "WARNING" (in large letters), line 2 "Potential Arc Flash Hazard" (in medium letters), line 3 & 4 "Appropriate Personal Protective Equipment and Tools required when working on this equipment".
- 1.11 All boxes and enclosures for emergency circuits shall be permanently marked with a readily visible red spray painted mark.

PART 2 - PRODUCTS

- 2.01 Nameplates:
- A. Identify each piece of equipment and related controls with a rigid laminated engraved plastic nameplate. Unless otherwise noted, nameplates shall be melamine plastic 0.125 inch thick, white with black center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the core. Minimum size of nameplates shall be 0.5 by 2.5 inches unless otherwise noted. Letting and engraving shall be to the satisfaction of the Facilities Manager.
- B. Normal block style. Engrave nameplates with the inscriptions indicated on the Drawings and, if not so indicated, with the equipment name. Securely fasten nameplates in place using two stainless steel or brass screws.
- 2.02 Finish requirements:
- A. Equipment: Refer to each electrical equipment section of these Specifications for painting requirements of equipment enclosures. Repair any final paint finish which has been damaged or is visibly constructed, revised, delting and adding to the Drawing Sheets as required. As built.
- B. Wiring System: In finished areas, paint all exposed conduits, boxes and fittings to match the color of the surface to which they are affixed.

PART 3 - EXECUTION

- 3.01 Workmanship:
- A. All electrical equipment and materials shall be installed in a neat and workmanship manner in accordance with the "NECA-I Standard Practices For Good Workmanship in Electrical Contracting". Workmanship of the entire job shall be first class in every respect.
- 3.02 Equipment Installations:
1. Provide the required inserts, bolts and anchors, and securely attach all equipment and materials to their supports.
 2. Do all the cutting and patching necessary for the proper installation work and repair any damage done.
 3. Earthequake restraints: all electrical equipment, including conduits over 2 inches in diameter, shall be braced or anchored to resist a horizontal force acting in any direction as per CBC Section 1616A Title 24, part 2 and ASCE7-10, section 13.3 and 13.6 and table 13.6-1.
 4. Structural work: All core drilling, bolt anchor insertion, or cutting of existing structural concrete shall be approved by a California registered structural consulting engineer prior to the execution of any construction. At all floor slabs and structural concrete walls to be drilled, cut or bolt anchors inserted, the contractor shall find and mark all reinforcing in both faces located by means of x-ray, patch-ometer, or proof-ometer. Submit sketch showing location of rebar and proposed cuts, cores, or bolt anchor locations for approval.
- 3.03 Field Test:
- A. Perform equipment field tests and adjustments. Properly calibrate, adjust and operationally check all circuits and components, and demonstrate as ready for service.
- B. Operational Tests: Operationally test all circuits to demonstrate that the circuits and equipment have been properly installed and adjusted and are ready for full-time service. Demonstrate the proper functioning of circuits in all modes of operation, including alarm conditions.
- 3.04 Records:
1. Maintain one copy of the contract Drawing Sheets on the site of the work for recording the "as built" condition. After completion of the work, the Contractor shall carefully mark the work as actually constructed, revised, delting and adding to the Drawing Sheets as required. As built Drawings shall be delivered to the Architect within ten (10) days of completion of construction.
- 3.05 Clean Up:
- A. Upon completion of electrical work, remove all surplus materials, rubbish, and debris that accumulated during the construction work. Leave the entire area neat, clean, and acceptable to the Facilities Manager & Architect.
- 3.06 Mechanical and Plumbing Electrical Work:
1. The requirements for electrical power and/or devices for all mechanical and plumbing equipment supplied and/or installed under this contract shall be coordinated and verified with the following:
 1. Mechanical and Plumbing Drawings.
 2. Mechanical and Plumbing sections of these Specifications.
 3. Manufacturers of the Mechanical and Plumbing equipment supplied.
 2. The coordination and verification shall include the voltage, ampacity, phase, location and type of disconnect, control, and connection required. Any changes that are required as a result of this coordination and verification shall be a part of this Contract.
 3. The Electrical Contractor shall furnish and install the following for all mechanical and plumbing equipment:
 1. Line voltage conduit and wiring.
 2. Disconnect switches.
 3. Manual line motor starters.
 4. All low voltage control wiring for Mechanical and Plumbing equipment shall be installed in conduit. Furnishing, installation and connection of all low voltage conduit, boxes, wiring and controls shall be by the Mechanical and Plumbing Contractor.
 5. Manual motor starters, where required, shall have toggle type operators with pilot light and melting alloy type overload relays. SQUARE D COMPANY, Class 2510, Type FG-1P (surface) or Type FS-1P (flush) or ITE, WESTINGHOUSE or GENERAL ELECTRIC equal.

- 1.04 Contract Documents:
- A. Drawings: The Electrical Drawings shall govern the general layout of the completed construction.
1. Locations of equipment, panels, pullboxes, conduits, stub-ups, ground connections are approximate unless dimensioned; verify locations with the Facilities Manager & Architect prior to installation.
 2. The general arrangement and location of existing conduits, piping, apparatus, etc., is approximate. The drawings and specifications are for the assistance and guidance of the contractor, exact locations, distances and elevations are governed by actual field conditions. Accuracy of data given herein and on the drawings is not guaranteed. Minor changes may be necessary to accommodate work. The contractor is responsible for verifying existing conditions. Should it be necessary to deviate from the design due to interference with existing conditions or work in progress, claims for additional compensation shall be limited to those for work required by unforeseen conditions as determined by the Facilities Manager & Architect.
 3. All drawings and divisions of these specifications shall be considered as whole. The contractor shall report any apparent discrepancies to the Facilities Manager & Architect prior to submitting bids.
 4. The contractor shall be held responsible to have examined the site and compared it with the specifications and plans and to have satisfied himself as to the conditions under which the work is to be performed. He shall be held responsible for knowledge of all existing conditions, whether or not accurately described. No subsequent allowance shall be made for any extra expense due to failure to make such examination.
- 1.05 Closeout Submittals:
- A. Manuals: Furnish manuals for equipment where manuals are specified in the equipment specifications or are specified in Division 1.
- 1.06 Coordination:
- A. Coordinate the electrical work with the other trades, code authorities, utilities and the Facilities Manager & Architect.
- B. Contractor shall pay all inspection and other applicable fees and procure all permits necessary for the completion of this work.
- C. Where connections must be made to existing installations, properly schedule all the required work, including the power shutdown periods.
- D. When two trades join together in an area, make certain that no electrical work is omitted.
- 1.07 Job Conditions:
- A. Operations: Perform all work in compliance with Division 1
1. Keep the number and duration of power shutdown periods to a minimum.
 2. Show all proposed shutdowns and their expected duration on the construction schedule. Schedule and carry out shutdowns so as to cause the least disruption to operation of the Owner's facilities.
 3. Carry out shutdown only after the schedule has been approved, in writing, by the owner. Submit power interruption schedule 15 days prior to date of interruption.
- B. Construction Power: Unless otherwise noted in Division 1 of these specifications, contractor shall make all arrangements and provide all necessary facilities for temporary construction power from the owner's on site source. Energy costs shall be paid for by the Owner.
- 1.08 Safety and Indemnity:
- A. The Contractor is solely and completely responsible for conditions of the job site including safety of all persons and property during performance of the work. This requirement will apply continually and not be limited to normal working hours. The contractor shall provide and maintain throughout the work site proper safeguards including, but not limited to, enclosures, barriers, warning signs, lights, etc. to prevent accidental injury to people or damage to property.
- B. The Contractor performing work under this Division of the Specifications shall hold harmless, indemnify, and defend the Owner, the Engineer, their consultants, and each of their officers, agents and employees from any and all liability claims, losses, or damage arising out of or alleged to arise from bodily injury, sickness, or death of a person or persons and for all damages arising out of injury to or destruction of property arising directly or indirectly out of or in connection with the performance of the work under this Division of the Specifications, and from the Contractor's negligence in the performance of the work described in the construction contract documents, but not including liability that may be due to the sole negligence of the Owner, the Engineer, their Consultants or their officers, agents and employees.
- C. If a work area is encountered that contains hazardous materials, the contractor is advised to coordinate with the owner and it's abatement consultant for abatement of hazardous material by the Owner's Representative. "Hazardous materials" means any toxic substance regulated or controlled by OSHA, EPA, State of California or local rules, regulations and laws. Nothing herein shall be construed to create a liability for Asbestos Consulting Engineers regarding hazardous materials abatement measures, or discovery of hazardous materials.
- 1.09 Access Doors:
- A. The contractor shall install access panels as required where floors, walls or ceilings must be penetrated for access to electrical, control, fire alarm or other specified electrical devices. The minimum size panel shall be 14" x 14" in usable opening. Where access by a service person is required, minimum usable opening shall be 18" x 24".
- 1.10 Arc Flash:
- A. The contractor shall install a clearly visible arc flash warning to the inside door of all panelboards and industrial control panels, as well as to the front of all switchboards and motor control centers that are a part of this project.
- B. The warning shall have the following wording: line 1 "WARNING" (in large letters), line 2 "Potential Arc Flash Hazard" (in medium letters), line 3 & 4 "Appropriate Personal Protective Equipment and Tools required when working on this equipment".
- 1.11 All boxes and enclosures for emergency circuits shall be permanently marked with a readily visible red spray painted mark.

SECTION 26 05 26

GROUNDING

PART 1 - EXECUTION

- 1.1 Grounding and Bonding:
1. Grounding and bonding shall be as required by codes and local authorities.
 2. All electrical equipment shall be grounded, including, but not limited to, panel boards, terminal cabinets and outlet boxes.
 3. The ground pole of receptacles shall be connected to their outlet boxes by means of a copper ground wire connecting to a screw in the back of the box.
 4. A green insulated copper ground wire, sized to comply with codes, shall be installed in all conduit runs.
 5. All metal parts of pull boxes shall be grounded per code requirements.
 6. All ground conductors shall be green insulated copper.

SECTION 26 05 42

CONDUITS, RACEWAYS AND FITTINGS

PART 1 - EXECUTION

- 1.01 Conduit, Raceway and Fitting Installation:
1. For conduit runs exposed to weather provide rigid metal (GRS).
 2. For conduit run underground, in concrete or masonry block wall and under concrete slabs, install minimum 1/2" size nonmetallic (PVC) with PVC elbows. Where conduits transition from underground or under slab to above grade install wrapped rigid metal (GRS) elbows and risers.
 3. For conduit runs concealed in steel or wood framed walls or in ceiling spaces or exposed in interior spaces above six feet over the finished floor, install EMT.
 4. Flexible metal conduit shall be used only for the connection of recessed lighting fixtures and motor connections unless otherwise noted on the Drawings. Liquid-tight steel flexible conduit shall be used for motor connections.
 5. The minimum size raceway shall be 1/2-inch unless indicated otherwise on the Drawings.
 6. Installation shall comply with the CEC.
 7. From pull point to pull point, the sum of the angles of all of the bends and offset shall not exceed 360 degrees.
 8. Conduit Supports: Properly support all conduits as required by the NEC. Run all conduits concealed except where otherwise shown on the drawings.
 1. Exposed Conduits: Support exposed conduits within three feet of any equipment or device and at intervals not exceeding NEC requirements; wherever possible, group conduits together and support on common supports. Support exposed conduits fastened to the surface of the concrete by one-hole clamps, or with channels. Use conduit spacers with one-hole clamps.
 - a. Conduits attached to walls or columns shall be as unobtrusive as possible and shall avoid windows. Run all exposed conduits parallel or at right angles to building lines.
 - b. Group exposed conduits together. Arrange such conduits uniformly and neatly.
 2. Support all conduits within three feet of any junction box, coupling, bend or fixture.
 3. Support conduit risers in shafts with Unistrut Superslutz, or approved equal, channels and straps.
 4. Moisture Slabs: Provide in accordance with NEC paragraphs 230-8 and 300-5(g).
 5. Where PVC conduit transitions from underground to above grade, provide rigid steel 90's with risers. Rigid steel shall be half-lap wrapped with 20 mil tape and extend minimum 12" above grade. Provide a nylon pull cord in each empty raceway.
 6. Provide galvanized rigid steel factory fittings for galvanized rigid steel conduit.
 7. Slope all underground raceways to provide drainage; for example, slope conduit from equipment located inside a building to the pull box or manhole located outside the building.
 8. Conduits shall be blown out and swabbed prior to pulling wires.

SECTION 26 05 16

LINE VOLTAGE WIRE AND CABLE

PART 1 - PRODUCTS

- 1.01 Conductors:
1. Conductors shall be copper, type THHN/THWN/MTW oil and gasoline resistant, 90°C, 600 volt rated insulation.
 2. Conductors shall be stranded copper.
 3. Minimum power and control wire size shall be No. 12 AWG unless otherwise noted.
 4. All conductors used on this Project shall be of the same type and conductor material.
- 1.02 Terminations:
1. Manufacturer - Terminals as manufactured by T&B, Burndy or equal.
 2. Wire Termination: Stranded conductors shall be terminated in clamping type terminations which serve to contain all the strands of the conductor. Curling of a stranded conductor around a screw type terminal is not allowed. For screw type terminations, use a fork type stake-on termination on the stranded conductor. Use only a stake-on tool approved for the fork terminals selected.
 3. End Slacks - Heat shrink plastic caps of proper size for the wire on which used.
- 1.03 Tape:
1. Tape used for terminations and cable marking shall be compatible with the insulation and jacket of the cable and shall be of plastic material.

PART 2 - EXECUTION

- 2.01 Cable Installation:
1. Provide the required inserts, bolts and anchors, and securely attach all equipment and materials to their supports.
 2. Do all the cutting and patching necessary for the proper installation work and repair any damage done.
 3. Earthequake restraints: all electrical equipment, including conduits over 2 inches in diameter, shall be braced or anchored to resist a horizontal force acting in any direction as per CBC Section 1616A Title 24, part 2 and ASCE7-10, section 13.3 and 13.6 and table 13.6-1.
 4. Structural work: All core drilling, bolt anchor insertion, or cutting of existing structural concrete shall be approved by a California registered structural consulting engineer prior to the execution of any construction. At all floor slabs and structural concrete walls to be drilled, cut or bolt anchors inserted, the contractor shall find and mark all reinforcing in both faces located by means of x-ray, patch-ometer, or proof-ometer. Submit sketch showing location of rebar and proposed cuts, cores, or bolt anchor locations for approval.
- 2.02 Cable Terminations and Splices:
1. Splices - UL Listed wirenuts.
 2. Terminations - Shall comply with the following:
 1. Make up and form cable and orient terminals to minimize cable strain and stress on device being terminated on.
 2. Burnish oxide from conductor prior to inserting in oxide breaking compound filled terminal.
- 2.03 Circuit and Conductor Identification:
1. Color Coding - Provide color coding for all circuit conductors. Insulation color shall be white for neutrals and green for grounding conductors. Conductor colors shall be as follows:

VOLTAGE	Phase A	Phase B	Phase C	Neutral	Ground
208/120V	Black	Red	Blue	White	Green
 2. Color coding shall be in the conductor insulation for all conductors #10 AWG and smaller; for larger conductors, color shall be either in the insulation or in colored plastic tape applied at every location where the conductor is readily accessible.
 3. Circuit Identification - All underground distribution and service circuits shall be provided with plastic identification tags in each secondary box and at each termination. Tags shall identify the source transformer of the circuit and the building number(s) serviced by the circuit.

- 2.04 Field Tests:
1. All systems shall test free from short circuits and grounds, shall be free from mechanical and electrical defects, and shall show an insulation resistance between phase conductors and ground of not less than the requirements of the CEC. All circuits shall be tested for proper neutral connections.

SECTION 26 05 33

OUTLET, JUNCTION AND PULL BOXES

PART 1 - PRODUCTS

- 1.01 Outlet boxes, Junction and Pull boxes
1. Standard Outlet Boxes: Galvanized, steel, knock-out type of size and configuration best suited to the application indicated on the Drawings. Minimum box size shall be 4 inches square (octagon for most light fixtures) by 1-1/2 inches deep with mud rings as required. Boxes used with conduit "1" or larger shall be minimum 2" deep.
 2. Switch Boxes: Minimum box size shall be 4 inches square by 1-1/2 inches deep with mud rings as required. Install multiple switches in standard gang boxes with raised device covers suitable for the application indicated.
 3. Conduit boxes: Cadmium plated, cast iron alloy. Conduit bodies with threaded conduit hubs and neoprene gasketed, cast iron covers. Bodies shall be used to facilitate pulling of conductors or to make changes in conduit direction only. Splices are not permitted in conduit bodies. Crouse-Hinds Form 8 Condulets, Appleton Form 35 Unilets or equal.
 4. Sheet Metal Boxes: Use standard outlet or concrete ring boxes wherever possible; otherwise use a minimum 16 gauge galvanized sheet metal, NEMA 1 box sized to Code requirements with covers secured by cadmium plated machine screws located six inches on centers. Circle AW Products, Hoffman Engineering Company or equal.
 5. Flush Mounted Pull boxes and Junction boxes: Provide overlapping covers with flush head cover retaining screws, prime coated.

PART 2 - EXECUTION

- 2.01 Outlet Boxes
1. General:
 1. All outlet boxes shall finish flush with building walls, ceilings and floors except in mechanical and electrical rooms above accessible ceiling or where exposed work is called for on the Drawings.
 2. Install raised device covers (plate rings) on all switch and receptacle outlet boxes installed in masonry or stud walls or in furled, suspended or exposed concrete ceilings. Covers shall be of a depth to suit the wall or ceiling finish.
 3. Leave no unused openings in any box. Install close-up plugs as required to seal openings.
 2. Box Layout:
 1. Outlet boxes shall be installed at the locations and elevations shown on the drawings or specified herein. Make adjustments to locations as required by structural conditions and to suit coordination requirements of other trades.
 2. Locate switch outlet boxes on the latch side of doorways.
 3. Outlet boxes shall not be installed back to back nor shall through-wall boxes be permitted. Outlet boxes on opposite sides of a common wall shall be separated horizontally by at least one stud or vertical structural member.
 4. For outlets mounted above counters, benches or backslashes, coordinate location and mounting heights with built-in units. Adjust mounting height to agree with required location for equipment served.
 5. On fire rated walls, the total face area of the outlet boxes shall not exceed 100 square inches per 100 square feet of wall area.
 3. Supports:
 1. Outlet Boxes installed in metal stud walls shall be equipped with brackets designed for attaching directly to the studs or shall be mounted on specified box supports.
 2. Fixture outlet boxes installed in suspended ceiling of gypsum board or lath and plaster construction shall be mounted to 16 gauge metal channel bars attached to main ceiling runners.
 3. Fixture outlet boxes installed in suspended ceilings supporting acoustical tiles or panels shall be supported directly from the structure above where pendant mounting lighting fixture are to be installed on the box.
 4. Fixture Boxes above tile ceilings having exposed suspension systems shall be supported directly from the structure above.
 5. Outlet and/or junction boxes shall not be supported by grid or fixture hanger wires at any locations.

2.02 Junction And Pull Boxes

1. General:
 1. Install junction or pull boxes where required to limit bends in conduit runs to not more than 360 degrees or where pulling tension achieved would exceed the maximum allowable for the cable to be installed. Note that these boxes are not shown on the Drawings.
 2. Locate pull boxes and junction boxes in concealed locations above accessible ceilings or exposed in electrical rooms, utility rooms or storage areas.
 3. Install raised covers (plate rings) on boxes in stud walls or in furled, suspended or exposed concrete ceilings. Covers shall be of a depth to suit the wall or ceiling finish.
 4. Leave no unused openings in any box. Install close-up plugs as required to seal openings.
 5. Identify circuit numbers and panel on cover of junction box with black marker pen.
2. Box Layouts:
 1. Boxes above hung ceilings having concealed suspension systems shall be located adjacent to openings for removable recessed lighting fixtures.
3. Supports:
 1. Boxes installed in metal stud walls shall be equipped with brackets designed for attaching directly to the studs or shall be mounted on specified box supports.
 2. Boxes installed in suspended ceilings of gypsum board or lath and plaster construction shall be mounted to 16 gauge metal channel bars attached to main ceiling runners.
 3. Boxes installed in suspended ceilings supporting acoustical tiles or panels shall be supported directly from the structure above.
 4. Boxes mounted above suspended acoustical tile ceilings having exposed suspension systems shall be supported directly from the structure above.

SECTION 26 28 16

CIRCUIT BREAKERS

PART 1 - PRODUCTS

- 1.01 Circuit Breaker: Each circuit breaker shall consist of the following:
1. A. Terminals shall be copper with an OVE center toggle type mechanism, providing quick-make, quick-break action. Each circuit breaker shall have a permanent trip unit containing individual thermal and magnetic trip elements in each pole. Multiple circuit breakers shall have variable magnetic trip elements which are set by a single adjustment to assure uniform tripping characteristics in each pole. Circuit breakers shall be of the bolt-on type unless otherwise noted.
 2. B. Breaker shall be calibrated for operation in an ambient temperature of 40°C.
 3. C. Each circuit breaker shall have trip indication by handle position and shall be trip-free.
 4. D. Three pole breakers shall be common trip.
 5. E. The circuit breakers shall be constructed to accommodate the supply connection at either end of the circuit breaker. Circuit breaker shall be suitable for mounting and operation in any position.
 6. F. Breaker shall be rated as shown on Drawings.
 7. G. Circuit breaker and/or Fuse/circuit breaker combinations for series connected interrupting ratings shall be listed by UL as recognized component combinations for use in the end-use equipment in which it is installed. Any series rated combination used shall be marked on the end use equipment per CEC section 110-22.
 8. H. Breakers shall be UL listed. Circuit breakers shall have removable lugs.
 9. I. Lugs shall be UL listed for copper and aluminum conductors.
 10. J. Breakers shall be UL listed for installation of mechanical screw type lugs.
 11. K. Circuit breakers serving HACR rated loads shall be HACR type. Circuit breakers serving other motor loads shall be motor rated.
 12. L. The requirements for "current limiting" ("CL"), shall be of the non-fused type; Square D I-Limiter, Westinghouse Limit-R, or ITE Sentron only.

SECTION 26 32 13

STANDBY POWER GENERATOR SYSTEM

PART 1 - GENERAL

- 1.01 RELATED DOCUMENTS:
1. A. The requirements for General Conditions, Supplementary General Conditions, and Division 1 General Requirements apply to the work of this Section.
- 1.02 DESCRIPTION OF WORK:
1. Work included in this Section: Emergency Generator and Automatic transfer switch systems.
 2. Related work included in other Sections: All other Sections of Division 26.
- 1.03 SUBMITTALS
1. A. Engine.
 2. B. Generator.
 3. C. Automatic Transfer Switch.
 4. D. Schematic wiring diagrams.
 5. E. Dimension drawing for actual unit being provided.
 6. F. Remote annunciator panel.
 7. G. Submittal heat rate, fuel consumption, and emissions data necessary to apply for and receive Authority to Construct and Permit to operate from local City/County Air Pollution Control District. Generator must include BACT as determined by local City/County Air Resource District.
- 1.04 PRODUCT HANDLING:
1. All material shall be carefully loaded, crated, or otherwise protected for shipment.
 2. B. The generator shall be protected from weather and theft.
 3. C. Inlets and outlets shall be blanked off or plugged with metal caps or covers properly secured before shipment.

- 1.05 WARRANTY:
1. A. The complete standby electric power system, including engine-generator set, shall be warranted for a period of five (5) year or fifteen hundred (1500) operating hours, whichever occurs first, from the date of initial start-up. Multiple warranties for individual components (engine, alternator, controls, etc.) will not be acceptable. Satisfactory warranty documents must be provided. In the judgment of the specifying authority, the manufacturer supplying the warranty for the complete system must have necessary financial strength and technical expertise to warrant the system. The manufacturer shall be responsible for the maintenance and service on equipment similar to that specified. A service agreement shall be available and shall include system operation under simulated operating conditions, adjustment to the generator, transfer switch, and switchgear controls as required, and certification in the owner's maintenance log of repairs made and proper functioning of all systems.

PART 2 - PRODUCTS

- 2.01 EQUIPMENT:
1. A. The natural gas generator set shall be Generac 60G035 or equal with a K0035124V21 alternator. It shall provide 35kw, 48kVA when operating at 120/208 volts, 3-Phase, 8 power factor. The generator sets shall be of the rated rating while operating in an ambient condition of 50°C (122°F) and 500 feet above sea level.
 2. B. The generator set shall be capable of starting motor loads of 200 kVA inrush, with a maximum voltage drop of 35%.
 3. C. Vibration isolators shall be provided between the engine-generator and heavy-duty steel base.
 4. D. The engine - generator shall be enclosed in a weatherproof enclosure.
- 2.02 ENGINE:
1. A. The 300-cubic-inch-displacement engine shall deliver a minimum of 49 hp at a governed speed of 1800 rpm. The engine shall be equipped with the following:
 1. An isochronous governor capable of +/- 0.5% steady-state frequency regulation.
 2. 12 Volt positive engagement solenoid shifting motor.
 3. 37-Ampere minimum automatic battery charging alternator with solid-state voltage regulation.
 4. Positive displacement, full pressure lubrication oil pump, cartridge oil filters, dipstick, and oil drain.
 5. Dry-type replaceable air cleaner elements for normal applications.
 2. B. The naturally aspirated engine shall be fueled with natural vapor and be supplied with a unit-mounted electric solenoid fuel shut-off valve, flexible fuel line, and secondary fuel pressure regulator.
 3. C. The engine shall have a minimum of 6 cylinders, and be liquid-cooled by a unit-mounted radiator, blower fan, water pump, and thermostat. This system shall properly cool the engine with up to 0.5 inches H2O static pressure on the fan in an ambient temperature up to 122°F/50°C.
- 2.03 GENERATOR:
1. A. The alternator shall be salient-pole, brushless, 12-lead reconnectable, self-ventilated of drip-proof construction with amortisseur rotor windings and skewed stator for smooth voltage waveform. The insulation shall meet the NEMA standard (MG1-22, 40 and 16,40) for Class H and be insulated with epoxy varnish to be long-life resistant per MIL-1-24092. Temperature rise of the rotor and stator shall be limited to NEMA Class F ratings. The excitation system shall be of brushless construction controlled by a solid-state voltage regulator capable of maintaining voltage within +/- 2% at any constant load from 0% to 100% of rating. The regulator must be isolated to prevent tracking when connected to SCR loads, and provide individual adjustments for voltage range, stability and volts-per-hertz operations; and be protected from the environment by conformal coating.
 2. B. The generator set shall meet the transient performance requirements of ISO 8528-5, level G-2.
 3. C. The generator shall be inherently capable of sustaining at least 250% of rated current for at least 10 seconds under a 3-phase symmetrical short circuit without the addition of separate current support devices.
 4. D. The generator, having a single maintenance-free bearing, shall be directly connected to the flywheel housing with a semi-flexible coupling between the rotor and the flywheel.

- 2.04 CONTROLLER:
1. A. Set-mounted controller capable of facing right, left, or rear, shall be vibration isolated on the generator enclosure. The controller shall be capable of being remote-mounted. The microprocessor control board shall be moisture proof and capable of operation from -40°C to 85°C. Relays will only be acceptable in high-current circuits.
 2. B. Circuitry shall be of plug-in design for quick replacement. Controller shall be equipped to accept a plug-in device capable of allowing maintenance personnel to test controller performance without operating the engine. The controller shall include the following features:
 1. Fused DC circuit.
 2. Complete 2-wire start/stop control, which shall operate on closure of a remote contact.
 3. Speed sensing and a second independent starter motor disengagement systems shall protect against starter engagement with a moving flywheel. Battery charging alternator voltage will not be acceptable for this purpose.
 4. The starting system shall be designed for restarting in the event of a false engine start, by permitting the engine to completely stop and then re-engage the starter.
 5. Cranking cycle with 15-second ON and OFF cranking periods.
 6. Overcrank protection designed to open the cranking circuit after 75 seconds if the engine fails to start.
 7. Circuitry to shut down the engine when signal for high coolant temperature, low oil pressure, or over-speed are received.
 8. Engine cool-down timer factory set at 5 minutes to permit unloaded running of the standby set after transfer of the load to normal.
 9. 3-position (AUTOMATIC-OFF-TEST) selector switch. In the TEST position, the engine shall start and run regardless of the position of the remote starting controls. In the Automatic position, the engine shall start when contacts in the remote control circuit close and stop 5 minutes after those contacts open. In the OFF position, the engine shall not start even though the remote start contacts close. This position shall also provide for immediate shutdown in case of an emergency. Reset of any fault shall also be accomplished by putting the switch to the OFF position.
 10. Alarm horn with silencer switch per NFPA 110.
 11. Flashing indicator lights to signal the following shall be included:
 - a. Not-in-Auto (flashing red)
 - b. Overcrank (red)
 - c. Emergency Stop (red)
 - d. High Engine Temperature (red)
 - e. Overspeed (red)
 - f. Low Oil Pressure (red)
 - g. Battery Charger Malfunction (red)
 - h. Low Battery Voltage (red)
 - i. Low Fuel (red)
 - j. Auxiliary Preamplifier (yellow)
 - k. Auxiliary Fault (red)
 - l. System Ready (green)
 12. Test button for indicating lights.
 13. Terminals shall be provided for each indicating light above, plus additional terminals for common fault and common prealarm.

2.05 INSTRUMENT PANEL:

1. The instrument panel shall include the following:
 1. Dual range voltmeter 3 1/2-inch, +/- 2% accuracy.
 2. Dual range ammeter 3 1/2-inch, +/- 2% accuracy.
 3. Voltmeter-ammeter phase selector switch.
 4. Lights to indicate high or low meter scale.
 5. Direct reading pointer type frequency meter 3 1/2-inch, 0.5% accuracy, 45 to 65 Hz scale.
 6. Panel-illuminating lights.
 7. Battery charging voltmeter.
 8. Coolant temperature gauge.
 9. Oil pressure gauge.
 10. Running-time meter.
 11. Voltage-adjust rheostat.

2.06 ACCESSORIES:

1. A. Line circuit breakers 400 amperes, 400 amps sensor, 3 poles, 600 volt rated, UL molded case type, generator mounted.
2. B. Engine block heater. Thermally controlled and sized to maintain manufacturers recommended engine coolant temperature to meet the start-up requirements of NFPA-110, Level 1.
3. C. A testable line current sensing breaker with inverse time versus current response shall be furnished which protects the generator from damage due to its own high current capability. This breaker shall not trip within the 10 seconds specified above to allow selective tripping of down-stream fuses or circuit breakers under a fault condition. This breaker shall not automatically reset, preventing restoration of voltage if maintenance is being performed. A field current-sensing breaker will not be acceptable.
4. D. Weather housings shall be constructed of rugged steel, cleaned, phosphated, and electrocoat painted inside and out with rust inhibiting primer and exterior coat of the manufacturer standard color. Side panels will be lockable and easily removed for servicing.
5. E. Battery rack, and battery cables, capable of holding the manufacturer's recommended batteries, shall be supplied.
6. F. A 12-volt-antimony battery(yes) capable of delivering the manufacturer's recommended minimum cold-cranking amps required at 0°F, per SAE Standard J-537, shall be supplied.
7. G



Engineering Submittal for Approval

Chualar Union School District Stationary Standby Generator



35kW Rating, 120/208V, 3 Phase

Submitted Equipment
Released for Production By:

Signature

Date

Print Name

CONTACTS



DISTRIBUTOR:

West Coast Energy Systems LLC
7100 S. Longe Street #300 Stockton, CA 95206
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Kathleen Beresh
Environmental Permitting Manager
kberesh@energysystems.com
253-292-6499

Customer
Yen Le
Chualar Union School District
yle@chualarUSD.org
831-679-2504



Bill of Materials

Quantity 1 - Generac Industrial gaseous engine-driven generator, 4.5L in-line 4 cylinder engine, consisting of the following features and accessories:

- Stationary Emergency-Standby rated
- 35 kW rating, wired for 120/208 VAC three phase, 60 Hz
- Brushless Excitation
- MLCB, 80% rated thermal-magnetic
 - 100 Amp
- **Natural Gas fuel system**
- Level 2 Acoustic Enclosure, Steel
 - Industrial Grey Baked-On Powder Coat Finish
- EPA Certified
- Ultra-Low Emissions
- cETLus
- Power Zone Pro Digital Control Panel for Single Generators
 - Meets NFPA 99 and 110 requirements
 - Temp Range -40 to +60 degrees C
 - Humidity 2 – 95% (Non Condensing)
 - UL6200
 - C-ETL-US
 - CE
 - IEC801 (Radiated Emissions, Susceptibility, and Surge Immunity)
 - 4.3" Resistive Color Touchscreen
 - Webserver (via Power Zone Gateway using ethernet)
 - IP65 (front)
 - Auto/Manual/Off key switch, Alarm Indication, Not in Auto Indication, audible alarm, emergency stop switch
 - Dual Core Digital Microprocessor
 - RS485, Ethernet and CANbus ports
 - All engine sensors are 4-20ma for minimal interference
 - Sensors: Oil Pressure, optional Oil Temp, Coolant Temp and Level, Fuel Level/Pressure (where applicable), Engine Speed, DC Battery Voltage, Run-time Hours, Generator Voltages, Amps, Frequency, Power, Power Factor
 - Alarm Status: Low or High AC Voltage, Low or High Battery Voltage, Low or High Frequency, Pre-low or Low Oil Pressure, Pre-high or High Oil Temp (optional), Low Water Level and Temp, Pre-high or High Engine Temp, High, Low, and Critical-low Fuel Level/Pressure (where applicable), Overcrank, Over and Under Speed, Unit Not in Automatic
 - Programmable I/O
 - Built-in PLC for special applications
 - Engine function monitoring and control:

- Full range standby operation; programmable auto crank, Emergency Stop, Auto-Off-Manual switch
- Isochronous Governor
 - 0.25% digital frequency regulation with: soft-start ramping - adjustable, gain - adjustable, overshoot limit - adjustable
- 3 Phase RMS Voltage Sensing
 - +/-0.5% digital voltage regulation with: soft-start voltage ramping - adjustable, loss of sensing protection - adjustable, negative power limit - adjustable, Hi/Lo voltage limit - adjustable, V/F slope and gain - adjustable, fault protection
- Service reminders, trending, fault history (alarm log)
- I2T function for full generator protection
- Selectable low-speed exercise
- 2-wire start controls for any 2-wire transfer switch
- 21 Light Remote Annunciator
 - Surface-Mount
 - Integral 8 Function Relay Board
- Remote Emergency Stop Switch, Surface-Mount, shipped loose
- 90 AH, 700 CCA Group 27F Battery, with rack, installed
- Block Heater, 1500 watt
- Std Heavy Duty Air Cleaner
- Battery Charger, 10 Amp, NFPA 110 compliant, installed
- 120V GFCI and 240V Outlet
- Baseframe Bottom Cover Plates, Aluminum, for rodent protection and airflow control
- Engine Run Relay, 10 Amp
- **Flex Fuel Hose, shipped loose**
- Std set of 3 Manuals
- Standard 2-Year Limited Warranty
- IBC Seismic Certified

Quantity 1 - TX Series Automatic Transfer Switch consisting of the following features and accessories:

- 200 Amp, 3 pole, 120/208 VAC three phase, 60 Hz, with 2 or 3-Wire Start Circuit
 - Utility Voltage Sensing Controls:
 - Adjustable Drop-out and Pick-up
 - Adjustable Utility Interrupt Delay
 - Adjustable Logic Controls:
 - Minimum Standby Voltage
 - Minimum Standby Frequency
 - Engine Warmup
 - Return to Utility
 - Engine Cooldown
 - Transfer on Exercise
- 3 Owner's Manuals
- Double Set of Form C Aux Cont
- IBC Seismic Certified
- Any Breaker (3 Cycle)
- Withstand and Close-On Rating - 200kA Fuse Rating
- Withstand and Close-On Rating - 22kA Any Breaker

- Withstand and Close-On Rating - 42kA Specific Breaker
- Enclosure Heater
- CSA - C22.2 No.178
- UL Listed 1008 by ETL
- Controller Cover, Padlockable, Black
- NEMA 3R Enclosure
- Non Service Entrance Rated
- Time Delay Neutral
- Standard two year basic warranty

Quantity 1 – Start Up and Training

- Generator Voltage and Current Calibrations
- 2 Hour Resistive Load Bank Testing with Report
- Fire Alarm Contacts Programming (Gen Running, Common Alarm, Low Fuel, Not in Auto, Leak Detection)
- ATS Programming, Voltage Calibration, Phase Rotation Check, Setting Generator Exercise Timer
- End User Training On-Site During Time of Start Up

GENERAL COMMENTS:

1. ENSURE AUTOMATIC TRANSFER SWITCH HAS LOCKABLE CABINET SO GENERAL PUBLIC CANNOT ACCESS.
2. REVIEW OF EXHAUST/NATURAL GAS INPUT BY OTHERS.

 AURUM CONSULTING ENGINEERS, INC. The review is only to check for general conformance with the information given in the drawings and specifications. The review and/or comments do not relieve the contractor from compliance with the intentions and requirements of the contract document.	SUBMITTAL REVIEW	
	☒ NO EXCEPTIONS TAKEN	
	☐ REVISE AND SUBMIT	
	☐ MAKE CORRECTIONS NOTED	
	☐ REJECTED	
BY: <u>Martin Serrano</u> DATE: 6-20-25		

This review does not relieve Contractor from compliance with the requirements and intentions of the drawings and specifications. The review is only to check general conformance with the design concept and information given in the contract documents.	No Exceptions Taken	NET
	Make Corrections Noted	MCN
	Resubmittal not required	MCN
	Revise and Resubmit	RR
	Rejected	RJ
	Not Reviewed	NR
Cypress Engineering Group	Date: 6.20.2025	
	By: Martin Serrano, PE	

Comments

1. Install the generator per NFPA 37 clearance requirements.

Standby Power Rating
35 kW, 44 kVA, 60 Hz



*Assembled in the USA using domestic and foreign parts



Image used for illustration purposes only

Codes and Standards

Not all codes and standards apply to all configurations. Contact factory for details.



UL2200, UL6200, UL1236, UL489



CSA C22.2



DIN

BS5514 and DIN 6271



SAE J1349



NFPA 37, 70, 99, 110



NEC700, 701, 702, 708



NEMA ICS10, MG1, 250, ICS6, AB1



ANSI C62.41



IBC 2009, CBC 2010, IBC 2012,
ASCE 7-05, ASCE 7-10, ICC-ES
AC-156 (2012)



Powering Ahead

Generac provides superior quality by designing and manufacturing most of its generator components, such as alternators, enclosures, control systems and communications software. Generac also makes its own spark-ignited engines, and you'll find them on every Generac gaseous-fueled generator. We engineer and manufacture them from the block up — all at our facilities throughout Wisconsin. Applying natural gas and LP-fueled engines to generators requires advanced engineering expertise for reliability, durability and necessary performance. By designing specifically for these dry, hotter-burning fuels, the engines last longer and require less maintenance. Building our own engines also means we control every step of the supply chain and delivery process, so you benefit from single-source responsibility.

Plus, Generac Industrial Power's distribution network provides all parts and service so you don't have to deal with third-party suppliers. It all leads to a positive owner experience and higher confidence level. Generac spark-ignited engines give you more options in commercial and industrial generator applications as well as extended run time from utility-supplied natural gas.

STANDARD FEATURES

ENGINE SYSTEM

- Oil Drain Extension
- Heavy Duty Air Cleaner
- Level 1 Fan and Belt Guards (Open Set Only)
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil and Coolant
- Critical Silencer
- Oil Temperature Sender with Alarm
- Air Filter Restriction Indicator

FUEL SYSTEM

- Stainless Steel Flexible Fuel Lines

COOLING SYSTEM

- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Factory-Installed Radiator
- 50/50 Ethylene Glycol Antifreeze
- Radiator Drain Extension

ELECTRICAL SYSTEM

- Battery Charging Alternator
- Battery Cables
- Battery Tray
- Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor

ALTERNATOR SYSTEM

- UL2200 GENprotect™
- Class H Insulation Material
- 2/3 Pitch
- Skewed Stator
- Brushless Excitation
- Sealed Bearing
- Full Load Capacity Alternator

GENERATOR SET

- Internal Genset Vibration Isolation
- Separation of Circuits - High/Low Voltage
- Separation of Circuits - Multiple Breakers
- Wrapped Exhaust Piping
- Standard Factory Testing
- 2 Year Limited Warranty (Standby and Demand Response Rated Units)

ENCLOSURE (If Selected)

- Rust-Proof Fasteners with Nylon Washers to Protect Finish
- High Performance Sound-Absorbing Material (Sound Attenuated Enclosures)
- Gasketed Doors
- Upward Facing Discharge Hoods (Radiator and Exhaust)
- Stainless Steel Lift Off Door Hinges
- Stainless Steel Lockable Handles
- RhinoCoat™ - Textured Polyester Powder Coat Paint

CONTROL SYSTEM



Power Zone® Pro Controller

- NFPA 110 Level 1 Compliant
- Engine Protective Functions
- Alternator Protective Functions
- Digital Engine Governor Control
- Digital Voltage Regulator
- Multiple Programmable Inputs and Outputs
- Remote Display Capability

Power Zone® Pro Controller Continued

- Remote Communication via Modbus® RTU, Modbus TCP/IP, and Ethernet 10/100
- Alarm and Event Logging with Real Time Stamping
- Expandable Analog and Digital Inputs and Outputs
- Remote Wireless Software Update Capable
- Built-In Programmable Logic Eliminates the Need for External Controllers Under Most Conditions
- Programmable I/O Channel Properties
- Built-In Diagnostics

Alarms and Warnings

- High/Low Oil Pressure
- High/Low Coolant Level
- High/Low Coolant Temperature
- Sender/Sensor Failure
- High/Low Oil Temperature
- Over Total kW
- Over/Under Speed
- Over/Under Voltage
- Over/Under Frequency
- Over Current
- High/Low Battery Voltage

Alarms and Warnings Continued

- Battery Charger Current
- Phase to Phase and Phase to Neutral Short Circuits (I²T Algorithm)
- 4.3 Inch Color Touch Screen Display
- Resistive Color Touch Screen
- Easily Identifiable Icons
- Multi-Lingual
- On Screen Editable Parameters
- Key Function Monitoring
- Three Phase Voltage, Amperage, kW, kVA, and kVAr
- Selectable Line to Line or Line to Neutral Measurements
- Frequency
- Engine Speed
- Engine Coolant Temperature
- Engine Oil Temperature
- Battery Voltage
- Hourmeter
- Warning and Alarm Indication
- Diagnostics
- Maintenance Events/Information

APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make	Generac
Cylinder #	4
Type	In-Line
Displacement - in ³ (L)	270.4 (4.43)
Bore - in (mm)	4.5 (114.3)
Stroke - in (mm)	4.25 (107.95)
Compression Ratio	9.94:1
Intake Air Method	Naturally Aspirated
Number of Main Bearings	5
Connecting Rods	Forged Steel, Fractured Split
Cylinder Head	Cast Iron
Cylinder Liners	Cast Iron
Ignition	Coil Near Plug Solid State Inductive
Piston Type	Cast Aluminum Flat Top
Crankshaft Type	Forged Steel
Lifter Type	Hydraulic
Intake Valve Material	Stainless Steel
Exhaust Valve Material	Stainless Steel
Hardened Valve Seats	High Steel Iron Alloy

Engine Governing

Governor	Electronic
Frequency Regulation (Steady State)	± 0.25

Lubrication System

Oil Pump	Gear Driving
Oil Filter Type	Full-Flow Spin-On Cartridge
Crankcase Capacity - qt (L)	21 (20)

Cooling System

Cooling System Type	Pressurized Closed
Fan Type	Pusher
Fan Speed (rpm)	2,100
Fan Diameter - in (mm)	20 (508)

Fuel System

Fuel Type	Natural Gas, Propane
Fuel Control	Electronic
Fuel Shutoff	Generac
Operating Fuel Pressure (NG) - in H ₂ O (kPa)	5 - 14 (1.2 - 3.5)
Operating Fuel Pressure (LP) - in H ₂ O (kPa)	7 - 14 (1.7 - 3.5)

*When designing the external fuel system, assume a 20% safety factor to the upper and lower limit of the specified fuel pressure range to account for site variation and measurement at the generator test port. Refer to Generac Document 10000046207, latest rev., for proper gas supply design guidelines, or contact factory for details.

Engine Electrical System

System Voltage	12 VDC
Battery Charger Alternator	35 A
Battery Size	See Battery Index 0161970SBY
Battery Voltage	12 VDC
Ground Polarity	Negative (-)

ALTERNATOR SPECIFICATIONS

Standard Model	K0035124Y21
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion (THD)	<5% (3-Phase Only)
Telephone Interference Factor (TIF)	<50

Standard Excitation	Synchronous Brushless
Bearings	Sealed Ball
Coupling	Direct via Flexible Disc
Prototype Short Circuit Test	Yes
Voltage Regulator Type	Full Digital
Number of Sensed Phases	All
Regulation Accuracy (Steady State)	± 0.25%

OPERATING DATA

POWER RATINGS

	Standby	
Single-Phase 120/240 VAC @1.0pf	35 kW/35 kVA	Amps: 146
Three-Phase 120/208 VAC @0.8pf	35 kW/44 kVA	Amps: 122
Three-Phase 120/240 VAC @0.8pf	35 kW/44 kVA	Amps: 105
Three-Phase 277/480 VAC @0.8pf	35 kW/44 kVA	Amps: 53
Three-Phase 346/600 VAC @0.8pf	35 kW/44 kVA	Amps: 42

STARTING CAPABILITIES (skVA)

277/480 VAC	30%	208/240 VAC	30%
K0035124Y21	61	K0035124Y21	46
K0060124Y21	124	K0060124Y21	95

FUEL CONSUMPTION RATES*

Natural Gas – scfh (m³/hr)		LP Vapor– scfh (m³/hr)	
Percent Load	Standby	Percent Load	Standby
25%	184 (5.2)	25%	98 (2.8)
50%	273 (7.7)	50%	129 (3.7)
75%	361 (10.2)	75%	159 (4.5)
100%	446 (12.6)	100%	191 (5.4)

1.5X maximum site rated fuel consumption should be used for gas supply design practices. Refer to Generac 10000046207, latest rev., for more information or contact factory for details.

COOLING

	Standby	
Air Flow (Fan Air Flow Across Radiator) - Open Set	cfm (m³/min)	3,511 (99.4)
Coolant Flow	gpm (Lpm)	37.7 (142.7)
Coolant System Capacity	gal (L)	3 (11.4)
Maximum Operating Ambient Temperature	°F (°C)	122 (50)
Maximum Operating Ambient Temperature (Before Derate)	See Bulletin No. 0199270SSD	
Maximum Additional Radiator Backpressure	in H ₂ O (kPa)	0.5 (0.12)

COMBUSTION AIR REQUIREMENTS

	Standby
Flow at Rated Power - cfm (m³/min)	74 (2.1)

ENGINE

	Standby	
Rated Engine Speed: RPM	rpm	1,800
Horsepower at Rated kW**	hp	54
Piston Speed	ft/min (m/min)	1,275 (389)
BMEP	psi (kPa)	88 (606)

** Refer to "Emissions Data Sheet" for maximum bHP for EPA and SCAQMD permitting purposes.

EXHAUST

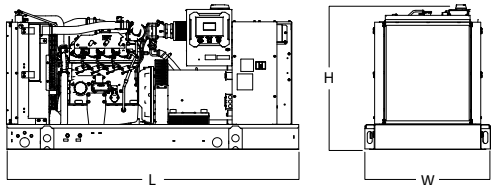
	Standby	
Exhaust Flow (Rated Output)	cfm (m³/min)	214.2 (6.1)
Maximum Exhaust Backpressure (Post Silencer)	in Hg (Kpa)	0.75 (2.54)
Exhaust Temperature (Rated Output)	°F (°C)	1,342 (728)

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions.

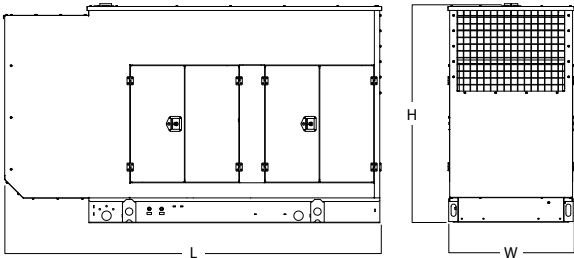
Please contact a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with BS5514 and DIN6271 standards.

Standby - See Bulletin 0187500SSB

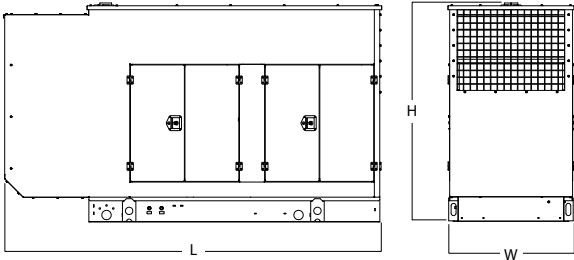
DIMENSIONS AND WEIGHTS*



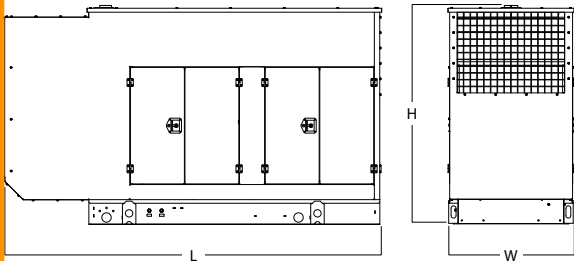
OPEN SET		
L x W x H - in (mm)	78.1 (1,981) x 37.3 (946) x 44.4 (1,128)	
Weight lbs (kg)	1,675 - 1,748 (760 - 793)	



WEATHER PROTECTED ENCLOSURE		
L x W x H - in (mm)	94.8 (2,409) x 38.0 (965) x 57.5 (1,461)	
Weight lbs (kg)	Steel: 2,160 - 2,233 (980 - 1,013)	
	Aluminum: 1,894 - 1,965 (859 - 891)	



LEVEL 1 SOUND ATTENUATED ENCLOSURE		
L x W x H - in (mm)	94.8 (2,408) x 38.0 (965) x 57.5 (1,461)	
Weight lbs (kg)	Steel: 2,258 - 2,329 (1,024 - 1,056)	
	Aluminum: 1,987 - 2,061 (901 - 935)	



LEVEL 2 SOUND ATTENUATED ENCLOSURE		
L x W x H - in (mm)	94.8 (2,409) x 38.0 (965) x 57.5 (1,461)	
Weight lbs (kg)	Steel: 2,341 - 2,414 (1,062 - 1,095)	
	Aluminum: 2,071 - 2,144 (939 - 972)	

* All measurements are approximate and for estimation purposes only.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings

POWER ZONE® CONTROL PLATFORM

Power Zone® Pro Controller and Gateway



Features - Power Zone® Pro Controller

The Generac Power Zone® Digital Control Platform is a fully integrated and multipurpose family of controllers for Generac's generator systems.

Standard Single Unit Control Features*

- Engine Protective Functions
- Alternator Protective Functions
- Digital Engine Governor Control
- Digital Voltage Regulator
- 4.3" Color Touch Screen
- Multi-Lingual
- Multiple Programmable Inputs and Outputs
- Remote Display Capability
- Remote Communication via Modbus® RTU, Modbus TCP/IP, Ethernet 10/100, SNMP
- Alarm and Event Logging with Real Time Stamping
- Expandable Analog and Digital Inputs and Outputs
- Wireless Software Update via Remote Computer
- BMS and Remote Telemetry
- E-mail Notifications for Alarm Conditions and Log Data**

Standard System Control Features

- Built-In PLC Logic Eliminates the Need for External Controllers Under Most Conditions
- Programmable I/O Channel Properties
- Built-In Diagnostics

Qualification Testing

- Life Test in Environmental Chamber
- Temperature Rating -40° C to +60° C
- Vibration Tested and Protected

Voltage Regulation (Single or Three Phase Module Options)

- Digital Control
- Single Phase or Three Phase RMS Sensing with Loss of Sensing Protection†
- Variable V/F Slope Settings and Adjustable Gains
- Negative Power Limit
- Soft Start Ramping
- Components Encapsulated for Total Protection
- Fault Protection (I²T Function and GFI)‡

PLC (Built-In Programmable Logic Controller)

- Configurable Through Software Tool
- Customer Configurable for Non-Standard Options
- Up to 8 Simultaneously Running PLC Programs or in Sequence

Communication Ports

- 1 - RS-485 - Power Zone Gateway
- 1 - RS-485 - Remote Annunciator Panel/Remote Relay Panel
- 2 - CANBus - Power Zone® Accessories

* For SG and SD Models

** Requires Use of a Network Accessible Authenticated or Open SMTP Server

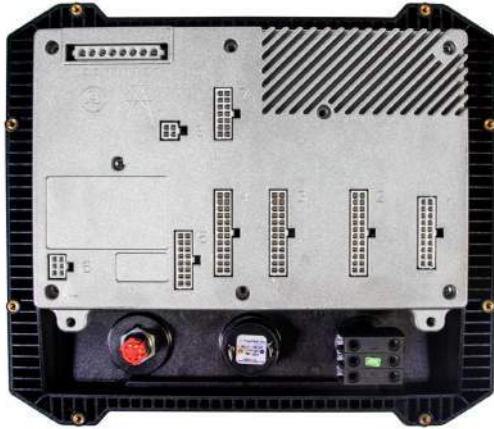
† With Select Voltage Regulators

‡ Configurable Option

POWER ZONE® CONTROL PLATFORM

Power Zone® Pro Controller and Gateway

Features - Power Zone® Pro Controller (Continued)



Display (Touch Screen)

- LCD 4.3" Color Touch Screen
- Easy Identifiable Icons
- Multi-Lingual
- IP65 Rated
- On Screen Editable Parameters
- Key Function Monitoring
 - Three Phase Voltage, Amperage, kW, kVa, and kVAr
 - Selectable Line to Line or Line to Neutral Measurements
 - Frequency
 - RPM
 - Engine Coolant Temperature
 - Engine Oil Pressure
 - Engine Oil Temperature
 - Battery Voltage
 - Warning and Alarm Indication
 - Diagnostics
 - Maintenance Events/Information
 - Hourmeter

Codes and Standards

- UL 6200
- UL 2200
- CSA STD C22.2 No. 14
- IEC/EN 61010-1
- NFPA 110 (Software Programmable for Level 1 or 2)[§]

Connections^{§§}

- 21 - Digital Outputs (Open Drain, 35VDC, 1.7A)
 - 7 Fast PWM Capable
 - 1 High Current
- 15 - Digital Inputs Maximum
 - 7 Fast PWM Capable
- 12 - General Purpose Analog Inputs
- 2 - Special Purpose Analog Inputs
- 2 - Analog Outputs (0-10 VDC)
- 1 - E-Stop Relay Output
- 3 - Current Sense Inputs
- 8 - High Voltage Sense Inputs (Three Phase + Neutral)
- 1 - Magnetic Pickup Input
- 1 - Coolant Sensor Input
- 2 - CANBus Channels
- 1 - External RS-485 Port
- 2 - Switchable 12VDC Power Outputs

Protections

- High/Low Oil Pressure
- High/Low Coolant Level
- High/Low Coolant Temperature
- Sender/Sensor Failure
- High/Low Oil Temperature
- Over/Under Speed
- Over/Under Voltage
- Over/Under Frequency
- Over Current
- Over Total kW
- High/Low Battery Voltage
- Battery Charger Current
- Phase to Phase and Phase to Neutral Short Circuits (I²T Algorithm and GFI)

Control Panel and Touch Screen

- Auto/Off/Manual
 - Operation Through Key Switch
 - Indication Through Touch Screen
- Alarm Acknowledge Soft Key
- Audible Alarm and Silence
- Emergency Stop
- Not in Auto Indication Through Touch Screen

[§] With Additional Optional Remote Annunciator
^{§§} Actual I/O May Vary Due to Configuration

POWER ZONE® CONTROL PLATFORM

Power Zone® Pro Controller and Gateway

Features - Power Zone® Gateway



The Power Zone® Connectivity Gateway is a user interface for the Power Zone® system that provides external communication via ethernet to a connected device such as a computer, smart phone or tablet. This external communication allows the user to configure or monitor generator parameters, including building management system connections.

Communications

- 1 - Ethernet Port
- 1 - RS-485 Port - Input to Main Controller
- 1 - RS-485 Port - Building Management
- 2 - Type A USB Port

Power Supply Requirements

- Voltage: 11-13 VDC (12 VDC Nominal)
- Usage: 1.1A (Maximum During Power Up)
- Cable: 2 Wires

Environmental

- Temperature Rating -40°C to +60°C
- UL Type 1 Enclosure
- 5% to 90% Non-condensing Humidity

Codes and Standards

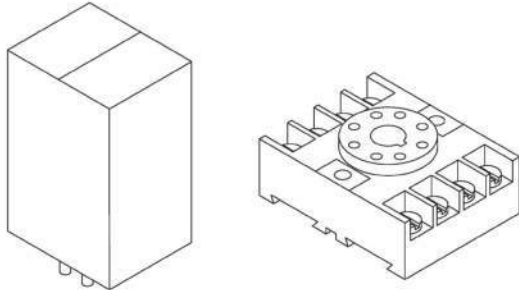
- UL 6200
- CSA STD 222 No. 61010-1
- C-ETL-US
- IEC/EN 61010-1

Features[°]

- Auto/Off/Manual Indication
- Not in Auto Indication
- Alarm Acknowledge Button
- 2 LED - Power & Communication
- Easily Identifiable Icons
- Multi-Lingual
- On Screen Editable Parameters
- USB Port for Easy Log Data Downloads and Firmware Updates
- SNMP 3 with Traps
- Modbus Passthrough
- Key Function Monitoring
 - Three Phase Voltage, Amperage, kW, kVA, and kVAR
 - Selectable Line to Line or Line to Neutral Voltage Measurements
 - Voltage Frequency
 - Engine Speed
 - Engine Coolant Temperature
 - Engine Oil Pressure
 - Engine Oil Temperature
 - Battery Voltage
 - Warning and Alarm Indication
 - Diagnostics
 - Maintenance Events and Information
 - Engine Hour Meter

[°] When Viewing on a Connected Computer, Smart Phone, Tablet, or Other Smart Device

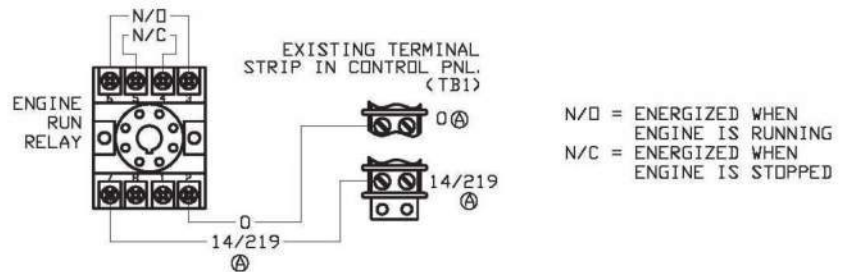
ENGINE RUN RELAY



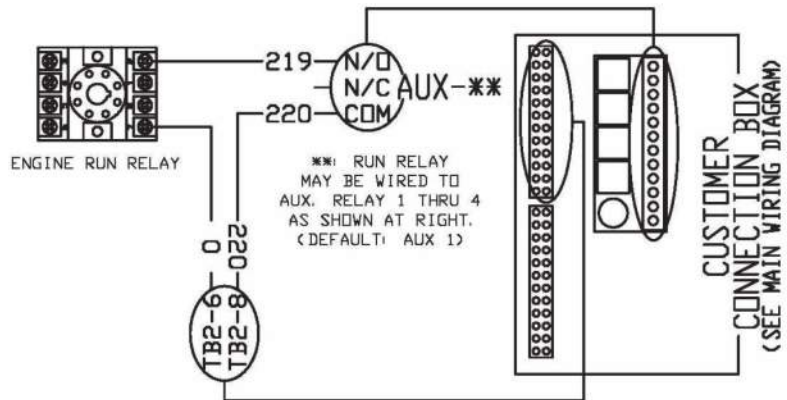
- For use with Generac's Digital Control Platforms
- 10 Amp Contact Rating
- 12 or 24 Volt DC Input
- Contact Open or Closure on Engine Run

Contacts	
Type	DPDT
Material	Silver
Rating	UL 10A @ 240VAC 10A @ 30VDC
Coils	
Input Voltage	24VDC
Resistance	400 Ohms
Nominal Power	1.5W

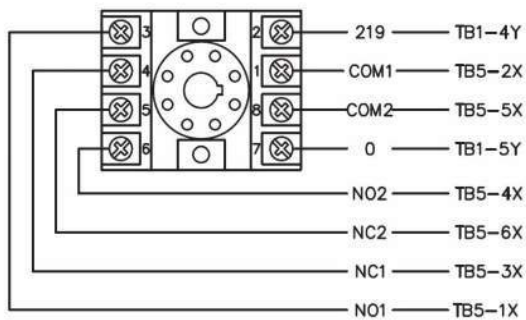
Wiring Diagram with E panel, H-100 Panel



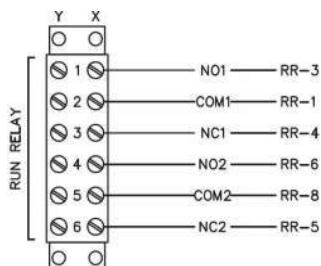
Wiring Diagram with PMDCP



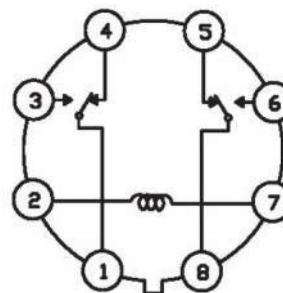
Wiring Diagram with Power Zone Pro Sync



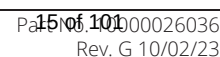
TB5



Pin Detail



Model G0098531 Gray Remote Annunciator Panel without Relays



21 Light Remote Annunciator and Remote Relay Panel

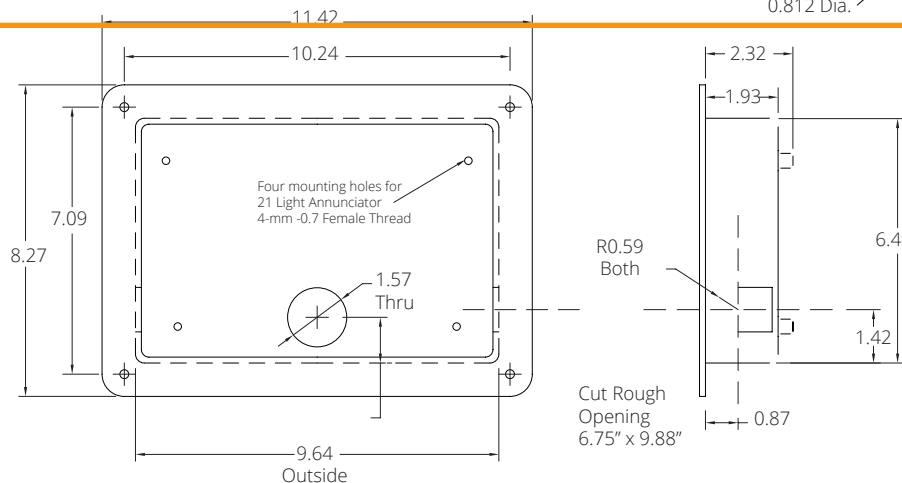
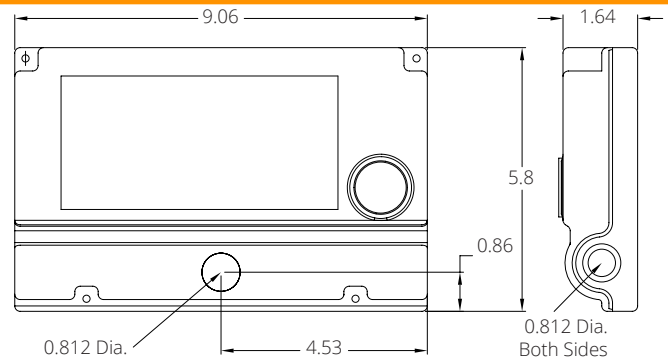
Function	Color	Alarm	Latched
Pre-Low Oil Pressure	Yellow	Yes	Yes
Pre-High Water Temperature	Yellow	Yes	Yes
Pre-Low Water Temperature	Yellow	Yes	Yes
Pre-Low Fuel	Yellow	Yes	Yes
Battery Charge AC Fail	Yellow	Yes	No
Low Battery Voltage	Yellow	Yes	No
High Battery Voltage	Yellow	No	No
Not in Auto	Red	Yes	No
RPM Sensor Loss	Red	Yes	Yes
Overcrank	Red	Yes	Yes
Overspeed	Red	Yes	Yes
Low Oil Pressure	Red	Yes	Yes
High Water Temperature	Red	Yes	Yes
Low Water Level	Red	Yes	Yes
Emergency Stop	Red	Yes	No
Gen Running	Yellow	No	No
Gen Power (ATS)	Yellow	No	No
Line Power (ATS)	Green	No	No
Systems Ready	Green	Yes	No
Communications OK	Green	Yes	No
Spare	Green	No	No

Spare Keypad Switch can be used to implement a remote start function (Models G0098511 and G0098521 only).

Annunciators

Surface Mount

The 21 Light Annunciator can mount to a flat surface with connections through the 0.812 inch diameter knockout on the back surface or through 0.812 inch diameter knockouts on sides as shown.



Flush Mount

This Flush Mount Box is recessed into the wall opening and the surface mount annunciator mounts to the (4) 4 mm screw holes on the back surface. After wire connections are made the front annunciator cover is attached.

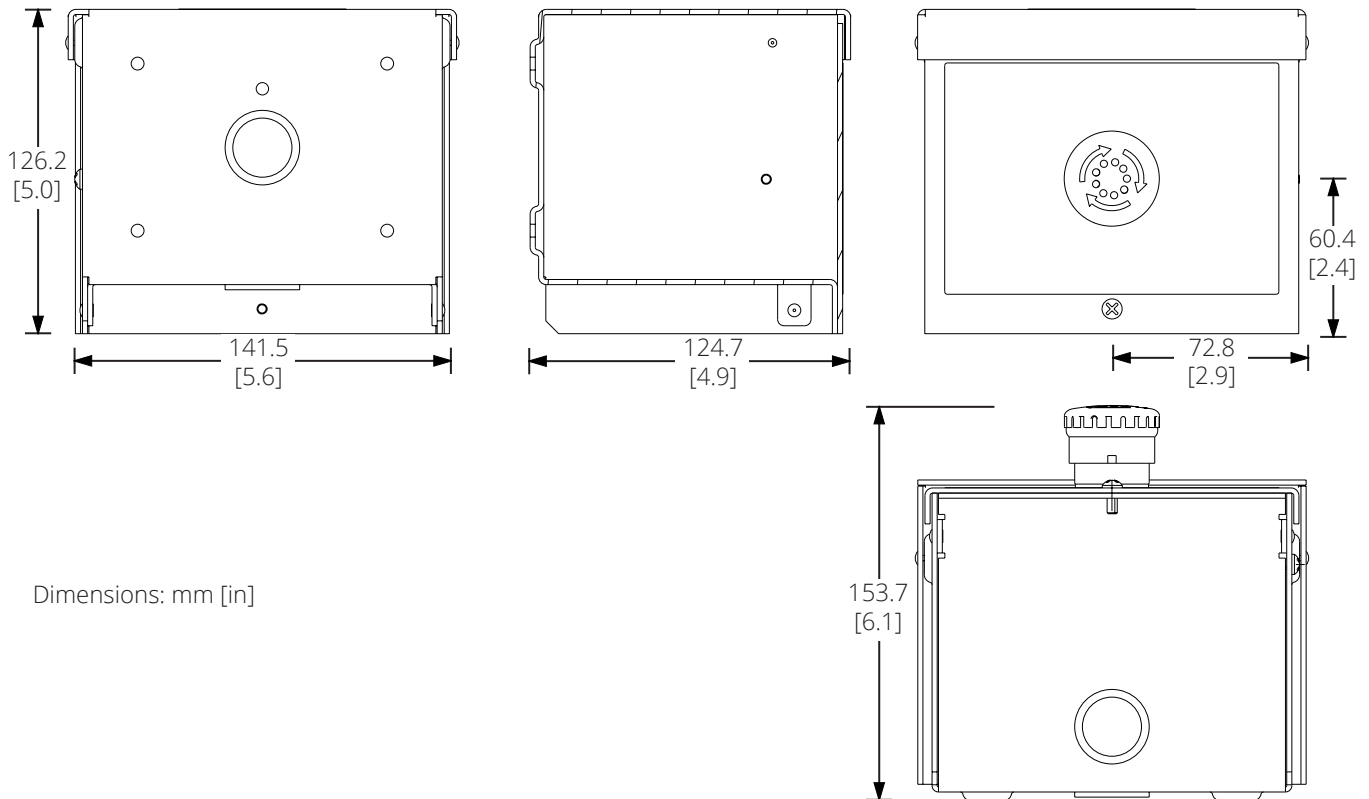
All dimensions are in inches.

REMOTE EMERGENCY STOP SWITCH Surface Mount - Power Zone® Pro

Specifications

Generac Part Number: A0000960253
Surface Mount, NEMA 3R
Aluminum Enclosure
Contact Rating: 10A at 120V
Contact Blocks: 3
Compatible Controllers: Power Zone® Pro

Wiring varies by engine; refer to unit specific wiring diagram.



Dimensions: mm [in]

ALTERNATOR DATA SHEET

K0035124Y21

General Characteristics

Voltages (V)	208/240 and 480	Number of Leads	12
Frequency (Hz)	60	Winding Type	Reconnectable
Phases	3	Air Flow (CFM)	599
Speed (RPM)	1,800	Total Harmonic Distortion (%)	<5
Excitation System	PMG/Brushless	Largest Single Harmonic Value (%)	<3.5
Insulation Class	H	Telephone Interference Factor (TIF)	<50
Winding Pitch	2/3	Reference Part Number	0J1374D01R, 0L4166E01R

Ratings @ 0.8 pf based on 40°C ambient

Voltage (V)	80°C Rise		105°C Rise		120°C Rise		150°C Rise	
	kW	kVA	kW	kVA	kW	kVA	kW	kVA
208/240	28	35	31	39	35	44	38	47
480	28	35	31	39	35	44	38	47

Base Data at 480V, 44 kVA, 1,800 RPM, 60 Hz, 3Ø

Description	Value
Stator Resistance, Line to Line, High Wye Connection (Ω)	0.2147
Rotor Resistance (Ω)	0.9450
Exciter Stator Resistance - PMG/Brushless (Ω)	4.740/5.6000
Exciter Rotor Resistance - PMG/Brushless (Ω)	0.4565/0.4120
Excitation Winding Resistance - PMG/Brushless (Ω)	2.2478/0.5719
Xd, Direct Axis Synchronous Reactance (p.u.)	2.57
X2, Negative Sequence Reactance (p.u.)	0.31
X0, Zero Sequence Reactance (p.u.)	0.05
X'd, Direct Axis Transient Reactance (p.u.)	0.26
X''d, Direct Axis Subtransient Reactance (p.u.)	0.21
Xq, Quadrature Axis Synchronous Reactance (p.u.)	1.12
T'd, Direct Axis Transient Short Circuit Time Constant (s)	0.05

Description	Value
T''d, Direct Axis Subtransient Short Circuit Time Constant (s)	0.008
T'do, Direct Axis Transient Open Circuit Time Constant (s)	0.765
Ta, Short Circuit Time Constant of Armature Winding (s)	0.018
Phase Sequence CCW-NDE	T1, T2, T3
Voltage Balance, L-L or L-N (%)	2.5
Deviation Factor (%)	7
High Wye Connection, Sustained 3Ø Short Circuit Current (%) - PMG Only	300
X/R	7
Short Circuit Ratio	0.51
Heat Rejection (BTU/hr) - 100% Rated Load, 480V, 0.8pf, 120°C Temperature Rise	27,469

Reference: Mil-STD-705B
All ratings are nominal

ALTERNATOR DATA SHEET

K0035124Y21

skVA

	10%	15%	20%	25%	30%	35%
480 V @ 0.3PF	14	22	31	41	55	67
480 V @ 0.6PF	17	25	36	46	61	75
208/240 V @ 0.3PF	11	16	24	31	41	51
208/240 V @ 0.6PF	13	19	28	36	46	57

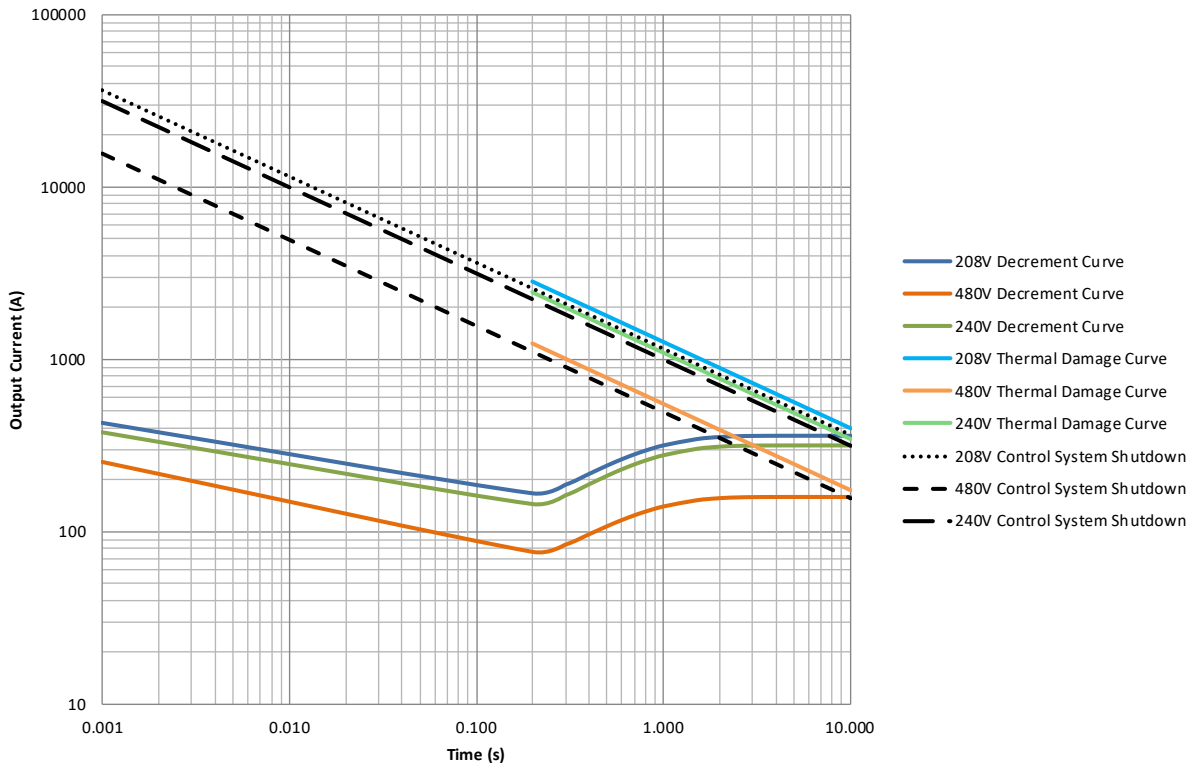
Efficiencies

	480 @ 0.8 PF	480 @ 1.0 PF	208/240 @ 0.8PF	208/240 @ 1.0 PF
20% Rated Power*	75.8	78.1	77.9	79.8
40% Rated Power*	82.4	85.6	82.4	86.0
60% Rated Power*	83.2	87.6	82.3	87.1
80% Rated Power*	82.5	87.9	80.7	86.6
100% Rated Power*	81.3	87.5	78.9	85.7

*Rated Power value is rating kW at 120°C Winding Temperature Rise and 0.8pf

LOG LOG Decrement Curve

Balanced 3Ø Short Circuit Decrement & Thermal Damage Current Limit Curves



GENprotect™

Seamless Protection for Industrial Power Generators

GENprotect Operation

The design choice of an onsite power system using a Generac Industrial Power Generator assures your emergency power source is protected from unexpected power distribution faults. Typically, a generator will include some type of over-current device, such as a circuit breaker, or be protected by inherent design with the controller protecting the alternator through a protection algorithm. Generac's GENprotect generator protection system monitors the system current output and protects the alternator with extended security against fault scenarios that could occur within the site's downstream distribution system.

It is a common misconception that the alternator's main circuit breaker protects the alternator from a short circuit event. The main output breaker protects the cabling and provides a convenient disconnect. The characteristic trip curve for the industry standard thermal magnetic breaker (MCCB, molded case thermal magnetic or solid state) does not coordinate with the thermal damage limitation for an on-site generator. If circuit breakers are used for generator protection, a solid-state circuit breaker with full adjustments (Long Time, Short Time and Instantaneous, LSI) is required to coordinate the breaker protection curve within the generator thermal damage curve. Historically, this limitation was often accepted in system design since failures of the main generator feeder are extremely rare. Most short circuit events happen at a branch circuit, equipment level, where the fault is easily cleared by the smaller down stream breakers.

Given the mission critical nature of today's back-up power applications, it is more desirable to protect the system against even relatively rare failure modes. As generator controllers have become more powerful it is feasible for manufactures to supply coordinated short circuit protection integral to the generator control system, negating the need for a main-line circuit breaker.

Generac's GENprotect alternator protection algorithm monitors the generator output. If this monitoring senses short circuit current in excess of rated amps, GENprotect steps in to provide a controlled and safe approach to breaker coordination and alternator protection. GENprotect first limits the alternator short circuit current level to 300%. By limiting the available fault current, GENprotect extends the time the alternator can maintain fault current resulting in consistent breaker coordination. Without this functionality a

line to neutral fault may be at 800% of rated current and need to be cleared within 1.4 seconds. The second function GENprotect performs is I²T thermal protection for the alternator. Since a short circuit event can heat the alternator so rapidly, it is not possible to protect the alternator by monitoring temperature. Instead GENprotect calculates the heat energy of the fault current. When this energy reaches the limits of NEMA MG1, GENprotect trips the generator off-line. This configuration ensures the alternator is protected and the power system is ensured 10 seconds of 300% fault current for breaker coordination.

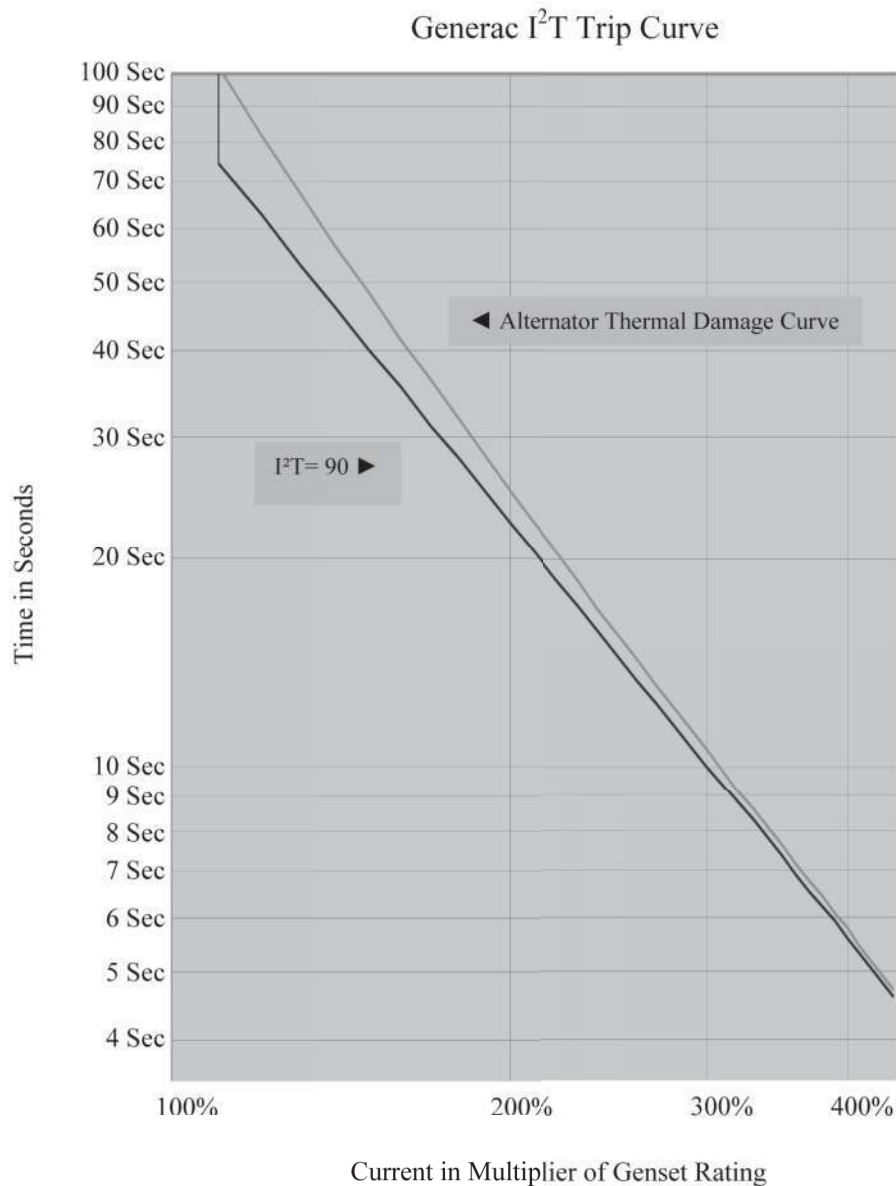
DESCRIPTION

- GENprotect is an alternator protection algorithm approved by UL.
- Protects alternator from damage due to shorts and electrical faults.
- Provides breaker coordination and alternator protection.
- Allows for use of multiple circuit breaker choices, including "no" breaker.



GENprotect™

Seamless Protection for Industrial Power Generators



The above Figure shows the Generac GENprotect thermal protection curve for use in protection and coordination studies. The alternator Thermal Damage Curve is shown just to the right of the GENprotect protection curve. If the alternator load is greater than the thermal damage protection curve for the alternator, the generator set will trip off-line. For example, an overload current of 110% for 75 seconds causes an overload alarm and will trip the generator off-line, shutting down the engine. GENprotect will provide generator protection over a full range of time and current, from instantaneous faults to overloads lasting several minutes. An advantage of GENprotect over a MCCB is that GENprotect allows for downstream breakers to clear faults without tripping the generator off-line, providing selective coordination with the first level of downstream breakers.

GENERATOR ENCLOSURES



DESCRIPTION

GENERAC POWER SYSTEMS' generator enclosures provide year-round weather protection for your power equipment. Engineered with functionality and value in mind, the enclosure design benefits are unique in that the enclosures utilize dimensionally matched components for either a weather protective configuration or a sound attenuated/acoustic configuration. With common components used between design, modification and on-site upgrades can be accomplished with ease.

The enclosure design offers several benefits over the "standard enclosures" of other manufacturers. Generac's enclosures have been created with the goal of maximizing the customer's product performance satisfaction while maintaining the functionality of reducing exterior noise levels and discouraging product tampering.

Although others may require a "premium" for a self-enclosed exhaust system, rugged steel panel construction or protective polyethylene washers under all exterior panel fasteners, Generac includes these and several other features on every enclosure configuration. Be sure to compare. Generac Enclosures offer additional design enhancement extras that other "standard enclosures" do not.

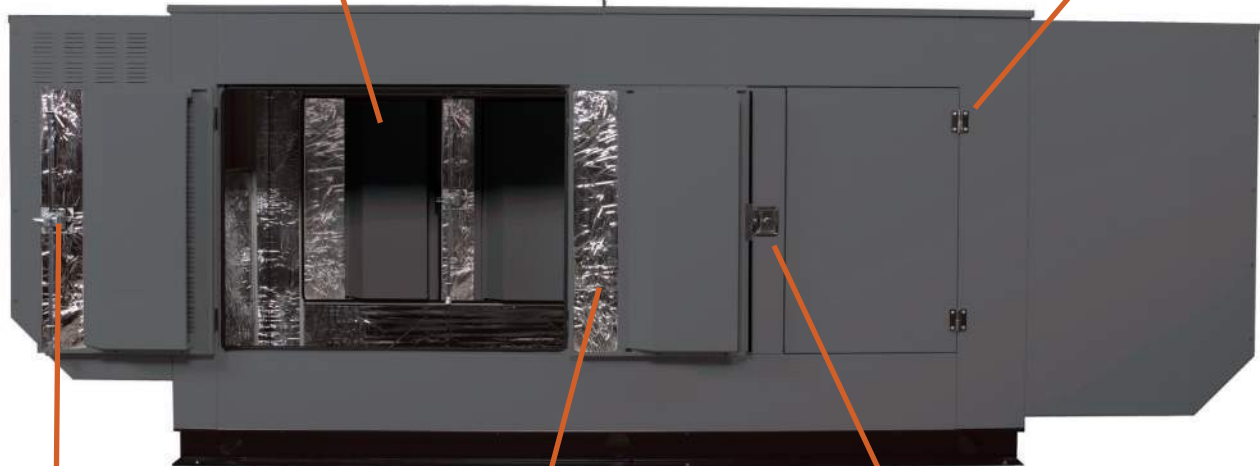
GENERATOR ENCLOSURES

Post-Free Twin Doors
Provide Large, Unobstructed Service Access

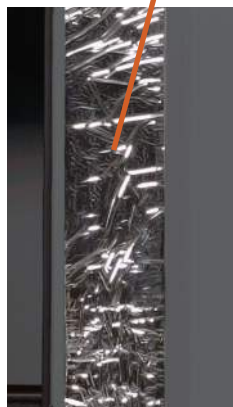


Gasket-Free, Interconnected Roof Panel Joint
Drip-Free, Maintenance-Free

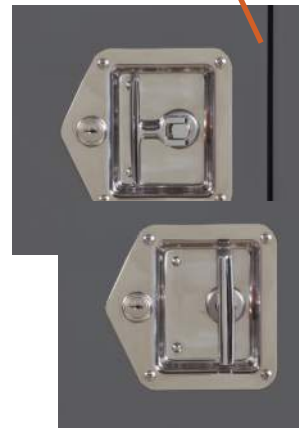
Heavy Gauge, Stainless Steel, Partial Pin Hinges with Nylon Spacers
Durable, Corrosion-Free, Removable Doors



Two-Point Door Latch System
Ensures Proper Seal
Preventing Water Ingress
and Sound Egress



Dense, Closed-Cell Foam Insulation with Reflective Silver Mylar Layer
Improved Sound Attenuation Without Damaging Effects From Radiant Heat Exposure



Lockable Turn and Tuck Stainless Steel Latch Handle
Corrosion-Free, Non-Protruding and Secure



GENERATOR ENCLOSURES

FEATURES:

Dimensional matching of acoustic and non-acoustic enclosure designs

Standardized enclosure components *

Enclosure mounted directly to unit baseframe

Electrostatically painted panels

12 or 14 gauge steel based on kW rating

Aluminum Enclosure optional

Stainless steel door latch and hinge hardware

Stainless steel door latch strike plate

Door hinges utilize slip-pin design

Polyethylene gasketing under door hinges

Keyed door latches

Large removable access doors

Relocation of access doors

Redesigned door gasketing

Weather resistant aluminum roof design with drip ledge

Cabled and gasketed radiator access cover

Acoustic roof panels manufactured with mechanical retention pins

Polyethylene washers under all panel fasteners

Internally fastened enclosure panels (where possible)

Additional roof panel stiffener

Self-enclosed exhaust system

Discharge air duct has been designed with minimal fasteners

Stainless steel exhaust band clamps

Drain holes within air ducts

Rodent-proof, tamper proof enclosure design

Redesigned baseframe lifting lugs

Up to 200 MPH wind kit options (Contact Factory for Availability)

BENEFITS:

Reduces variation in fuel tank pricing, inventory; removes need to change out fuel tank or retrofit

Ease of retrofit or upgrade to acoustic system; reduced parts inventory, costs

Simplified delivery and installation with enclosure and unit in single component design

Maximum protection from weather elements

Maximum sound attenuation, protection and product life

Prevents corrosion in coastal regions

Provides extended component life; maximum protection against rusting

Maximum protection against enclosure paint damage from door latch pin

Provides quick door removal for full-unit access

Additional protection for enclosure paint finish

Protection for equipment and personnel

Ease of maintenance

Provides improved access to MLCB on all units

Improved sealing quality from sound and weather elements

Provides optimum moisture/rain runoff from unit

Provides improved radiator access and additional protection from weather elements

Increased acoustic foam retention within unit

Additional paint finish protection from stainless steel fastener

Provides streamlined unit appearance

Added overall compartment rigidity and acoustic foam panel retention

Provides safe unit operation; no enclosure hot spots; streamlined unit appearance

Ease of removal and access to exhaust system

Provides extended component life; ensures proper exhaust seal

Enables maximum water run-off

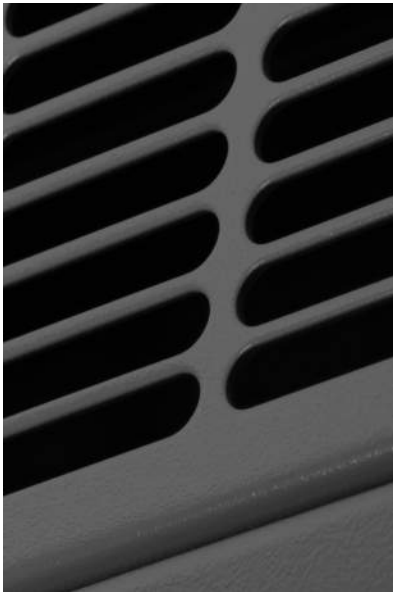
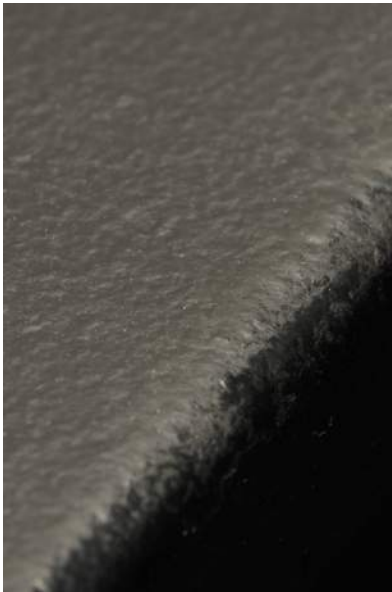
Safety and security for personnel and equipment

Ease of unit relocation; prevents compartment damage from lifting straps

Meets locally enforced wind requirements

* Consult Generac Power Systems, Inc. for installation drawings for specific configurations and dimensions.

RhinoCoat™



Generac's RhinoCoat™ finish system provides superior durability as a standard for all Generac Industrial enclosures, tanks and frames.*

Testing Standards

Generac's RhinoCoat™ finished surfaces are subjected to numerous tests. These include:

- ASTM D - 1186 - 87.....2.5+ MIL Paint Thickness
- ASTM D - 3363 - 92a.....Adequate Material Hardness
- ASTM D 522 - B.....Resistant to Cracking
- ASTM D 3359 - B.....Exceptional Adhesion
- ASTM B117 D 1654.....Resistant to Salt Water Corrosion
- ASTM D1735 D 1654.....Resistant to Humidity
- ASTM 2794 93 (2004).....Exceptional Impact Resistance
- SAEJ1690 - UV Specifications.....UV Protection

In addition to the testing standards above, Generac adds the following test requirements more specific to generator applications:

- Resistant to Typical Oils
- Resistant to Typical Fuels
- Resistant to Typical Antifreeze
- Resistant to Distilled Water

Primary Codes and Standards



*RhinoCoat™ powder coat paint is durable and corrosion resistant however it is not a rust preventative. Generac pretreats all powder coated parts to assist with resistance to corrosion.

INDUSTRIAL GENSET - BATTERY INDEX

• Warranty by Exide Corp. • Exide e-mail: tbгна@exide.com • 800-782-7848 National Hot line

INDUSTRIAL SPARK-IGNITED GENSETS - AVAILABLE BATTERIES

Engine	System Voltage	Battery Quantity	GENERAC PART #					
			058208 (Group 24F)	077483 (Group 26)	058665 (Group 27F)	061119 (Group 31)	061104 (Group 8D)	BT0015A02 (Group 8D)
G2.4	12	1		X				
G4.5	12	1			X	X		
G9.0	12	1			X	X		
G14.2	24	2					X	
G21.9	24	2					X	
G25.8	24	2					X	
G33.9	24	4					X	
G49.0	24	4					X	X

INDUSTRIAL DIESEL GENSETS - AVAILABLE BATTERIES

Engine	System Voltage	Battery Quantity	GENERAC PART #			
			058665 (Group 27F)	061119 (Group 31)	061104/ BT0015A00 (Group 8D)	BT0015A02 (Group 8D)
D2.2 Perkins	12	1	X	X		
D3.3 MHI	12	1		X		
D4.5 FPT	12	1		X		
D6.7 FPT 100, 130kW	12	1		X		
D6.7 FPT 150, 175kW	12	2		X		
D8.7 FPT	24	2		X		
D10.3 FPT	24	2		X	X	
D12.9 FPT	24	2		X	X	
D12.5 Perkins	24	2			X	
D15.2 Perkins	24	2			X	
D16.0 Volvo	24	2		X	X	
D18.1 Perkins	24	2			X	
D30.6 Perkins	24	2			X	X
D33.9 MHI	24	2			X	X
D37.1 MHI	24	4			X	X
D49.0 MHI	24	4			X	X
D65.4 MHI	24	4			X	X

DIMENSIONS (in) NOMINAL

Part Number	Group Number*	Nominal CCA @ 0° F	L	W	H
058208	24F	525	6.75	10.63	9.00
077483	26	525	6.75	8.25	7.75
058665	27F	700	6.75	12.50	9.00
061119	31	925	6.75	13.00	9.40
061104/ BT0015A00	8D	1,200	11.00	20.80	10.00
BT0015A02	8D	1,400	11.00	20.80	10.00

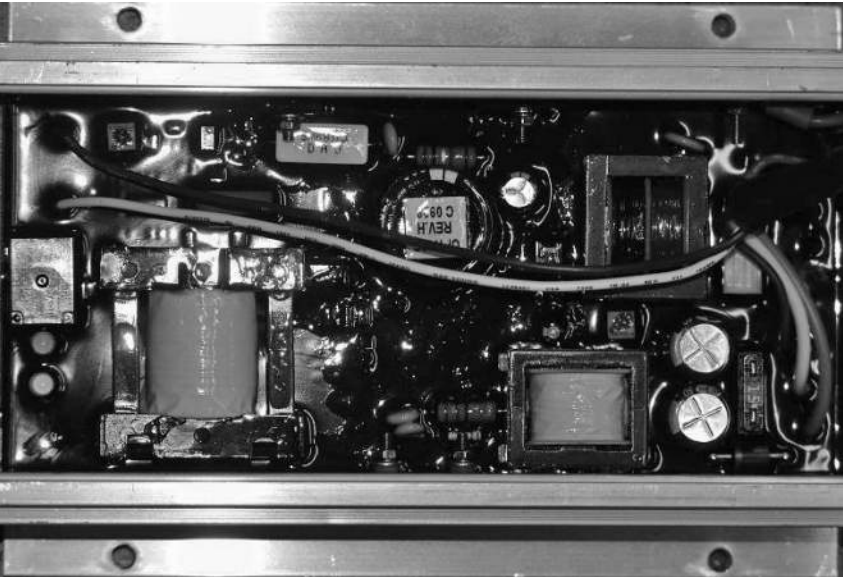
All batteries are 12V, 6 cell construction, lead calcium type.
 For 24V systems, batteries are wired in series.

X Battery available with electrolyte and installed in genset.

* BCI Group Size reference.

BATTERY CHARGER

10 amp



Battery charger shown from inside of control panel enclosure.
Connections are made via an attached harness.

The Generac 10 amp 12/24 volt battery charger is designed to work with Generac Industrial Controls and the G8601 to provide the ultimate in automatic battery voltage maintenance.

The 10 amp charger has automatic float and equalize control. It precisely monitors the battery's voltage and automatically activates the correct charging mode. The charge rate is limited and controlled to efficiently and safely maintain ideal battery levels under varying conditions.

The equalize system uses a control circuit to limit charging current to 10 amps. When battery voltage drops below a preset level, charging current increases to 5 amps and then to the 10 amp charge rate if needed. When the battery reaches maximum charge, the charger switches to float mode to supply just enough current to maintain the battery at or above 13/26 volts. Battery voltage and charging current are read at the control panel digital display.

Specifications	10A
Nominal Input	120 VAC
Operating AC Line Voltage Range	108 to 132 VAC
Input AC Line Frequency	50/60 Hz
Battery Fuse	15 A
Nominal Charge Rate	10 A
Equalize Voltage	13.8/27.6 V
Float Voltage	13.0/26.0 V
Current @ Equalize to Float Transition	5 A
Battery Under-voltage shutdown	11/22 V
LED Indicators	Yes
AC Line Voltage	Green LED
Battery Connected and Charging	Yellow LED
Battery Current Drain	30 mA
AC Line Connection	Connector Plug
Battery Connection	Connector Plug
Control Connection	AC Power Fail Form Relay Form C 2 A Rating
CUL Recognized	Yes
NFPA 110 Compliant	Yes
AGM Compatible	Yes
UL1236	Yes
CSA 22.2 No. 107	Yes

EATON POWER DEFENSE™ CIRCUIT BREAKER DATA

PD2 FRAME

DESCRIPTION

- Globally accepted molded case circuit breakers
- Covers a range of 15A through 225A
- Available in standard 80% rating or optional 100% UL rating

AVAILABLE FEATURES AND ACCESSORIES

- Thermal/Magnetic trip units (fixed thermal, fixed magnetic)
- PXR 10 Electronic Trip Units (LSI)
- Modular field-installable accessories
 - Shunt Trip
 - Auxiliary Contacts
 - Alarm Contacts



STANDARDS AND CERTIFICATIONS

- UL
- CSA
- IEC (CE)
- CB (CCC)

PD G 2 3 M 225 TFF						
Product Series	Certifications/Standards	Frame Size	Pole Options	Interrupting Ratings	Continuous Current Ratings	Trip Unit Type Options
PD= Power Defense	G = 80% Rated F = 100% Rated	2 = 2	3 = 3-pole	F = 25 kA at 480V G = 35 kA at 480V K = 50 kA at 480V M = 65 kA at 480V N = 85 kA at 480V P = 100 kA at 480V F = 14 kA at 600V G = 18 kA at 600V K = 22 kA at 600V M = 25 kA at 600V N = 30 kA at 600V P = 35 kA at 600V	0015 = 15 A 0020 = 20 A 0025 = 25 A 0030 = 30 A 0035 = 35 A 0040 = 40 A 0045 = 45 A 0050 = 50 A 0060 = 60 A 0070 = 70 A 0080 = 80 A 0090 = 90 A 0100 = 100 A 0110 = 110 A 0125 = 125 A 0150 = 150 A 0175 = 175 A 0200 = 200 A 0225 = 225 A	TFF = Fixed Thermal/Fixed Magnetic B2N = LSI KSN = Molded Case Switch (2)

(1) 100% rating available on LSI trip only

(2) Magnetic-only Molded Case Switches available at 100A, 150A and 225A

All breakers are rated 600V
All breakers are 3-Pole

EATON POWER DEFENSE™ CIRCUIT BREAKER DATA

PD2 FRAME

LOAD-SIDE LUGS - PD2 FRAME

BREAKER-FRAME	CIRCUIT BREAKER RANGE (A)	WIRE TEMPERATURE RATING	CIRCUIT BREAKER LUGAWGWIRE RANGE/(NUMBER OF CONDUCTORS)	TORQUE TO WIRE	GENERAC #	EATON#
Power Defense - 2	15-100	167°F (75°C)	14-1/0 (1)	See listed chart frame size 2	A0002200431	PDG2X3TA100
Power Defense - 2	110-225	167°F (75°C)	4-4/0 (1)	375 in-lb (42.37 Nm)	A0002200432	PDG2X3TA225

Frame Size 2 Wire Torque

For Sizes ...	Torque (in-lb)		For Sizes ...	Torque (Nm)
14-10 AWG	35		2.5-6 mm2	3.95 Nm
8 AWG	40		10 mm2	4.52 Nm
6-4 AWG	45		16-25 mm2	5.08 Nm
3 - 1/0 AWG	50		25-50 mm2	5.65 Nm

All breakers are rated 600V
All breakers are 3-Pole

COOLANT HEATER OPTION 1500 WATT, 120VAC

SPECIFICATIONS:

VOLTAGE: 120VAC

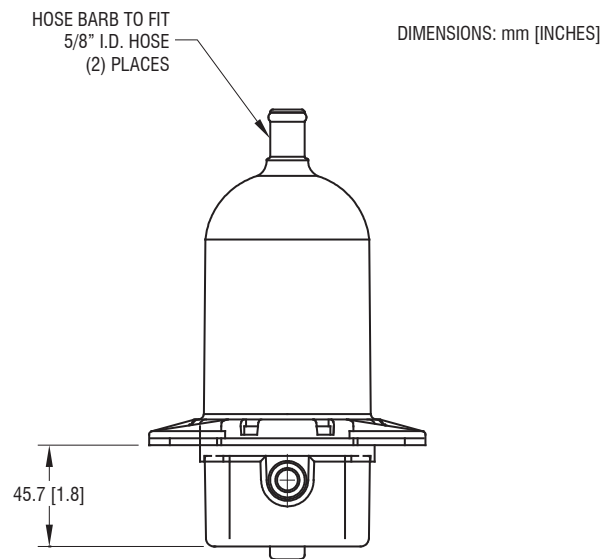
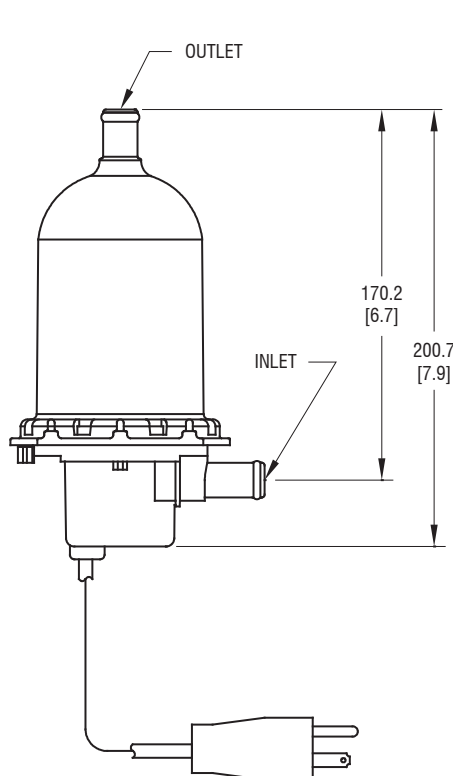
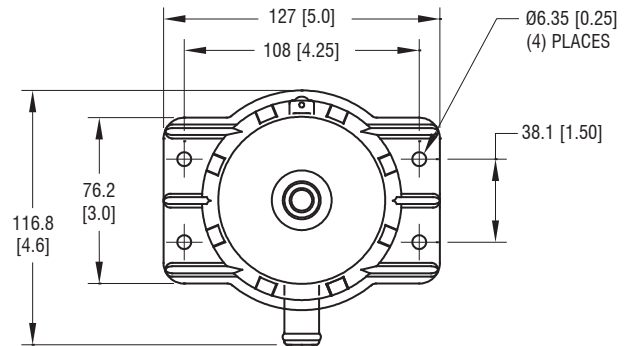
HEAT POWER: 1500W

FIXED THERMOSTAT: 60°-80°F

HEATING ELEMENT: INCOLOY 800

MAXIMUM PRESSURE: 90 PSI (620 kPa)

PLUG NEMA STD: 5-15P



ELECTRONIC GOVERNOR

Spark-Ignited Engines



Generac’s electronic isochronous governor systems are standard on all Spark-Ignited gensets utilizing Generac’s Digital Control Platforms.

- Isochronous Speed Regulation
- ±0.25% Steady State Regulation
- Factory Installed and Adjusted
- Fully Adjustable
- Quiet-Test™ Low-Speed Exercise Capability
- Fast Response
- High Reliability
- Environmentally Sealed
- RoHS Compliant

ACTUATOR

Die cast enclosure housing the throttle plate and the gear-driven rotary actuator with the interior components sealed against dust, dirt and moisture. The gear drive is directly connected to the throttle plate for fast and precise control. Safety spring-return to a closed position upon loss of power.

Design	Generac
Type.....	Electronically Actuated Throttle Valve
Operating Voltage.....	12VDC
Response Time	< 100 ms
Operating Temperature Range.....	-40°F to 212°F
Output.....	Rotary (internal - no linkage)

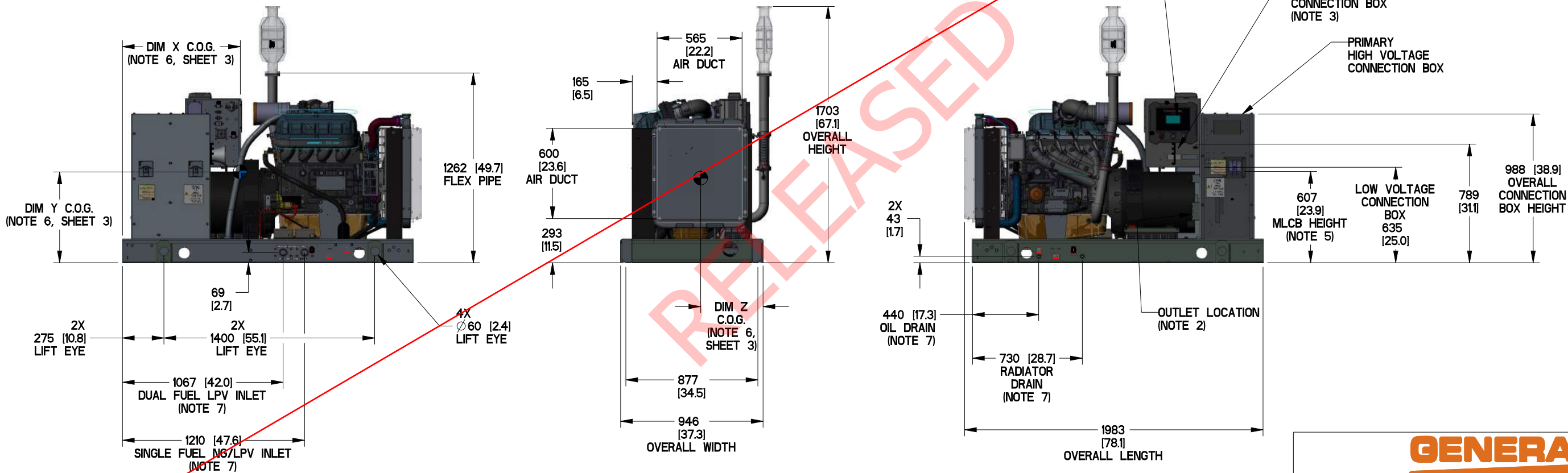
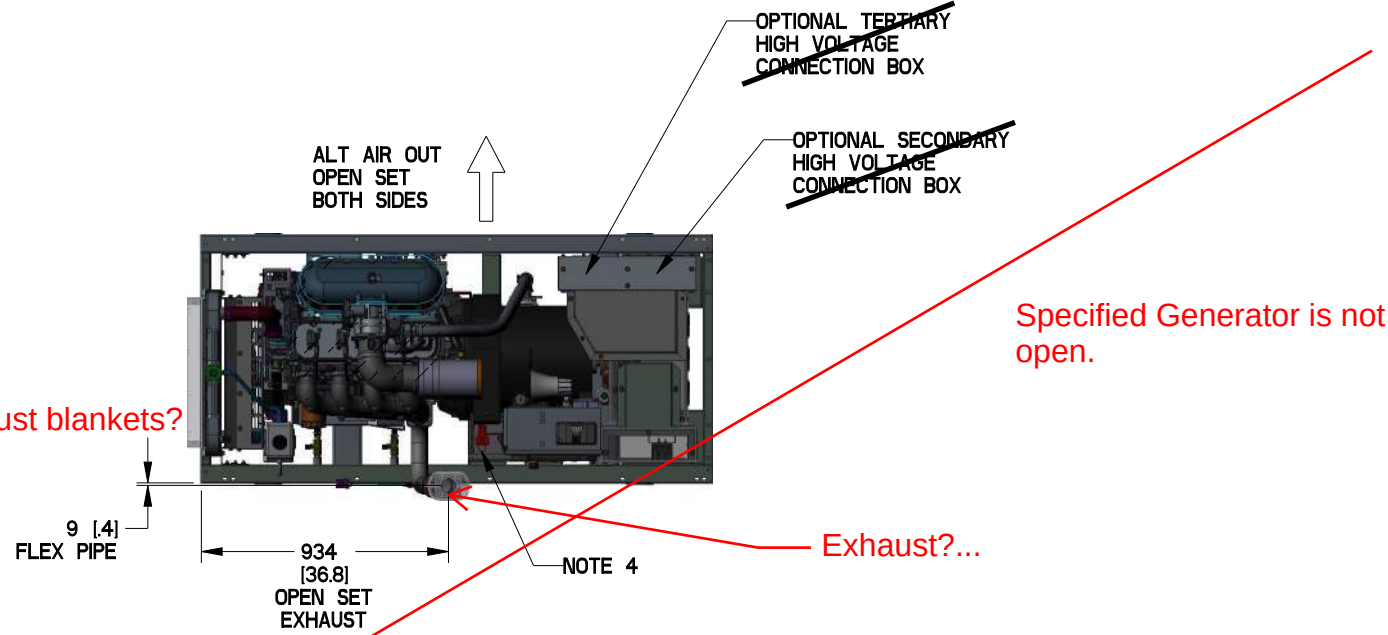
CONTROLLER

The governor driver module is located in the generator control panel. A sealed unit with waterproof connections and a feedback circuit from the actuator for throttle plate position. Generac software controls speed governing, and is fully adjustable.

The Generac electronic governor system applies to all spark-ignited gensets with Generac's Digital Control Platforms.

- Notes:
1. CONTROL PANEL, (BATTERY CHARGER INSIDE).
 2. 120V, 20A GFCI & 250V, 15A OUTLET (OPTIONAL).
 3. CONNECTION POINTS FOR CONTROL WIRES PROVIDED IN THE LOW VOLTAGE CONNECTION BOX (USE LOW VOLTAGE STUB-UP AREA).
 4. BATTERY (12 VOLT NEGATIVE GROUND SYSTEM).
 5. MAIN LINE CIRCUIT BREAKER (MLCB), AC LOAD LEADS. (DIMENSIONS MAY VARY DUE TO UNIT CONFIGURATION).
 6. CENTER OF GRAVITY AND WEIGHT MAY CHANGE DUE TO UNIT OPTIONS. FOR WEIGHT AND CENTER OF GRAVITY DATA SEE SHEET 3.
 7. ENGINE SERVICE CONNECTIONS:
 - INLET NATURAL GAS/LPV = 1-1/4" NPT FEMALE COUPLING
 - INLET DIESEL = N/A
 - RETURN DIESEL = N/A
 - OIL DRAIN = 1/2" NPT COUPLING
 - RADIATOR DRAIN = 1/2 NPT COUPLING.
 - FLEX PIPE OUTLET = 2.5" ID - WELD ON FLANGE PROVIDED
 - EXHAUST OUTLET = N/A
- ***** SEE GENERATOR SIZING GUIDE FOR FUEL PIPE SIZING TO SUIT APPLICATION *****

8. AUXILIARY AC CONNECTION FOR UNIT OPTIONS ARE LOCATED IN HIGH VOLTAGE CONNECTION BOX, UNLESS AN OPTIONAL LOAD CENTER IS INSTALLED.
9. EXHAUST PIPES MAY BE ROTATED TO ALLOW MUFFLER TO POINT OUT TO THE RIGHT OR LEFT SIDE OF GENERATOR. (MAY NOT APPLY TO ALL UNITS)
10. GENERATOR SET MUST BE INSTALLED SUCH THAT FRESH COOLING AIR IS AVAILABLE AND DISCHARGE AIR FROM THE RADIATOR IS NOT RECIRCULATED.
11. BOTTOM OF GENERATOR SET MUST BE ENCLOSED TO PREVENT PEST INTRUSION AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
12. EXHAUST SYSTEM MAXIMUM BACK PRESSURE = 10" H2O (ADDITIONAL).
13. INSTALL EXHAUST BLANKETS ALONG THIS LINE.
14. CONNECT THE OPEN SET EXHAUST PER NFPA 37.
15. BLANKETS SHOULD NOT COVER OXYGEN SENSOR.
16. OXYGEN SENSOR (IF EQUIPPED) MUST BE MOUNTED BETWEEN ENGINE OUTLET AND CATALYST INLET IN PORT PROVIDED.
17. CATALYST MUST BE MOUNTED IN DESCRIBED POSITION. FAILING TO FOLLOW THESE INSTRUCTIONS WHEN INSTALLING A CERTIFIED ENGINE IN A PIECE OF STATIONARY EQUIPMENT VIOLATES FEDERAL LAW 40CFR 1068.105(b), SUBJECT TO FINES OR PENALTIES AS DESCRIBED IN THE CLEAN AIR ACT.
18. BOLTS OR STUDS USED TO MOUNT UNIT TO PAD SHALL BE 5/8 - 11 GRADE 5.



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3D FILE. ECO MODIFICATION TO BE
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INSTALLATION DRAWING

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ELECTRONICALLY APPROVED
INSIDE WINDCHILL

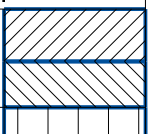
GENERAC

TITLE
OPEN SET
G4.5L 60Hz
SG35, SG40, SG45, SG50

ISSUE DATE:		08/27/2019	
SIZE	CAGE NO	DWG NO	REV
B	N/A	A0000292914	E
SCALE	0.035	WT-KG	SHEET 32 of 101 3

RECOMENDED ELECTRICAL STUB-UP

(HIGH VOLTAGE STUB-UP)
AC LOAD LEAD CONDUIT FOR
PERMANENT MAGNET EXCITATION
CONNECTION BOX
LOW VOLTAGE STUB-UP



2X
110
[4.3]

2X
570
[22.4]

2X
1140
[44.9]

2X
1710
[67.3]

2X 255 [10.0]
122 [4.8]

937
[36.9]

839
[33.0]

795
[31.3]

CB CONNECTION BOX OPENING FOR TERTIARY BREAKER ON
CONFIGURATIONS WITH THREE CIRCUIT BREAKERS
(OPTIONAL)

LOW VOLTAGE
STUB-UP AREA
(SEE NOTE 3)

102
[4.0]

262
[10.3]

LOW VOLTAGE
STUB-UP AREA
SURFACE MOUNTED
(SEE NOTE 3)

2X 319
[12.5]
OPEN AREA
FOR STUB-UP

464
[18.3]

1930
[76.0]

CB CONNECTION BOX OPENING FOR SECONDARY BREAKER ON
CONFIGURATIONS WITH TWO CIRCUIT BREAKERS
(OPTIONAL)

CB CONNECTION BOX OPENING FOR SECONDARY BREAKER ON
CONFIGURATIONS WITH THREE CIRCUIT BREAKERS
(OPTIONAL)

SECONDARY HIGH VOLTAGE STUB-UP AREA W/OLAND PLATE
(OPTIONAL)

385
[15.2]

100A MLCB

2X 115
[4.5]

2X 205 [8.1]
OPEN AREA
FOR STUB-UP

2X 20
[.8]

2X 71
[2.8]

PRIMARY HIGH VOLTAGE STUB-UP AREA
W/OLAND PLATE

PRIMARY CB CONNECTION BOX OPENING

8X
Ø17.45 [.687]
MOUNTING HOLES
SEE NOTE 18

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INSIDE WINDCHILL

GENERAC

TITLE

STUB-UP
G4.5L 60Hz
SG35, SG40, SG45, SG50

ISSUE DATE: 08/27/2019

SIZE
B

CAGE NO
N/A

DWG NO

A0000292914

REV
E

SCALE 0.120

WT-KG

SHEET 33 of 101

3

INSTALLATION DRAWING

OPEN SET

MODEL	VOLTAGE	WEIGHT	CENTER OF GRAVITY DIM X	CENTER OF GRAVITY DIM Y	CENTER OF GRAVITY DIM Z
SG35, SG40, SG45, SG50	220V, 240V, 1Ø	759.8 kg [1675 lbs.]	1038 [40.9]	551 [21.7]	444 [17.5]
SG35, SG40, SG45, SG50	600V	763.4 kg [1683 lbs.]	1038 [40.9]	551 [21.7]	
SG35, SG40, SG45, SG50	208V, 240V, 400V, 480V	765.2 kg [1687 lbs.]	1038 [40.9]	551 [21.7]	
SG35, SG40, SG45, SG50	220V, 240V, 1Ø UPSIZE	787.4 kg [1736 lbs.]	1014 [40]	546 [21.5]	
SG35, SG40, SG45, SG50	600V UPSIZE	791.1 kg [1744 lbs.]	1012 [39.8]	545 [21.5]	
SG35, SG40, SG45, SG50	208V, 240V, 400V, 480V UPSIZE	792.9 kg [1748 lbs.]	1011 [39.8]	545 [21.5]	

STD ENCLOSURE, STEEL

MODEL	VOLTAGE	WEIGHT	CENTER OF GRAVITY DIM X	CENTER OF GRAVITY DIM Y	CENTER OF GRAVITY DIM Z
SG35, SG40, SG45, SG50	220V, 240V, 1Ø	979.8 kg [2160 lbs.]	1069 [42.1]	614 [24.2]	448 [17.6]
SG35, SG40, SG45, SG50	600V	983.4 kg [2168 lbs.]	1069 [42.1]	614 [24.2]	
SG35, SG40, SG45, SG50	208V, 240V, 400V, 480V	985.2 kg [2172 lbs.]	1068 [42]	614 [24.2]	
SG35, SG40, SG45, SG50	220V, 240V, 1Ø UPSIZE	1007.4 kg [2221 lbs.]	1054 [41.5]	608 [23.9]	
SG35, SG40, SG45, SG50	600V UPSIZE	1011.1 kg [2229 lbs.]	1053 [41.5]	607 [23.9]	
SG35, SG40, SG45, SG50	208V, 240V, 400V, 480V UPSIZE	1012.9 kg [2233 lbs.]	1052 [41.4]	607 [23.9]	

STD ENCLOSURE, ALUMINUM

WEIGHT	CENTER OF GRAVITY DIM X	CENTER OF GRAVITY DIM Y	CENTER OF GRAVITY DIM Z
859.1 kg [1894 lbs.]	1051 [41.4]	601 [23.7]	447 [17.6]
861.8 kg [1900 lbs.]	1051 [41.4]	601 [23.7]	
863.6 kg [1904 lbs.]	1051 [41.4]	600 [23.6]	
886.8 kg [1955 lbs.]	1035 [40.7]	595 [23.4]	
889.5 kg [1961 lbs.]	1034 [40.7]	595 [23.4]	
891.3 kg [1965 lbs.]	1034 [40.7]	594 [23.4]	

L1A ENCLOSURE, STEEL

MODEL	VOLTAGE	WEIGHT	CENTER OF GRAVITY DIM X	CENTER OF GRAVITY DIM Y	CENTER OF GRAVITY DIM Z
SG35, SG40, SG45, SG50	220V, 240V, 1Ø	1024.2 kg [2258 lbs.]	1071 [42.2]	616 [24.3]	449 [17.7]
SG35, SG40, SG45, SG50	600V	1026.9 kg [2264 lbs.]	1070 [42.1]	616 [24.3]	
SG35, SG40, SG45, SG50	208V, 240V, 400V, 480V	1028.7 kg [2268 lbs.]	1070 [42.1]	616 [24.3]	
SG35, SG40, SG45, SG50	220V, 240V, 1Ø UPSIZE	1051.9 kg [2319 lbs.]	1058 [41.7]	611 [24.1]	
SG35, SG40, SG45, SG50	600V UPSIZE	1054.6 kg [2325 lbs.]	1057 [41.6]	611 [24.1]	
SG35, SG40, SG45, SG50	208V, 240V, 400V, 480V UPSIZE	1056.4 kg [2329 lbs.]	1057 [41.6]	610 [24]	

L1A ENCLOSURE, ALUMINUM

WEIGHT	CENTER OF GRAVITY DIM X	CENTER OF GRAVITY DIM Y	CENTER OF GRAVITY DIM Z
901.3 kg [1987 lbs.]	1056 [41.6]	604 [23.8]	447 [17.6]
904.1 kg [1995 lbs.]	1056 [41.6]	604 [23.8]	
906.7 kg [1999 lbs.]	1056 [41.6]	604 [23.8]	
929 kg [2048 lbs.]	1042 [41]	599 [23.6]	
932.6 kg [2056 lbs.]	1041 [41]	599 [23.6]	
934.9 kg [2061 lbs.]	1041 [41]	598 [23.5]	

L2A ENCLOSURE, STEEL

MODEL	VOLTAGE	WEIGHT	CENTER OF GRAVITY DIM X	CENTER OF GRAVITY DIM Y	CENTER OF GRAVITY DIM Z
SG35, SG40, SG45, SG50	220V, 240V, 1Ø	1061.9 kg [2341 lbs.]	1076 [42.4]	626 [24.6]	452 [17.8]
SG35, SG40, SG45, SG50	600V	1065.5 kg [2349 lbs.]	1076 [42.4]	626 [24.6]	
SG35, SG40, SG45, SG50	208V, 240V, 400V, 480V	1067.3 kg [2353 lbs.]	1076 [42.4]	626 [24.6]	
SG35, SG40, SG45, SG50	220V, 240V, 1Ø UPSIZE	1089.5 kg [2402 lbs.]	1064 [41.9]	621 [24.4]	
SG35, SG40, SG45, SG50	600V UPSIZE	1093.2 kg [2410 lbs.]	1063 [41.9]	620 [24.4]	
SG35, SG40, SG45, SG50	208V, 240V, 400V, 480V UPSIZE	1095.4 kg [2415 lbs.]	1063 [41.9]	620 [24.4]	

L2A ENCLOSURE, ALUMINUM

WEIGHT	CENTER OF GRAVITY DIM X	CENTER OF GRAVITY DIM Y	CENTER OF GRAVITY DIM Z
939.4 kg [2071 lbs.]	1063 [41.9]	612 [24.1]	450 [17.7]
943 kg [2079 lbs.]	1063 [41.9]	612 [24.1]	
944.8 kg [2083 lbs.]	1063 [41.9]	612 [24.1]	
966.6 kg [2131 lbs.]	1049 [41.3]	607 [23.9]	
970.7 kg [2140 lbs.]	1049 [41.3]	606 [23.9]	
972.5 kg [2144 lbs.]	1048 [41.3]	606 [23.9]	

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INSIDE WINDCHILL



TITLE

OPEN SET
G4.5L 60Hz
SG35, SG40, SG45, SG50

ISSUE DATE: 08/27/2019

SIZE
B

CAGE NO
N/A

DWG NO

A0000292914

REV
E

SCALE 0.035

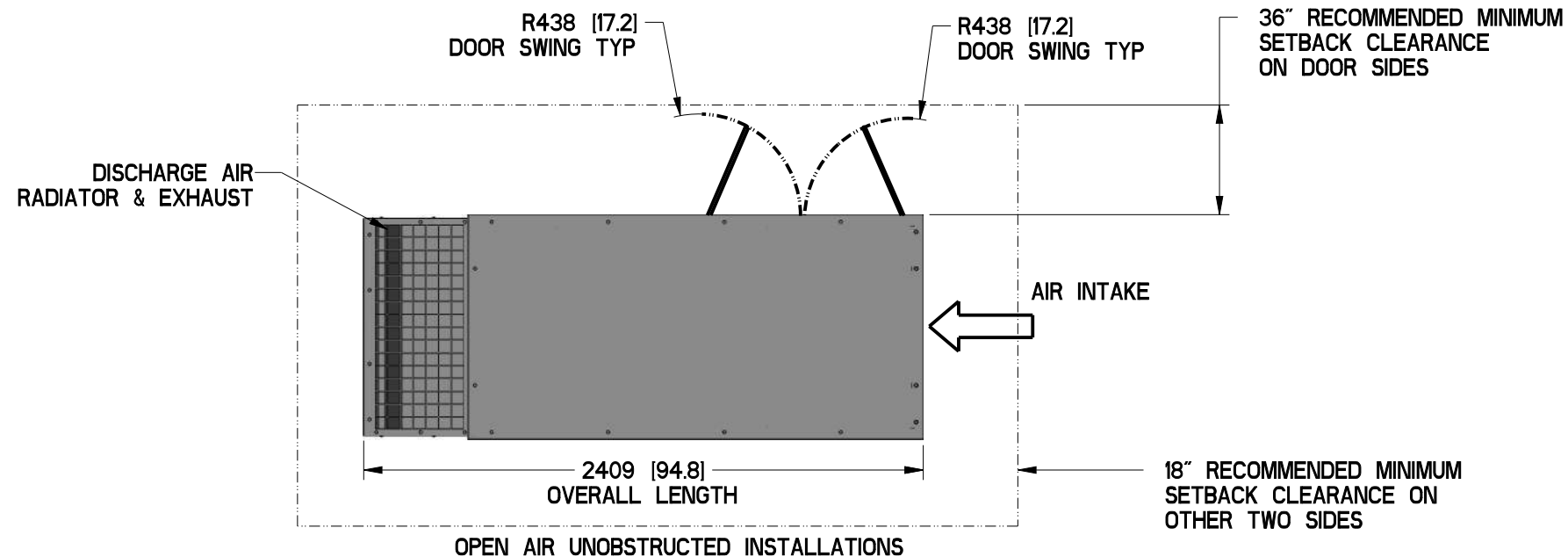
WT-KG

SHEET 34 of 101

3

B

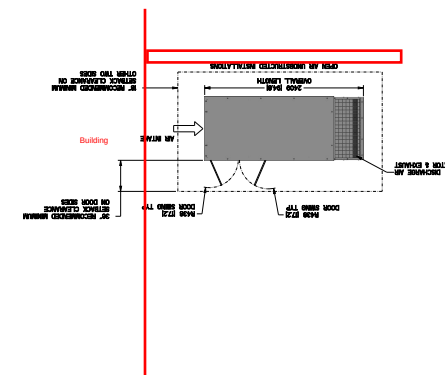
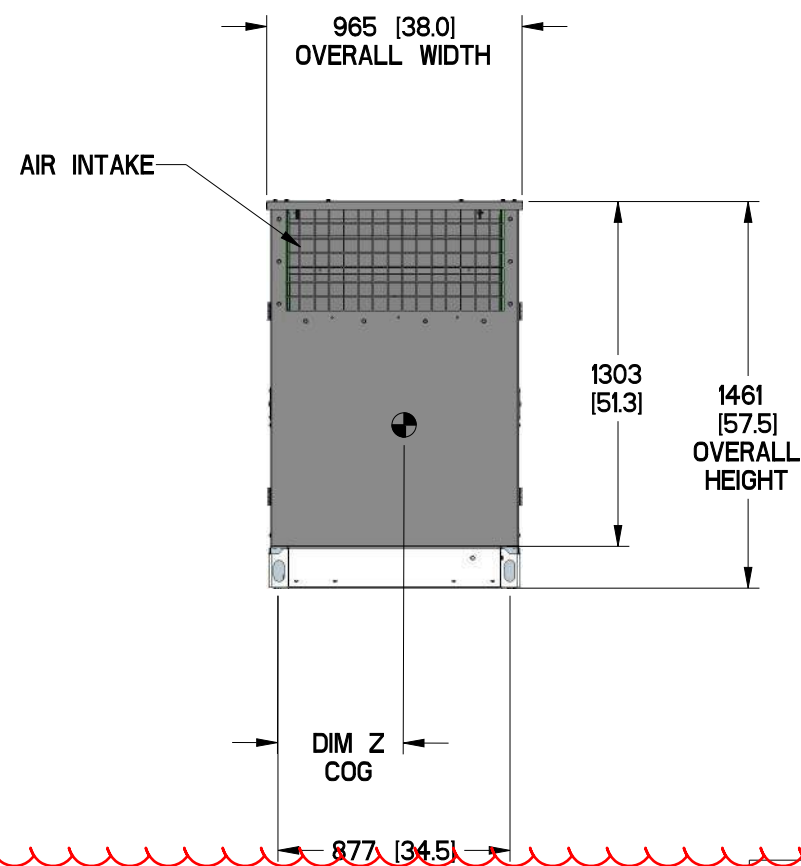
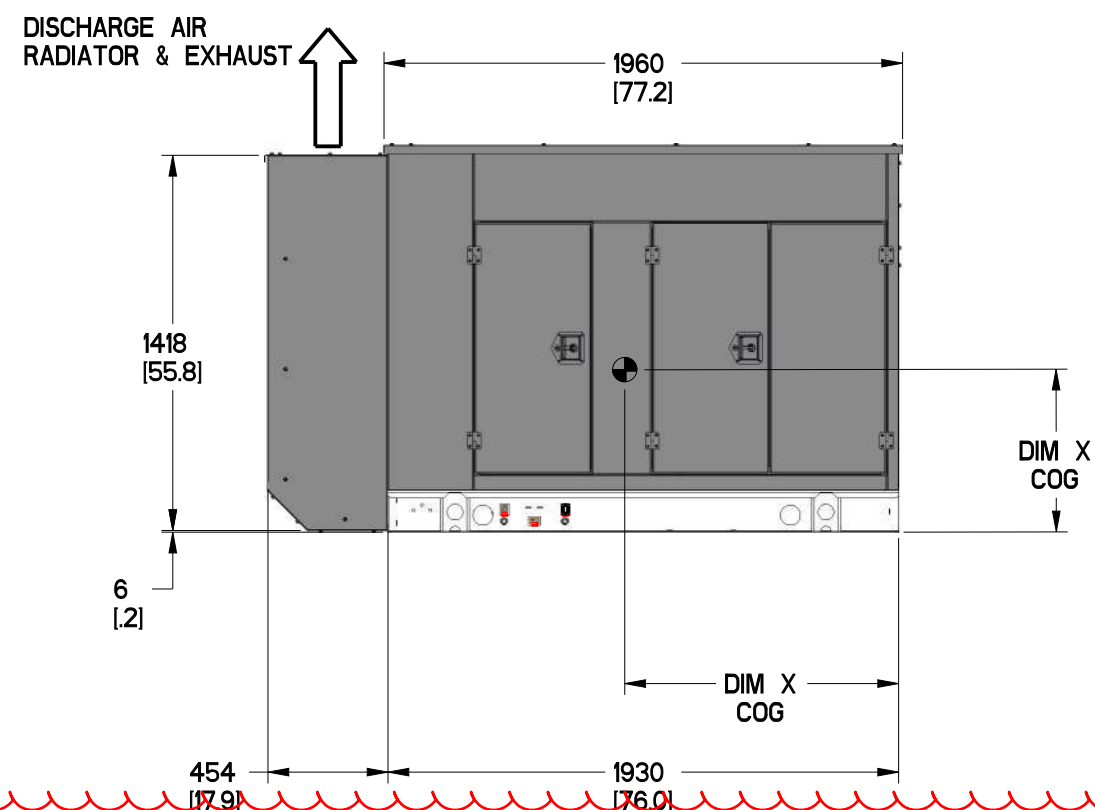
B



NOTES:

1. FOR ALL STUB-UP, WEIGHT AND COG DETAILS, SEE CORRESPONDING OPEN SET DRAWING PER UNIT CONFIGURATION
2. FOR INSTALLATIONS WITH AIRFLOW OBSTRUCTIONS ON ANY SIDE OF THE GENERATOR SEE SUPPORTING DOCUMENTATION FOR AIR FLOW CLEARANCE IN SUBMITTAL DOCUMENTS.

This is our case



A

A

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INSIDE WINDCHILL

GENERAC

TITLE

INSTALL A-GRP ENCLOSED
G4.5L 50&60Hz

ISSUE DATE:

SIZE
BCAGE NO
N/A

DWG NO

A0000335178

REV
D

SCALE

0.035

WT-KG

N/A

SHEET 35 of 101

1

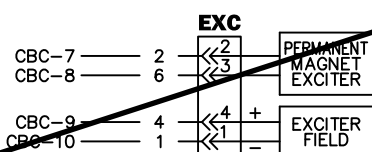
INSTALLATION DRAWING

LEGEND

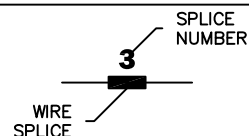
AFPS - AIR FILTER PRESSURE SENSOR
 AH1 - ALARM HORN
 ALT - DC CHARGE ALTERNATOR
 AVR - AUTOMATIC VOLTAGE REGULATOR
 BCC - BATTERY CHARGER CONNECTOR
 BCH - BATTERY CHARGER
 BPC - BATTERY CHARGER POWER CONNECTOR
 BS - POWERZONE BASE STATION
 BS_ - BASE STATION CONNECTOR
 BSG - BASE STATION CHASSIS GROUND
 CAMS - CAMSHAFT POSITION SENSOR
 CB - CIRCUIT BREAKER PME
 CBC - (MLCB) CIRCUIT BREAKER CONNECTOR
 CRKS - CRANKSHAFT POSITION SENSOR
 CT_ - CURRENT TRANSFORMER
 CTC - CURRENT TRANSFORMER CONNECTOR
 CAC - CHARGE AIR COOLER BYPASS
 DB - DIODE BRIDGE
 DGND - CONTROL PANEL DOOR GROUND
 DPR - DRIVER POWER RELAY

ECM - ENGINE CONTROL MODULE
 EMC - ELECTRONIC MIXER CONTROL VALVE
 ES1 - EMERGENCY STOP SWITCH
 ETC - ELECTRONIC THROTTLE CONTROL VALVE
 EXC - EXCITER
 FB_ - FUSE BLOCK
 FPS - FUEL PRESSURE SENSOR
 FS_ - FUEL SOLENOID
 FSP - FUEL SOLENOID PLUG
 FSR - FUEL SOLENOID RECEPTACLE
 GFCI - GROUND FAULT CURRENT INTERRUPT
 GND - GROUND BAR CONNECTION
 IC_ - IGNITION COIL
 IR - IGNITION RELAY
 LFP - LOW FUEL PRESSURE SWITCH/SENSOR
 MLCB - MAIN LINE CIRCUIT BREAKER
 NEU - NEUTRAL BUS
 OPS - OIL PRESSURE SENDER
 OS - OXYGEN SENSOR
 OTS - OIL TEMPERATURE SENDER

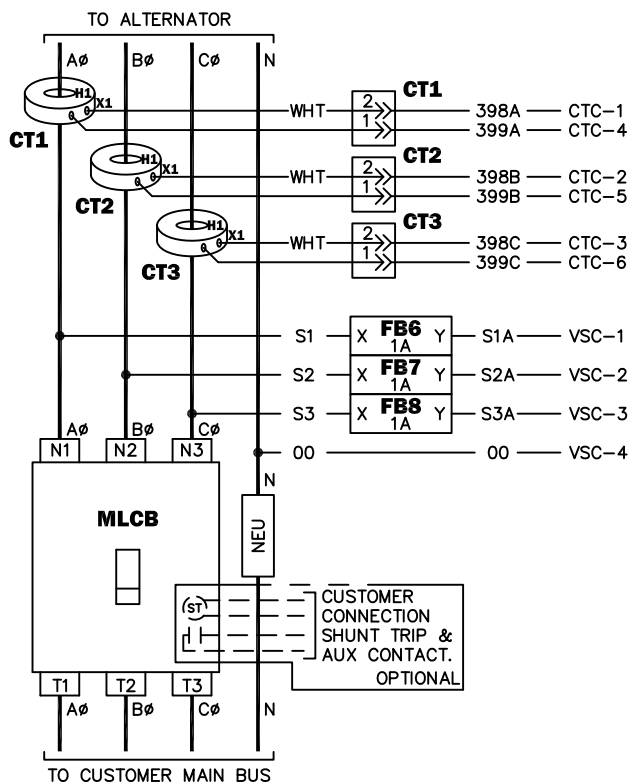
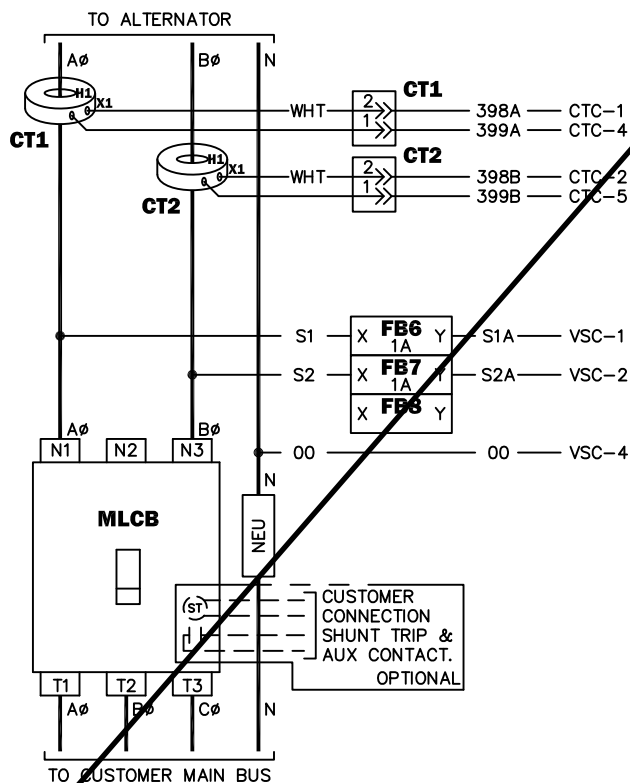
PWR - POWER ZONE POWER CONNECTOR
 PZC - MAIN POWER ZONE CONNECTOR
 PZCS - POWER ZONE CONNECTIVITY SERVER
 R1 - RESISTOR
 RB_ - RELAY BOARD
 RB_A - RELAY BOARD CONNECTOR
 SC - START CONTACTOR
 SM - STARTER MOTOR
 ST - SHUNT TRIP
 SW1 - OFF/AUTO/MANUAL SWITCH
 SWC - OPERATOR SWITCH CONNECTOR
 TB_ - TERMINAL BLOCK
 TMAP - MANIFOLD TEMPERATURE & PRESSURE
 TPS - MIXER POSITION SENSOR
 VSC - VOLTAGE SENSING CONNECTOR
 WLS - COOLANT LEVEL SENDER
 WM - WIFI MODULE
 WM_ - WIFI MODULE CONNECTOR
 WTS - COOLANT TEMPERATURE SENDER

ALTERNATOR EXCITATION

NOTE: ALL WIRES 18 AWG
300V UL LISTED UNLESS
SHOWN OTHERWISE

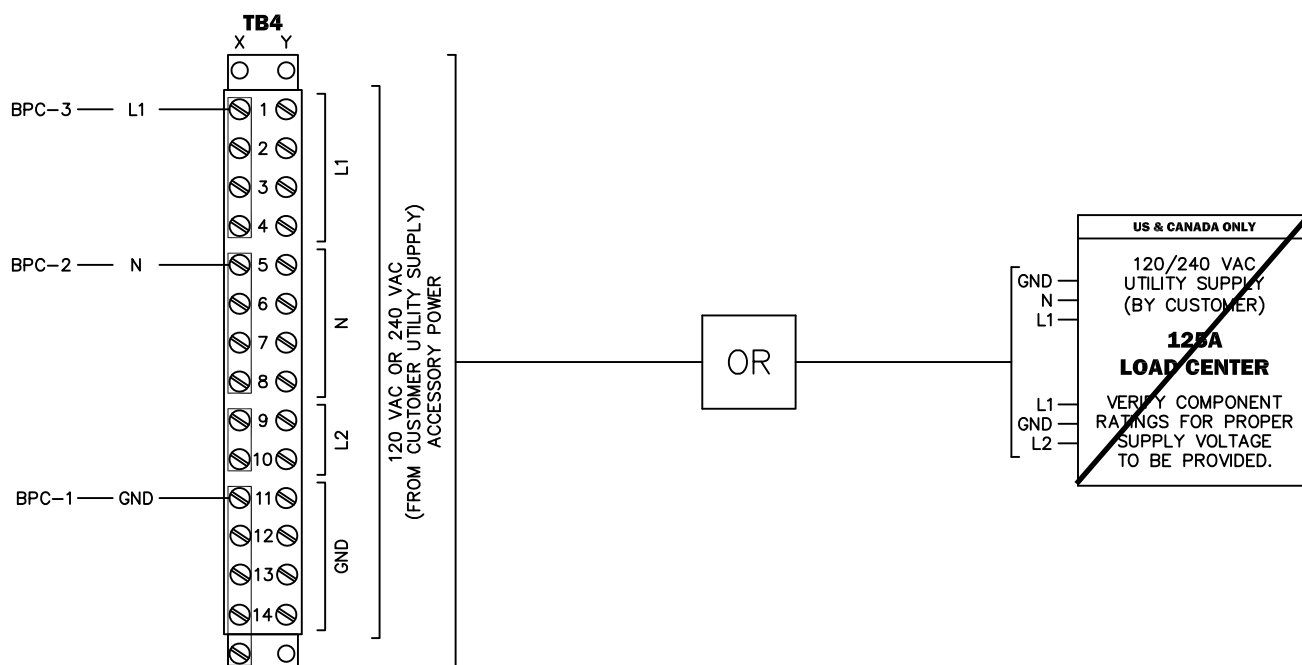
**COMPONENTS LOCATED IN HIGH VOLTAGE CUSTOMER CONNECTION MODULE****CONNECTIONS
FOR 1Ø UNIT**

NOTE: ALL WIRES IN THIS
SECTION ARE 600V RATED

**CONNECTIONS
FOR 3Ø UNIT**

COMPONENTS LOCATED IN HIGH VOLTAGE CUSTOMER CONNECTION MODULE

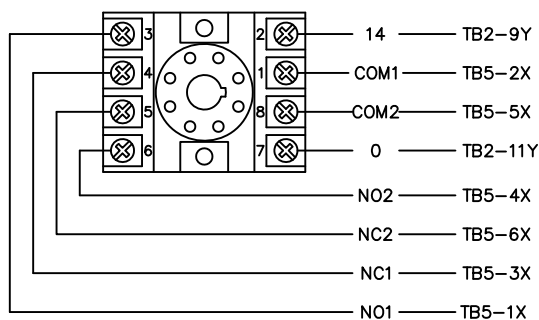
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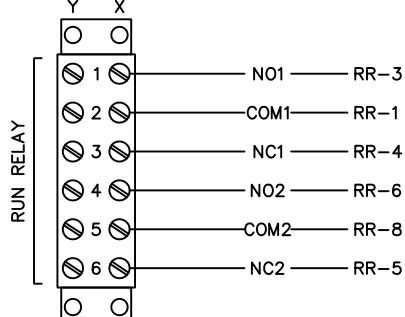
COMPONENTS LOCATED IN HIGH VOLTAGE CUSTOMER CONNECTION MODULE

NOTE: ALL WIRES ON THIS
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RUN RELAY

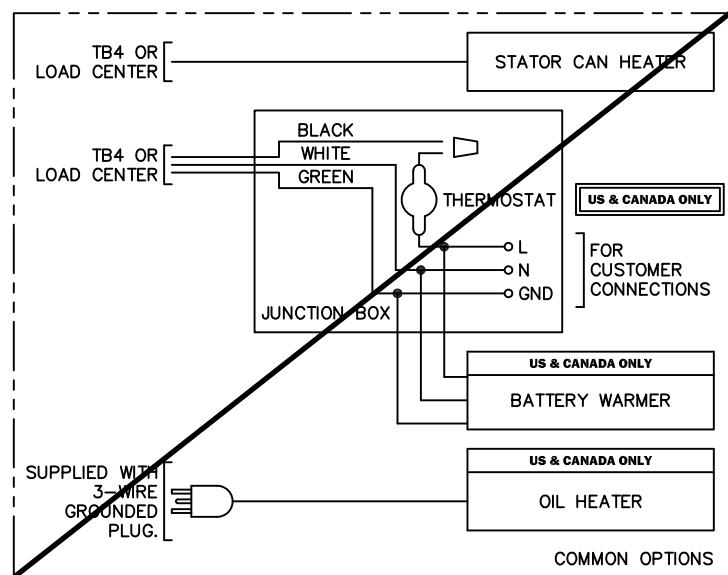
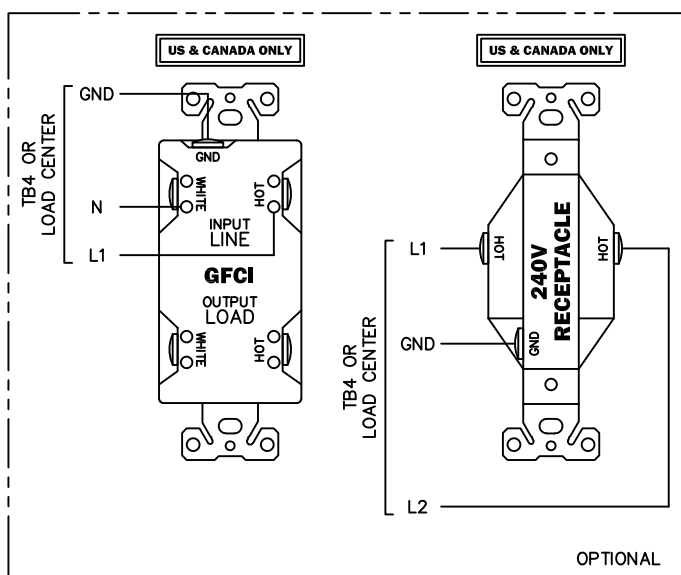
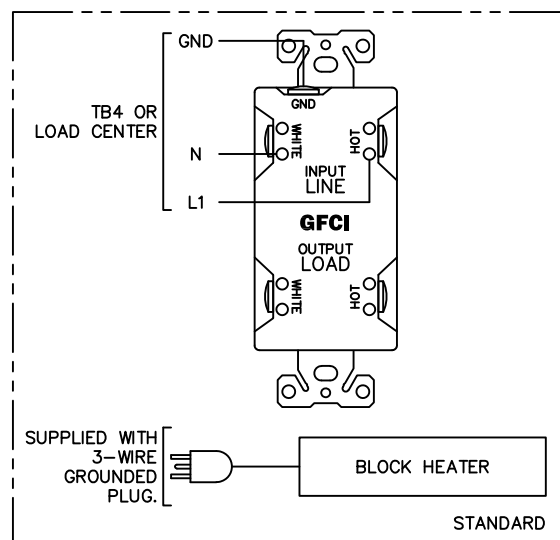


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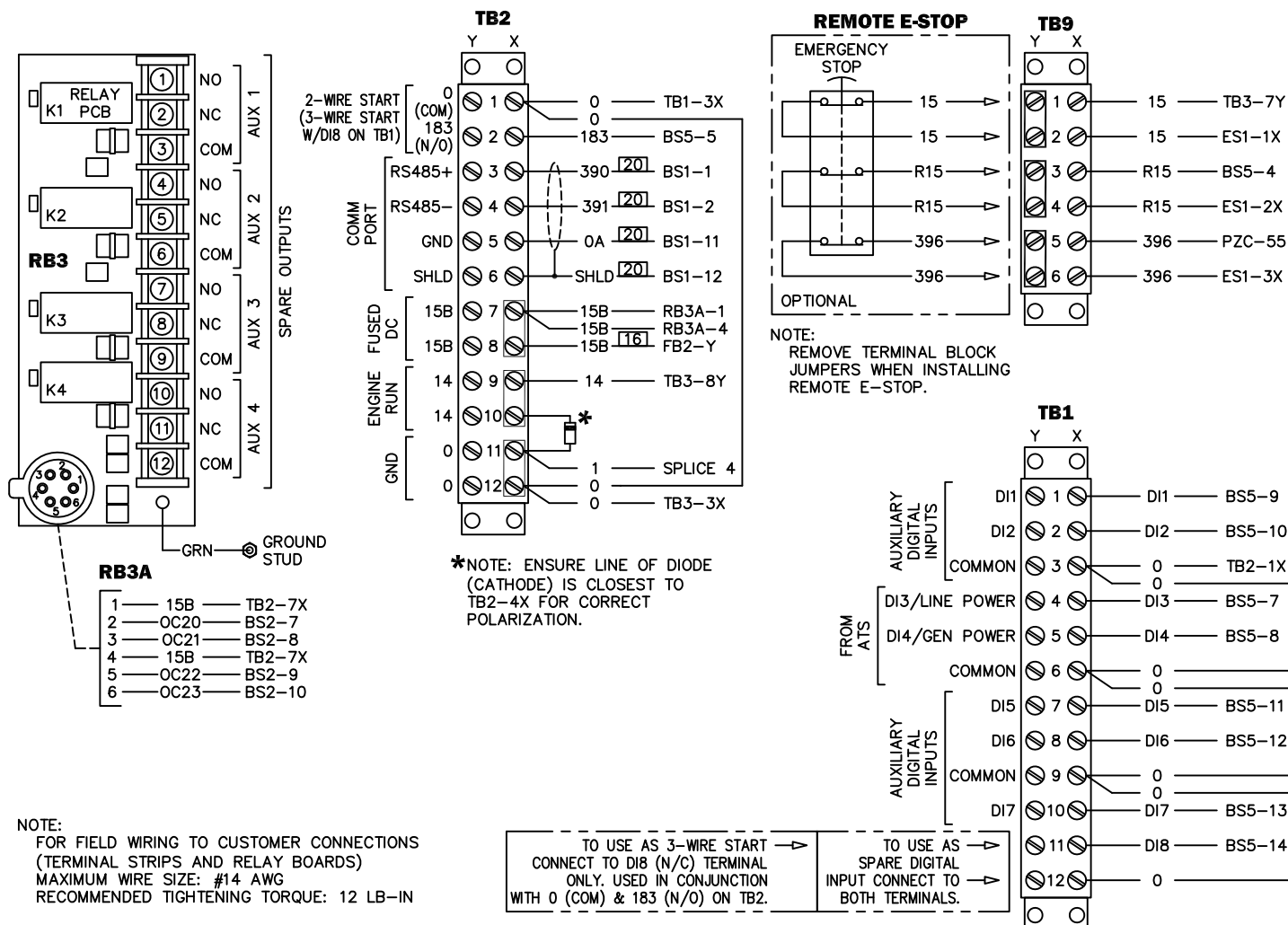


NOTE:
FOR FIELD WIRING TO CUSTOMER CONNECTIONS
(TERMINAL STRIPS AND RELAY BOARD)
MAXIMUM WIRE SIZE: #14 AWG
RECOMMENDED TIGHTENING TORQUE: 12 LB-IN

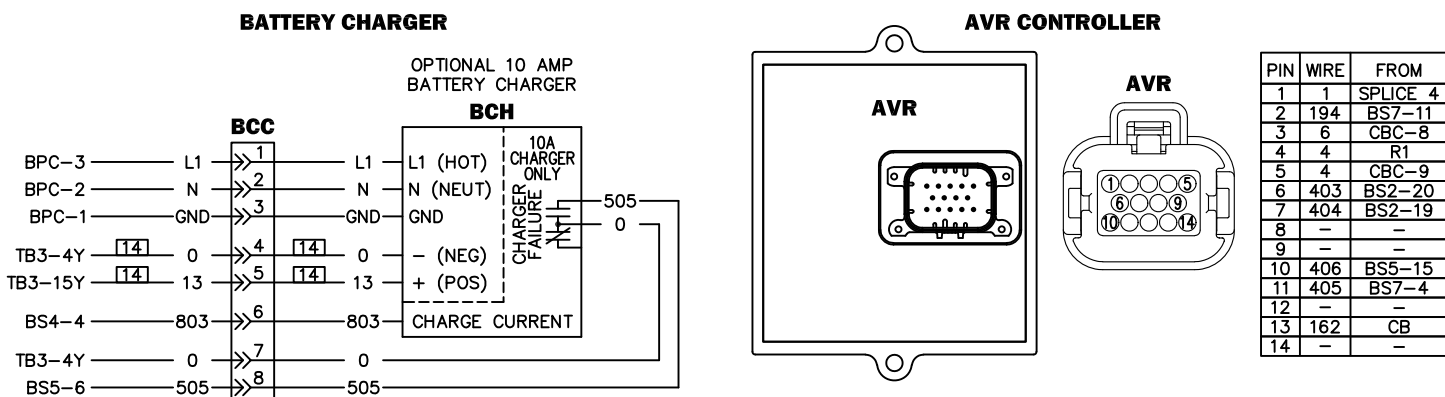
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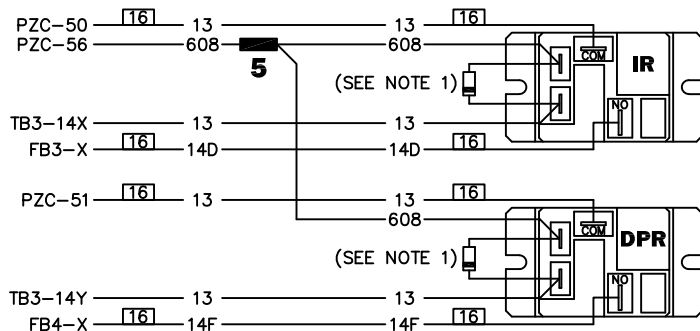
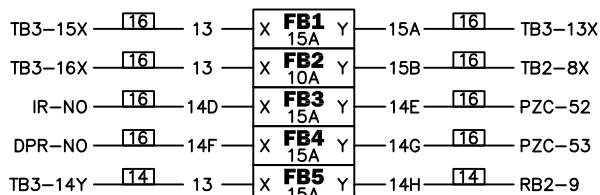
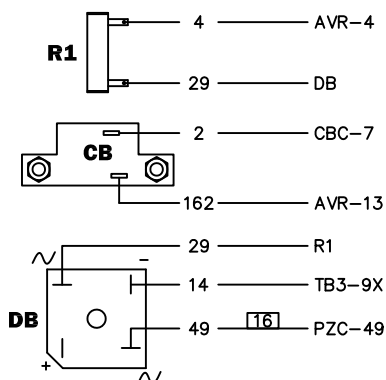
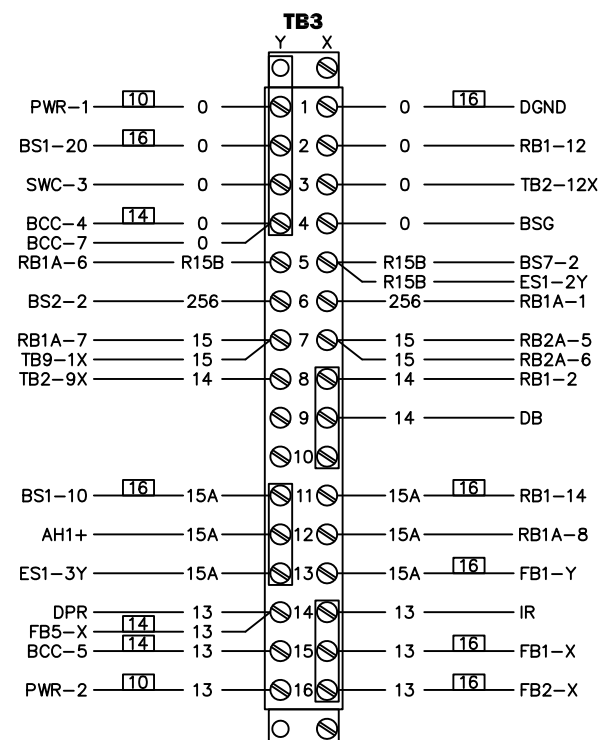
COMPONENTS LOCATED ON LOW VOLTAGE CUSTOMER CONNECTION PANEL



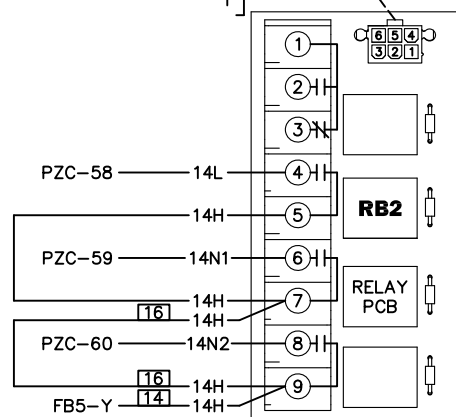
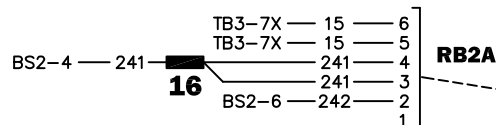
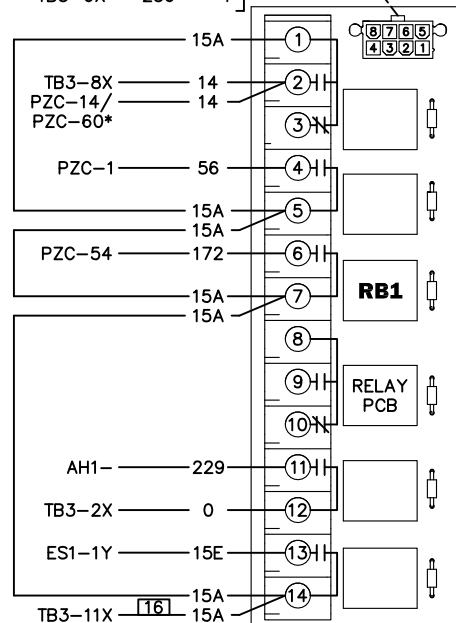
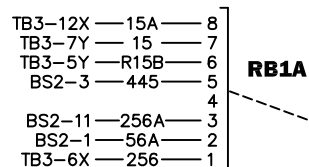
COMPONENTS LOCATED IN CONTROL PANEL



COMPONENTS LOCATED IN CONTROL PANEL



*WIRE #14 WIRED TO PZC-60 FOR FSP 6 POSITION CONNECTOR SCENARIO.



NOTE:
1. 1A, 1000V DIODE. ENSURE LINE OF DIODE (CATHODE) IS CLOSEST TO WIRE #13 FOR CORRECT POLARIZATION.

COMPONENTS LOCATED ON CONTROL PANEL BACK WALL

PIN	WIRE	FROM	TO
1	56	RB1-4	SC
2	-	-	-
3	-	-	-
4	-	-	-
5	-	-	-
6	601	BS5-3	FSP-1
7	573	BS3-12	WLS-A
8	573A	BS3-11	WLS-B
9	-	-	-
10	-	-	-
11	-	-	-
12	-	-	-

PIN	WIRE	FROM	TO
13	-	-	-
14	14	RB1-2	SPLICE 3
15	-	-	-
16	-	-	-
17	-	-	-
18	-	-	-
19	-	-	-
20	-	-	-
21	-	-	-
22	-	-	-
23	-	-	-
24	-	-	-

PIN	WIRE	FROM	TO
25	-	-	-
26	-	-	-
27	-	-	-

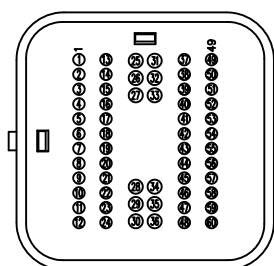
PIN	WIRE	FROM	TO
28	-	-	-
29	-	-	-
30	-	-	-

PIN
NUMBERS

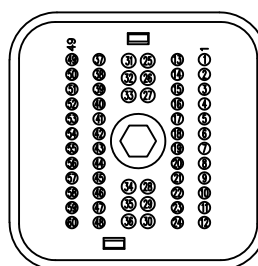
1 13 25 31 37 49
12 24 30 36 48 60

PIN
NUMBERS

49 37 31 25 13 1
60 48 36 30 24 12



CONTROLLER SIDE
CONTROL PANEL



ENGINE SIDE
CONTROL PANEL

PIN	WIRE	FROM	TO
31	-	-	-
32	-	-	-
33	-	-	-

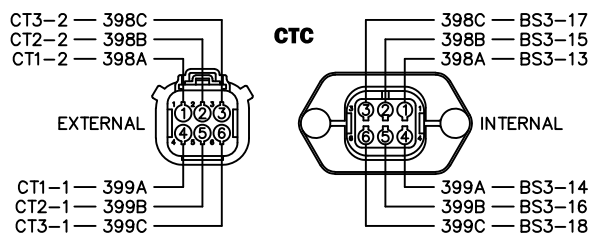
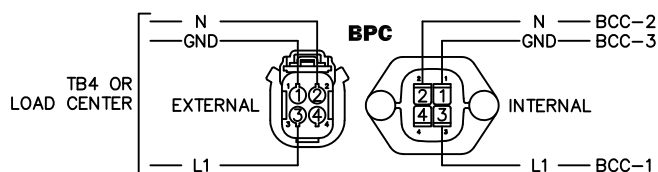
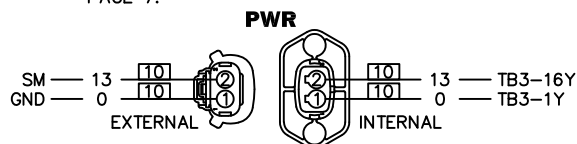
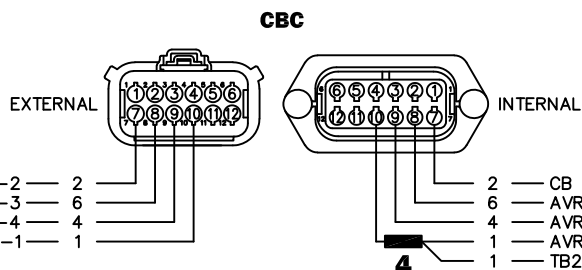
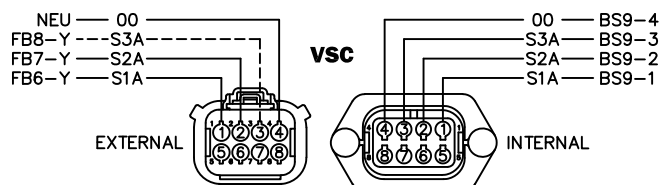
PIN	WIRE	FROM	TO
34	-	-	-
35	-	-	-
36	-	-	-

PIN	WIRE	FROM	TO
37	-	-	-
38	-	-	-
39	-	-	-
40	797S	BS4-1	FSP-2
41	797R	BS4-13	FSP-3
42	797V	BS4-9	FSP-4
43	743A	BS8-3	ECM-2C
44	744A	BS8-4	ECM-2B
45	SHLD	BS8-2	ECM (CUT)
46	-	-	-
47	-	-	-
48	-	-	-

PIN	WIRE	FROM	TO
49	49	DB	ALT
50	13	IR-COM	SPLICE 1
51	13	DPR-COM	SPLICE 1
52	14E	FB3-Y	SPLICE 6
53	14G	FB4-Y	SPLICE 13
54	172	RB1-6	ECM-20
55	396	TB9-5X	ECM-3J
56	608	SPLICE 5	ECM-1H
57	609	BS2-13	ECM-3K
58	14L	RB2-4	FSP-8
59	14N1	RB2-6	FSP-9
60	14N2	RB2-8	FSP-10

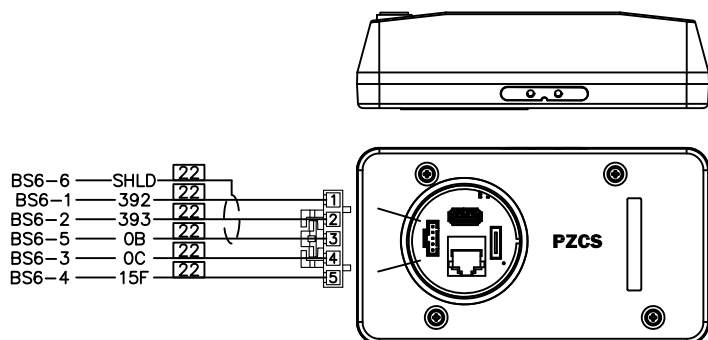
*SEE ALTERNATIVE WIRING TO FSP
FOR 6 POSITION CONNECTOR ON
PAGE 7.

NOTE:
THE DASHED S3A WIRE IN
VSC CONNECTOR IS
POPULATED IN 3 PHASE
APPLICATION.

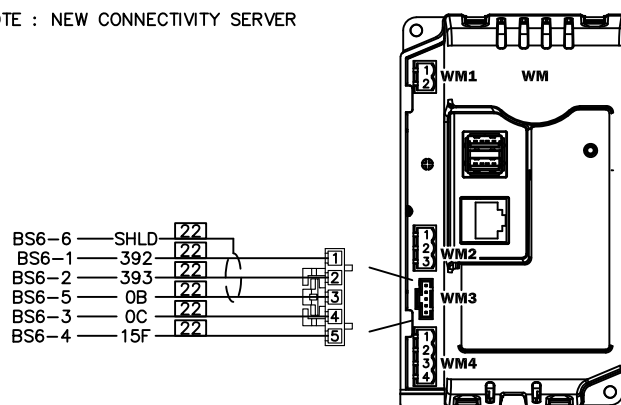
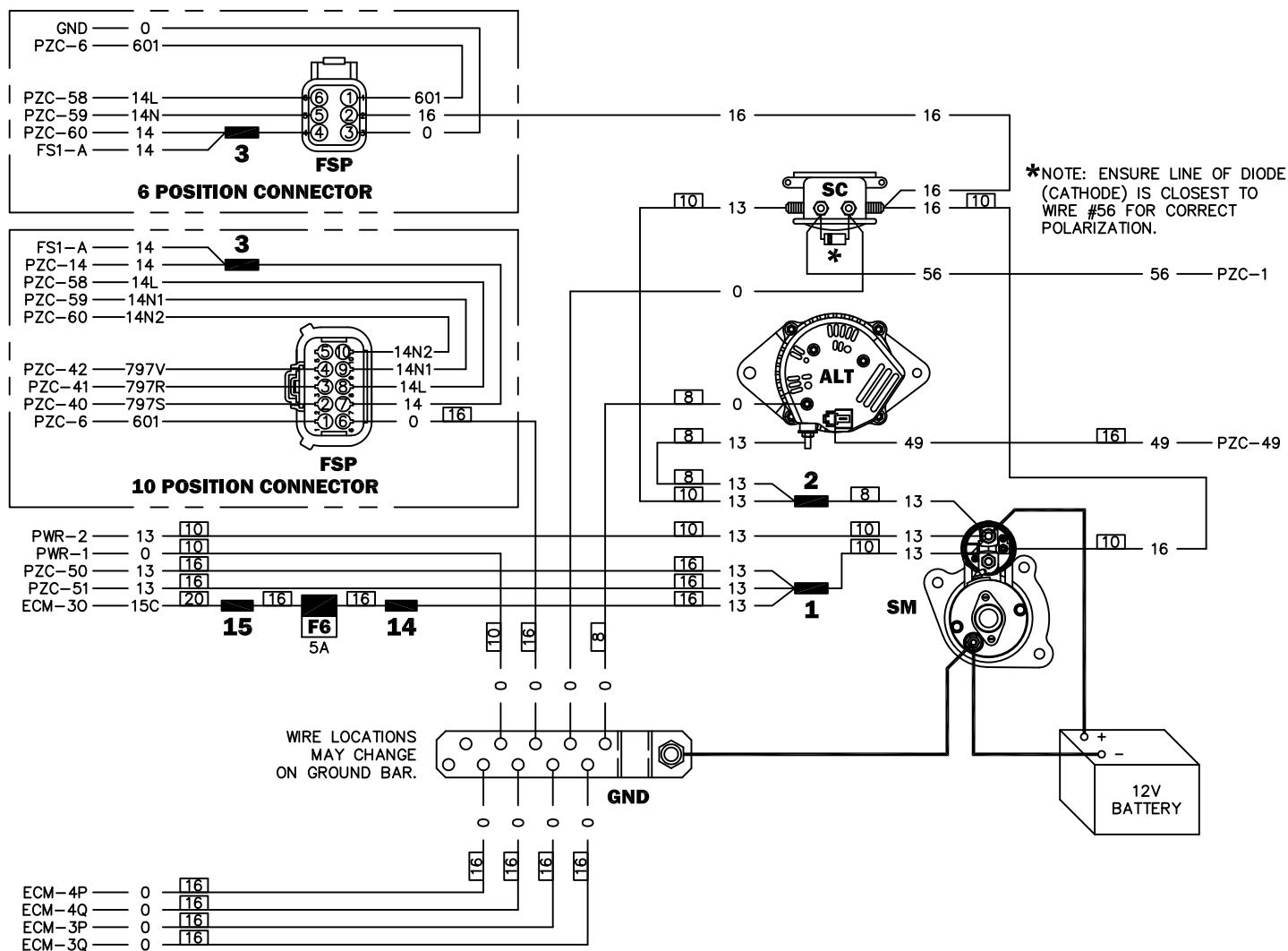


COMPONENTS LOCATED ON TOP OF CONTROL PANEL

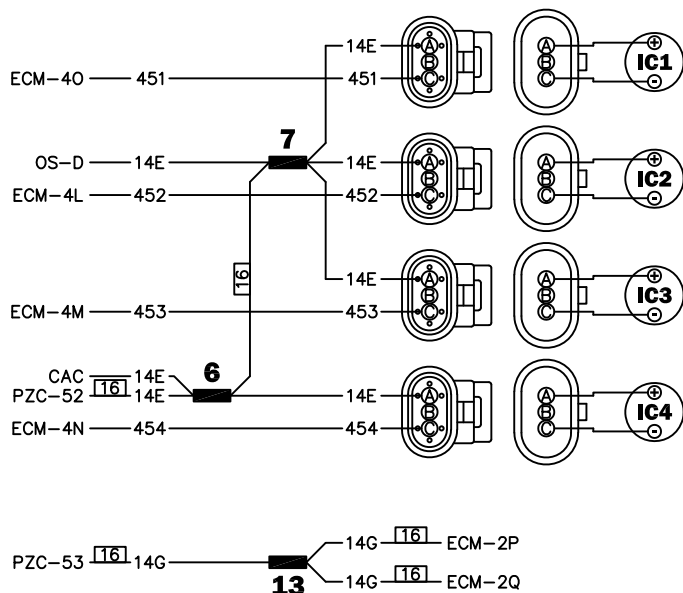
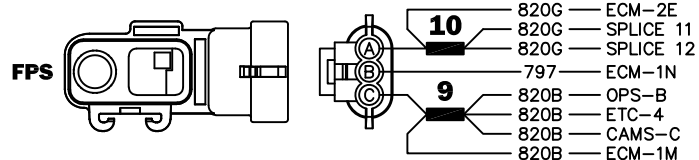
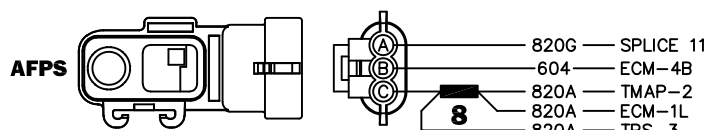
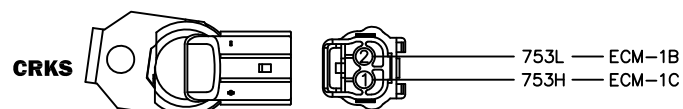
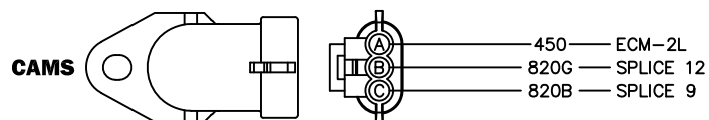
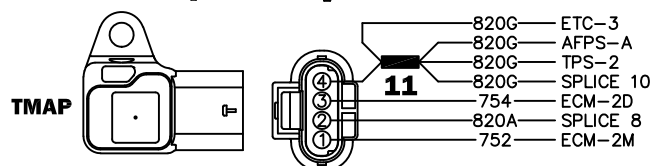
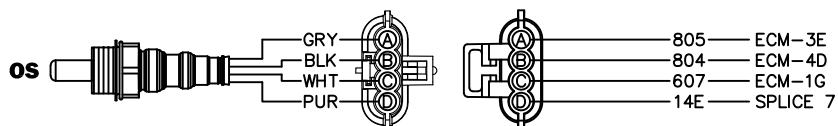
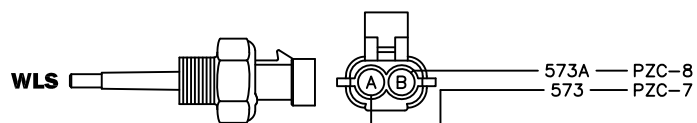
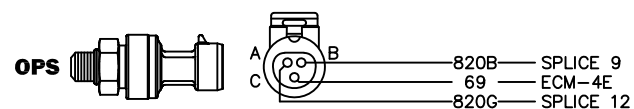
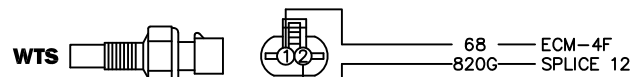
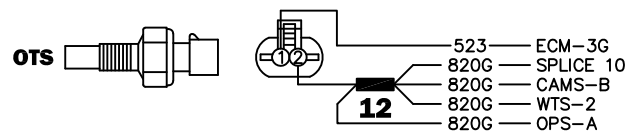
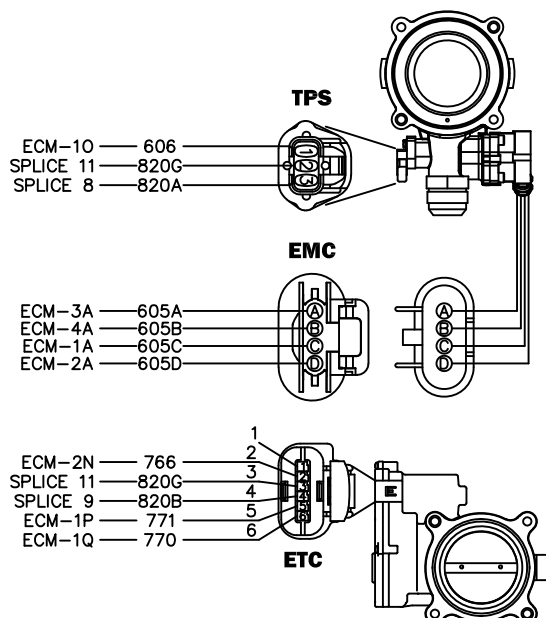
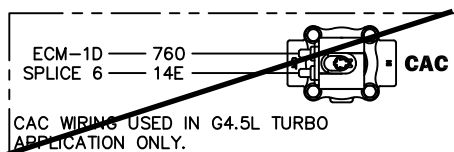
NOTE : OLD CONNECTIVITY SERVER

**COMPONENTS LOCATED INSIDE THE CONTROL PANEL**

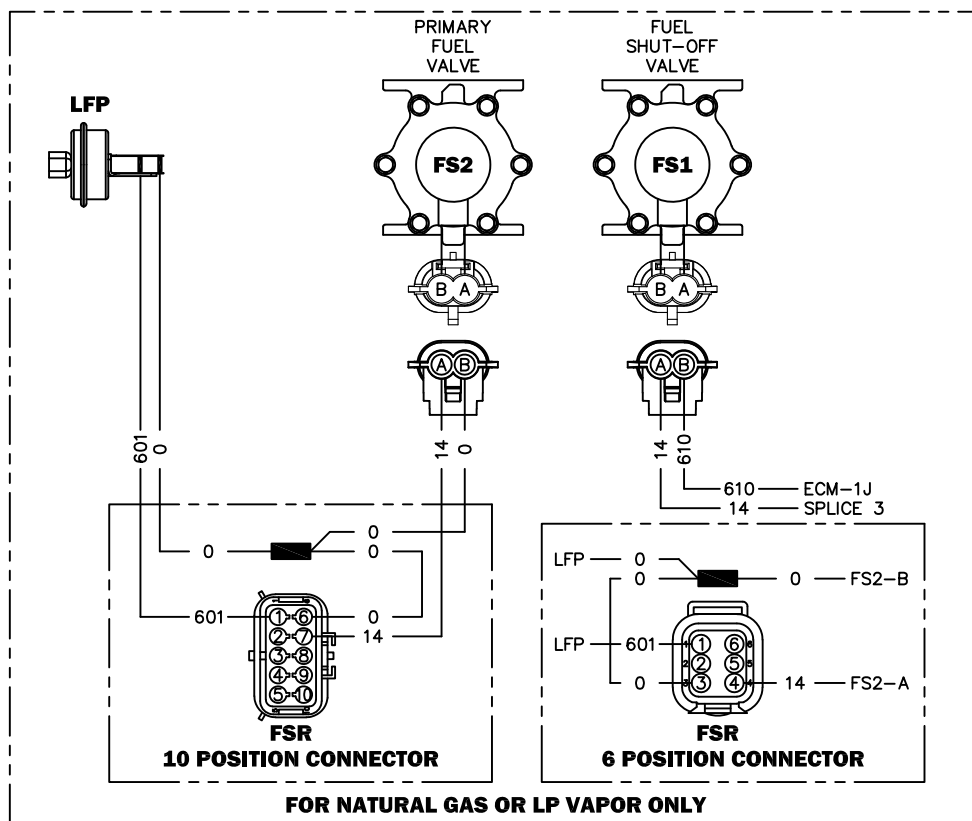
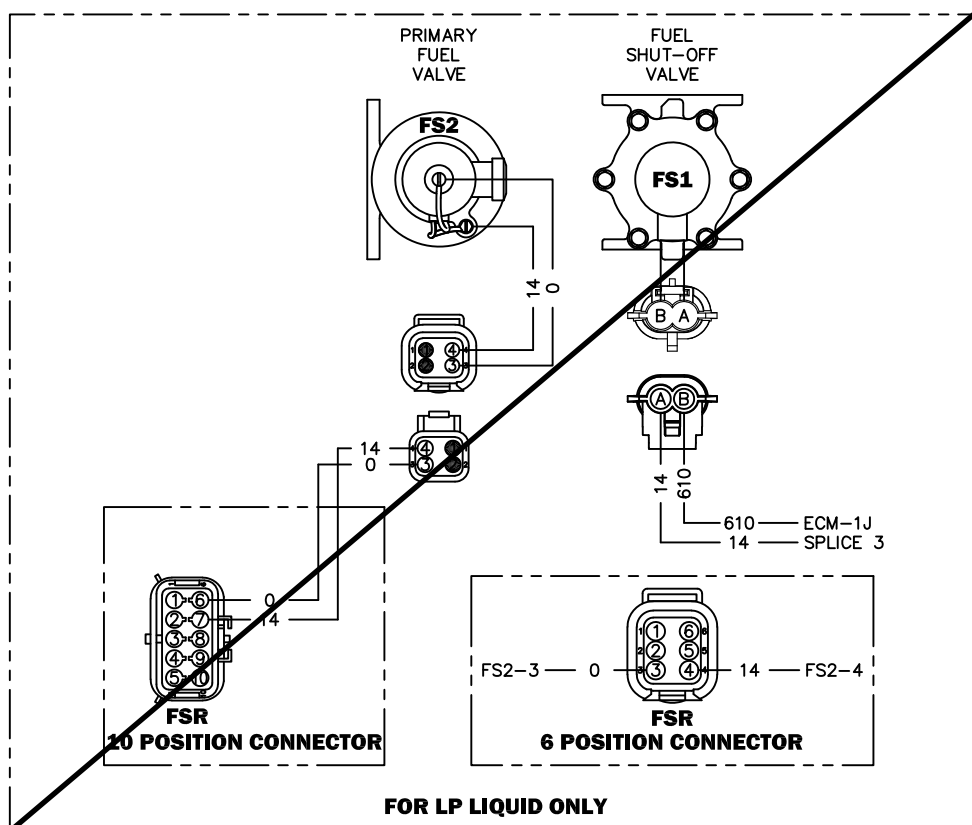
NOTE : NEW CONNECTIVITY SERVER

**COMPONENTS LOCATED ON ENGINE**

COMPONENTS LOCATED ON ENGINE

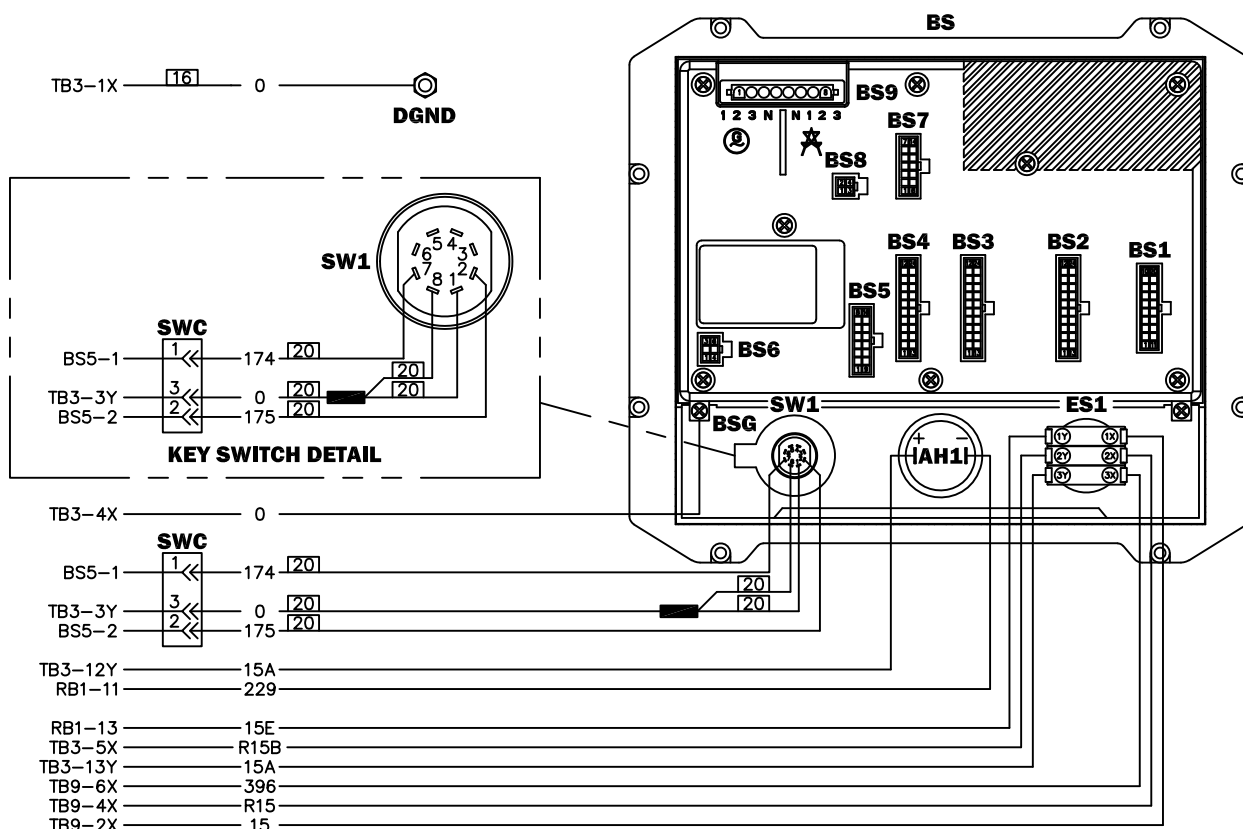


COMPONENTS LOCATED ON ENGINE





COMPONENTS LOCATED IN CONTROL PANEL



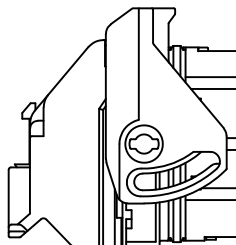
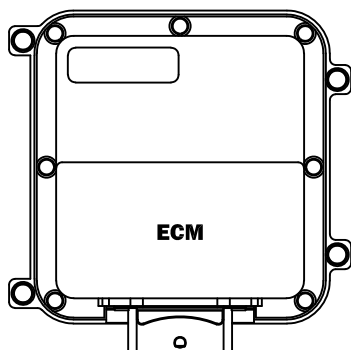
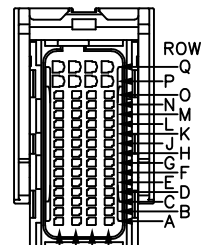
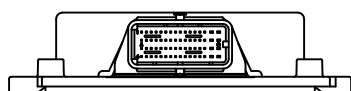
BS1			BS2			BS3		
FROM	WIRE	PIN	FROM	WIRE	PIN	FROM	WIRE	PIN
TB3-11Y	15A	10	TB3-2Y	0	20	PZC-7	573	12
-	-	9	-	-	12	PZC-8	573A	11
-	-	8	RB1A-3	256A	11	-	-	10
-	-	7	RB3A-6	0C23	10	-	-	9
-	-	6	RB3A-5	0C22	9	-	-	8
-	-	5	RB3A-3	0C21	8	-	-	7
-	-	4	RB3A-2	0C20	7	-	-	6
-	-	3	RB2A-2	242	6	-	-	5
TB2-4X	391	2	-	-	5	-	-	4
TB2-3X	390	1	SPLICE 16	241	4	-	-	3
			RB1A-5	445	3	-	-	2
			TB3-6Y	256	2	-	-	1
			RB1A-2	56A	1	-	-	

BS4			BS5			BS6		
FROM	WIRE	PIN	FROM	WIRE	PIN	FROM	WIRE	PIN
-	-	12	TB1-5X	DI4	8	PZCS-4/MM3-4	0C	3
-	-	11	TB1-4X	DI3	7	PZCS-2/MM3-2	393	2
-	-	10	BCC-8	505	6	PZCS-1/MM3-1	392	1
PZC-42	797H	9	TB2-2X	183	5			
-	-	8	TB9-3X	R15	4			
-	-	7	PZC-6	601	3			
-	-	6	SWC-2	175	2			
-	-	5	SWC-1	174	1			
BCC-6	803	4						
-	-	3						
-	-	2						
PZC-40	797S	1						

BS7			BS8			BS9		
FROM	WIRE	PIN	FROM	WIRE	PIN	PIN	WIRE	FROM
-	-	7	PZC-45	SHLD	2	1	S1A	VSC-1
-	-	6	-	-	1	2	S2A	VSC-2
-	-	5				3	S3A	VSC-3
AVR-11	405	4				4	00	VSC-4
-	-	3				5	-	-
TB3-5X	R15B	2				6	-	-
-	-	1				7	-	-
						8	-	-

BS9		
PIN	WIRE	FROM
1	S1A	VSC-1
2	S2A	VSC-2
3	S3A	VSC-3
4	00	VSC-4
5	-	-
6	-	-
7	-	-
8	-	-

COMPONENTS LOCATED ON ENGINE ELECTRONIC CONTROL MODULE

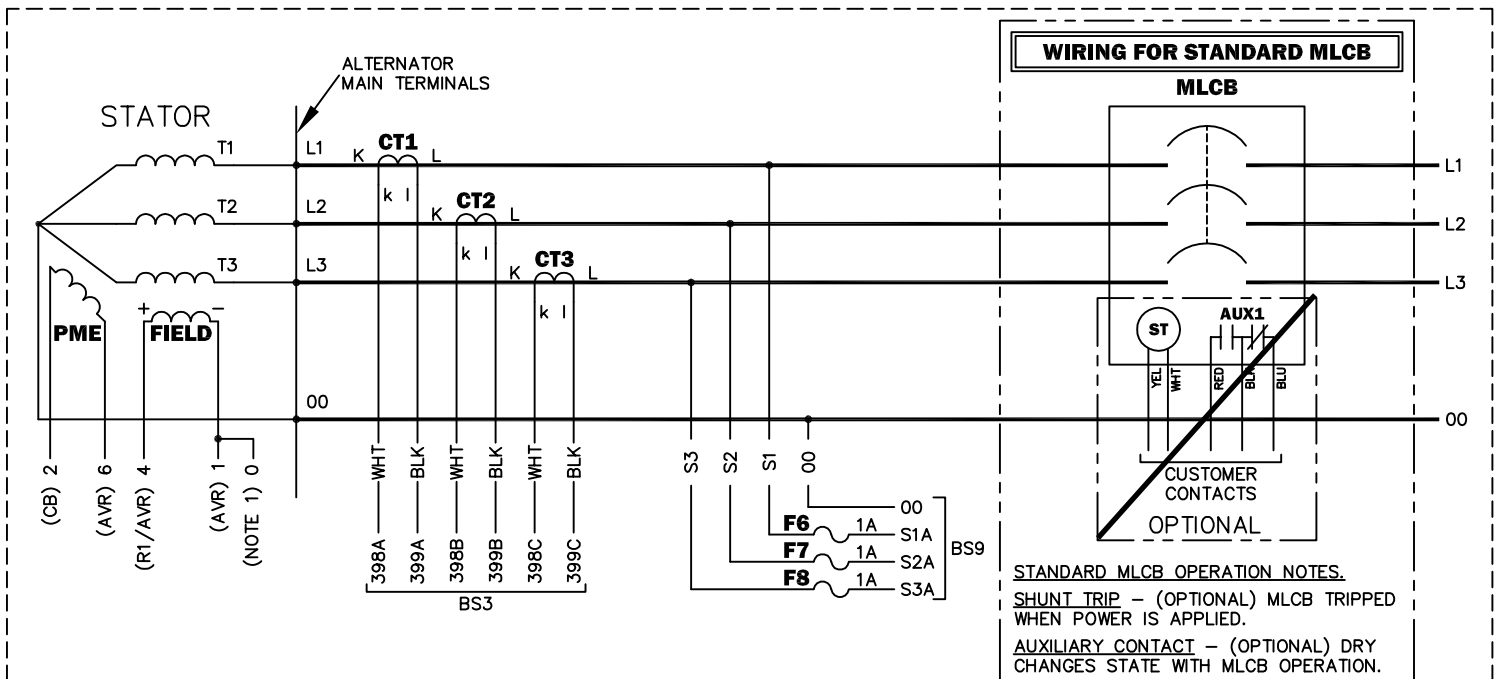
SIDE VIEW OF
CONNECTOR W/COVERTOP VIEW
OF CONNECTOR
W/O COVER

PIN	WIRE	TO
1A	605C	EMC-C
1B	753L	CRKS-2
1C	753H	CRKS-1
1D	760	CAC
1E	-	-
1F	-	-
1G	607	OS-C
1H	608	PZC-56
1J	610	FS1-B
1K	-	-
1L	820A	SPLICE 8
1M	820B	SPLICE 9
1N	797	FPS-B
1O	606	TPS-1
1P	771	ETC-5
1Q	770	ETC-6

PIN	WIRE	TO
2A	605D	EMC-D
2B	744A	PZC-44
2C	743A	PZC-43
2D	754	TMAP-3
2E	820G	SPLICE 10
2F	-	-
2G	-	-
2H	-	-
2J	-	-
2K	-	-
2L	450	CAMS-A
2M	752	TMAP-1
2N	766	ETC-2
2O	172	PZC-54
2P	14G	SPLICE 13
2Q	14G	SPLICE 13

PIN	WIRE	TO
3A	605A	EMC-A
3B	-	-
3C	-	-
3D	-	-
3E	805	OS-A
3F	-	-
3G	523	OTS-1
3H	-	-
3J	396	PZC-55
3K	609	PZC-57
3L	-	-
3M	-	-
3N	-	-
3O	15C	SPLICE 15
3P	0	GND
3Q	0	GND

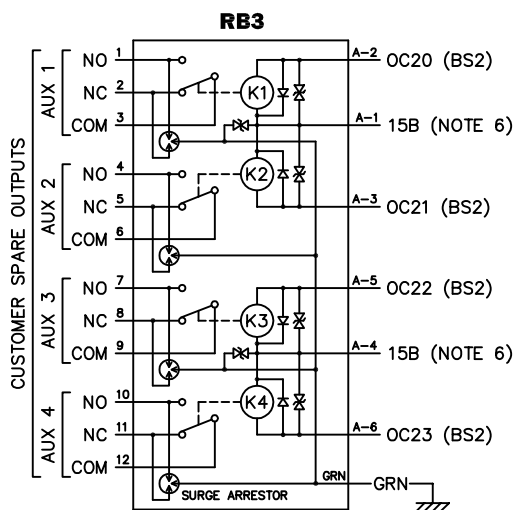
PIN	WIRE	TO
4A	605B	EMC-B
4B	604	AFPS-B
4C	-	-
4D	804	OS-B
4E	69	OPS-C
4F	68	WTS-1
4G	-	-
4H	-	-
4J	-	-
4K	-	-
4L	452	IC2-C
4M	453	IC3-C
4N	454	IC4-C
4O	451	IC1-C
4P	0	GND
4Q	0	GND

**NOTES:**

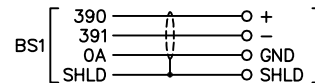
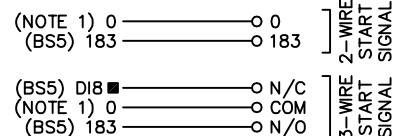
- 1) WIRE# 0 IS CHASSIS GROUND (BATTERY-) UNLESS NOTED OTHERWISE.
- 2) WIRE# 13 IS UNFUSED +12VDC (BATTERY+).
- 3) WIRE# 14 IS FUSED +12VDC POWER WHEN ENGINE IS CRANKING OR RUNNING.
- 4) WIRE# 15 IS FUSED +12VDC POWER WHEN E-STOP IS NOT ACTIVATED.
- 5) WIRE# 15A IS FUSED +12VDC POWER FOR GENERAL USE.
- 6) WIRE# 15B IS FUSED +12VDC POWER FOR THE CUSTOMER RELAYS AND FUSED DC CONNECTIONS.
- 7) WIRE# 15C IS FUSED +12VDC POWER FOR THE ECM.
- 8) WIRE# 15E IS FUSED +12VDC CONTROLLED BY BASE STATION PRIOR TO E-STOP.

LEGEND

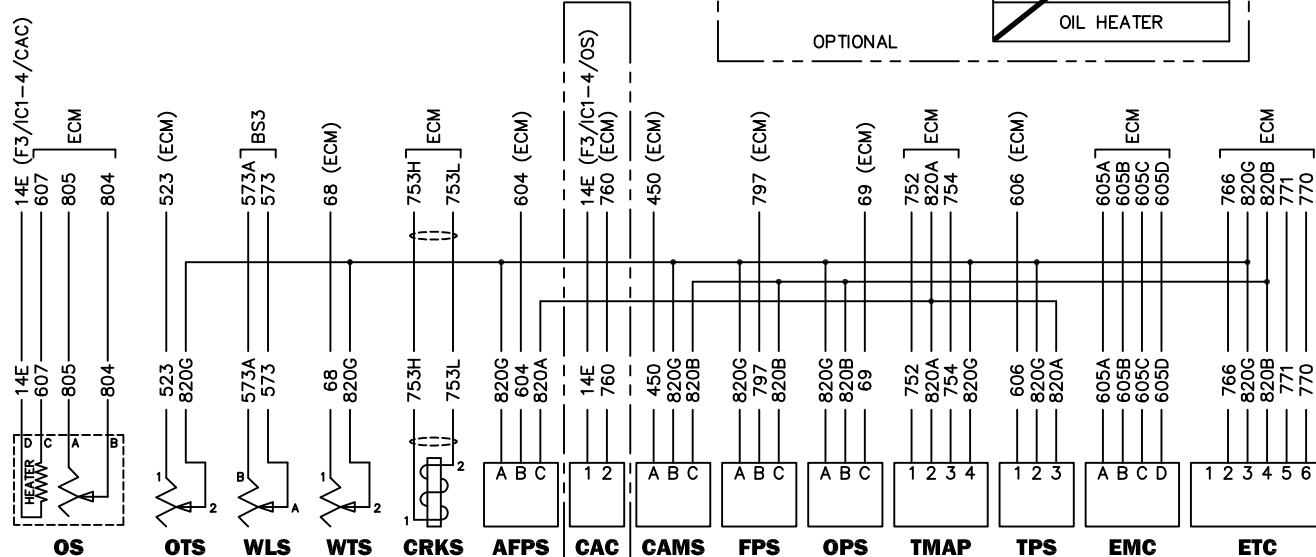
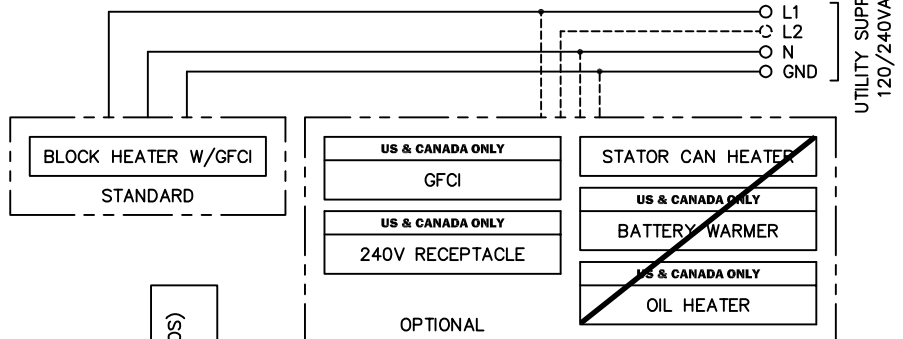
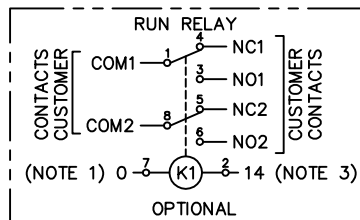
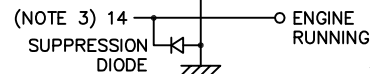
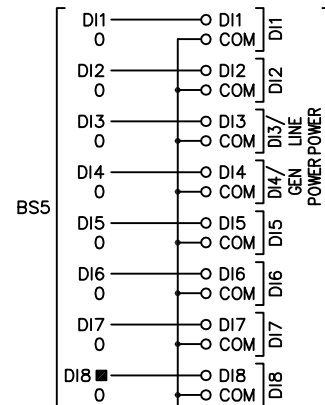
AFPS - AIR FILTER PRESSURE SENSOR	DPR - DRIVER POWER RELAY	OS - OXYGEN SENSOR
AH1 - ALARM HORN	ECM - ENGINE CONTROL MODULE	OTS - OIL TEMPERATURE SENDER
ALT - DC CHARGE ALTERNATOR	EMC - ELECTRONIC MIXER CONTROL VALVE	PME - PERMANENT MAGNET EXCITER
AUX_ - AUXILIARY CONTACT	ES1 - EMERGENCY STOP SWITCH	PZCS - POWER ZONE CONNECTIVITY SERVER
AVR - AUTOMATIC VOLTAGE REGULATOR	ETC - ELECTRONIC THROTTLE CONTROL VALVE	R1 - RESISTOR
BAT - BATTERY	F_ - FUSE	RB_ - RELAY BOARD
BCH - BATTERY CHARGER	FPS - FUEL PRESSURE SENSOR	SC - START CONTACTOR
BS - POWER ZONE BASE STATION	FS_ - FUEL SOLENOID	SM - STARTER MOTOR
BS_ - BASE STATION CONNECTOR	GFCI - GROUND FAULT CURRENT INTERRUPT	ST - SHUNT TRIP
CAC - CHARGE AIR COOLER BYPASS	IC_ - IGNITION COIL	SW1 - OFF/AUTO/MANUAL SWITCH
CAMS - CAMSHAFT POSITION SENSOR	IR - IGNITION RELAY	TMAP - MANIFOLD TEMP AND PRESSURE
CB - CIRCUIT BREAKER	LFP - LOW FUEL PRESSURE SWITCH/SENSOR	TPS - MIXER POSITION SENSOR
CRKS - CRANKCASE POSITION SENSOR	MLCB - MAIN LINE CIRCUIT BREAKER	WLS - COOLANT LEVEL SENDER
CT_ - CURRENT TRANSFORMER	OPS - OIL PRESSURE SENSOR	WTS - COOLANT TEMPERATURE SENDER
DB - DIODE BRIDGE		



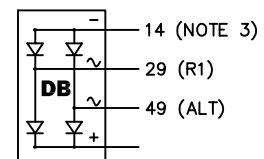
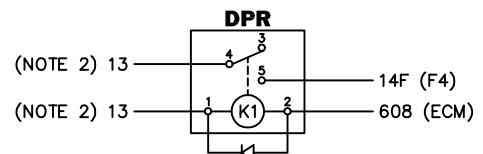
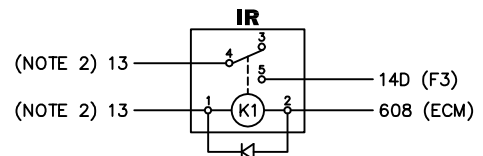
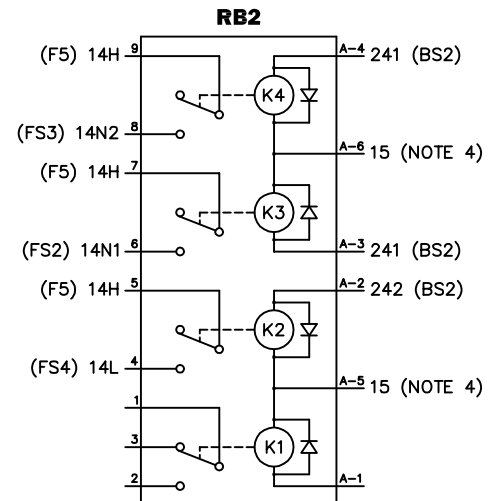
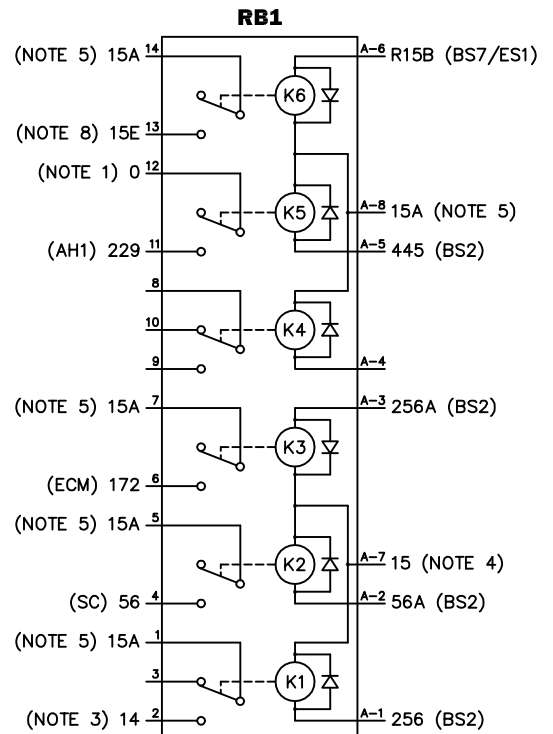
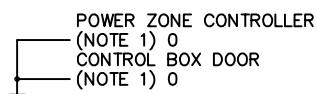
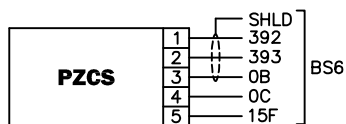
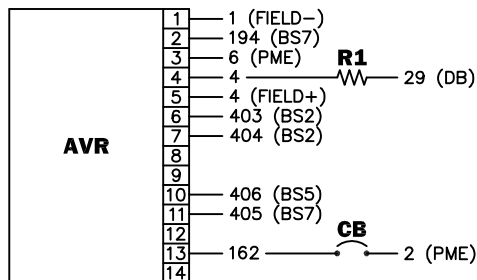
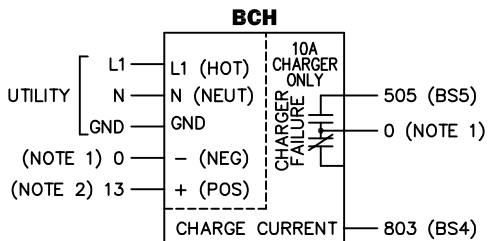
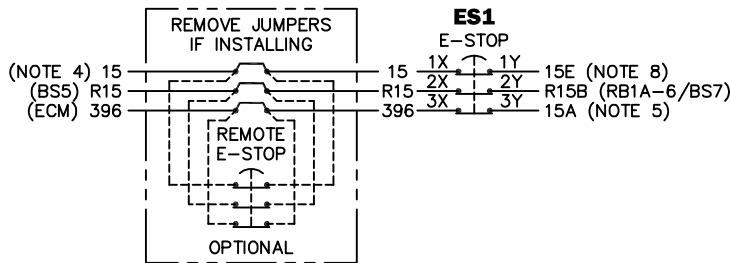
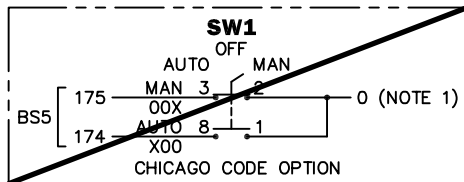
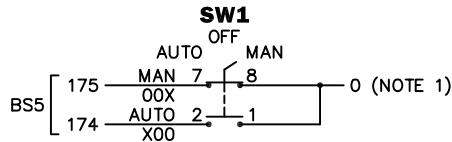
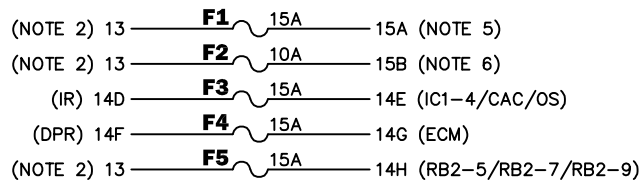
■ NOTE:
DI8 CAN BE USED WITH 3-WIRE START
OR AS A SPARE DIGITAL INPUT.

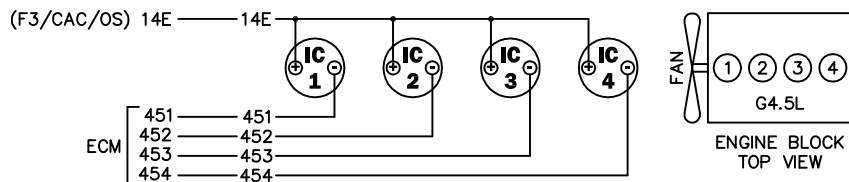
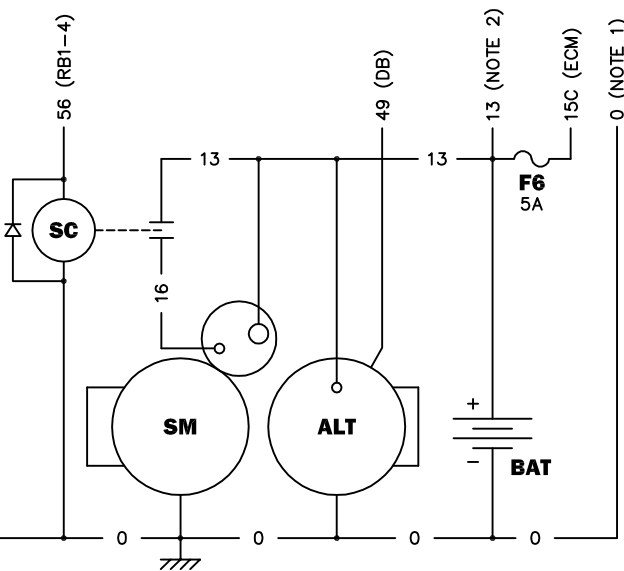
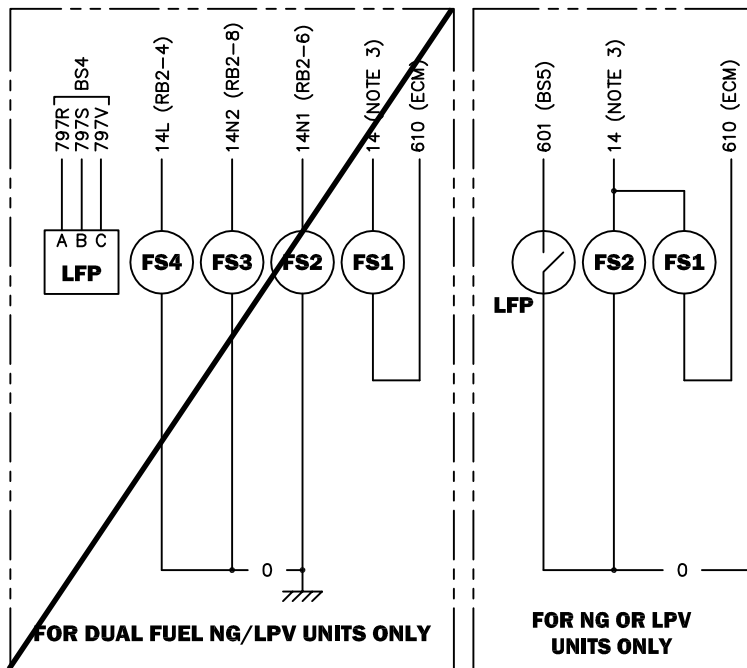
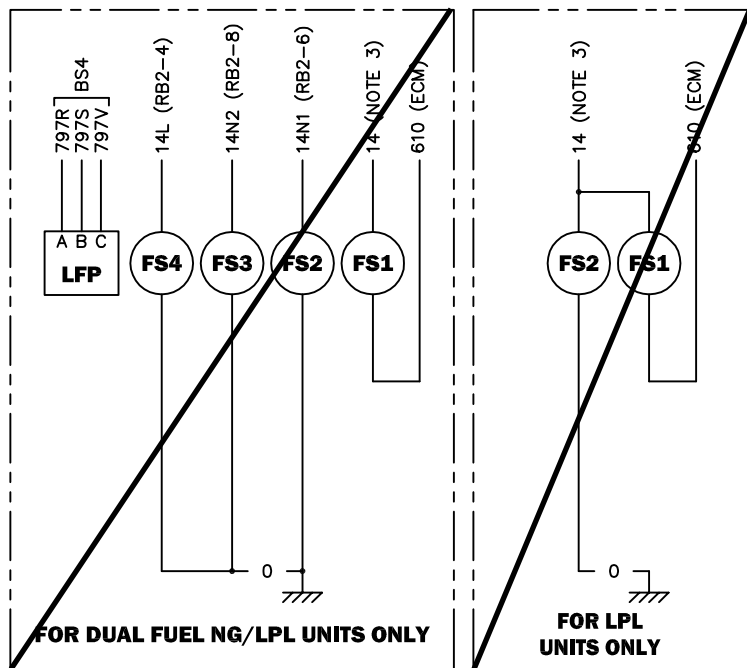


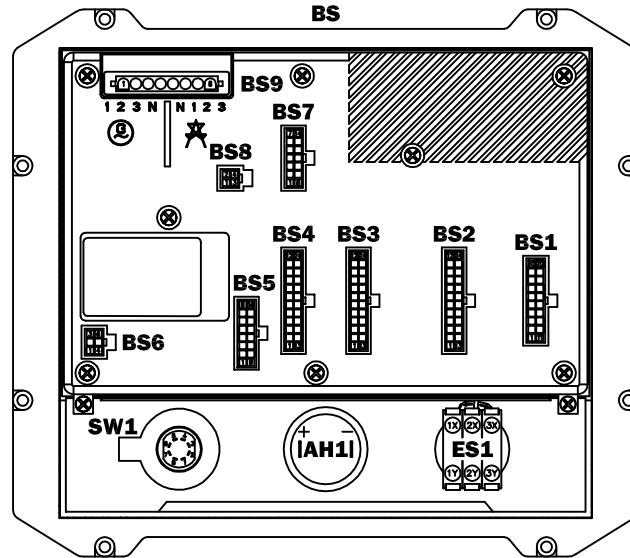
(NOTE 6) 15B — +12 VDC



CAC WIRING
ONLY USED IN G4.5L
TURBO APPLICATION.





**BS1**

PIN	WIRE	TO	FUNCTION
1	390	CUST CONN	RS485+ (TRANSFER SWITCH)
2	391	CUST CONN	RS485- (TRANSFER SWITCH)
10	15A	F1	NOTE 5
11	0A	CUST CONN	RS485 GND (TRANSFER SWITCH)
12	SHLD	CUST CONN	RS485 DRAIN (TRANSFER SWITCH)
20	0	GND	NOTE 1

BS2

PIN	WIRE	TO	FUNCTION
1	56A	RB1A-2	START RELAY
2	256	RB1A-1	FUEL RELAY
3	445	RB1A-5	ALARM RELAY
4	241	RB2A-3/RB2A-4	NG SOLENOID RELAY (DUAL FUEL ONLY)
6	242	RB2A-2	LPV/LPL SOLENOID RELAY (DUAL FUEL ONLY)
7	0C20	RB3A-2	SPARE RELAY 1
8	0C21	RB3A-3	SPARE RELAY 2
9	0C22	RB3A-5	SPARE RELAY 3
10	0C23	RB3A-6	SPARE RELAY 4
11	256A	RB1A-3	ECM RUN RELAY
13	609	ECM-3K	FUEL SELECT
19	404	AVR-7	AVR GATE TRIGGER A
20	403	AVR-6	AVR GATE TRIGGER B

BS3

PIN	WIRE	TO	FUNCTION
11	573A	WLS-B	COOLANT LEVEL (-)
12	573	WLS-A	COOLANT LEVEL (+)
13	398A	CT1-2	GEN PHASE A CURRENT (+)
14	399A	CT1-1	GEN PHASE A CURRENT (-)
15	398B	CT2-2	GEN PHASE B CURRENT (+)
16	399B	CT2-1	GEN PHASE B CURRENT (-)
17	398C	CT3-2	GEN PHASE C CURRENT (+)
18	399C	CT3-1	GEN PHASE C CURRENT (-)

BS4

PIN	WIRE	TO	FUNCTION
1	797S	LFP-B	FUEL PRESSURE SENSOR SIGNAL
4	803	BCH	BATTERY CHARGER CURRENT
9	797V	LFP-C	FUEL PRESSURE SENSOR 5V SUPPLY
13	797R	LFP-A	FUEL PRESSURE SENSOR GROUND

BS5

PIN	WIRE	TO	FUNCTION
1	174	SW1	AUTO START
2	175	SW1	MANUAL START
3	601	LFP	LOW FUEL PRESSURE SWITCH
4	R15	ES1-2X	EMERGENCY STOP
5	183	CUST CONN	REMOTE START
6	505	BCH	BATTERY CHARGER FAIL
7	D13	CUST CONN	AUXILIARY DI3/LINE POWER
8	D14	CUST CONN	AUXILIARY DI4/GENERATOR POWER
9	D11	CUST CONN	AUXILIARY DIGITAL INPUT 1
10	D12	CUST CONN	AUXILIARY DIGITAL INPUT 2
11	D15	CUST CONN	AUXILIARY DIGITAL INPUT 5
12	D16	CUST CONN	AUXILIARY DIGITAL INPUT 6
13	D17	CUST CONN	AUXILIARY DIGITAL INPUT 7
14	D18	CUST CONN	AUXILIARY DIGITAL INPUT 8
15	406	AVR-10	AVR ZERO CROSSING INPUT

BS6

PIN	WIRE	TO	FUNCTION
1	392	PZCS-1	RS485+ (POWER ZONE CONNECTIVITY SERVER)
2	393	PZCS-2	RS485- (POWER ZONE CONNECTIVITY SERVER)
3	0C	PZCS-4	POWER ZONE CONNECTIVITY SERVER GROUND
4	15F	PZCS-5	POWER ZONE CONNECTIVITY SERVER +12VDC
5	0B	PZCS-3	RS485 GND (POWER ZONE CONNECTIVITY SERVER)
6	SHLD	PZCS (CUT)	RS485 DRAIN (POWER ZONE CONNECTIVITY SERVER)

BS7

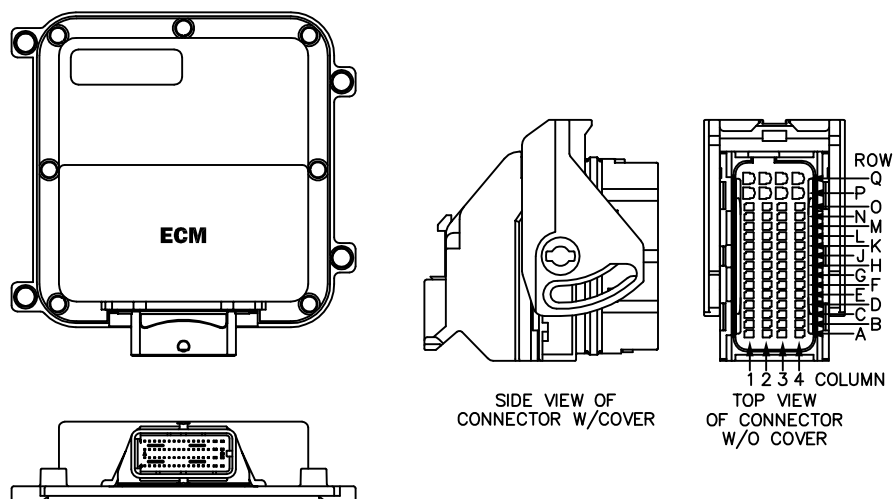
PIN	WIRE	TO	FUNCTION
2	R15B	RB1A-6/ES1-2Y	OVERSPEED /WATCHDOG
4	405	AVR-11	AVR GROUND
11	194	AVR-2	AVR +12VDC

BS8

PIN	WIRE	TO	FUNCTION
2	SHLD	ECM (CUT)	CAN COMMS TO ECM (SHIELD)
3	743A	ECM-2C	CAN COMMS TO ECM (HIGH)
4	744A	ECM-2B	CAN COMMS TO ECM (LOW)

BS9

PIN	WIRE	TO	FUNCTION
1	S1A	FB6-Y	PHASE A VOLTAGE SENSING
2	S2A	FB7-Y	PHASE B VOLTAGE SENSING
3	S3A	FB8-Y	PHASE C VOLTAGE SENSING
4	00	NEUTRAL	NEUTRAL VOLTAGE SENSING

**ECM**

PIN	WIRE	TO	FUNCTION
1A	605C	EMC-C	ELECTRONIC MIXER CONTROL VALVE B (+)
1B	753L	CRKS-2	CRANKSHAFT POSITION SENSOR (-)
1C	753H	CRKS-1	CRANKSHAFT POSITION SENSOR (+)
1D	760	CAC	CHARGE AIR COOLER BYPASS
1G	607	OS-C	OXYGEN HEATER
1H	608	IR/DPR	ECM POWER RELAY COIL
1J	610	FS1-B	FUEL SHUT OFF VALVE
1L	820A	AFPS/TMAP/TPS	SENDER POWER 1
1M	820B	CAMS/ETC/FPS/OPS	SENDER POWER 2
1N	797	FPS-B	FUEL PRESSURE SENSOR
1O	606	TPS-1	MIXER POSITION SENSOR
1P	771	ETC-5	ELECTRONIC THROTTLE CONTROL VALVE (-)
1Q	770	ETC-6	ELECTRONIC THROTTLE CONTROL VALVE (+)
2A	605D	EMC-D	ELECTRONIC MIXER CONTROL VALVE B (-)
2B	744A	BS8-4	CAN COMMS TO BASE STATION (LOW)
2C	743A	BS8-3	CAN COMMS TO BASE STATION (HIGH)
2D	754	TMAP-3	INTAKE AIR TEMPERATURE
2E	820G	AFPS/CAMS/ETC/FPS OPS/OTS/TMAP/TPS/WTS	SENDER GROUND
2L	450	CAMS-A	CAMSHAFT POSITION SENSOR
2M	752	TMAP-1	MANIFOLD AIR PRESSURE
2N	766	ETC-2	ELEC. THROTTLE CONTROL VALVE POSITION
2O	172	RB1-6	RUN SIGNAL
2P	14G	F4	DRIVER POWER
2Q	14G	F4	DRIVER POWER

ECM

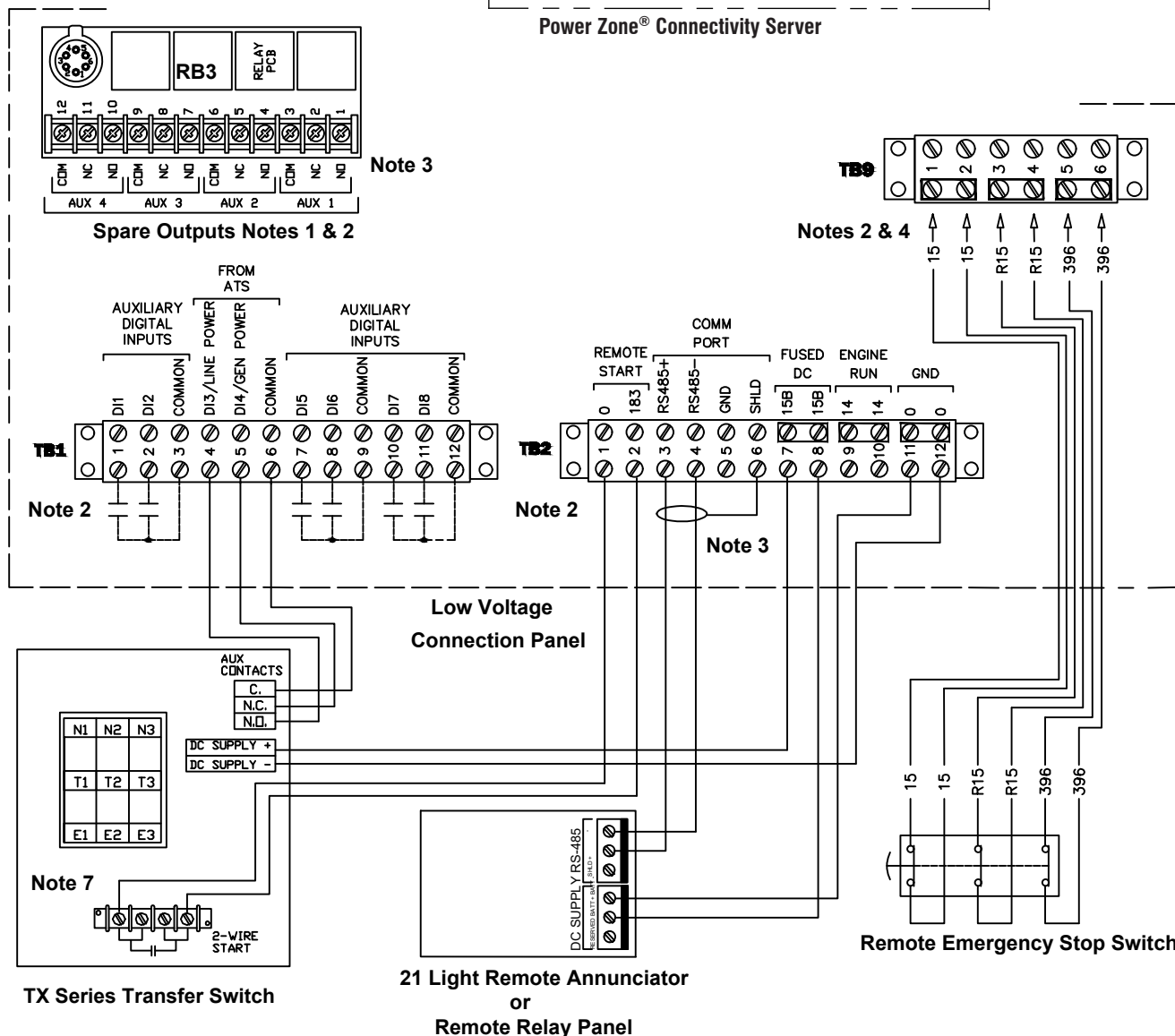
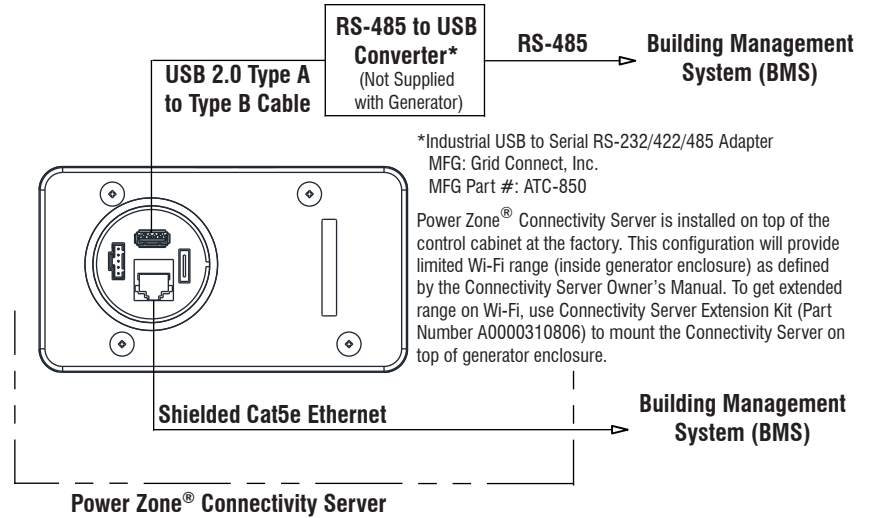
PIN	WIRE	TO	FUNCTION
3A	605A	EMC-A	ELECTRONIC MIXER CONTROL VALVE A (+)
3E	805	OS-A	OXYGEN SENSOR (-)
3G	523	OTS-1	OIL TEMPERATURE SENSOR
3J	396	ES1-3X	EMERGENCY STOP
3K	609	BS2-13	FUEL SELECT
3O	15C	F5	NOTE 7
3P	0	GND	NOTE 1
3Q	0	GND	NOTE 1
4A	605B	EMC-B	ELECTRONIC MIXER CONTROL VALVE A (-)
4B	604	AFPS-B	AIR FILTER PRESSURE SENSOR
4D	804	OS-B	OXYGEN SENSOR
4E	69	OPS-C	OIL PRESSURE SENSOR
4F	68	WTS-1	COOLANT TEMPERATURE SENSOR
4L	452	IC2-C	IGNITION COIL 2
4M	453	IC3-C	IGNITION COIL 3
4N	454	IC4-C	IGNITION COIL 4
4O	451	IC1-C	IGNITION COIL 1
4P	0	GND	NOTE 1
4Q	0	GND	NOTE 1

POWER ZONE® CONTROL PLATFORM

Power Zone® Pro Control Interconnections

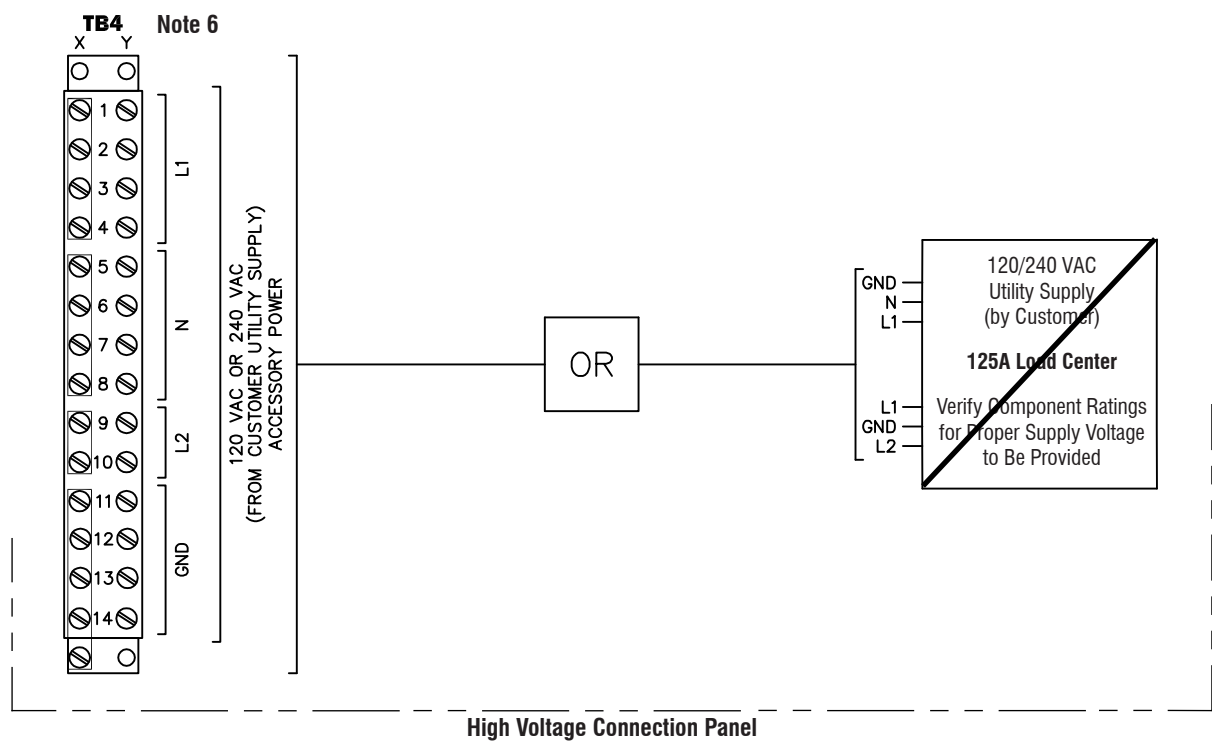
Notes:

1. Power Zone® Connectivity Server Required for Programming Spare Outputs. Contacts Rated 10A at 30VAC/30VDC
2. TB1, TB2, TB9 & RB3 Max Wire Size: #14 AWG, Recommended Tightening Torque: 12 LB-IN
3. Connect the RS-485 Overall Shield at Genset Connection Terminal Only
4. Remove TB9 Terminal Block Jumpers when Installing Remote E-stop Wires
5. Setup of Remote Annunciator Panel or Remote Relay Panel (RAP/RRP) Can Be Performed via Power Zone® Connectivity Server
6. TB4 Max Wire Size: #10 AWG, Recommended Tightening Torque: 14 LB-IN
7. 2 Wire Start Terminals (J-18-8 & J-18-9) Located Behind Front of ATS Controller Cover



POWER ZONE® CONTROL PLATFORM

Power Zone® Pro Control Interconnections



DESIGN GUIDELINES

Natural Gas Supply System Design Guide for Generac Industrial Spark Ignited Generators

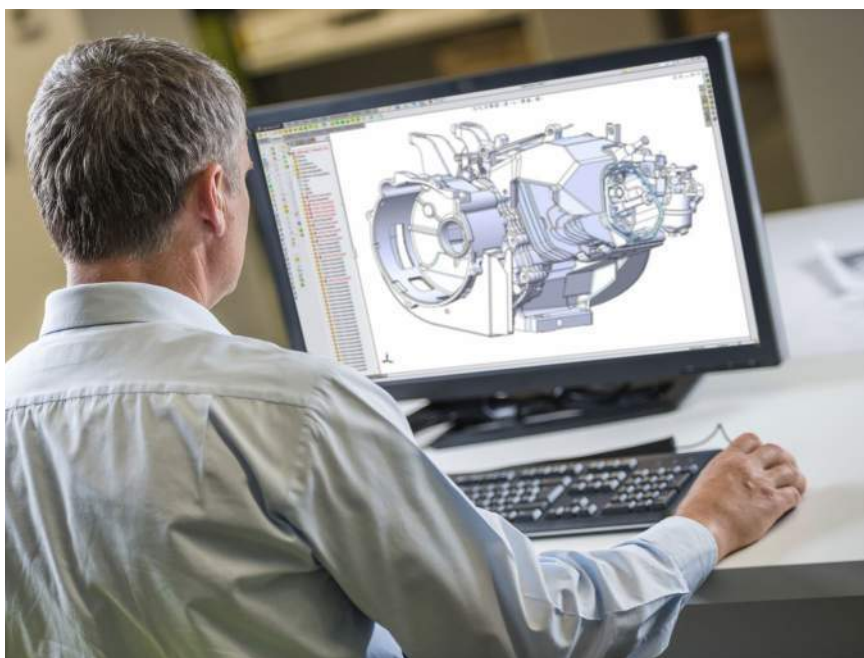
DESIGN GUIDE

Natural Gas Supply System Design Guide for Generac Industrial Spark Ignited Generators

INTRODUCTION

This design guidance document is to be provided to the consulting engineer during the project design phase and again at the time of submittal to the engineer and mechanical contractor for all Generac Industrial natural gas and propane fueled generator sets.

The following pages provide information and design best practices that have been demonstrated to minimize gas pressure instability and flow deficiency problems in the field. These design guidelines are to be used in combination with applicable national standards,¹ local fuel gas piping codes, and Generac's Installation Guidelines for Stationary Industrial Generators (Document #046622).



1. DESIGN OBJECTIVES

1.1. Provide the generator with a stable gas supply pressure over varying gas flow demand conditions. Maximum gas flow for all Generac generators are listed on the unit nameplate and generator data sheets.²

1.2. The pressure difference measured at the generator fuel pressure test port should typically be less than 2" water column (w.c.) from no-load running to full-load running condition.

1.3. The gas pressure must remain above the minimum specified for the generator set at all times, under all operating conditions. Failure to maintain adequate gas pressure and flow will result in operational problems such as extended crank cycles, inability to carry full load, and unstable engine speed.

1.4. Maintain a pressure and flow margin to allow for seasonal pressure variation on the upstream gas system. The emergency system must be before the facility shutoff.

1.5. Other facility loads must be factored in while sizing the Generator fuel system. It is recommended that the generator should have a dedicated fuel supply, which is not shared with any other appliances (furnace, water heaters, ranges, etc.) and the Generator fuel supply line shall be installed away from a high heat source so that the fuel temperature must remain at an acceptable operating range.

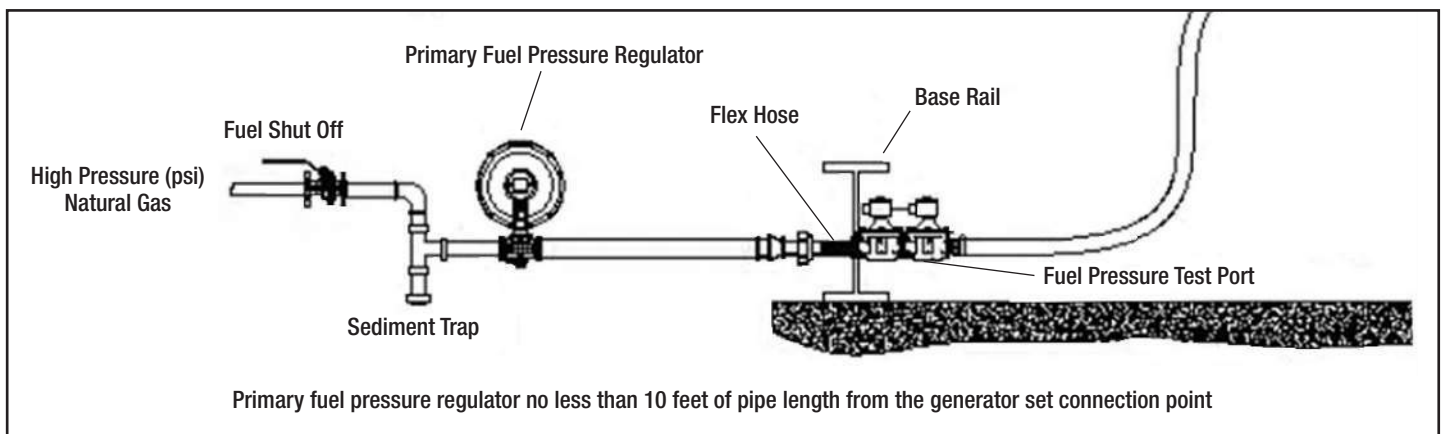


Figure 1: Typical natural gas supply regulator and piping configuration.

2. REGULATOR PERFORMANCE ATTRIBUTES³

2.1. Regulator Body Size: The inlet and outlet ports on a regulator are typically a single metal casting. The “body size” refers to the nominal diameter of the inlet and outlet pipe threads (or flange).

The regulator body size should never be larger than the pipe size, but it may be smaller provided the required flow can be obtained through the smaller regulator body size.

2.2. Pressure differential: The maximum flow rate of a service regulator is constrained by the gas pressure differential across the inlet and outlet port. When selecting a regulator for a specific gas flow requirement, it must correspond to the expected nominal upstream and downstream gas pressures. Consult manufacturers' published flow rate tables at various inlet and outlet pressure values to select an appropriate regulator (*See the example in Table 1*).

2.3. Flow and droop: Select a direct acting regulator that will deliver approximately 1.5 times the maximum gas flow required by the generator with 1" – 2" water column (w.c.) pressure droop at the expected nominal upstream and downstream gas pressures. Direct acting regulators provide the quick

response required for controlling fast changing gas flow demands encountered in engine-generator applications.

For example, a Generac SG500 generator, configured for 7" – 11" w.c. nominal gas pressure, requires 6,000 CFH of gas at full load. The selected regulator must be rated to flow approximately 9,000 CFH (1.5 X 6000 CFH = 9000 CFH). Given an upstream gas pressure of 2 psi, a 1½" Model 122-12 regulator with a blue spring would be the first choice. However, assume there is a substantial risk of seasonal pressure variation where the upstream gas pressure may fall closer to 1 psi, a larger 2" Model 122-12 regulator with a blue spring will still provide the required flow at the lower upstream pressure.

INLET PRESSURE	Set Point 5" w.c.	Set Point 7" w.c.	Set Point 11" w.c.	Set Point 18" w.c.	Set Point 28" w.c.	Set Point 2 w.c.	REGULATOR SIZE AND MODEL
	Red Spring 1" w.c. DR00P	Blue Spring 1" w.c. DR00P	Green Spring 2" w.c. DR00P	Orange Spring 2" w.c. DR00P	Orange Spring 3" w.c. DR00P	Black Spring 1/4" PSI DR00P	
8" w.c.	4000	3000	-	-	-	-	1 ½" Model 122-12
14" w.c.	4900	4500	3700	-	-	-	
1 psi	6600	6500	6000	5750	-	-	
2 psi	10500	10000	9800	9000	9500	-	
3 psi	12000	12000	11100	10000	10500	8900	
5 psi	14500	14500	13900	12000	12700	10000	
10 psi	16000	16000	15000	13500	14000	12700	
15 psi	18000	18000	19000	19000	20000	18000	2 ½" Model 122-12
8" w.c.	5000	4000	-	-	-	-	
14" w.c.	8800	8000	6600	-	-	-	
1 psi	12200	12000	11500	10700	-	-	
2 psi	18200	18000	17300	16500	16900	-	
3 psi	25000	25000	24000	22300	23000	18000	
5 psi	32000	32000	30000	28100	29000	27400	
10 psi	38000	38000	35000	32200	33000	30000	
15 psi	38000	38000	40000	39000	40000	36000	

Table 1: Typical regulator flow capacity table. Note how the same model regulator will flow larger volumes of gas with a higher inlet pressure while maintaining a set downstream pressure. Courtesy of Sensus.

Gas pressure regulators are feedback control systems driven by the pressure differential across the diaphragm and the case spring. When gas flow on the low-pressure side of the regulator causes a pressure drop, spring force in the regulator case pushes on the diaphragm and opens the valve to increase gas flow to maintain the set pressure.

The dynamic pressure maintained by the regulator decreases slightly as gas flow rate increases (Figure 2). This phenomenon is known as pressure droop or, more simply, “droop”. Regulator manufacturers design products to minimize pressure droop while still maintaining regulator stability for a given gas flow rate.

Regulators tend to exhibit the best stability and response time when they operate near the middle of their proportional band. Selecting a regulator with a published maximum gas flow of approximately 1.5 times the full-load gas flow required by the generator avoids operation very close to the fully open or fully closed position, minimizing the probability of unstable operation. A regulator that is too large, capable of flowing several times the maximum gas flow required by the generator, will operate very close to its fully closed position which may also result in unstable operation.

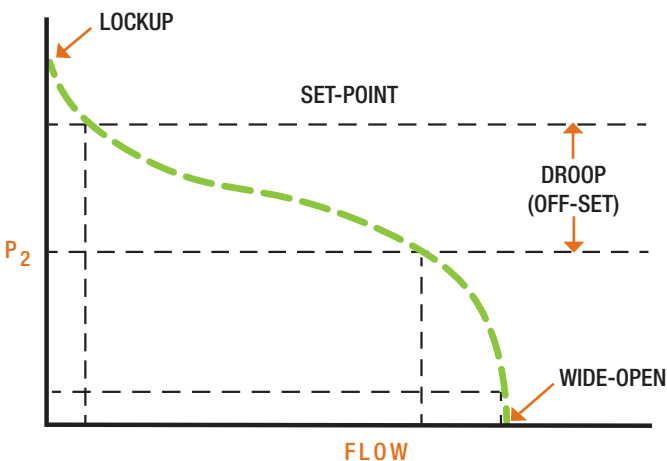


Figure 2: Pressure droop characteristic of a typical direct-operated regulator. Courtesy of Emerson-Fisher Natural Gas Application Guide.

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2.4. Spring Rate, Accuracy, and Response Time:⁴

The regulator spring provides the force required to open the regulator valve and maintain the desired operating pressure. There may be more than one spring covering a desired operating pressure. Spring selection plays a role in regulator accuracy and response time.

In general, using the lightest spring rate (*a blue spring from the prior example referencing Figure 2*) that achieves the desired operating pressure will provide the best accuracy, minimizing pressure droop across the range of expected gas flow rates. However, a response that is “too fast” can introduce oscillation and instability. If instability is experienced during operation, moving to the next higher spring (*a green spring from the prior example referencing Table 1*) that includes the desired operating pressure is one potential method to mitigate oscillations.

2.5. Orifice size: For regulators where various orifice sizes are available, select the smallest orifice that will provide approximately 1.5 times the maximum gas flow required by the generator. Selecting an orifice that is significantly larger than necessary will result in the valve operating very close to the seat (nearly closed) and may result in pressure instability, increased seal wear, or audible noise from the regulator.

2.6. Lockup or hard shutoff: A regulator with a lockup or hard shutoff feature must be used. Lockup is the pressure above the regulator setpoint that is required to shut the regulator off tight so no gas flows. Typically, the lockup pressure is 1"-3" W.C. above the dynamic pressure setpoint measured when a small volume of gas is flowing (*i.e. no-load running condition on the generator*). The lockup feature prevents the low-pressure side of the regulator from

creeping up to the regulator line side pressure during long periods of zero gas flow when the generator is not running. If excessive gas pressure is allowed to build up on the low-pressure side of the regulator, the generator solenoid valves may be unable to open against the excessive pressure and the engine will not start.

2.7. Internal vs. external pressure registration:

Internally registered regulators are recommended because they generally have fewer operational problems in the field.

The diaphragm case of a regulator must have a connection to the low-pressure side in order to function. Internally registered regulators have a passage built into the body casting which provides a path for low-pressure gas to act against the diaphragm and spring force. Externally registered regulators lack this internal connection path but instead have an additional pipe fitting on the regulator case where a smaller diameter pipe is field-fabricated to a downstream location on the low-pressure side of the main gas piping system. Because all the pipe fabrication is done in the field, variation in the main gas piping system and the remote pressure registration line can cause unpredictable performance that is difficult to troubleshoot.

Externally registered regulators can be used, but the engineer and installation contractor must be aware of the dynamic effects introduced by variables such as; flow turbulence, length and diameter of the sensing line, location of the sensing point in the low pressure piping system, increases and decreases in pipe diameter.

If an externally registered regulator is used, locate the remote sensing point 8 to 10 pipe diameters downstream of the regulator in the largest diameter pipe section. The start of 8 to 10 pipe diameters is

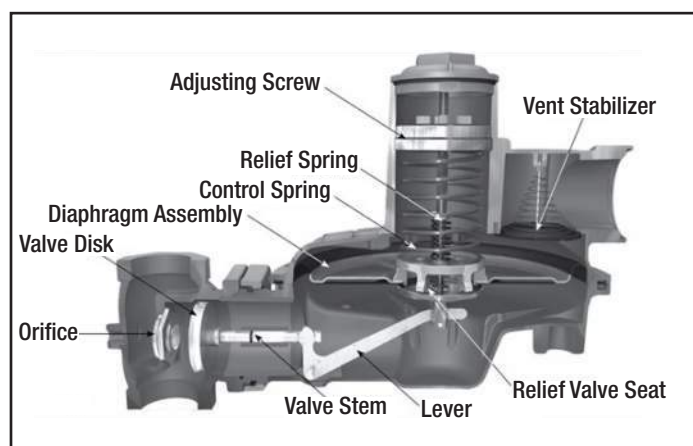


Figure 3: Major components of a direct-acting lever-type regulator, internally registered.
(Courtesy Emerson Fisher).

after the transition to the largest diameter pipe or any other throttling devices, component and/or fittings that will disrupt flow and create turbulence. The sensing line should be taken off the top of the main line to keep it free of debris and condensate. If possible, it should horizontally slope back to the main so that any condensate will drain back into the main rather than accumulate in the regulator's diaphragm case. Minimize the fittings used in running the sensing line. An externally registered regulator will respond to the pressure changes sensed at the remote tap rather than within the regulator body. It is advisable to install a pressure gauge at the sensing line tap on the main as this will be the control point of the regulator.

2.8. Recommended gas regulators:

The list of regulators below is not an exhaustive list of all suitable regulators that are available in the market, nor is it a list of "Generac Approved" regulators. The list is intended to help design engineers and mechanical contractors identify a range of products that have demonstrated their suitability for engine-generator service in past projects. Consult your Generac Distributor or gas regulator supplier for additional information.

- Sensus⁵
- Emerson Fisher
- Itron

3. FLOW CHARACTERISTICS OF GAS PIPING SYSTEMS:

3.1. Elbows and Tees: Minimize the number of elbows and tee fittings that increase pressure drop and flow turbulence in the system. Where more than three elbows and/or tees are required, use of swept radius elbows (typical for welded pipe sections) will help reduce pressure loss.

3.2. Reducing bushings (swages): Pipe reducing bushings are the transition from a larger to smaller pipe diameter or vice versa. Gas flow velocity is slower in a larger diameter pipe compared to a smaller diameter pipe moving the same volume of gas. If a remote sensing regulator is used, it is important to understand the dynamic pressure effects caused by the gas flow velocities in different sized pipe sections and design accordingly.⁶

In some installations where it is impractical to run approximately 10 feet of pipe, swaging up to a larger diameter pipe is a practical method to increase the gas volume between the service regulator and the generator fuel system. For installations where this method is used, an internally registered regulator is strongly recommended.

3.3. Flexible fuel lines: Flexible fuel lines are intended to isolate the rigid gas piping system from vibrations on the generator set and must be installed as straight as possible. They are not intended to correct misaligned pipe sections or to serve as an elbow.

3.4. Regulator vent lines: Regulator vents must open downward and be screened to prevent insects and water from entering the regulator case. Regulator vent lines should be kept as short as possible to reduce the possibility of affecting the regulator response time.

4. DESIGN REQUIREMENTS:

4.1. Use Generac's Power Design Pro⁷ gas pipe sizing module to determine the minimum recommended pipe size for the selected generator's gas flow given the anticipated length of the pipe run between the service regulator and the generator fuel inlet, including all elbows. Select the option to design for <0.5" water column pressure drop. Refer to the Table 1 for more detail.

4.2. The flexible fuel line shall be installed at the generator fuel inlet located on the frame rail and must exit the generator perpendicular to the frame rail. No pipe fittings (elbows or swages) are permitted between the flexible fuel line and the generator fuel inlet port.

4.3. The flexible fuel line must be as straight as possible. It is designed to isolate the rigid gas piping system from vibrations on the generator set. It is not intended to correct misaligned pipe sections or to serve as an elbow.

4.4. Given the combined effects of pipe friction loss and regulator droop, gas pressure should typically not drop more than 2" w.c. from no-load running to full-load running. Under no circumstances shall the gas pressure measured at the test port on the inside frame rail of the generator set drop below the minimum rated gas pressure listed on the generator nameplate.

4.5. Full-port ball valves, the same diameter as the pipe which they are connected to, are to be used for all shut-offs.

4.6. For multiple generator set installations (Generac MPS), each generator set must have its own regulator installed. Do not share a single large regulator across multiple generator sets.

Table 2: Natural Gas Fuel Pipe Sizing

KW	PIPE SIZE (inches)							
	1.00"	1.25"	1.5"	2"	2.5"	3"	4"	5"
25	10	95	220	739				
30		60	147	565				
40		25	75	315	790			
50			50	220	560			
60			25	145	390	1185		
70			5	75	225	710		
80				65	195	630		
100				40	140	460		
130					50	215		
150					30	150		
200					15	95	475	
250						62	315	1020
300						35	255	850
350						10	145	535
400							107	452
500							42	245
625								120
750								112

TABLE VALUES ARE MAXIMUM PIPE RUN IN (feet)

NOTE: Pipe sizing is based on 0.5" H₂O pressure drop for Natural Gas. Also sizing includes nominal number of elbows and tees. Please verify adequate service and meter sizing.

5. RECOMMENDED DESIGN BEST PRACTICES:

5.1. Provide approximately 10 feet of pipe between the regulator and generator gas inlet. This does not have to be a single straight run. The pipe volume decouples the dynamic response of the generator throttle control system and the service regulator, reducing the probability of oscillation and unstable operation.

5.2. Avoid installing elbows or pipe swages immediately upstream or downstream of a regulator, unless specifically allowed by the regulator manufacturer. This will increase the turbulence of the gas flow, having a negative impact on pressure regulation accuracy and stability. Regulator

manufacturers typically recommend 10 pipe diameters of straight pipe run upstream and downstream of a regulator. For example, on a regulator with 2" diameter pipe fittings, 20" of straight pipe should be fitted upstream and downstream of the regulator. When field conditions prohibit meeting both constraints, place the elbow on the high-pressure side of the regulator. The straight run on the low-pressure side is more critical for proper regulator operation.

5.3. Avoid installing pipe swages immediately before or after an elbow. The combined flow turbulence of the swage and elbow in close proximity can cause unexpectedly large pressure drops at high flow rates.

5.4. Minimize the number of 90-degree elbows.

If more than three elbows are needed downstream of the regulator to accommodate the design, swept radius elbows are recommended to minimize pressure drop.

5.5. Use of an internally registered regulator is strongly recommended. Regulators with external pressure registration lines add an additional variable into the system that can be difficult to troubleshoot should the gas pressure become unstable under high-flow conditions.

5.6. For more stable gas flow with longer gas piping, the high pressure side may be raised as high as code allows and regulate it down to generator operating pressure at the generator. (This is the same design concept used in the electrical industry; “high voltage for long distances, transformation at the loads”). This may also help reduce cost as pipe diameters can be smaller, saving material and installation costs.

6. INSTALLATION AND COMMISSIONING RECOMMENDATIONS:

6.1. Refer to Generac’s Installation Guidelines for Stationary Industrial Generators (Document #046622) for additional installation details.

6.2. Pig all gas pipes after installation to remove pipe dope, weld slag and other contaminants that could damage the regulator valve seat and cause pressure creep.

6.3. Install a dirt trap and/or screen before the gas regulator.

6.4. Set the regulator pressure with the generator running at no-load. Measurements are taken at the generator fuel pressure test port on the inside of the frame rail. For units configured for 7"-11" w.c. operating pressure, set the regulator to 11" w.c. no-load running. For units configured for 11-14" w.c. operating pressure, set the regulator to 14" w.c.

no-load running. Pressure droop at full-load running will be a combination of regulator droop and pipe friction loss. Proper design will limit the no-load to full-load running pressure drop to no more than 2" w.c. and at no time can the gas pressure fall below the minimum pressure listed on the generator nameplate. Expect the lockup static pressure typically to be higher than the no-load running dynamic pressure.

7. METHODS FOR CORRECTING UNDESIRABLE PERFORMANCE:

7.1. Pressure surging and cycling: Should the regulator experience “hunting” or other unstable operating behavior, an extended vent line may be creating resonant condition on the atmospheric side of the regulator diaphragm. If this is suspected, temporarily disconnect the vent line or remove the cap from the regulator spring case and observe if the unstable behavior stops. Shortening the length or increasing the diameter of the vent line will often correct an instability caused by vent line resonance.

The pipe volume between the service regulator and the generator may be insufficient to decouple the control action of the regulator and the generator’s throttle control system. Increase the pipe volume between the regulator and the generator.

Change the response time of the regulator. In some cases, a small adjustment of the regulator spring (up or down 1 w.c.) will be enough to restore stability to the system. If available for the selected regulator, using the next higher spring is another inexpensive and easy to implement option. This will slow the regulator response and can reduce or eliminate the instability. Keep in mind that changing to a higher spring rate will also increase pressure droop and reduce the regulator’s maximum flow capacity which limits the applicability of this corrective measure.

7.2. Low gas pressure under high load: There are several potential causes of low gas pressure under high load.

Pipe runs with excessive friction loss caused by a pipe diameter that is too small for the required gas flow and pipe length and/or a large number of elbows. The only corrective action for this is to increase the pipe diameter between the regulator and the generator or to raise the pressure of the high pressure gas. Avoid this problem by using a gas pipe sizing tool during the design phase.

Insufficient regulator capacity. Confirm the upstream gas main and regulator flow capabilities for a given upstream gas pressure. If the upstream gas pressure is lower than originally anticipated, investigate the possibility adjusting the utility regulator (if present). If increasing upstream gas pressure is not possible, a larger orifice and/or different spring combination may be available for the existing regulator to increase flow and reduce pressure droop. If the previous steps fail to correct the situation, a larger regulator will be required. Avoid this problem by thoroughly reviewing the regulator manufacturer's flowrate tables prior to ordering.

7.3. Excessive transient pressure drop during generator crank cycle or block load application: If the transient pressure drop during a generator crank cycle or block load application is large enough to impact performance, speeding up the regulator response will reduce the transient pressure drop. Avoid this problem by using a direct-acting regulator that is suitable for engine-generator applications. If available for the selected regulator, using a lighter spring will increase the regulator response speed and reduce transient pressure dip. Finally, if a remotely registered regulator is used, increase the pipe diameter of the remote sensing line.

7.4. Pressure creep: Ensure the selected regulator has a lockup or hard-shutoff feature. Pressure creep is almost always caused by contaminants in the pipe system upstream of the regulator. The contaminants either get caught on the regulator valve disk or cause physical damage to the valve disk, making it impossible to achieve a hard shutoff. Avoid this problem by pigging all pipe components prior to installing the regulator and ensure a dirt trap is installed upstream of the regulator.

7.5. Failure to start, run smoothly, or accept 100% load: Barring a mechanical failure on the generator, failure to make 10-second start, run smoothly, or carry full load is almost always caused by an underlying gas supply problem.

8. PROPANE VAPOR AND LIQUID:

8.1. Propane vapor system: This type of system uses the vapors formed above the liquid fuel in the supply tank. The maximum tank liquid capacity is 80% and a minimum of approximately 20% of the tank capacity is required to boil off liquid into the vapor state. Gas pressure and volume requirements for an LPG system at the connection point of the generator are listed on the unit specification sheet. The piping system connecting the outlet of the first stage regulator to the connection point on the second stage regulator must be properly sized to provide the fuel volume required by the unit at 100% load.

The piping system between the outlet of the second stage regulator and the generator connection point must be sized to provide the fuel volume required by the generator at 100% load while also staying within the pressure range noted on the unit specification sheet.

8.2. Tank vaporization rate: In addition to sizing the gas piping system in a similar manner to natural gas, LP-vapor systems must also size the propane storage tanks to ensure a sufficient volume of gas will boil off

GAS SUPPLY CHECK LIST

Gas Service Meter and Serving Utility

- Available on site and reliable
- Rated for the combined loading of the facility and the generator (total BTU)
- Maintains generator minimum pressure requirements while under maximum loading

• Step Down Pressure Regulators

- 1.5X maximum site rated fuel consumption should be used for gas supply design practices
- Direct acting type with good dynamic response (no significant time lags in regulation)
- Selected for minimum no-load to full load pressure droop (< 1-2" w.c. desired)
- Located near the generator (allows the long piping runs to be at higher pressure)
- Located at least 10' away from generator connection (avoids regulator oscillations)
- Dedicated to a single generator (increases system reliability)

• Piping

- Sized large enough to minimize pressure drops to acceptable levels under full gas flow
- Minimize the number of elbows to avoid unwanted pressure drops
- Ensure entire gas supply system maintains acceptable generator pressure under full gas flow conditions
- Should be connected to generator with a flexible connection
- Should include a drip leg (sediment trap)

• LP

- LP tank's boil off rate (BTU capacity) needs to support rated BTU at minimum ambient
- LP liquid withdrawal systems should be considered: cold ambients, small tanks, large generators
- LP liquid systems require pressure rated piping and vaporization outside a building

• Generac Design Resources

- "Installation Guidelines for Stationary Industrial Generators" manual 046622 (detailed information)
- "Natural Gas Supply System Design Guide for Generac Industrial Spark Ignited Generators" manual 10000046207
- "Power Design Pro" software -- mechanical design tab (gas piping pressure drop calculator)

• National Codes and Standards

- NFPA 37 "Installation and use of Stationary Combustion Engines"
- NFPA 54 "National Fuel Gas Code"
- NFPA 58 "LP Gas Code"

FUEL SPECIFICATION

Natural Gas

Generac products are designed to run on natural gas and are tested for performance and reliability with clean, dry, pipeline quality natural gas. The properties presented in this standard represent the natural gas used in product testing. The performance and reliability of Generac products using non-conforming fuels are unknown and cannot be guaranteed.

Natural gas is, by definition, any gas that occurs organically, but this standard focuses on natural gas that intended for use as fuel in reciprocating internal combustion engines. This natural gas is generally assumed to have specific properties, but compositional differences and contaminants greatly influence the fuel's quality and combustion stability. This variation can lead to lower power output, pre-ignition, detonation, and corrosion if the fuel does not meet this standard. This standard identifies an acceptable fuel composition for use in Generac products.

Fuel Specifications

The fuel used by Generac is clean, dry, pipeline quality natural gas adhering to the following:

Component / Property	Unit	Range
Methane	% Volume	80 Minimum
Ethane	% Volume	0-10
Propane	% Volume	0-5
Butanes	% Volume	0-2
Pentanes and Heavier	% Volume	0-0.5
Nitrogen and Other Inerts	% Volume	0-3
Carbon Dioxide	% Volume	0-3
Total Diluents Gases	% Volume	0-5
Hydrogen Sulfide	g/100scf (mg/m3)	0.25-0.3 (6-7)
Total Sulfur	g/100scf (mg/m3)	5-20 (115-460)
Water Vapor	lb/MMscf (mg/m3)	4-7 (60-110)
High Heating Value	Btu/scf (kJ/m3)	950-1,150 (35,400-42,800)
Methane Number	MN	80 Minimum

Notes:

- The fuel must be free of liquid water and hydrocarbons at delivery temperature and pressure.
- The fuel must be free of particulate matter.

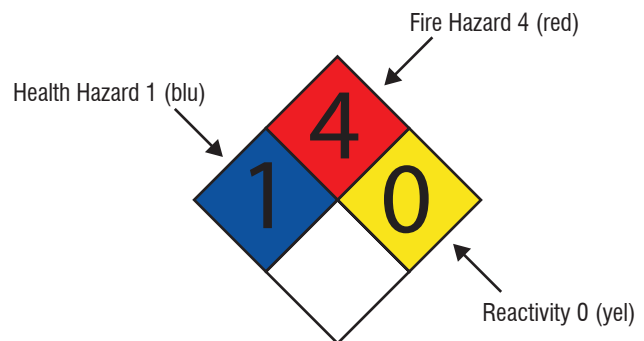
Hazards Information

Emergency Overview

DANGER!
EXTREMELY FLAMMABLE GAS - MAY CAUSE FLASH FIRE OR EXPLOSION!

High concentrations may exclude oxygen and cause dizziness and suffocation. Contact with pressurized vapor may cause frostbite or freeze burn.

NFPA 704 Hazard Identification System



4 - Severe 3 - Serious 2 - Moderate 1 - Slight 0 - Minimal

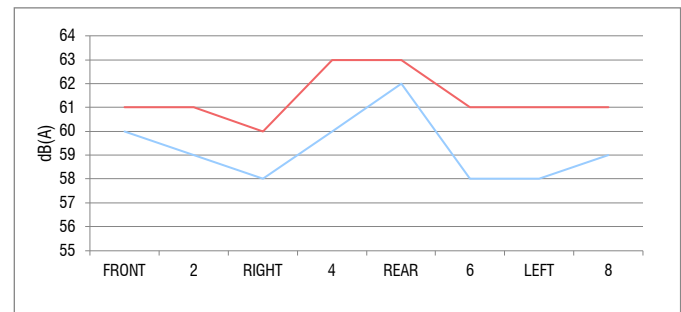
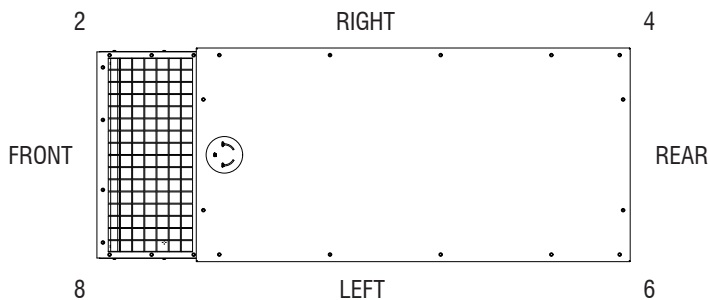
LEVEL 2 SOUND ATTENUATED ENCLOSURE G4.5L SG035

60Hz NO-LOAD, dB(A)
DISTANCE: 7 METERS

MICROPHONE LOCATION	OCTAVE BAND CENTER FREQUENCY (Hz)									dB(A)
	31.5	63	125	250	500	1,000	2,000	4,000	8,000	
FRONT	28	41	53	52	55	54	51	51	43	60
2	27	43	50	53	54	54	49	47	42	59
RIGHT	30	39	51	52	53	51	48	49	42	58
4	29	42	52	57	55	52	52	46	42	60
REAR	27	43	50	57	56	53	56	47	44	62
6	27	43	52	54	53	51	51	46	41	58
LEFT	30	46	48	52	53	52	49	46	41	58
8	28	41	50	52	55	57	50	46	41	59
AVERAGE	28	42	51	54	54	53	51	47	42	59

60Hz FULL-LOAD, dB(A)
DISTANCE: 7 METERS

MICROPHONE LOCATION	OCTAVE BAND CENTER FREQUENCY (Hz)									dB(A)
	31.5	63	125	250	500	1,000	2,000	4,000	8,000	
FRONT	29	52	54	54	56	55	50	51	45	61
2	28	48	54	55	56	56	49	48	44	61
RIGHT	31	51	55	53	54	51	48	49	42	60
4	28	56	57	58	56	53	51	47	43	63
REAR	27	58	51	58	56	55	53	49	45	63
6	26	58	50	54	54	52	51	47	43	61
LEFT	30	56	48	53	55	53	49	47	43	61
8	28	53	52	56	55	56	50	47	44	61
AVERAGE	28	54	53	55	55	54	50	48	44	61



1. All positions at 23 feet (7 meters) from side faces of generator set.
2. Test conducted on a 100 foot diameter asphalt surface.
3. Sound pressure levels are subject to instrumentation, installation and testing conditions.
4. Sound levels are ± 2 dB(A).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2025 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION
AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: Generac Power Systems, Inc.
(U.S. Manufacturer or Importer)

Certificate Number: SGNXB04.42L1-025

Effective Date:

11/27/2024

Expiration Date:

12/31/2025

Byron J. Bunker, Division Director
Compliance Division

Issue Date:

11/27/2024

Revision Date:

N/A

Manufacturer: Generac Power Systems, Inc.

Engine Family: SGNXB04.42L1

Mobile/Stationary Certification Type: Stationary

Fuel : Natural Gas (CNG/LNG)

Emission Standards :

Part 1054 Phase 1 Class II

Part 60 Subpart JJJJ Table 1

Emergency Use Only : Y

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547) and 40 CFR Part 60, 40 CFR Part 60, 1065, 1068, and 60 (stationary only and combined stationary and mobile) and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following nonroad engines, by engine family, more fully described in the documentation required by 40 CFR Part 60, 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new nonroad spark-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60, 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60, 40 CFR Part 60. This certificate of conformity does not cover nonroad engines imported prior to the effective date of the certificate.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068.20 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60, 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60, 40 CFR Part 60.

This certificate does not cover large nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

Certification of Quality

Generac Power Systems certifies that the products we manufacture have been built and tested in accordance with strict internal and external standards for quality. Our quality management system has been registered with the internationally recognized ISO 9001:2008 standard and our products comply with external standards that include, but are not limited to, CSA, NEMA, EGSA, ISO, and UL.

The Generac Quality Management System (GQMS) ensures the highest standards of quality at every level of production, from raw materials to the finished product. This includes receiving inspection, in-process checks, product and process audits, testing, final inspections, and shipping standards.

Tests of our products are performed in accordance with our internal procedures and controlled through the GQMS to ensure accuracy and effectiveness. The testing process and product designs comply with external standards which may include, but are not limited to: ISO 8528-5, ISO 3046, NFPA 99, NFPA 110, BS 5514, SAE J1349, and DIN 6271.

Generac Power Systems has over one million square feet of manufacturing space and over 2000 employees dedicated to designing and manufacturing power generation equipment in our multiple State of Wisconsin, USA factories. All of our installed and mobile generators are built with pride by our skilled American workforce to ensure our customers receive the quality that they expect from Generac.

We are committed to producing quality products for both our internal and external customers. We will continuously improve our processes and diligently measure all aspects of our business.

Daniel Waschow

Vice President of Quality
Generac Power Systems, Inc.
Waukesha, Wisconsin USA



CERTIFICATE



This is to certify that

Generac Power Systems, Inc.

S45 W29290 Hwy. 59
Waukesha, WI 53189
United States of America

with the organizational units/sites as listed in the annex

has implemented and maintains a **Quality Management System**.

Scope:

Design, Manufacture, and Distribution of Power Products and Solutions.

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 9001 : 2015

Certificate registration no.	10012920 QM15
Date of original certification	2021-06-25
Date of certification	2024-06-06
Valid until	2027-07-15



DQS Inc.

David Tellez
Managing Director

DQS IS A MEMBER OF



010125

Accredited Body: DQS Inc., 1500 McConnor Parkway, Suite 400, Schaumburg, IL 60173 USA
The validity of the certification can only be verified by the QR-code.



Annex to certificate
Registration No. 10012920 QM15

Generac Power Systems, Inc.

S45 W29290 Hwy. 59
Waukesha, WI 53189
United States of America

Location

Scope

10012920
Generac Power Systems, Inc.
S45 W29290 Hwy. 59
Waukesha, WI 53189
United States of America

Design and Support of Power Products and Solutions.

10012922
Generac Power Systems, Inc.
211 Murphy Dr.
Eagle, WI 53119
United States of America

Manufacture and Distribution of Power Products and Solutions.

10012923
Generac Power Systems, Inc.
757 N. Newcomb St.
Whitewater, WI 53190
United States of America

Manufacture and Distribution of Power Products and Solutions.

10012924
Generac Power Systems, Inc.
900 N. Parkway
Jefferson, WI 53549
United States of America

Manufacture of Power Products and Solutions.

10013528
Generac Power Systems
3815 Oregon St.
Oshkosh, WI 54902
United States of America

Manufacture and Distribution of Power Products.

10014175
Generac Power Systems, Inc.
351 Collins Road
Jefferson, WI 53549
United States of America

Parts and Components Receiving, Warehousing, Return and Reconditioning of Product, and Distribution to Generac Locations.

10017103
Generac Mobile
215 Power Drive
Berlin, WI 54923
United States of America

Manufacture and Distribution of Power Products.



Annex to certificate
Registration No. 10012920 QM15

Generac Power Systems, Inc.

S45 W29290 Hwy. 59
Waukesha, WI 53189
United States of America

Remote Location

10017439
Generac Mobile
745 E. Knopf St.
Berlin, WI 54923
United States of America

Scope

The remote location at Belin, WI performs the following primary functions: Parts and Components Receiving, Warehousing, and Shipping.

GENERAC DIESEL & BI-FUEL GENERATORS GENERAC / OLYMPIAN GAS GENERATORS SPECIAL SEISMIC CERTIFICATION

*Buehler Project No. 2017-0460.00
April 20, 2020*

Generac and Olympian Gas Generators and Generac Diesel and Bi-Fuel Generators (listed in Table 1) are seismically certified in accordance with the 2018 International Building Code (IBC), 2019 California Building Code (CBC), and American Society of Civil Engineers (ASCE) Minimum Design Loads for Buildings and Other Structures, ASCE 7-16. This product line is also preapproved in accordance with PIN 55: Office of Statewide Health Planning and Development (OSHPD) Special Seismic Certification Preapproval (OSP-0282-10), dated 04/08/2020.

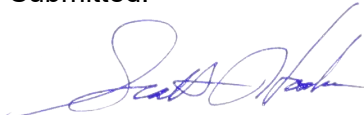
The basis of this seismic certification is through successful tri-axial shake table testing at the US Army Construction Engineering Research Laboratory (Report 2012-0211.00), Curtiss-Wright QualTech NP testing lab (Report Q1218.0 – Rev 2 and amendment dated 09/12/2019), and University of Buffalo testing lab, SEESL (Report No: UB CSEE/SEESL-2019-05 Rev2), and the analytic evaluation by Buehler Engineering, Inc. The shake table testing and operability tests were conducted in accordance with ICC-ES AC 156 (2018).

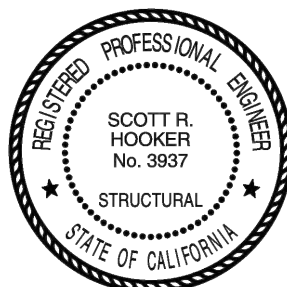
Units are qualified for seismic applications when properly installed utilizing a **rigid base mounted** configuration, used as intended and located in the United States where the “design 5 percent damped spectral response acceleration at short periods adjusted for site class effects”, S_{DS} , is less than or equal to values in **Table 1**. Below grade, at grade, or above grade installations are permitted and included in this certification. This certification may be valid for additional S_{DS} levels where the height factor, z/h , is less than listed in **Table 1**. This certification is valid for a component importance factor, I_P , of 1.0 or 1.5.

For anchorage requirements, refer to the manufacturer supplied installation instructions for seismic applications. Anchorage requirement details such as brand, type, embedment, edge spacing, anchor spacing, support structure strength, special inspection, and attachment to building and non-building structures must be outlined and approved by the Structural Engineer of Record (SEOR) for the project or building. Structural floors and housekeeping pads must also be designed to resist seismic forces and approved by SEOR. The installing contractor is responsible for the proper installation of units, observing and complying with the mounting requirements, and any additional requirements outlined by the SEOR.

This certification applies only to the manufacture model numbers noted herein, and further limited to the internal components certified by qualified shake table testing. For additional information, refer to the supplemental analysis report.

Submitted:


Scott R. Hooker
President
For Buehler Engineering, Inc.



$S_{DS} = 0.80g @ z/h = 1.0$ $F_p / W_p = 1.80$
 $S_{DS} = 2.44g @ z/h = 0.0$ $F_p / W_p = 1.83$
Table 1B. Gas Generator Certified Product Matrix Cont.

Model Number	Kw Rating	Level 2A Enclosure					Level 3 Enclosure				
		Unit Dimensions (mm)			Operating Weight (lbs)		Unit Dimensions (mm)			Operating Weight (lbs)	
		H	W	L	Steel	Alum	H	W	L	Steel	Alum
SG0035*G54 ¹	35	1574	965	2409	2,328	1,974	n/a	n/a	n/a	n/a	n/a
SG0035*G54 ¹	35	1574	965	2409	2,328	1,974	n/a	n/a	n/a	n/a	n/a
SG0035*G45 ¹	35	1461	965	2409	2,353	2,083	n/a	n/a	n/a	n/a	n/a
SG0040*G54 ¹	40	1574	965	2409	2,328	1,974	n/a	n/a	n/a	n/a	n/a
SG0040*G45 ¹	40	1461	965	2409	2,353	2,083	n/a	n/a	n/a	n/a	n/a
SG0045*G54 ¹	45	1574	965	2409	2,328	1,974	n/a	n/a	n/a	n/a	n/a
SG0045*G45 ¹	45	1461	965	2409	2,353	2,083	n/a	n/a	n/a	n/a	n/a
SG0050*G54 ¹	50	1574	965	2409	2,328	2,070	n/a	n/a	n/a	n/a	n/a
SG0050*G45 ¹	50	1461	965	2409	2,353	2,083	n/a	n/a	n/a	n/a	n/a
SG0050*G68 ¹	50	1722	1016	2840	2,811	2,499	n/a	n/a	n/a	n/a	n/a
SG0060*G45 ¹	60	1779	1028	2839	2,756	2,475	n/a	n/a	n/a	n/a	n/a
SG0060*G68 ¹	60	1722	1016	2840	2,811	2,530	n/a	n/a	n/a	n/a	n/a
SG0070*G45 ¹	70	1779	1028	2839	2,756	2,475	n/a	n/a	n/a	n/a	n/a
SG0070*G68 ¹	70	1722	1016	2840	2,811	2,530	n/a	n/a	n/a	n/a	n/a
SG0080*G45 ¹	80	1779	1028	2839	2,756	2,475	n/a	n/a	n/a	n/a	n/a
SG0080*G68 ²	80	2054	1028	3671	3,600	3,240	n/a	n/a	n/a	n/a	n/a
SG0080*G90 ²	80	1743	1028	2840	3,100	2,802	n/a	n/a	n/a	n/a	n/a
SG0100*G68 ²	100	2054	1028	3671	3,600	3,240	n/a	n/a	n/a	n/a	n/a
SG0100*G90 ²	100	1743	1028	2840	3,100	2,756	n/a	n/a	n/a	n/a	n/a
SG0130*G68 ²	130	2054	1028	3671	3,600	3,240	n/a	n/a	n/a	n/a	n/a
SG0130*G90 ²	130	2054	1028	3671	3,400	2,928	n/a	n/a	n/a	n/a	n/a
SG0150*G68 ²	150	2330	1280	3633	4,190	3,771	n/a	n/a	n/a	n/a	n/a
SG0150*G90 ²	150	2330	1280	3633	4,050	2,928	n/a	n/a	n/a	n/a	n/a
SG0150*G129 ²	150	2372	1371	3923	7,236	n/a	n/a	n/a	n/a	n/a	n/a
SG0150*G133 ²	150	2726	1463	4588	8,000	n/a	n/a	n/a	n/a	n/a	n/a
SG0150*G142 ²	150	2370	1371	3923	6,980	6,122	3274	1617	5269	10,602	8,386
SG0175*G129 ²	175	2372	1371	3923	7,236	n/a	n/a	n/a	n/a	n/a	n/a
SG0175*G133 ²	175	2726	1463	4588	8,000	n/a	n/a	n/a	n/a	n/a	n/a
SG0175*G142 ²	175	2370	1371	3923	6,980	6,122	3274	1617	5269	10,602	8,386
SG0200*G129 ²	200	2372	1371	3923	7,236	n/a	n/a	n/a	n/a	n/a	n/a
SG0200*G133 ²	200	2726	1463	4588	8,000	n/a	n/a	n/a	n/a	n/a	n/a
SG0200*G142 ²	200	2370	1371	3923	6,980	6,206	3274	1617	5269	10,602	8,386
SG0200*G142 ²	200	2726	1463	4588	8,395	6,731	3274	1617	5269	10,905	9,096
SG0230*G129 ²	230	2726	1463	4588	9,169	n/a	n/a	n/a	n/a	n/a	n/a
SG0230*G133 ²	230	2726	1463	4588	9,200	n/a	n/a	n/a	n/a	n/a	n/a
SG0230*G142 ²	230	2726	1463	4588	8,251	7,117	3274	1617	5269	10,602	9,618
SG0250*G129 ²	250	2726	1463	4588	9,169	n/a	n/a	n/a	n/a	n/a	n/a
SG0250*G133 ²	250	2726	1463	4588	9,200	n/a	n/a	n/a	n/a	n/a	n/a
SG0250*G142 ²	250	2726	1463	4588	8,251	7,247	3274	1617	5269	10,905	9,793
SG0250*G142 ²	250	2726	1450	4588	8,502	7,652	3274	1617	5269	11,080	10,340
SG0275*G129 ²	275	2726	1463	4588	9,421	n/a	n/a	n/a	n/a	n/a	n/a
SG0275*G133 ²	275	2726	1463	4588	9,200	n/a	n/a	n/a	n/a	n/a	n/a
SG0275*G142 ²	275	2726	1463	4588	8,502	7,201	3274	1617	5269	11,080	10,340
SG0300*G129 ²	300	2726	1463	4588	9,421	n/a	n/a	n/a	n/a	n/a	n/a
SG0300*G133 ²	300	2726	1463	4588	9,200	1,974	n/a	n/a	n/a	n/a	n/a
SG0300*G142 ²	300	2726	1463	4588	8,502	7,487	3274	1617	5269	11,080	10,340
SG0350*G219 ²	350	2899	1803	5268	11,100	9,510	3281	1954	5890	13,577	11,888
SG0350*G219 ²	350	2899	1803	5268	11,808	10,210	3281	1954	5890	14,285	12,763
SG0400*G219 ²	400	2899	1803	5268	11,100	9,510	3281	1954	5890	13,577	11,888
SG0400*G219 ²	400	2899	1803	5268	11,808	10,210	3281	1954	5890	14,285	12,763
SG0450*G219 ²	450	2899	1803	5268	11,808	10,210	3281	1954	5890	14,285	12,763
SG0500*G258 ²	500	2899	1803	5268	13,274	11,419	3281	1954	5890	15,635	14,274

1. Available in Prime Modular (MPS) configuration (MG vs SG). See Nomenclature.

2. Available in MPS configuration (MG vs SG) AND in Olympian Brand (LG). See Nomenclature.

Generac Power Systems 2 Year (2B) Limited Warranty for Industrial Standby Generators

For the period of warranty noted below, which begins upon the successful start-up and/or on-line activation of the unit, Generac Power Systems, Inc. "Generac" warrants that its generator will be free from defects in material and workmanship for the items and period set forth below. Generac will, at its discretion, repair or replace any part(s) which, upon evaluation, inspection, and testing by Generac or an Independent Authorized Service Dealer (IASD), is found to be defective. Any equipment that the purchaser/owner claims to be defective must be evaluated by the nearest IASD. Emissions components are excluded from coverage under this extended warranty. Emissions warranty coverage is detailed in a separate emissions warranty.

Warranty Coverage: Warranty coverage period is for two (2) years or two-thousand (2,000) hours, whichever occurs first.

Warranty Coverage in Year(s): 1	Warranty Coverage in Year(s): 2
Parts, Labor and Limited Travel	Limited Parts Only

Limited Gearbox Coverage:

Year(s): 1-5 Coverage	Year(s): 6-10 Coverage
Limited Parts and Labor	Limited Parts Only

Guidelines:

- Unit must be registered and proof of purchase available.
- Any and all warranty repairs and/or concerns must be performed and/or addressed by an IASD, or branch thereof. Repairs or diagnostics performed by individuals other than an IASD not authorized in writing by Generac will not be covered.
- This Warranty is transferable between ownership of original install site.
- Generac supplied engine coolant heaters (block-heaters), heater controls, and circulating pumps are only covered during the first year of the warranty provision.
- Generac may choose to repair, replace, or refund a piece of equipment at its sole discretion.
- Enclosures are warranted against rust for the first year of ownership only. Damage caused after receipt of generator is the responsibility of the owner and is not covered by this warranty. Nicks, scrapes, dents, or scratches to the painted enclosure should be repaired promptly by the owner.
- Warranty only applies to permanently wired and mounted units.
- Damage to any covered components or consequential damages caused by the use of a non-OEM part will not be covered by the warranty.
- Proof of performance of all required maintenance must be available.
- Travel allowance is limited to 300 miles maximum, and seven and one half (7.5) hours maximum (per occurrence, whichever is less) round trip from the nearest IASD. Any additional travel required will not be covered.
- Engines, driven components, remote cooling systems, and fuel tanks used in Generac's standby power products system can carry a separate manufacturer's (OEM) warranty (the "OEM Warranties"), unless otherwise expressly stated. OEM Warranties are in addition to this Warranty. All warranty claims for defects in material and/or workmanship on Generac product OEM components, may be directed through the OEM distributor/dealer network. OEM Warranties may vary and are subject to change. Generac shall have no liability under OEM warranties.

The following will NOT be covered by this warranty:

- Costs of normal maintenance (i.e. tune-ups, associated part(s), adjustments, loose/leaking clamps, installation, and start-up).
- Damage/failures to the generator and/or transfer switch system caused by accidents, shipping, handling, or incorrect storage.
- Damage/failures caused by operation with incorrect fuels, speeds, loads, or installations other than what's recommended or specified by Generac.
- Damage to the generator and/or transfer switch due to the use of non-Generac parts and/or equipment, remote cooling systems, contaminated fuels, oils, coolants/antifreeze, or lack of correct fuels, oils, or coolants/antifreeze.
- Failures due to normal wear and tear, accident, misuse, abuse, neglect, incorrect installation, incorrect sizing, or rodent, reptile, and/or insect infestation.
- Rental equipment used while warranty repairs are being performed and/or any extraordinary equipment used for removal and/or reinstallation of generator (i.e. cranes, hoists, lifts, et. al.).
- Planes, ferries, railroad, buses, helicopters, snowmobiles, snowcats, off-road vehicles, or any other mode of transport deemed not standard by Generac.
- Products that are modified or altered in a manner not authorized by Generac in writing.
- Starting batteries, fuses, light bulbs, engine fluids, and any related labor.
- Steel enclosures that rust as a result of incorrect installation, location in a harsh or salt water environment, or are scratched where the integrity of applied paint is compromised.
- Units sold, rated or used for "Prime Power", "Trailer Mounted", or "Rental Unit" applications as defined by Generac. Contact an IASD for definitions.
- Shipping costs associated with expedited shipping.
- Additional costs for overtime, holiday, or emergency labor costs for repairs outside of normal business hours.
- Any incidental, consequential, or indirect damages caused by defects in materials or workmanship, or any delay in repair or replacement of the defective part(s).
- Failures caused by any act of God or external cause including without limitation, fire, theft, freezing, war, lightning, earthquake, windstorm, hail, water, tornado, hurricane, or any other matters which are reasonably beyond the manufacturer's control.

THIS WARRANTY SUPERSEDES ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. SPECIFICALLY, GENERAC MAKES NO OTHER WARRANTIES AS TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ANY IMPLIED WARRANTIES WHICH ARE ALLOWED BY LAW, SHALL BE LIMITED IN DURATION TO THE TERMS OF THE EXPRESS WARRANTY PROVIDED HEREIN. SOME JURISDICTIONS DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. PURCHASER'S SOLE AND EXCLUSIVE REMEDY AND GENERAC'S ONLY LIABILITY SHALL BE THE REPAIR OR REPLACEMENT OF PART(S) AS STATED ABOVE. IN NO EVENT SHALL GENERAC BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, EVEN IF SUCH DAMAGES ARE A DIRECT RESULT OF GENERAC'S NEGLIGENCE. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU ALSO HAVE OTHER RIGHTS UNDER APPLICABLE LAW.

FOR AUSTRALIA ONLY: Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

FOR NEW ZEALAND ONLY: Nothing in this warranty statement excludes, restricts, or modifies any condition, warranty right, or remedy which pursuant to the New Zealand Legislation (Commonwealth or State) including the Fair Trading Practices Act of 1986 or the Consumer Guarantees Act 1993 ("CGA") applies to this limited warranty and may not be so excluded, restricted, or modified. Nothing in this statement is intended to have the effect of contracting out of the provisions of the CGA, except to the extent permitted by that Act, and these terms are to be modified to the extent necessary to give effect to that intention. If you acquire goods from Generac Power Systems or any of its authorized resellers and distributors for the purposes of a business, then pursuant to section 43(2) of the CGA, it is agreed that the provisions of the CGA do not apply.

GENERAC POWER SYSTEMS, INC. • P.O. BOX 8 • Waukesha, WI, USA 53187

Ph: (888) GENERAC (436-3722) • Fax: (262) 544-4851

To locate the nearest Independent Authorized Service Dealer and to download schematics, exploded views and parts lists
visit our website: www.generac.com

Generac Power Systems 2 Year (2B) Limited Warranty for Industrial Transfer Switch Systems

For the period of warranty noted below, which begins upon the successful start-up and/or on-line activation/registration of the unit, Generac Power Systems, Inc. "Generac" warrants that its transfer switch will be free from defects in material and workmanship for the items and period set forth below. Generac will, at its discretion, repair or replace any part(s) which, upon evaluation, inspection and testing by Generac or an Independent Authorized Service Dealer, is found to be defective. Any equipment that the purchaser/owner claims to be defective must be evaluated by the nearest Independent Authorized Service Dealer.

Warranty Coverage in Year(s): 1	Warranty Coverage in Year(s): 2
Parts, Labor and Limited Travel	Limited Parts Only

Guidelines:

- Unit must be registered and proof of purchase available.
- Any and all warranty repairs and/or concerns must be performed and/or addressed by an Independent Authorized Service Dealer, or branch thereof. Repairs or diagnostics performed by individuals other than Independent Authorized Service Dealers not authorized in writing by Generac will not be covered.
- Warranty is transferable between ownership of original installation site.
- Generac may choose to repair, replace or refund a piece of equipment in its sole discretion.
- Warranty only applies to permanently wired and mounted units.
- Enclosures are warranted for the first year of ownership only. Damage caused after receipt of generator is the responsibility of the owner and is not covered by this warranty. Nicks, scrapes, dents or scratches to the painted enclosure should be repaired promptly by the owner.
- Proof of performance of all required maintenance must be available.
- Travel allowance is limited to 300 miles maximum or seven and a half (7.5) hours maximum (per occurrence, whichever is less) round trip from the nearest Independent Authorized Service Dealer. Any additional travel required will not be covered.

The following will NOT be covered by this warranty:

- Costs of normal maintenance (i.e. associated part(s), adjustments, installation or start-up).
- Damage to the transfer switch system caused by accidents, shipping, handling or improper storage.
- Damage/failures caused by operation with loads or installations other than what's recommended or specified by Generac. Unauthorized modification/misapplication will not be warranted unless authorized by Generac in writing.
- Rental equipment used while warranty repairs are being performed and/or any extraordinary equipment used for removal and/or reinstallation of transfer switch (i.e. cranes, hoists, lifts, et. al.).
- Planes, ferries, railroad, buses, helicopters, snowmobiles, snow-cats, off-road vehicles or any other mode of transport deemed not standard by Generac.
- Failures due to normal wear and tear, accident, misuse, abuse, neglect, improper installation, or improper sizing.
- Damage to any covered components or consequential damages caused by the use of a non-OEM part will not be covered by this warranty.
- Damage related to rodent, reptile, and/or insect infestation.
- Repairs or diagnostics performed by individuals other than Independent Authorized Service Dealers not authorized in writing by Generac.
- Steel enclosures that rust as a result of improper installation, location in a harsh or salt water environment, or are scratched where the integrity of applied paint is compromised.
- Fuses, light bulbs and any related labor.
- Units sold, rated or used for "Prime Power," "Trailer Mounted" or "Rental Unit" applications as defined by Generac. Contact an Independent Authorized Service Dealer for definitions.
- Failures caused by any act of God or external cause including without limitation, fire, theft, freezing, war, lightning, earthquake, windstorm, hail, water, tornado, hurricane, or any other matters which are reasonably beyond the manufacturer's control.
- Shipping costs associated with expedited shipping.
- Any incidental, consequential or indirect damages caused by defects in materials or workmanship, or any delay in repair or replacement of the defective part(s).
- Any unit built/manufactured prior to 2014 models.
- Overtime, holiday or emergency labor.
- Living or travel expenses of person(s) performing service, except as specifically included within the terms of a specific unit warranty period.

THIS WARRANTY SUPERSEDES ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. SPECIFICALLY, GENERAC MAKES NO OTHER WARRANTIES AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ANY IMPLIED WARRANTIES WHICH ARE ALLOWED BY LAW, SHALL BE LIMITED IN DURATION TO THE TERMS OF THE EXPRESS LIMITED WARRANTY PROVIDED HEREIN. SOME JURISDICTIONS DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. GENERAC'S ONLY LIABILITY SHALL BE THE REPAIR OR REPLACEMENT OF PART(S) AS STATED ABOVE. IN NO EVENT SHALL GENERAC BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, EVEN IF SUCH DAMAGES ARE A DIRECT RESULT OF GENERAC'S NEGLIGENCE. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU COULD ALSO HAVE OTHER RIGHTS UNDER APPLICABLE LAW.

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Part No. 0J4302

Revision H (4/21)

Emissions Warranty Statement (Spark-Ignition Engine Powered Generators)

Warranty Rights, Obligations, and Coverage

The Spark-Ignition Engine ("Engine") installed in your Generac Power Systems Inc. ("Generac") "Generator" is certified to Clean Air Act ("CAA") requirements including United States Environmental Protection Agency ("EPA") implementing regulations. Through this "Emissions Warranty," Generac warrants that your certified stationary Engine is designed and manufactured free from defects in material and workmanship which would cause a noncompliance to EPA regulations or damage due to premature failure of emission related engine components ("ERCs").

The Emission Control Information Label on your Engine presents the "EPA Family Name." The **fifth** character of the EPA Family Name indicates which EPA "Product Category" the Engine is certified to, and which regulations apply.

Fifth character of EPA Family Name:

- **B:** Generator Engine is certified to the "Large Nonroad Spark-Ignition Engine" or "NRLSI" regulations
- **L :** Generator Engine is certified to the "Nonroad Compression-Ignition Engine" or "NRCI" regulations
- **NOTE:** All NRCI Engines installed in Generac Generators are certified by the third-party Engine supplier. Please see separately provided third-party Engine Manufacturer manuals and warranty.
- **S:** Generator Engine is certified to the "Small Nonroad Spark-Ignition Engine" or "NRSSI" regulations

Warranty Duration

Generac considers the Generator Engine as placed into service upon sale to the first purchaser (the customer who will install and/or operate the Generator), thereby activating the warranty period from the time of sale to the first purchaser or for total engine hours for the periods below. For NRSSI Engines, the Emissions Control Information label on your Engine presents the Compliance Period, establishing the Emissions Warranty period in the table below. *Hour limitation for Engines equipped with hour meters.

Engine Category	Duration from Sale	
	Years	Hours*
NRLSI - Emissions Related Components	3	2500
NRLSI - High Cost Emissions Related Components (\$770 or greater replacement cost in isolation)	5	3500
NRSSI Exhaust Emissions Related Components [Compliance Period = 500 hours]	2	250
NRSSI Exhaust Emissions Related Components [Compliance Period = 1000 hours]	2	500

EMISSION RELATED PARTS MAY INCLUDE THE FOLLOWING (IF EQUIPPED):

- | | | |
|------------------------|------------------------------|-------------------------------------|
| 1. Fuel Metering | h. Liquid Gas Vaporizer | 8. Catalyst Assembly |
| a. Carburetor | i. Fuel Lines | 9. Muffler |
| b. Injection | 2. Intake (Manifold, Piping) | 10. Crankcase Breather Assembly |
| c. Pressure Regulators | 3. Ignition Module | 11. Sensors |
| d. Fuel Rail | 4. Ignition Coil | 12. Electronic Controls/Diagnostics |
| e. Fuel Pump | 5. Spark Plug | |
| f. Mixers | 6. Spark Plug Wires | |
| g. Regulators | 7. Exhaust Manifold | |

Purchasers'/Owner's Warranty Responsibilities and Limitations

The Engine purchaser/owner/operator ("You") is responsible for:

1. Engine installation, operation, adjustment, and maintenance per Generac's specifications, instructions, and Owner's Manual.
2. Presenting the Engine to an authorized Generac distribution center, servicing dealer, or equivalent entity ("Generac Service Center") as soon as a problem presents. Generac will complete Emissions Warranty repairs in a reasonable time.
 - a. You are responsible for transportation and delivery expenses incurred to/from the Generac Service Center.
 - b. You are responsible for damages or losses incurred in transport or shipment for inspection or Emissions Warranty repairs.

Generac warranty coverage and obligation:

1. Generac will repair or replace at no cost to you, including diagnosis, parts, and labor, defective or prematurely failed ERCs.
 - a. Generac will pay for inspection and diagnostic services determining a warrantable condition.
 - i. Customer may be responsible for inspection and diagnostic services fees if no warrantable condition is determined.

Generac will deny Emissions Warranty coverage and claims:

1. For evidence of abuse, misuse, neglect, improper maintenance, deficient maintenance, unapproved modifications, accidents, or acts of God.
2. For damage not caused by Generac Engines or Generac equipment.
3. For Engines on which add-on or non-equivalent parts are installed.

Limitation for ERCs subject to maintenance schedules:

1. ERCs not scheduled for maintenance repaired or replaced under this Emissions Warranty: the repaired/replaced component is warranted only for the remaining warranty period.
2. ERCs scheduled for maintenance having failed prior to first scheduled maintenance: the repaired/replaced ERC is warranted through the next scheduled maintenance event.

Part and Service Selection:

1. You may choose any qualified repair shop or person to maintain, replace, or repair your Engine with original or equivalent replacement components.
2. Generac recommends that you retain all receipts covering maintenance on your equipment, but Generac cannot deny Emissions Warranty service solely for lack of receipts.
3. Emissions Warranty, recall, and all other services paid for by Generac must be performed at an authorized Generac service provider.

Contacts: Emissions Warranty service can be initiated through your selling dealer or a Generac Service Center. Please call 1-800-333-1322 or visit www.generac.com or write to Generac Power Systems, Inc. P.O. Box 8, Waukesha, WI 53187.

Important Note: This Emissions Warranty does not apply to any incidental, consequential, or indirect damages caused by: defects in materials or workmanship, or any delay in repair or replacement of the defective part(s). Emissions Warranty is in place of all other warranties, expressed or implied. Specifically, Generac makes no other warranties as to the merchantability or fitness for a particular purpose. Any implied warranties required by law, shall be limited in duration to the terms of the express warranty provided herein.

Purchaser's/Owner's Recordkeeping Responsibilities (United States Environmental Protection Agency Requirements for STATIONARY EMERGENCY Generators [NRSSI and NRLSI Engines]

EPA regulations in 40 C.F.R. § 60 Subpart JJJJ require the Owner/Operator to maintain the certified emergency stationary SI internal combustion engine ("Emergency Engine") and emissions control system according to Generac's Owner's Manual instructions. The Owner/Operator ("You") may need to maintain and be able to present records including:

1. The Emergency Engine is certified to meet EPA emission standards.
2. Maintenance records.
3. Records to demonstrate that the engine was operated less than 100 hours per year on propane and only during emergency situations.
4. Records of operating hours, including emergency and non-emergency operation; Generac Emergency Engines are equipped with non-resettable hour meters to facilitate recordkeeping.
5. Compliance permits and records for State and local requirements.

You are responsible for compliance and potential liabilities for all Emergency Engine operation including requirements and limitations determined by Federal, State, local, and insurance agencies. Emergency Engines may be operated for maintenance checks and readiness testing provided that the tests are recommended by Federal, State, or local requirements; Generac, or the insurance company associated with the Engine.

Your certified Emergency Engine has a pre-set emission control system and does not require adjustment.

Maintenance checks and readiness testing is generally limited to 100 hours per year. Emergency Engines may be used without a time limit during qualifying emergency situations.

Emergency Engines may, depending on local regulations, operate up to 50 hours per year in non-emergency situations, including demand response without compensation, counted towards the 100 hours per year provided for maintenance and testing, but cannot be used for peak shaving or to generate income or as part of a financial arrangement.

Failing to follow the Generac Owner's Manual may cause EPA to treat your Emergency Engine as non-certified and subject to site permitting and / or performance testing.

Non-Compliance Liability

You may be subject to penalties for violations to Federal, State and local laws including those in 40 C.F.R. § 1068.101(b) for improper operation, maintenance, or compliance practices. California regulations may prohibit demand response operation for Emergency Engines not certified to California Air Resources Board regulations.



ES Service Dept requires (2-3) weeks for scheduling

Return to:

START-UP CHECKLIST TO SCHEDULE INITIAL START-UP AND TESTING

Company Name:

Generator Voltage:

of Phases:

Site Name:

Generator Model:

Generator Serial No:

Site Address:

Generator kW:

Generator kVA:

If multiple generators or ATS record below in Additional Info

On-site Contact:

Phone No:

ATS Model:

ATS Serial No:

On-site Contact E-mail:

Fuel Type:

ALL ITEMS MUST BE FILLED OUT BEFORE CHECKLIST REVIEW

Utility Power

Utility voltage present at time of start-up

YES ☐ NO ☐

Voltage No. of Phases

Building load available at time of start-up

YES ☐ NO ☐

Expected Load [Amps]

Phase rotation: CW ☐ CCW ☐ N/A ☐

AC Powered Auxiliaries

AC power supply for AC powered auxiliaries must be sourced from building load side of the transfer switch

All wiring must be labeled and terminated in the customer connection box at the generator.

All wiring must be in a separate conduit(s) than the generator power cables. All wiring must be stranded.

Wiring for battery charger labeled and terminated

YES ☐ NO ☐

N/A ☐ Voltage

Wiring for block heater labeled and terminated

YES ☐ NO ☐

N/A ☐ Voltage

DO NOT ENERGIZE THE CIRCUITS UNTIL THE ES START-UP TECHNICIAN REQUESTS POWER

Automatic Transfer Switch (ATS)

Utility breaker installed for the ATS is of equal or lesser value than the ATS current rating.

Utility breaker current rating [Amps]

ATS current rating [Amps]

ATS voltage matches Utility Voltage

YES ☐ NO ☐

No. of Phases

ATS is energized and ready for start-up

YES ☐ NO ☐

All power cables are pulled and terminated

YES ☐ NO ☐

All control wires are labeled and terminated

YES ☐ NO ☐

ATS is installed and secured in accordance with local codes

YES ☐ NO ☐

Additional switch position outputs or relays needed, i.e. for a BMS or elevator controls

YES ☐ NO ☐

N/A ☐

Annunciator

All wiring must be labeled and terminated in the customer connection box at the generator.

All wiring must be in a separate conduit(s) than the generator power cables. All wiring must be stranded.

Use Shielded CAT 5 or CAT 6 for Power Zone Pro and Pro Sync Panels.

Required 14awg (min) for power supply AND Belden 3105A or equivalent for communications (2-pair shielded).

Annunciator(s) installed with wires labeled and terminated

YES ☐ NO ☐

N/A ☐

Control and Output Relay Wiring

All wiring must be labeled and terminated in the customer connection box at the generator.

All wiring must be in a separate conduit(s) than the generator power cables. All wiring must be stranded.

2-wire start wires labeled and terminated

YES ☐ NO ☐

N/A ☐

Remote e-stop wires labeled and terminated

YES ☐ NO ☐

N/A ☐

Wiring labeled and terminated to (4) output relays

YES ☐ NO ☐

N/A ☐

Desired function of
output relays:

Relay 1

Relay 3

Relay 2

Relay 4

6/19/25

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Batteries	Lead Acid starter batteries only. Batteries will ship with the generator unless noted on the quote.			
	Batteries received with unit	YES ☐	NO ☐	
	If NO do you wish ES to supply them	YES ☐	NO ☐	
DO NOT CONNECT BATTERIES. THE ES START-UP TECHNICIAN WILL DO THIS				
Outdoor Installation	Generator enclosure secured to mounting pad	YES ☐	NO ☐	N/A ☐
	Installation allows clearance for all doors to open/panels to be removed	YES ☐	NO ☐	
	Installation allows for proper cooling airflow into the enclosure	YES ☐	NO ☐	
	Installation allows for proper outlet airflow from the enclosure	YES ☐	NO ☐	
	Installation allows for unobstructed exhaust flow	YES ☐	NO ☐	
Indoor Installation	Generator secured to mounting pad	YES ☐	NO ☐	N/A ☐
	Installation allows clearance for all doors to open/panels to be removed if applicable	YES ☐	NO ☐	N/A ☐
	Installation allows for proper cooling airflow into the room (min 2x size of the radiator)	YES ☐	NO ☐	
	Installation allows for proper outlet airflow from the room (min 1.5x size of the radiator)	YES ☐	NO ☐	
	- Air inlet and air outlet should not share the same wall			
	Ducting used to direct air into and out of the room	YES ☐	NO ☐	
	Installation allows for unobstructed engine exhaust flow	YES ☐	NO ☐	
	- Exhaust system must be plumbed outdoors and comply with local codes			
	Diesel Fuel units: fuel tank vents are plumbed outside of the room	YES ☐	NO ☐	N/A ☐
Load Testing	Is start-up to be performed using building load or a load bank			
		Bldg. Load ☐	Load Bank ☐	
	If <u>Bldg. load</u> , what is the anticipated load [Amps]			
	If <u>Load bank</u> , distance from where the load bank will be operated to the cable connection point [Feet]			
	Where will the cables be connected			
		Gen breaker ☐	Docking station ☐	Other ☐
	If <u>Load bank</u> , what is the duration of testing required [Hours]			
	If <u>Load bank</u> , are there specific requirements for % of load, load steps, etc.			
	YES ☐	NO ☐		
	If <u>YES</u> , please describe testing requirements:			
Fuel Supply	Fuel must be available at time of start-up and for the duration of the start-up and testing.			
	Refer to the Generac installation guide and engine spec sheet for fuel supply requirements.			
	Natural Gas ☐			
	Propane Vapor LPG [vaporized fuel delivered from propane tank to generator skid]	☐		
	Propane Liquid LPL [liquid fuel delivery from propane tank to generator skid]	☐		
	Propane Tank(s) Size [Gallons]: Tank 1 Tank 2 Tank 3 Tank 4 Tank 5			
PLEASE FILL OUT THE FUEL WORKSHEET BELOW				
Air Permit	California requires an air permit to install and operate stationary engines ≥50 bhp (≥37 kW). If the air permit has not been obtained from the local air district prior to startup, Energy Systems is not liable for any notice of violation (NOV) or fines associated with equipment startup and/or operation			
	The Authority to Construct Permit or Permit to Construct Air Permit has been issued	YES ☐	NO ☐	N/A ☐
Witness Testing	Please coordinate all parties required to witness test the system.			
	If witness testing is required, describe what is necessary to perform the testing:			
Training	One hour of system operation training included at time of start-up. A return trip to complete training is not included unless agreed to at time of equipment order. Please verify training time with ES start-up technician upon arrival on site.			
	Note: Rescheduling training may take 2-3 weeks			

FUEL SYSTEM WORKSHEET

NG and LPV Fuel Systems:

The final connection to the generator base frame must use the supplied flexible gas line to allow for vibration (this line must remain straight). **There should be a minimum of 10' of pipe length from the secondary regulator to the generator skid for proper operation of the engine.** Fuel piping and pressure regulator(s) must be sized to provide the required BTU, fuel volume and pressure for full load operation.

LPL Fuel Systems:

The correct vaporizer (negative or positive pressure) must be used for proper operation of the engine.

Refer to the engine spec sheet and Generac installation manual and/or Generac piping guideline manual.

Note 1: The generator(s) require their own fuel supply. NG or LP fuel lines must not tee off to additional equipment after the primary regulator. This could adversely affect the generator performance.

Note 2: Fuel supply must be turned on and available to the generator with rough adjustment of the supply pressure having been made. A manual shutoff valve and safety valves have been installed per local codes along with a manual shutoff valve and pressure test port installed near the generator set to aide with fine adjustment of the supply fuel pressure.

Gas System Information

Fuel Type: Engine Fuel Requirements @100% Load [from engine spec sheet]:
CFH/BTU's: Pressure:

Primary Regulator [natural gas and LPG applications]

Regulator Manufacturer: Regulator Model:
BTU Rating @ the Required Pressure: Regulator Body Size (must match size of pipe being used):

Piping Design [from primary regulator to secondary regulator or generator skid]

Length: Diameter: Qty of Elbows: Qty of Tees: Outlet pressure setting [" WC]:

Secondary Regulator [natural gas and LPG applications, if applicable]

Regulator Manufacturer: Regulator Model:
BTU Rating @ the Required Pressure: Regulator Body Size (must match size of pipe being used):

Piping Design [from secondary regulator to generator skid if applicable]

Length: Diameter: Qty of Elbows: Qty of Tees: Outlet pressure setting [" WC]:

Vaporizer [for applications with liquid propane delivery to generator skid]

Vaporizer Manufacturer: Vaporizer Model:

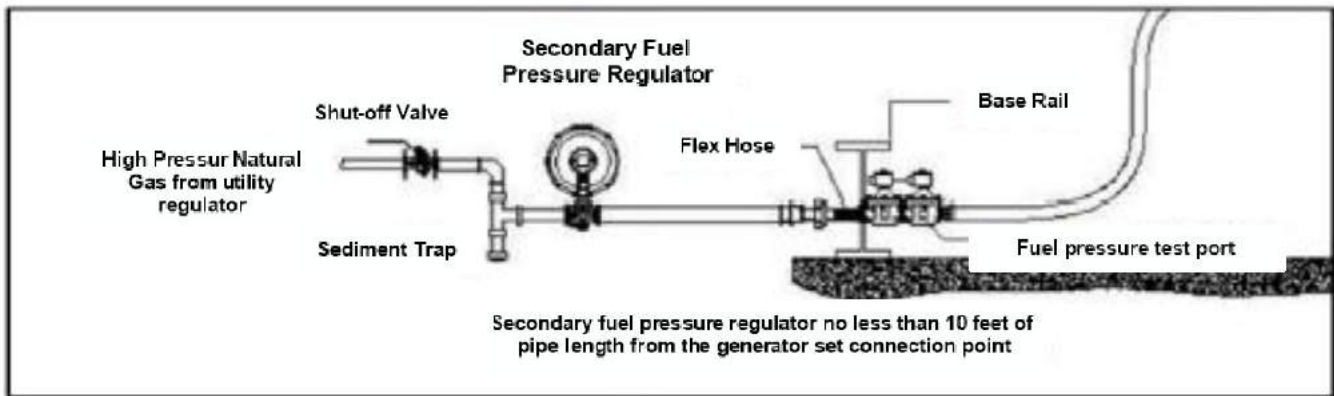
Piping Design [from propane tank to vaporizer]

Length: Diameter: Qty of Elbows: Qty of Tees:

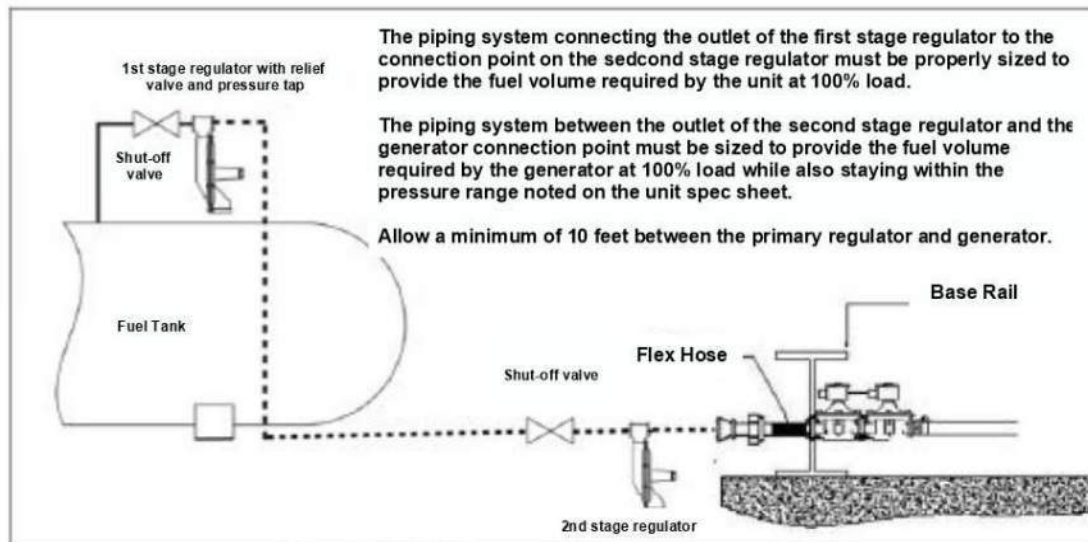
Piping Design [from vaporizer to generator skid]

Length: Diameter: Qty of Elbows: Qty of Tees: Outlet pressure setting [" WC]:

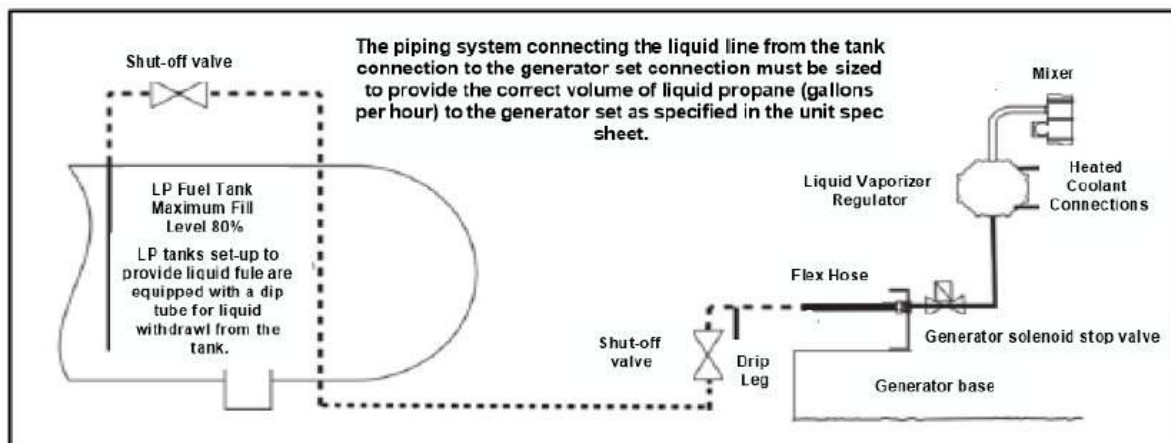
FUEL SYSTEM EXAMPLES



Typical natural gas supply regulator and piping configuration



Typical propane vapor (LPG) tank and regulator withdrawal system



Typical propane liquid (LPL) tank and vaporizer withdrawal system

ATS ELECTRICAL CONNECTIONS

1. Power cables between the generator output breaker, automatic transfer switch(es) and Neutral are properly installed and terminated
2. Power cables, auxiliary AC power supply wiring, control and communication wiring is ran in separate conduits.
3. If ATS is a 2-wire start type switch (i.e. Generac TX, GTS or PSTS or ASCO, Cutler Hammer, etc.) run qty (5) 14awg **stranded** wires between the ATS and generator for remote start and switch position. If a TX series only, (2) additional 14awg **stranded** wires should be provided for back-up power to the TX controller in the event its on-board rechargeable battery depletes.
4. If ATS is a Generac HTS model a 2 conductor twisted shielded pair (18 awg Belden 3105A) is needed for communications to the generator panel. Also run a 4 conductor for DC voltage from the generator to ATS and 2-wire start. All wire to be **stranded**. Wires should be labeled.
5. Verify the specs if any additional ATS communications/contacts are needed. Typically this is only needed if the ATS has a separate remote annunciator, ATS metering or monitoring is needed or if elevators controls require switch position monitoring.

GENERATOR MOUNTING

1. The generator set must be securely mounted and anchored onto a concrete pad. For unit dimensions, weight, conduit stub up locations and fuel connection locations refer to the detailed installation drawing for the specific unit being installed.
2. The concrete pad should be a minimum of 12" longer and wider than the generator mounting skid or sub-base fuel tank to provide at least a 6" apron around the unit.
3. If the generator set is being installed indoors consult the submittal documentation and installation manual.

SITE LOCATION / ACCESS

Location of Generator(s)[parking garage, rooftop, etc.]:

If Rooftop, Describe Access [ladder, elevator, staircase, etc.]:

Site Access Restrictions [parking garage height, etc.]:

Location of Transfer Switch(s):

Distance from Service Vehicle Parking to Generator:

Specific Directions, Instructions or Access Not Already Noted:

PHOTOS REQUIRED TO BE SENT WITH CHECKLIST

1. Generator skid or generator enclosure anchoring (both sides)	YES	☐	NO	☐	N/A	☐
2. Show accessibility to all sides of the skid or enclosure; room to doors to open maintenance activities	YES	☐	NO	☐	N/A	☐
3. Show installation of ATS and accessibility	YES	☐	NO	☐	N/A	☐
4. Show ATS power cable terminations	YES	☐	NO	☐	N/A	☐
5. Show ATS labeled and terminated control wiring	YES	☐	NO	☐	N/A	☐
6. Show Generator power cable terminations at generator breaker	YES	☐	NO	☐	N/A	☐
7. Indoor install: ventilation - inlet air	YES	☐	NO	☐	N/A	☐
8. Indoor install: ventilation - outlet air	YES	☐	NO	☐	N/A	☐
9. Indoor install: engine exhaust piping	YES	☐	NO	☐	N/A	☐
10. Generator customer connection panel - AC auxiliary power wiring terminations	YES	☐	NO	☐	N/A	☐
11. Generator customer connection panel - 2-wire start / relay output wiring terminations	YES	☐	NO	☐	N/A	☐
12. Generator customer connection panel - annunciator wiring terminations	YES	☐	NO	☐	N/A	☐
13. Annunciator - wiring terminations at annunciator	YES	☐	NO	☐	N/A	☐
14. Generator(s) data tag	YES	☐	NO	☐	N/A	☐
15. ATS(s) data tag	YES	☐	NO	☐	N/A	☐
16. Show gas system: primary NG regulator/meter or LP tank/primary regulator	YES	☐	NO	☐	N/A	☐
17. Show gas system: secondary NG or LP regulator and connection to enclosure or LPL vaporizer	YES	☐	NO	☐	N/A	☐
18. Show gas system: pictures of piping	YES	☐	NO	☐	N/A	☐
19. Misc.	YES	☐	NO	☐	N/A	☐
20. Misc.	YES	☐	NO	☐	N/A	☐
21. Misc.	YES	☐	NO	☐	N/A	☐
22. Misc.	YES	☐	NO	☐	N/A	☐
23. Misc.	YES	☐	N	☐	N/A	☐

Warranty Registration Request Form

This information is mandatory. The equipment can not be registered for warranty without the below fields completed

Owner Information

Name:	Company Name:		
Street Address (P.O. Boxes not accepted):	City:	State:	Zip Code:
Phone:	Email:		

Installing Contractor Information

Name:	Company Name:		
Street Address (P.O. Boxes not accepted):	City:	State:	Zip Code:
Phone:	Email:		

Site Information (can be the same as the Owner Information)

Name:	Company Name:		
Street Address (P.O. Boxes not accepted):	City:	State:	Zip Code:
Phone:	Email:		

Additional Information

APPROVED SERVICE DATE AND TIME: Energy Systems will not be able to schedule a technician until this completed and signed checklist is received by our office. If upon arrival for the scheduled work the system is not installed correctly and completely as per these guidelines, the start-up technician will document and review the needed corrections with the site contact before demobilizing from the site. A trip charge per occurrence will be assessed and the start-up rescheduled.

Please return the signed and completed checklist along with requested pictures to our Service Dept. for review and scheduling. For technical support prior to start-up, call our Service Dept at or email us at

Date:	Signature:

CANCELLATION REQUEST

**Please submit your cancellation request to your Generac Inside Sales Representative.
The ISR will review the request and confirm the cancellation along with any charges.**

CONTACT INFORMATION

Distributor/Dealer Name:	Cancellation Request Date:	
Contact Name:	Contact Phone:	Email:

ORDER INFORMATION

SO Number:	Scheduled Ship Date:
PO Number:	Current Shipping Window:
Reason for Cancellation:	

Will this be reordered? Yes or No:

COST ADJUSTMENT

Order Total	Amount: \$
Order Cancellation Fee (See below)	Amount: \$

Order Cancellation charges are based on the original shipping window and enforced at the discretion of Generac.

DISTRIBUTOR/DEALER AUTHORIZATION

Signature: (Sign and Date Below)

FOR INTERNAL USE ONLY

Inside Sales Representative:		
Date:	Approved or Denied:	Amount:

CANCELLATION REQUEST

For Orders ≤ \$100,000 in Total Price:

20 weeks prior to ship date	10% of Selling Price
18 weeks prior to ship date	20% of Selling Price
16 weeks prior to ship date	30% of Selling Price
15 weeks prior to the ship date or less	40% of Selling Price
Discontinued Product (Engine)	No Cancellations Accepted
Non-Standard Tanks	
Special Engineering (Upon Generac SEQ Approval)	Incremental 10% of Selling Price

For Orders > \$100,000 in Total Price:

20 Weeks Prior to Ship Date	10% of Selling Price
18 Weeks Prior to Ship Date	15% of Selling Price
16 Weeks Prior to Ship Date	20% of Selling Price
14 Weeks Prior to Ship Date	30% of Selling Price
13 Weeks Prior to Ship Date	40% of Selling Price
12 Weeks Prior to Ship Date	50% of Selling Price
10 weeks prior to the ship date or less.	60% of Selling Price
Discontinued Product (Engine)	No Cancellations Accepted
Special Engineering (Upon Generac SEQ Approval)	10% of Selling Price

Cancellation For PSTS Transfer Switch Orders:

PSTS Products ≤ 1000 Amps:

> 18 Weeks Prior to Ship Date	0% of Selling Price
14-18 Weeks Prior to Ship Date	25% of Selling Price
Less than 14 Weeks Prior to Ship Date	100% of Selling Price

PSTS Products > 1000 Amps:

> 13 Weeks Prior to Ship Date.	0% of Selling Price
12-13 Weeks Prior to Ship Date	25% of Selling Price
Less than 12 Weeks Prior to Ship Date	100% of Selling Price

Residential Products:

Cancellation of stock item products is permitted provided the cancellation request is executed by Generac sales and order entry prior to shipment. Cancellations are subject to the following fees:

2 – 4 Weeks Prior to Ship Date	2% of Selling Price
1 Day – 2 Weeks Prior to Ship Date	5% of Selling Price

TX611 Series Transfer Switch

100 – 400 Amps

Contactor Type · Open and Delayed Transition

- Automatic Transfer Switch
- 100 – 400 A, up to 480 VAC, 60 Hz
- Single or Three Phase
- 2, 3, or 4 Poles
- UL Type 1 or Type 3R Enclosure
- Open and Inphase or Open with Delayed Transition
- ETLus and cETLus
- 3 Cycle Rated for Easy Upstream Breaker Coordination



Image used for illustration purposes only

Codes and Standards



ETLus and cETLus Listed to UL 1008



NFPA 70, 99, 110



NEC 700, 701, 702, 708



oshpd

OSHPD and Seismic Certified CBC
2019, CBC 2016, IBC 2018, IBC 2015,
IBC 2012, IBC 2009, ASCE 7-10,
ASCE 7-16, ICC-ES AC-156

Description

Generac's patented* contactor is featured in the TX contactor type transfer switch, which is a double-throw robust switch construction with inherent interlocks for safe positive transfer between power sources. Featuring a transition time of less than 20 milliseconds, this high speed transfer is ideal for all applications, including motor load applications. The contacts are silver composite for long life, resisting pitting or burning. The switches are rated for full load transfers in mission critical, emergency, legally required, and optional power systems.

The microprocessor based controller provides the customers with the flexibility to program a comprehensive group of set points to match the application needs. The controller has two programmable inputs and one programmable output as standard and is available with optional expansion boards for up to four programmable inputs and outputs. The LCD displays real time and historical information with time-stamped events. The integrated plant exerciser can be configured in off, daily, day of week, biweekly, and monthly intervals with user selectable run time. Standard features of the controller include three phase sensing on both sources, phase unbalance, phase reversal, load shed, emergency inhibit, and communications.

TX611 Series Transfer Switch

100 – 400 Amps

Contactors Type · Open and Delayed Transition

STANDARD FEATURES

GENERAL

- Small Footprint, Results in Easy Mounting and Installation for Reduced Time and Costs
- Cable Entry is Top or Bottom
- Double-Throw, Stored Energy Transfer Mechanism
- Can be Electrically Isolated while Energized
- Graphical LCD-Based Display for Programming, System Diagnostics and Help Menu Display Mimic
- Diagram with Source Available and Connected LED Indicator
- Method of Transfer: Open with Inphase Transition
- Mechanically Interlocked to Prevent Connection of Both Sources
- Modbus® RTU
- TXC 100 Controller
- Operating Temperature -4 ° to 158 °F (-20 ° to 70 °C)
- Removable Top and Bottom Plates for Ease of Entry
- Voltage Agnostic*
- High Withstand and Closing Ratings
- Heater Kit Standard on All 3R Enclosures
- Auxiliary Output Includes: Two Wire Start, Signal Before Transfer, Fault, and a Programmable Relay Output
- Auxiliary Input Includes: Permissive Inputs (24 VDC)
- General Alarm Indication
- 2 Year Standard Warranty
- IBC 2018, 2015, 2012, 2009

VOLTAGE AND FREQUENCY SENSING

- Three Phase Under and Over Voltage Sensing on Normal and Emergency Sources
- Under and Over Frequency Sensing on Normal and Emergency
- Selectable Settings: Single or Three Phase Voltage
- Sensing on Normal, Emergency and Load 60 Hz
- Phase Sequence Sensing for Phase Sensitive Loads

Start Circuit

- 2-Wire Start
- 3-Wire Start From C Contact for Circuit Monitoring

Digital Outputs

- Signal Before Transfer (Elevator)
- General Alarm

Digital Inputs

- Emergency Inhibit (Permissive & Load Shed)
- Go to Emergency (Demand Response)
- Manual Generator Retransfer

CONTROLS

- Front Programmable Control Reduces PPE Needs and Arc Flash Hazard
- Built in Battery Backup - Increases Switch Reliability and Reduces Switch Transition Time to Alternate Source
- Battery Backup Able to Power the Controller for up to 60 Minutes in the Event of No Source Availability
- Generator Battery Backup for Controller
- Accessible USB Port for Easy Data Downloads, Firmware Updates without Requiring PPE, Reducing the Risk of Arc Flash
- All Amp Nodes Offered with Delayed Transition
- Heater Programmable through Control for Desired Temperature and Humidity Settings
- Front Accessible Customer Connections
- Time-Stamped Event History Log
- Programmable Exerciser - Daily, Weekly, Bi-Weekly, Monthly

* 480 V 3-Wire Systems Must be Specified at Time of Ordering for Transformer Kit to be Included

CONFIGURABLE OPTIONS

- Chicago Code Kit
- 3R Padlockable Cover for Controller (Standard on 3R Enclosure)
- CTs for Integrated Metering
- Heater Option for Temperature and Humidity Control (Standard on 3R)
- Time Delay in Neutral Transition (TDN), or Inphase with a Default to Time Delay in Neutral Transfer
- Expandable Input/Output Board Module Includes: 4 Relay Outputs and 4 Optically Isolated Inputs
- IBC Seismic Certified/Seismic Rated
- 2 Year Extended Limited Warranty
- 5 Year Basic Limited Warranty
- 5 Year Extended Limited Warranty
- 7 Year Extended Limited Warranty
- 10 Year Extended Limited Warranty

Engineered Options

- Transient Voltage Surge Suppressor (TVSS)
- NEMA 4X Stainless Steel (304 or 316) Enclosure
- Manual Generator Retransfer Switch
- Go to Emergency Switch

Conversion Kits

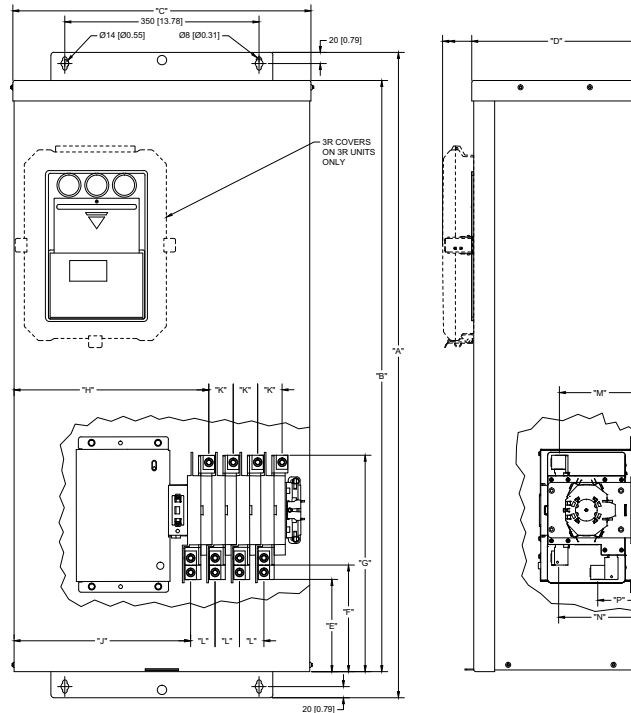
- 480 V Transformer Kit for 3-Wire Systems
- UL Type 1 to Type 3R Kit

TX611 Series Transfer Switch

100 – 400 Amps

Contactor Type · Open and Delayed Transition

UNIT DIMENSIONS*



Contactor Type, Open and Delayed Transition, 100 – 400 A

Description	in (mm)														Cu/Al					lbs (kg)
	A (Height)	B (Height)	C (Width)	D (Depth)	E (Dim)	F (Dim)	G (Dim)	H (Dim)	J (Dim)	K (Dim)	L (Dim)	M (Dim)	N (Dim)	P (Dim)	Normal 75 °C Wire	Standby Source 75 °C Wire	Load 75 °C Wire	Neutral Connection	Ground Connection	Weight
100A NON SER TYPE 1	35.6 (903)	31.7 (806)	21.2 (538)	12.0 (305)	8.9 (226)	9.9 (252)	18.5 (471)	13.7 (348)	12.4 (315)	1.7 (44)	1.7 (44)	5.8 (148)	5.8 (148)	3.1 (79)	(1) 2/0 - 14	(1) 2/0 - 14	(1) 2/0 - 14	(5) 2/0 - 14	(2) 1/0 - 14	105.6 (48)
100A NON SER TYPE 3R	35.6 (903)	31.7 (806)	21.2 (538)	13.9 (355)	8.9 (226)	9.9 (252)	18.5 (471)	13.7 (348)	12.4 (315)	1.7 (44)	1.7 (44)	5.8 (148)	5.8 (148)	3.1 (79)	(1) 2/0 - 14	(1) 2/0 - 14	(1) 2/0 - 14	(5) 2/0 - 14	(2) 1/0 - 14	110.0 (50)
150A NON SER TYPE 1	35.6 (903)	31.7 (806)	21.2 (538)	12.0 (305)	9.3 (236)	10.3 (262)	18.1 (460)	13.7 (348)	12.4 (315)	1.7 (44)	1.7 (44)	6.0 (153)	6.0 (153)	3.3 (84)	(1) 250 - 6	(1) 250 - 6	(1) 250 - 6	(4) 350 - 6	(2) 250 - 6	116.6 (53)
150A NON SER TYPE 3R	35.6 (903)	31.7 (806)	21.2 (538)	13.9 (355)	9.3 (236)	10.3 (262)	18.1 (460)	13.7 (348)	12.4 (315)	1.7 (44)	1.7 (44)	6.0 (153)	6.0 (153)	3.3 (84)	(1) 250 - 6	(1) 250 - 6	(1) 250 - 6	(4) 350 - 6	(2) 250 - 6	121.0 (55)
200A NON SER TYPE 1	35.6 (903)	31.7 (806)	21.2 (538)	12.0 (305)	9.3 (236)	10.3 (262)	18.1 (460)	13.7 (348)	12.4 (315)	1.7 (44)	1.7 (44)	6.0 (153)	6.0 (153)	3.3 (84)	(1) 250 - 6	(1) 250 - 6	(1) 250 - 6	(4) 350 - 6	(2) 250 - 6	116.6 (53)
200A NON SER TYPE 3R	35.6 (903)	31.7 (806)	21.2 (538)	13.9 (355)	9.3 (236)	10.3 (262)	18.1 (460)	13.7 (348)	12.4 (315)	1.7 (44)	1.7 (44)	6.0 (153)	6.0 (153)	3.3 (84)	(1) 250 - 6	(1) 250 - 6	(1) 250 - 6	(4) 350 - 6	(2) 250 - 6	121.0 (55)
300A NON SER TYPE 1	51.4 (1,305)	47.5 (1,206)	24.2 (614)	12.0 (305)	9.7 (246)	11.5 (292)	20.3 (516)	14.8 (377)	13.1 (311)	2.3 (59)	2.3 (59)	6.5 (166)	6.5 (166)	3.3 (84)	(1) 600 - 4 or (2) 250 - 1/0	(1) 600 - 4 or (2) 250 - 1/0	(1) 600 - 4 or (2) 250 - 1/0	(5) 600 MCM - 4 or (10) 250 MCM - 1/0	(2) 250 - 6	173.8 (79)
300A NON SER TYPE 3R	51.4 (1,305)	47.5 (1,206)	24.2 (614)	13.9 (355)	9.7 (246)	11.5 (292)	20.3 (516)	14.8 (377)	13.1 (311)	2.3 (59)	2.3 (59)	6.5 (166)	6.5 (166)	3.3 (84)	(1) 600 - 4 or (2) 250 - 1/0	(1) 600 - 4 or (2) 250 - 1/0	(1) 600 - 4 or (2) 250 - 1/0	(5) 600 MCM - 4 or (10) 250 MCM - 1/0	(2) 250 - 6	178.2 (81)
400A NON SER TYPE 1	51.4 (1,305)	47.5 (1,206)	24.2 (614)	12.0 (305)	9.7 (246)	11.5 (292)	20.3 (516)	14.8 (377)	13.1 (311)	2.3 (59)	2.3 (59)	6.5 (166)	6.5 (166)	3.3 (84)	(1) 600 - 4 or (2) 250 - 1/0	(1) 600 - 4 or (2) 250 - 1/0	(1) 600 - 4 or (2) 250 - 1/0	(5) 600 MCM - 4 or (10) 250 MCM - 1/0	(2) 250 - 6	173.8 (79)
400A NON SER TYPE 3R	51.4 (1,305)	47.5 (1,206)	24.2 (614)	13.9 (355)	9.7 (246)	11.5 (292)	20.3 (516)	14.8 (377)	13.1 (311)	2.3 (59)	2.3 (59)	6.5 (166)	6.5 (166)	3.3 (84)	(1) 600 - 4 or (2) 250 - 1/0	(1) 600 - 4 or (2) 250 - 1/0	(1) 600 - 4 or (2) 250 - 1/0	(5) 600 MCM - 4 or (10) 250 MCM - 1/0	(2) 250 - 6	178.2 (81)

UL 1008 Withstand and Closing Ratings

Ampere Rating	Specific Breaker (kA)**	3-Cycle Rating (kA)	Fuse Rating (Class J)	Fuse Size	Voltage
100	35	22	200 kA	200 A	480V
150	42	22	200 kA	200 A	480V
200	42	22	200 kA	200 A	480V
300	65	35	200 kA	400 A	480V
400	65	35	200 kA	400 A	480V

* All measurements are approximate and for estimation purposes only. Specification characteristics may change without notice. Please contact a Generac Power Systems Industrial Dealer for detailed installation drawings.
** See Specific Breaker List available on GENconnect.

SPECIFIC BREAKER LIST

TX611 Series Transfer Switch

TX611 Series Switches Covered:

200A up to 480V

Short-Circuit Withstand and Closing Fuse Ratings

When protected by a fuse of the specific fuse class and maximum ampere rating as marked below, this transfer switch is suitable for use in a circuit capable of delivering the short-circuit current at the maximum voltage marked.

Switch Ampere Rating	Transfer Switch Short-Circuit Current Rating (RMS Symmetrical Amperes x 1,000)	Voltage (Volts AC, Maximum)	Fuse Class	Rating (Amperes)
200	200	480	J	200

Specific Circuit Breaker Manufacturer and Type Listing

When protected by a circuit breaker of the specific manufacturer, type, and ampere rating as marked below, this transfer switch is suitable for use in circuits capable of delivering short-circuit current at the maximum voltage marked.

Switch Ampere Rating	Transfer Switch Short-Circuit Current Rating (RMS Symmetrical Amperes x 1,000)	Voltage (Volts AC, Maximum)	Manufacturer	Type	Circuit Breaker Rating (Amperes Maximum)
200	25	480	Square D	BJ, BG, BD	125
200	42	480	Square D	HD, HG, HJ, HL, HR	150
200	42	480	Square D	JG, JJ, JL, JR	200
200	30	480	Eaton	FD, FDC, FDCE	200
200	30	480	Eaton	FDE, HFD, HFDE	200
200	42	480	Eaton	EGE, EGC	125
200	42	480	Eaton	EGH, EGS	125
200	35	480	Eaton	HJD, JD, JDB	200
200	35	480	Eaton	JDC, JGC, JGH	200
200	35	480	Eaton	JGS, JGU, JGX	200
200	35	480	Eaton	LGC, LGH, LGS	200
200	35	480	Eaton	LGU, LGX	200
200	35	480	GE/ABB	SGL, SGP	125
200	42	480	GE/ABB	SEL, SEP, PE_N	150
200	42	480	GE/ABB	PE_H, PE_L	150
200	42	480	GE/ABB	THLC1	150
200	42	480	Siemens	3VA52_6	200

Any Breaker (3 Cycle) Withstand and Closing Rating

When protected by a circuit breaker, this transfer switch is suitable for use in a circuit capable of delivering the short-circuit current for the maximum time duration and voltage marked below. The circuit breaker must include an instantaneous trip response unless the available short-circuit current is less than or equal to the short-time rating of the transfer switch and the circuit breaker includes a short-time trip response. The maximum clearing time of the instantaneous trip response must be less than or equal to the time duration shown for the marked short-circuit current. When protected by a circuit breaker with a short-time trip response, the short-time response of the circuit breaker must be coordinated with the short-time current rating of the transfer switch as marked below.

Switch Ampere Rating	Transfer Switch Short-Circuit Current Rating (RMS Symmetrical Amperes x 1,000)	Voltage (Volts AC, Maximum)	Time Duration (Sec, Maximum)
200	22	480	0.050

TX Series Transfer Switch

TXC-100

Automatic Transfer Switch Controller

- Automatic Transfer Switch Controller
- Up to 480 VAC, 50/60 Hz
- Single and Three Phase
- cETLus Recognized Component
- Tested to UL 1008



Image used for illustration purposes only

Codes and Standards

Not all codes and standards apply to all configurations. Contact factory for details.



cETLus Recognized per UL 1008



NFPA 37, 70, 99, 110



NEC 700, 701, 702, 708

Description

Generac's TXC-100 microprocessor based controller provides customers with the flexibility to program a comprehensive group of set points to match the application needs. The controller has 2 programmable inputs and 1 programmable output as standard and is available with an optional expansion board for up to 4 programmable inputs and outputs. The LCD displays real time and historical information with time-stamped events. The integrated plant exerciser can be configured in off, daily, day of week, biweekly, and monthly intervals with user selectable run time. Standard features of the controller include three phase sensing on both sources, phase unbalance, phase reversal, emergency inhibit, and communications.

TX Series Transfer Switch

TXC-100

Automatic Transfer Switch Controller

STANDARD FEATURES

GENERAL

- Graphical LCD-Based Display for Programming, System Diagnostics and Help Menu Display Mimic Diagram with Source Available and Connected LED Indicator
- Time-Stamped Event History Log
- Programmable Exerciser - Daily, Weekly, Bi-Weekly, Monthly
- Methods of Transfer Include: Open with Inphase Transition Only, Time Delay in Neutral Transition, or Inphase with a Default to Time Delay in Neutral Transfer
- Modbus® RTU Communications
- Operating Temperature -4 ° to 158 °F (-20 ° to 70 °C)
- Voltage Agnostic*
- Integrated Anti-condensation Heater Control
- Auxiliary Output Includes: 2WS, SB4T, Fault, and a Programmable Relay Output
- Auxiliary Input Includes: Permissive and Loadshed Inputs (24 VDC)
- Expandable Input/Output Board Module Includes: 4 Relay Outputs and 4 Optically Isolated Inputs
- Front Programmable Control Reduces PPE Needs and Arc Flash Hazard

- Built in Battery Backup - Increases Switch Reliability and Reduces Switch Transition Time to Alternate Source
- Rechargeable Lithium-ion Battery Backup Able to Power the Controller for up to 60 Minutes in the Event of No Source Availability
- Accessible USB Port for Easy Data Downloads, Firmware Updates without Requiring PPE, Reducing the Risk of Arc Flash
- All Amp Nodes Offered with Delayed Transition
- General Alarm Indication
- Heater Programmable through Control for Desired Temperature and Humidity Settings
- Front Accessible Customer Connections and Battery without Arc Flash Exposure
- Auxiliary Generator Battery Backup for Controller

VOLTAGE AND FREQUENCY SENSING

- Three Phase Under and Over Voltage Sensing on Normal and Emergency Sources
- Under and Over Frequency Sensing on Normal and Emergency
- Selectable Settings: Single or Three Phase Voltage
- Sensing on Normal, Emergency and Load 50 or 60 Hz
- Phase Sequence Sensing for Phase Sensitive Loads

PROGRAMMABLE I/O PARAMETERS

Outputs:

- Source 1 – Two Wire Start
- Source 2 – Two Wire Start
- Engine Exercising
- Engine Warmup
- Signal Before Transfer (Elevator Contact)
- General Alarm
- Source 1 Good
- Source 2 Good

Inputs:

- Permissive (Emergency Inhibit)
- Remote Engine Fast Test
- Remote Engine Normal Test
- ATS Timer
- Initiate Demand Response

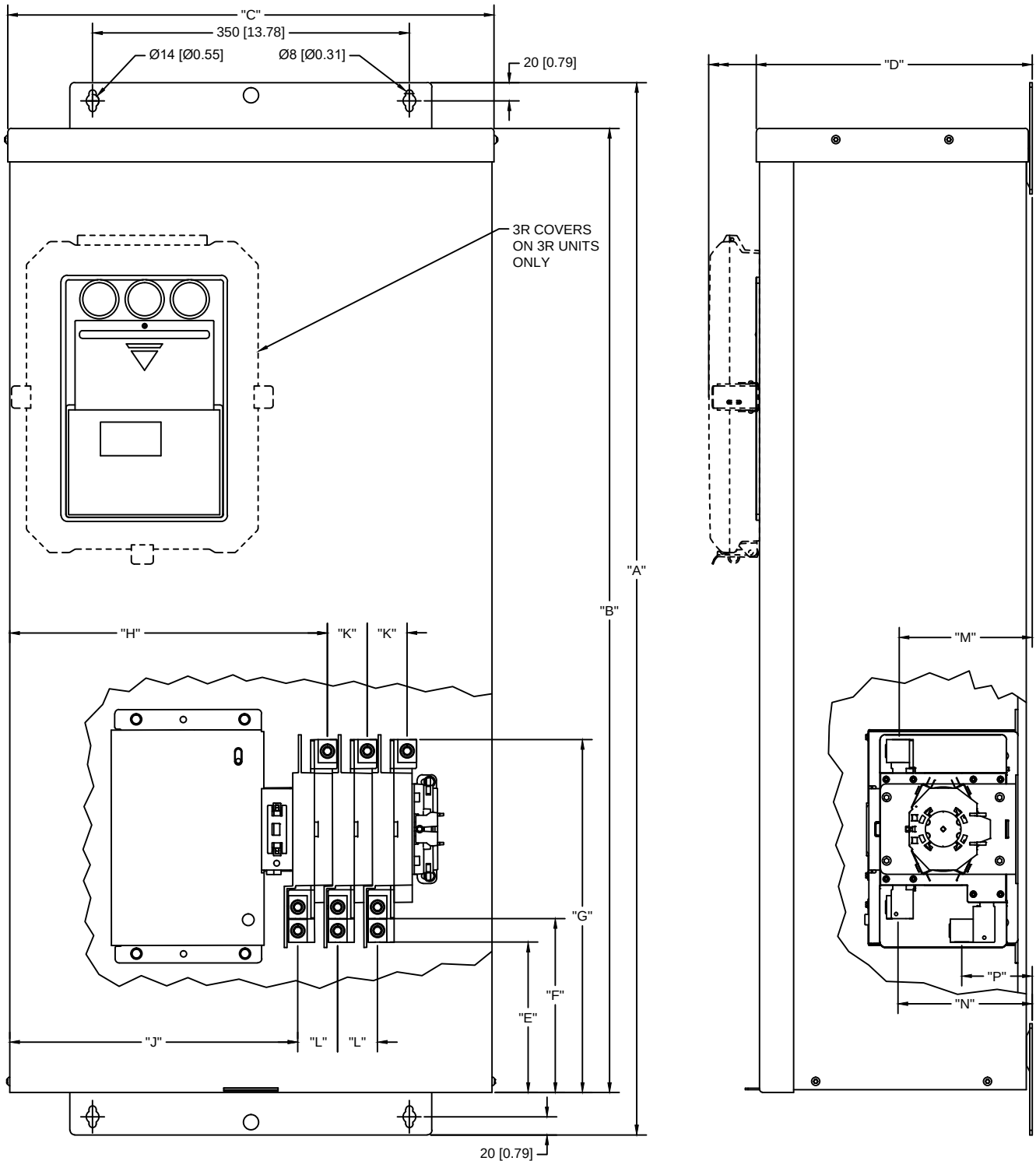
* 480 V Delta Must be Specified at Time of Ordering for Transformer Kit to be Included

AVAILABLE OPTIONS

- Chicago Code Kit
- 3R Padlockable Cover for Controller (Standard on 3R Enclosure)
- Emergency Inhibit
- Selectable Retransfer
- Manual Generator Retransfer
- Type 1 to 3R Conversion Kit

- Heater Option for Temperature and Humidity Control (Standard on 3R Enclosure)
- Input/Output (I/O) Module
- Current Measurements**
- Power in kW**
- Power Factor**

** When Equipped with Current Transformers



ALL DIMENSION ARE: mm [inches]

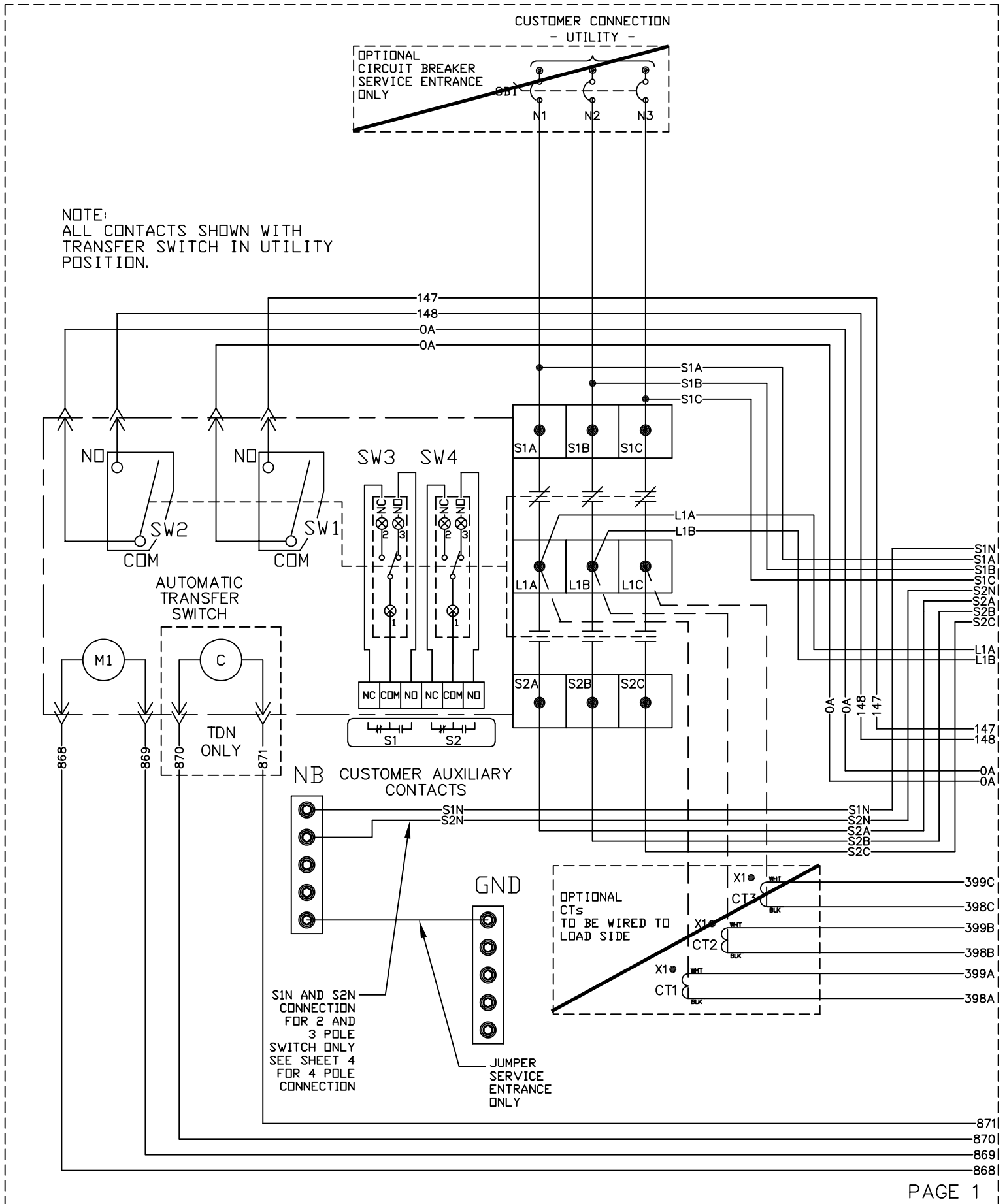
DESCRIPTION	HEIGHT "A"	HEIGHT "B"	WIDTH "C"	DEPTH "D"	DIM "E"	DIM "F"	DIM "G"	DIM "H"	DIM "J"	DIM "K"	DIM "L"	DIM "M"	DIM "N"	DIM "P"	WEIGHT
100A NON SER NEMA 1	903	806	538	305	226	252	471	348	315	44	44	149	149	79	48kg
	[35.55]	[31.71]	[21.16]	[12.00]	[8.89]	[9.91]	[18.54]	[13.70]	[12.40]	[1.73]	[1.73]	[5.88]	[5.88]	[3.11]	105.6lbs
100A NON SER NEMA 3R	903	806	538	355	226	252	471	348	315	44	44	149	149	79	50kg
	[35.55]	[31.71]	[21.16]	[13.99]	[8.89]	[9.91]	[18.54]	[13.70]	[12.40]	[1.73]	[1.73]	[5.88]	[5.88]	[3.11]	110.0lbs
150A NON SER NEMA 1	903	806	538	305	237	263	460	348	315	44	44	153	153	83	53kg
	[35.55]	[31.71]	[21.16]	[12.00]	[9.31]	[10.34]	[18.12]	[13.70]	[12.40]	[1.73]	[1.73]	[6.04]	[6.04]	[3.26]	116.6lbs
150A NON SER NEMA 3R	903	806	538	355	237	263	460	348	315	44	44	153	153	83	55kg
	[35.55]	[31.71]	[21.16]	[13.99]	[9.31]	[10.34]	[18.12]	[13.70]	[12.40]	[1.73]	[1.73]	[6.04]	[6.04]	[3.26]	121.0lbs
200A NON SER NEMA 1	903	806	538	305	237	263	460	348	315	44	44	153	153	83	53kg
	[35.55]	[31.71]	[21.16]	[12.00]	[9.31]	[10.34]	[18.12]	[13.70]	[12.40]	[1.73]	[1.73]	[6.04]	[6.04]	[3.26]	116.6lbs
200A NON SER NEMA 3R	903	806	538	355	237	263	460	348	315	44	44	153	153	83	55kg
	[35.55]	[31.71]	[21.16]	[13.99]	[9.31]	[10.34]	[18.12]	[13.70]	[12.40]	[1.73]	[1.73]	[6.04]	[6.04]	[3.26]	121.0lbs

REVISION: D
REVISION DATE: 10/06/2020

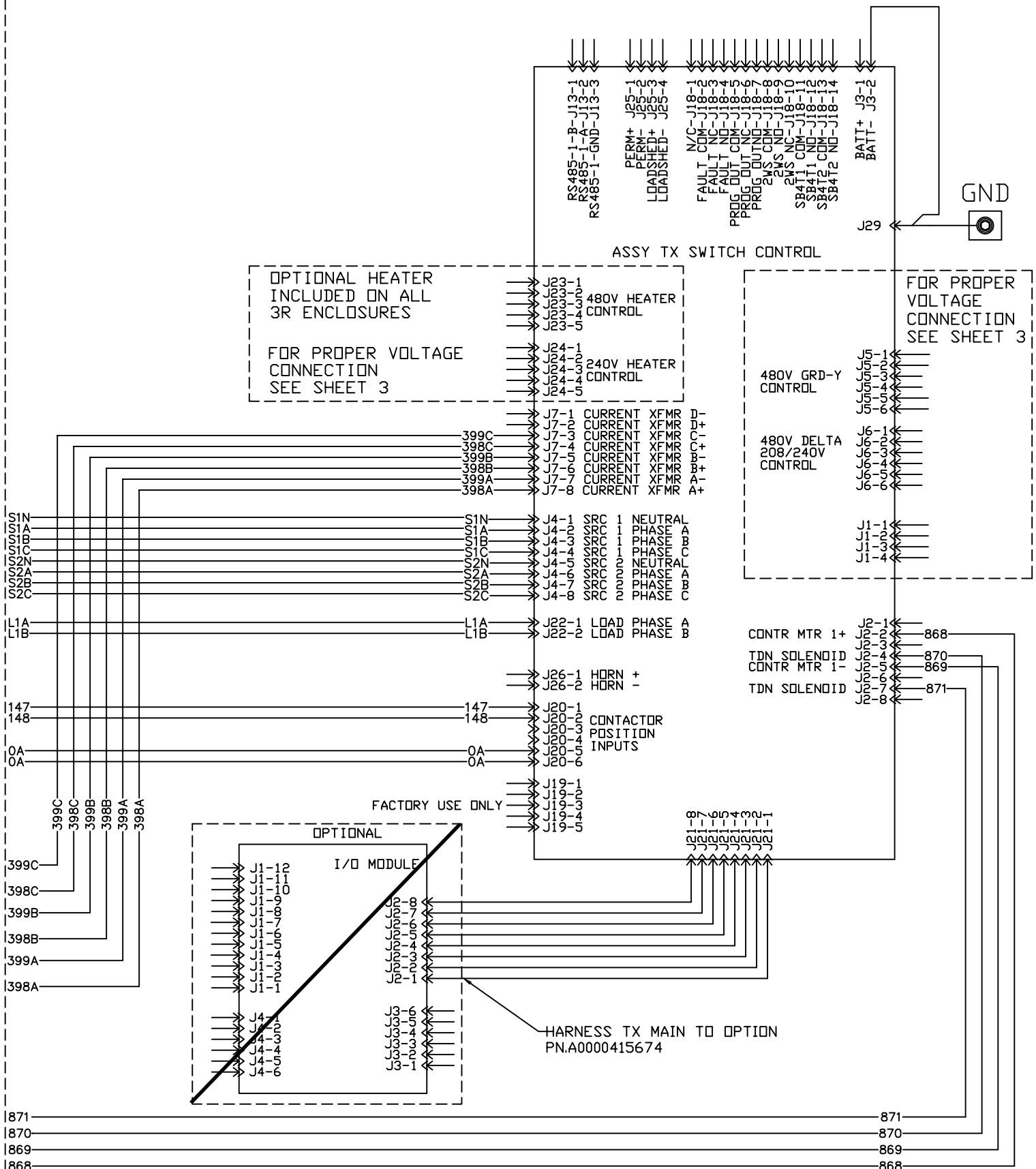
6/19/25

ID TX SWITCH NON SERVICE ENTRANCE 3-POLE 100A-200A
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NOT TO SCALE

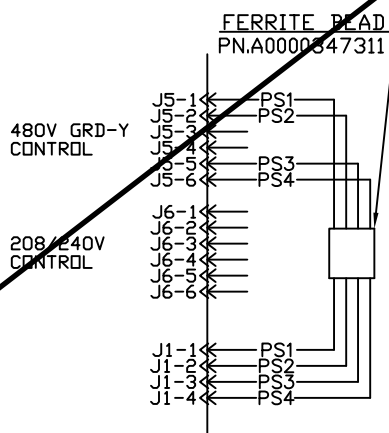
94 of 101



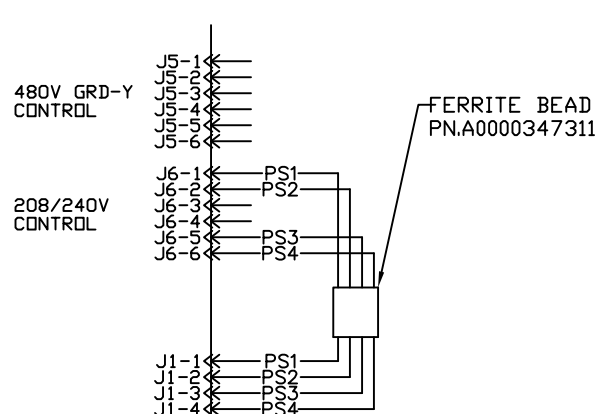
IF AN EXTERNAL 12/24V POWER SUPPLY IS PROVIDED, THE JUMPER BETWEEN J29 AND J3-2 IS TO BE REMOVED AND DISCARDED.
THIS EXTERNAL POWER SUPPLY MUST BE CHASSIS GROUNDED.
THE LOCAL CHASSIS GROUND WIRE MUST BE RE-ATTACHED TO J29.



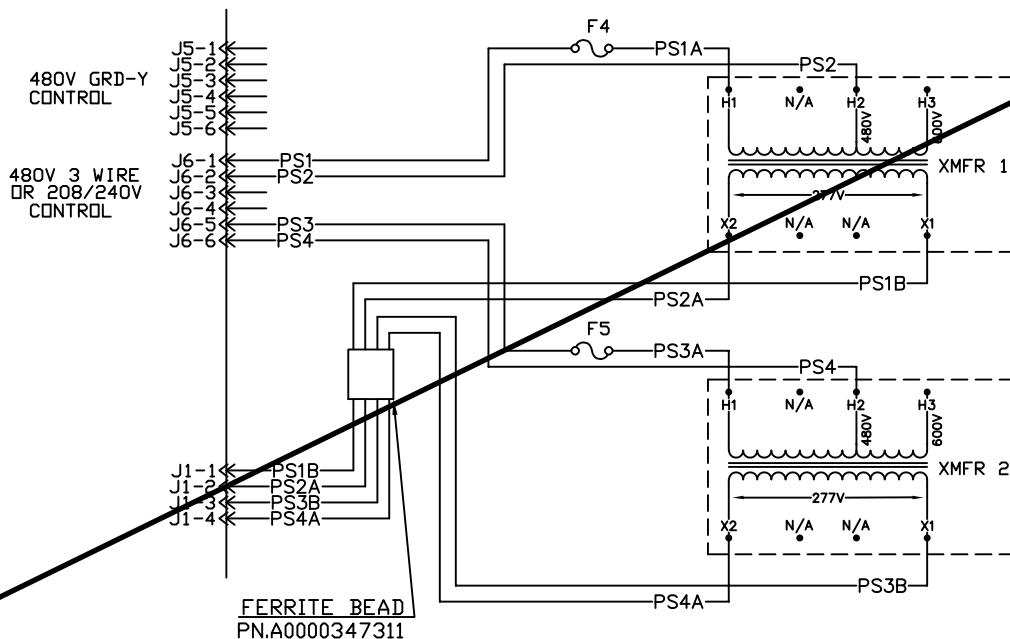
480V GRD-Y CONTROL



208/240V CONTROL

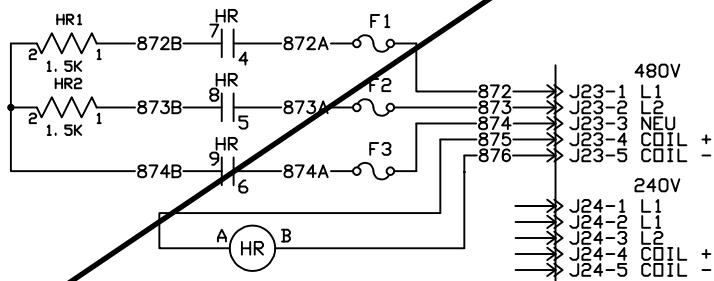


480V 3 WIRE CONNECTION WITH TRANSFORMERS



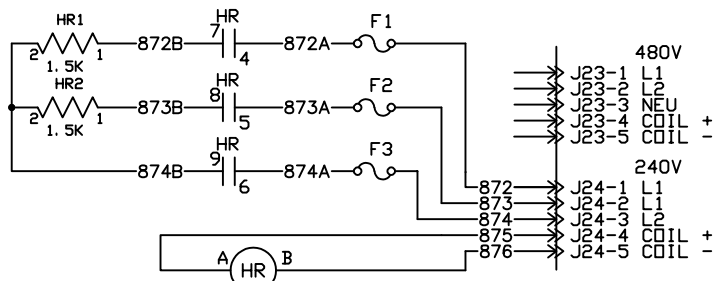
480V HEATER CONTROL

OPTIONAL HEATER
INCLUDED ON ALL 3R ENCLOSURES



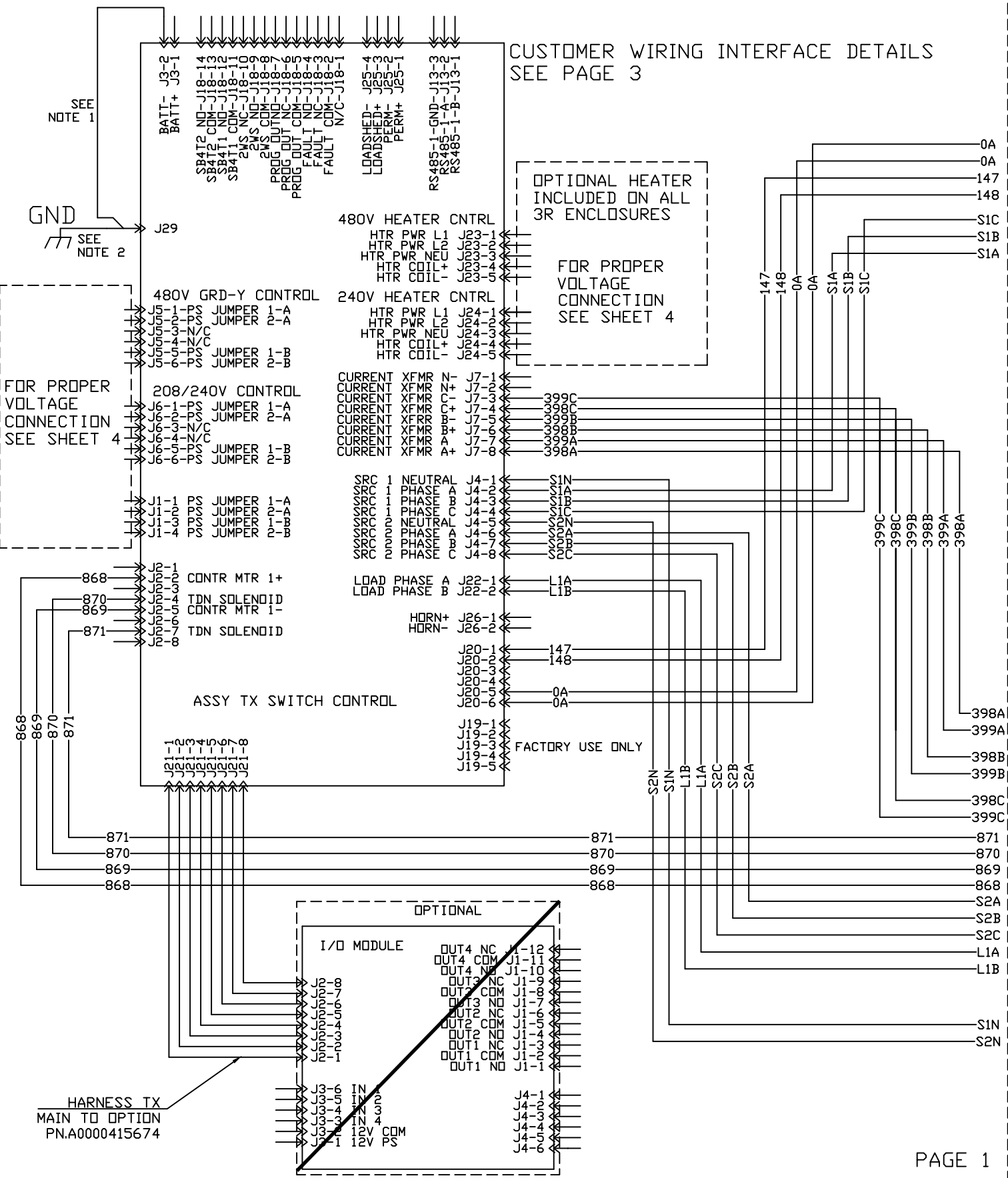
208/240V HEATER CONTROL

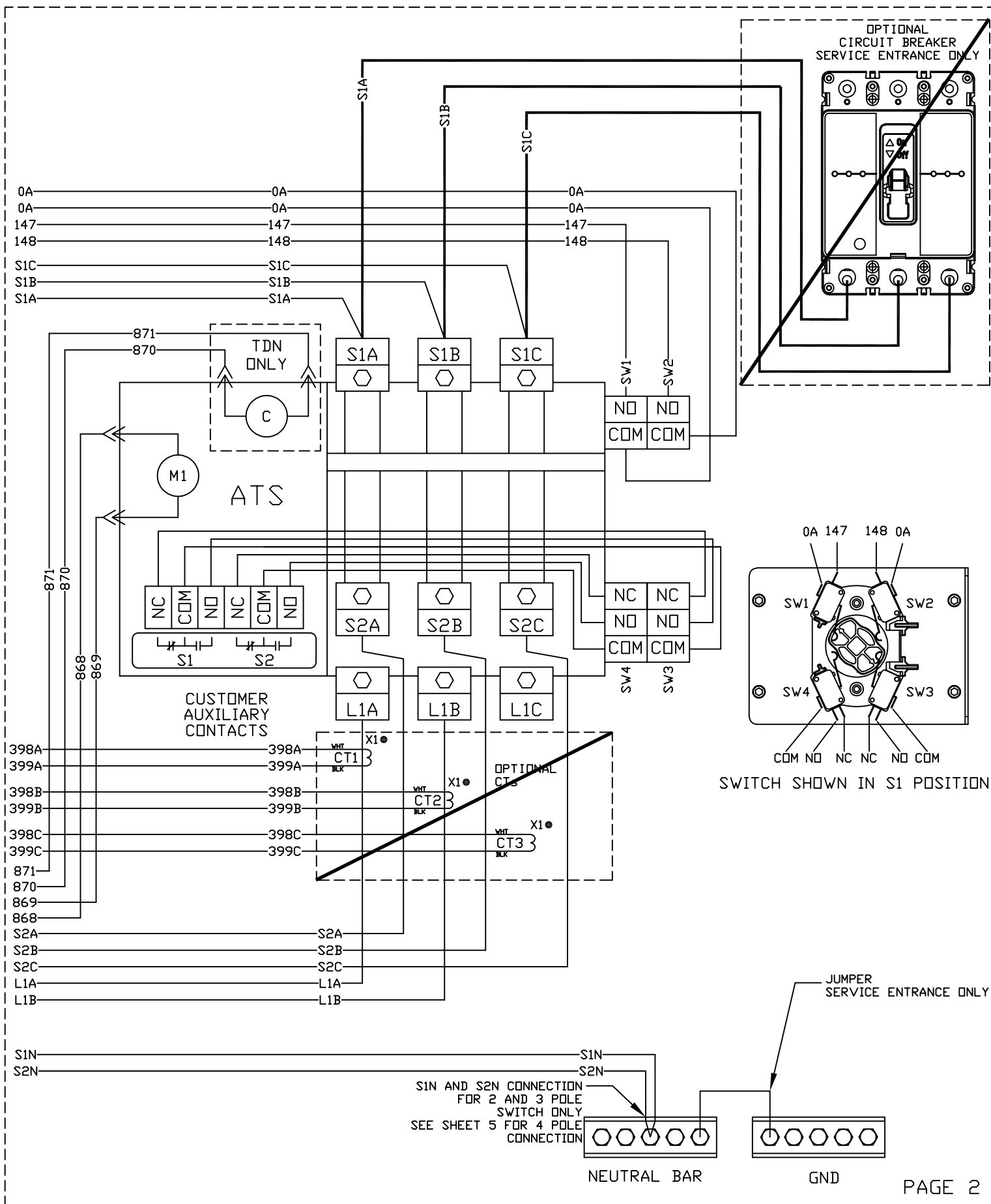
OPTIONAL HEATER
INCLUDED ON ALL 3R ENCLOSURES



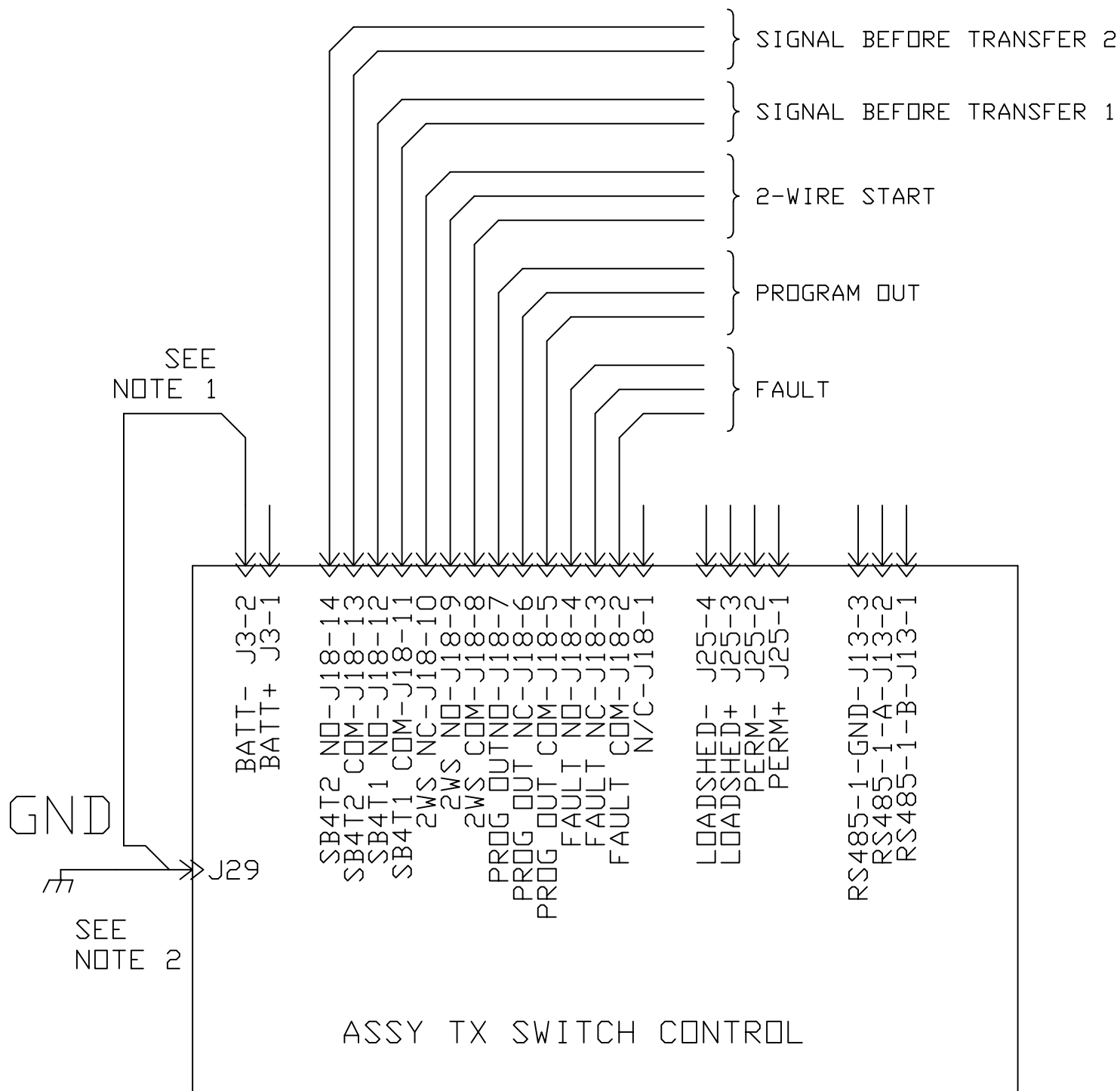
NOTE 1: IF AN EXTERNAL 12/24V POWER SUPPLY IS PROVIDED, THE JUMPER BETWEEN J29 AND J3-2 IS TO BE REMOVED AND DISCARDED.
THIS EXTERNAL POWER SUPPLY MUST BE CHASSIS GROUNDED.

NOTE 2: THE LOCAL CHASSIS GROUND WIRE MUST BE RE-ATTACHED TO J29.

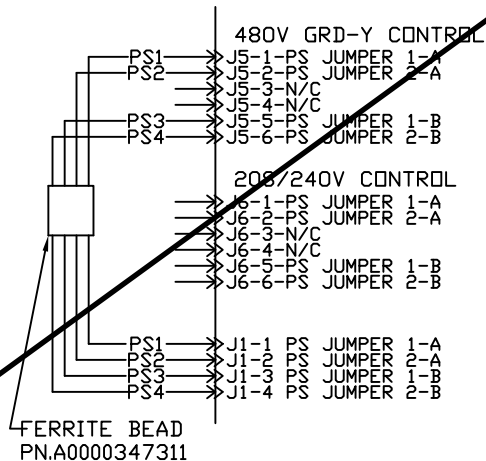




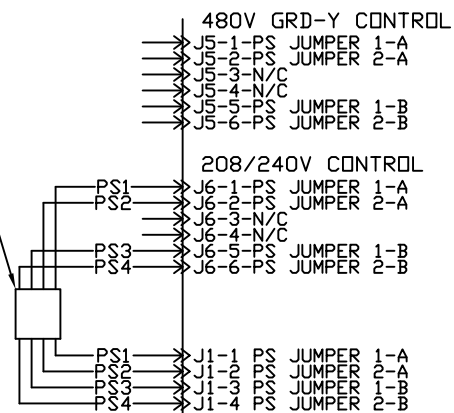
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- NOTE 2: THE LOCAL CHASSIS GROUND WIRE MUST BE RE-ATTACHED TO J29.



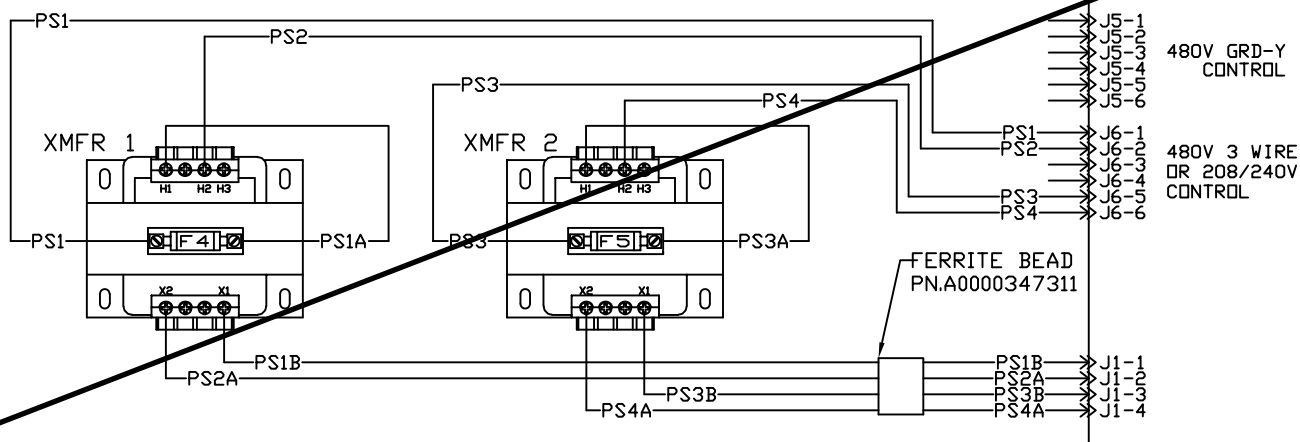
480V GRD-Y CONTROL



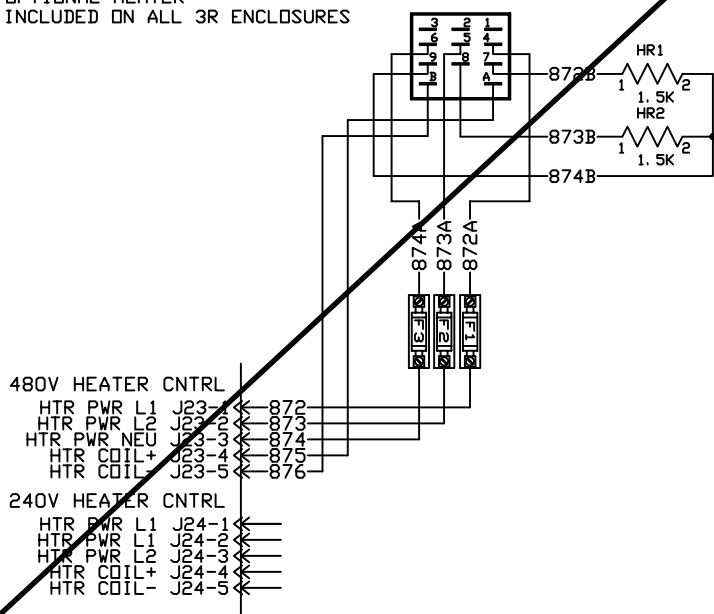
208/240V CONTROL

FERRITE BEAD
PNA0000347311

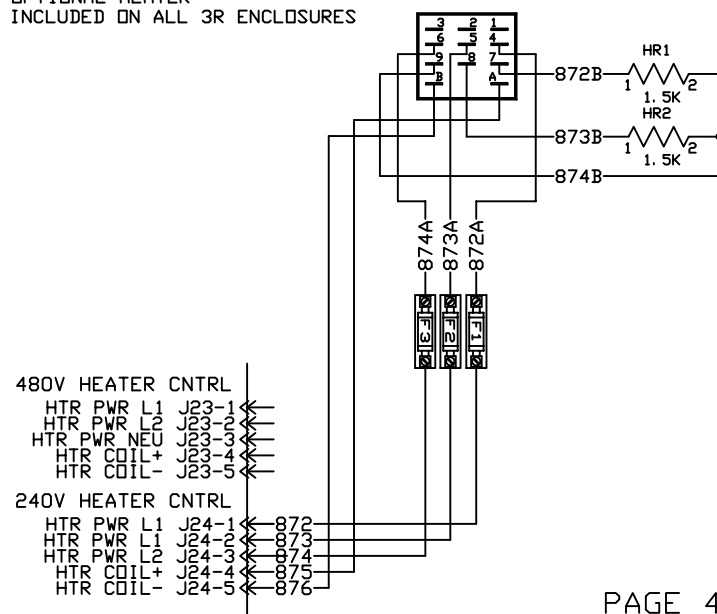
480V 3 WIRE CONNECTION WITH TRANSFORMERS



480V HEATER CONTROL

OPTIONAL HEATER
INCLUDED ON ALL 3R ENCLOSURES

208/240V HEATER CONTROL

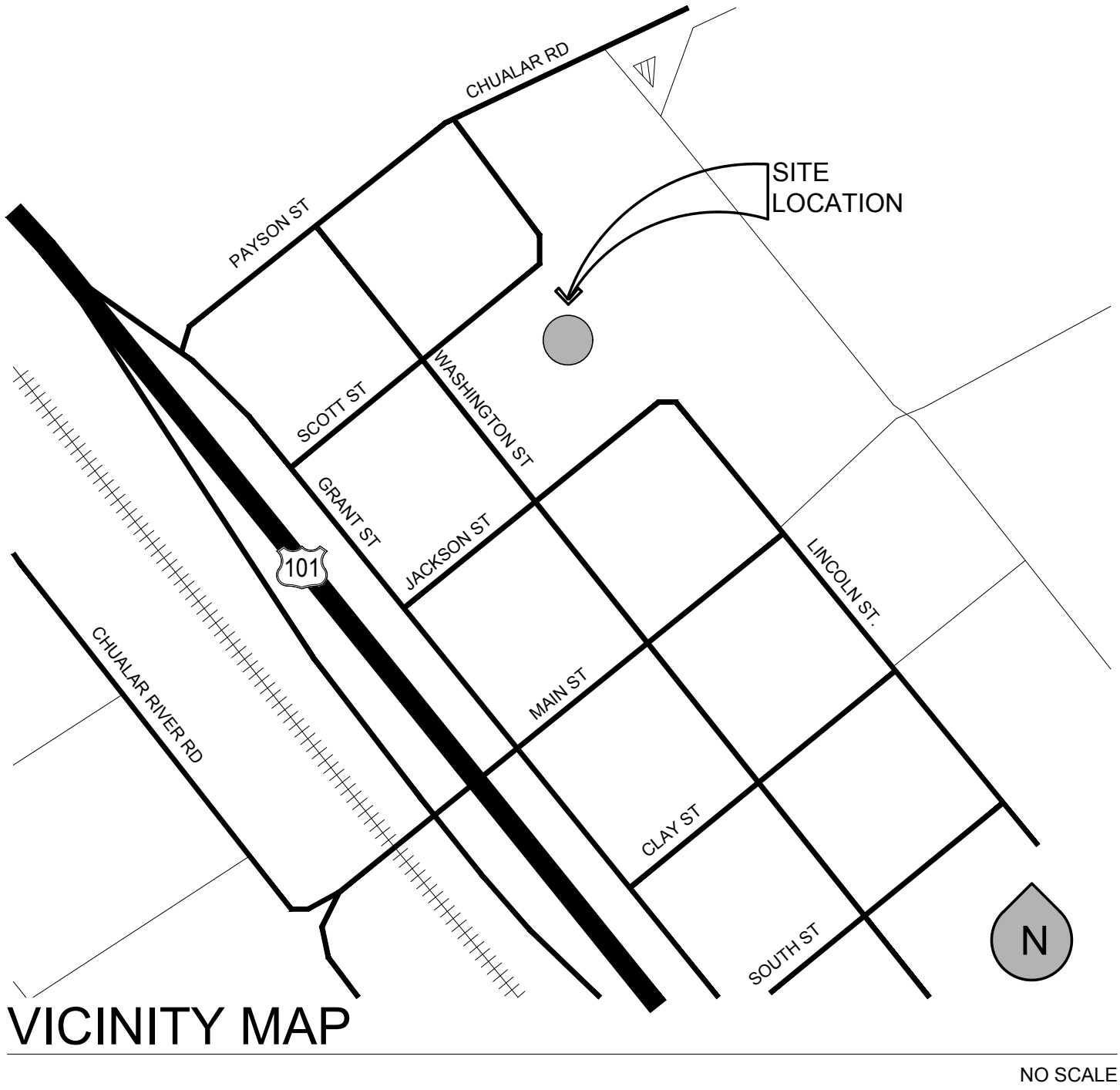
OPTIONAL HEATER
INCLUDED ON ALL 3R ENCLOSURES

PAGE 4

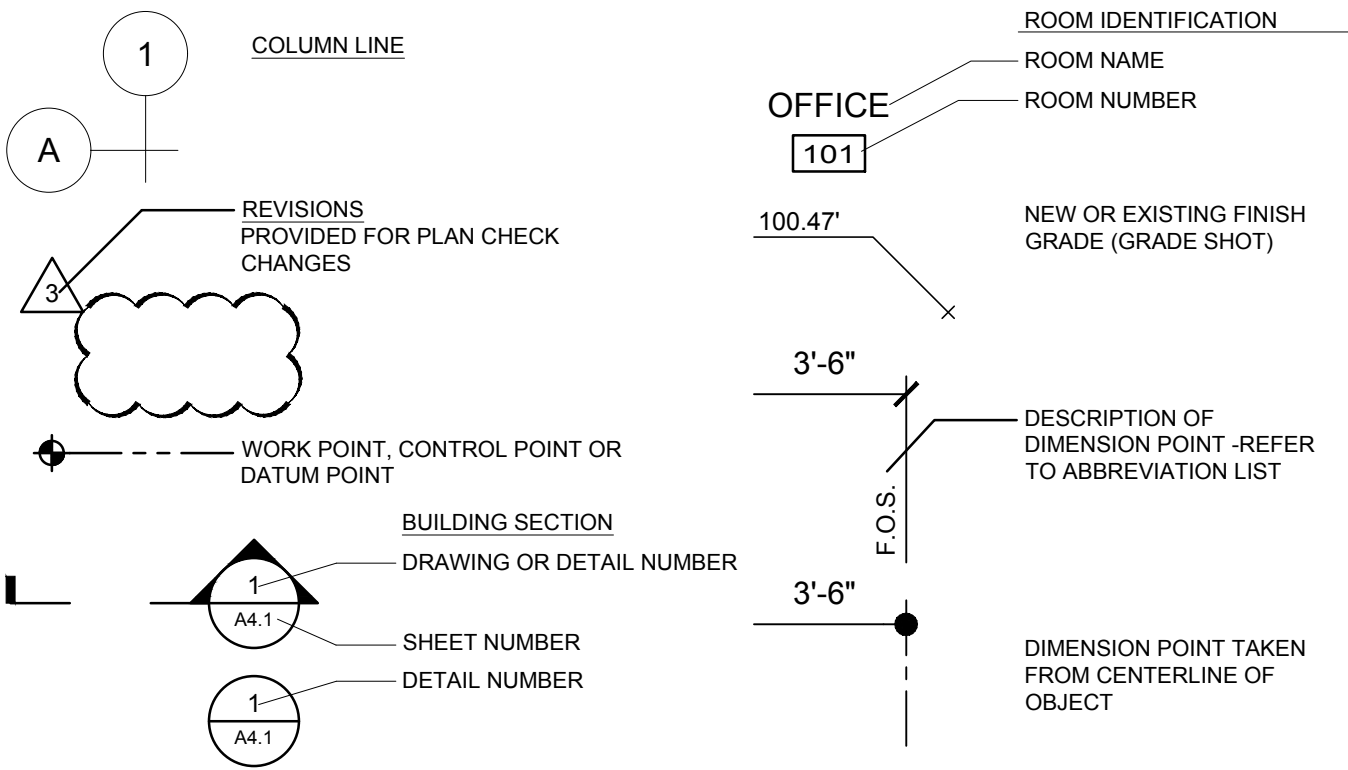
WIRING - DIAGRAM

BACK-UP GENERATOR FOR:
CHUALAR UNION ELEMENTARY SCHOOL

24285 LINCOLN ST, CHUALAR, CA 93925
CHUALAR UNION SCHOOL DISTRICT



SYMBOLS



ABBREVIATIONS

(E)	EXISTING	EXT	EXTERIOR	NTS	NOT TO SCALE
(N)	NEW	FA	FIRE ALARM	OC	ON CENTER
AC	ASPHALTIC CONCRETE	FD	FLOOR DRAIN	OC	OWNER FURNISHED
BLDG	BUILDING	FE	FIRE EXTINGUISHER	OC	CONTRACTOR INSTALLED
BLK	BLOCK	FEC	FIRE EXTINGUISHER CABINET	OFOI	OWNER FURNISHED
BLKG	BLOCKING	FIN	FINISH	OFOI	OWNER INSTALLED
BOT	BOTTOM	FL	FLOOR	PLAM	PLYWOOD
BTWN	BETWEEN	FOF	FACE OF FINISH	PLYWD	PLYWOOD
CLG	CEILING	FT	FOOT OR FEET	PSI	POUNDS PER SQUARE INCH
CLR	CLEAR	GA	GAUGE	RD	ROOF DRAIN
COL	COLUMN	GALV	GALVANIZED	REQ	REQUIRED
CONC	CONCRETE	GYPBD	GYPSPUM BOARD	RM	ROOM
CONT	CONTINUOUS	HDR	HEADER	RO	ROUGH OPENING
DBL	DOUBLE	HM	HOLLOW METAL	RR	RESTROOM
DEPT	DEPARTMENT	HR	HOUR	SF	SQUARE FEET
DIA	DIAMETER	IN	INCH	SIM	SIMILAR
DIM	DIMENSION	INT	INTERIOR	SPEC	SPECIFICATION
DS	DOWNSPOUT	LAV	LAVATORY	TYP	TYPICAL
DWG	DRAWING	MAX	MAXIMUM	UNON	UNLESS OTHERWISE NOTED
EA	EACH	MECH	MECHANICAL	W/	W/ WITH
ELEC	ELECTRICAL	MIN	MINIMUM	WC	WATER CLOSET
EQ	EQUAL	MISC	MISCELLANEOUS	W/O	W/O WITHOUT
EW	EACH WAY	NIG	NOT IN CONTRACT		

SHEET INDEX

T1.0 TITLE SHEET

ARCHITECTURAL

A9.1 SITE DETAILS

PLUMBING **

P0.1 SYMBOL LEGENDS, ABBREVIATIONS, NOTES - PLUMBING
P2.1 FLOOR PLAN - PLUMBING

ELECTRICAL **

E001 SYMBOLS, ABBREVIATIONS, GENERAL CONSTRUCTION NOTES, CODES & SHEET INDEX
E101 ELECTRICAL SINGLE LINE DIAGRAM
E201 ELECTRICAL SITE PLAN
E401 POWER & SYSTEMS PLAN
E601 ELECTRICAL DETAILS
E701 ELECTRICAL SPECIFICATIONS

TOTAL SHEETS: 10

SCOPE OF WORK

- BACKUP GENERATOR, CONCRETE PAD & REQUIRED ELECTRICAL WORK.

CODES

2022 CALIFORNIA ADMINISTRATIVE CODE (CAC); PART 1, TITLE 24, C.C.R.
2022 CALIFORNIA BUILDING CODE (CBC); PART 2, TITLE 24, C.C.R.
2022 CALIFORNIA ELECTRICAL CODE (CEC); PART 3, TITLE 24, C.C.R.
2022 CALIFORNIA MECHANICAL CODE (CMC); PART 4, TITLE 24, C.C.R.
2022 CALIFORNIA PLUMBING CODE (CPC); PART 5, TITLE 24, C.C.R.
2022 CALIFORNIA ENERGY CODE; PART 6, TITLE 24, C.C.R.
2022 CALIFORNIA FIRE CODE (CFC); PART 9, TITLE 24, C.C.R.
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN); PART 11, TITLE 24 C.C.R.
2022 CALIFORNIA REFERENCE STANDARDS CODE; PART 12, TITLE 24, C.C.R.
TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

APPLICABLE STANDARDS
FOR A LIST OF APPLICABLE STANDARDS, INCLUDING CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS, REFER TO CBC CHAPTER 35 AND CFC CHAPTER 80.

ALL CONSTRUCTION AND DEMOLITION SHALL BE IN ACCORDANCE WITH CHAPTER 33 OF THE CBC & CFC, AND THE WRITTEN FIRE LIFE SAFETY PLAN.

DEFERRED SUBMITTALS

- DEFERRED SUBMITTALS PER C.B.C. 107.3.4.2
- THERE ARE NO DEFERRED SUBMITTALS FOR THIS PROJECT.

DSA NOTES

- TITLE 24, PARTS 1-5 MUST BE KEPT ON THE SITE DURING CONSTRUCTION.
- SUBSTITUTIONS AFFECTING DSA REGULATED ITEMS WILL BE CONSIDERED AS CHANGES TO APPROVED PLANS OR SPECIFICATIONS. THEY ARE TO BE TREATED AS ADDENDA OR CONSTRUCTION CHANGE DOCUMENTS, AND WILL REQUIRED DSA'S APPROVAL PRIOR TO FABRICATION AND INSTALLATION. (SEC. 4-338 (c), PART 1, TITLE 24, AND IR A-6).
- ADDENDA MUST BE STAMPED AND SIGNED BY A/E ON RECORD AND DELEGATED DESIGN PROFESSIONAL WHEN APPLICABLE, AND APPROVED BY DSA. (SEC. 4-338 (SEC. 4-338(b), PART 1, TITLE 24).
- CHANGES TO THE STRUCTURAL, ACCESSIBILITY, OR FIRE AND LIFE SAFETY PORTIONS OF THE APPROVED PLANS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR CONSTRUCTION CHANGE DOCUMENT (CCD, DSA FORM 140) AND SHALL BE SUBMITTED TO AND APPROVED BY DSA PRIOR TO COMMENCEMENT OF THE WORK. CHANGES AFTER THE WORK HAS BEEN LET SHALL BE MADE BY A CONSTRUCTION CHANGE DOCUMENT AS REQUIRED IN SECTION 4-338, PART 1, TITLE 24, AND SHALL BE SUBMITTED TO AND APPROVED BY DSA PRIOR TO COMMENCEMENT OF THE WORK. ADDENDUMS AND CONSTRUCTION CHANGE DOCUMENTS SHALL BE PREPARED, STAMPED AND SIGNED BY THE ARCHITECT AND ENGINEERS IN RESPONSIBLE CHARGE AND SUBMITTED TO DSA IN COMPLIANCE WITH DSA INTERPRETATION OF REGULATION IR A-6.
- SUPERVISION OF CONSTRUCTION BY DSA SHALL BE IN ACCORDANCE WITH SECTION 4-334, PART 1, TITLE 24.
- DSA SHALL BE NOTIFIED AT THE START OF CONSTRUCTION AND PRIOR TO THE PLACEMENT OF THE CONCRETE PER SECTION 4-331, PART 1, TITLE 24.
- CONTRACTOR, INSPECTOR, ARCHITECT AND ENGINEERS SHALL SUBMIT VERIFIED REPORTS (FORM DSA-6) IN ACCORDANCE WITH SECTION 4-336 AND 4-343, PART 1, TITLE 24.
- GRADING PLANS, DRAINAGE IMPROVEMENT, ROAD AND ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONCERNS SHALL COMPLY WITH ALL LOCAL ORDINANCES.
- PRIOR TO OCCUPANCY OF ANY BUILDING THE FIRE ALARM SYSTEM SHALL BE TESTED AND ACCEPTED BY THE LOCAL FIRE AUTHORITY.
- CONTRACTOR, INSPECTOR, ARCHITECT, AND ENGINEERS SHALL SUBMIT VERIFIED REPORTS IN ACCORDANCE WITH SECTION 4-336 AND 4-343, PART 1, TITLE 24.

PROJECT TEAM

OWNER:
CHUALAR UNION SCHOOL DISTRICT
24285 LINCOLN STREET,
CHUALAR, CA 93925
CONTACT: RUBEN PULIDO
EMAIL: rpulido@chualarusd.org
OWNER: (831) 679-2504 x100

ARCHITECT:
PEARTREE+ BELL ARCHITECTS
235 MONTEREY ST. SUITE B
SALINAS, CA 93901
CONTACT: DAVID PEARTREE
EMAIL: david@peartreebelli.com
PHONE: (831) 424-4620

MECHANICAL/PLUMBING:
CYPRESS ENGINEERING GROUP, LLC
8 HARRIS COURT, BLDG. A - UNIT 8
MONTEREY, CA 93940
CONTACT: METIN SERTTUNC
EMAIL: metin@cypressseg.com
PHONE: (408) 510-0906

ELECTRICAL/FIRE ALARM:
AURUM CONSULTING ENGINEERS
80 GARDEN COURT, STE. 210
MONTEREY, CA 93940
CONTACT: NAJIB ANWARY
EMAIL: najib@acemb.com
PHONE: (831) 646-3300

PROJECT DATA

ASSESSOR PARCEL NUMBER (APN): 145-031-003-000, 145-042-003-000
ZONING: POP - PUBLIC/ QUASI-PUBLIC

ALL BUILDING DATA IS EXISTING TO REMAIN (NO CHANGE)

STATEMENT OF GENERAL CONFORMANCE

FOR ARCHITECTS/ENGINEERS WHO UTILIZE PLANS INCLUDING BUT NOT LIMITED TO SHOW DRAWINGS, PREPARED BY OTHER LICENSED DESIGN PROFESSIONALS AND/OR CONSULTANTS.

(APPLICATION No. N/A FILE No. N/A)

** SHEETS: SEE SHEET INDEX

HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS OR CONSULTANTS WHO ARE LICENSED AND/OR AUTHORIZED TO PREPARE SUCH DRAWINGS IN THIS STATE. IT HAS BEEN EXAMINED BY ME FOR:

- DESIGN INTENT AND APPEARS TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS AND THE PROJECT SPECIFICATIONS PREPARED BY ME, AND
- COORDINATION WITH MY PLANS AND SPECIFICATIONS AND IS ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT.

THE STATEMENT OF GENERAL CONFORMANCE "SHALL NOT BE CONSTRUED AS RELIEVING ME OF MY RIGHTS, DUTIES, AND RESPONSIBILITIES UNDER SECTIONS 17302 AND 81138 OF THE EDUCATION CODE AND SECTIONS 4-336, 4-341 AND 4-344" OF TITLE 24, PART 1, (TITLE 24, PART 1, SECTION 4-316 (b)).

I CERTIFY THAT: ☒ ALL DRAWINGS OR SHEETS LISTED ON THE COVER OR INDEX SHEET

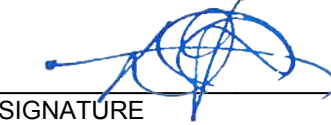
☒ THIS DRAWING OR PAGE

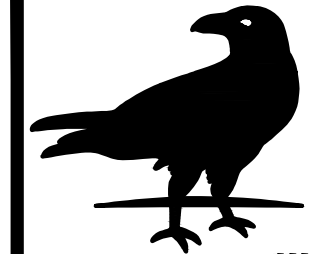
☒ IS/ARE IN GENERAL CONFORMANCE WITH THE PROJECT DESIGN, AND

☒ HAS/HAVE BEEN COORDINATED WITH THE PROJECT PLANS AND SPECIFICATIONS

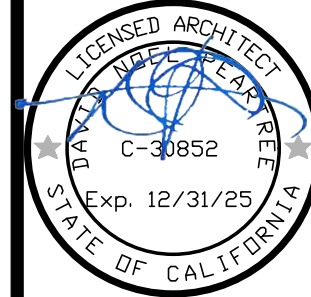
ARCHITECT OR ENGINEER DESIGNATED TO BE IN GENERAL RESPONSIBLE CHARGE:

DAVID PEARTREE, LIC. C-30852, EXP.: 12/31/2025

SIGNATURE  DATE 06/13/2025



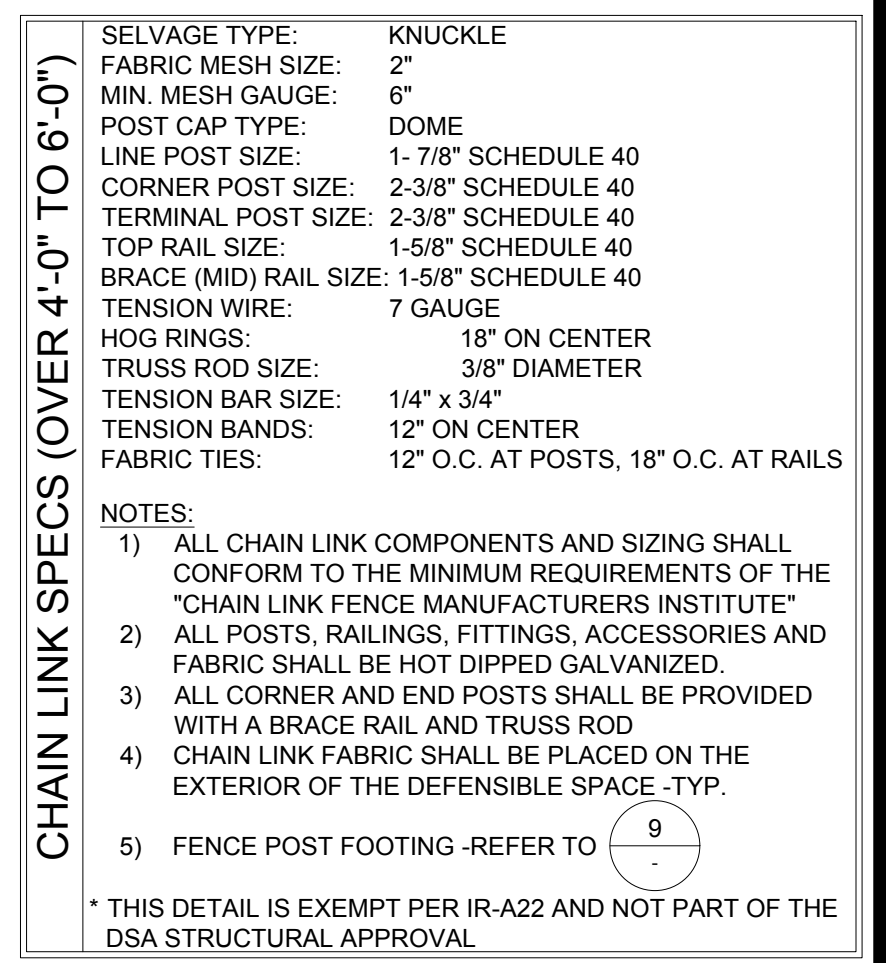
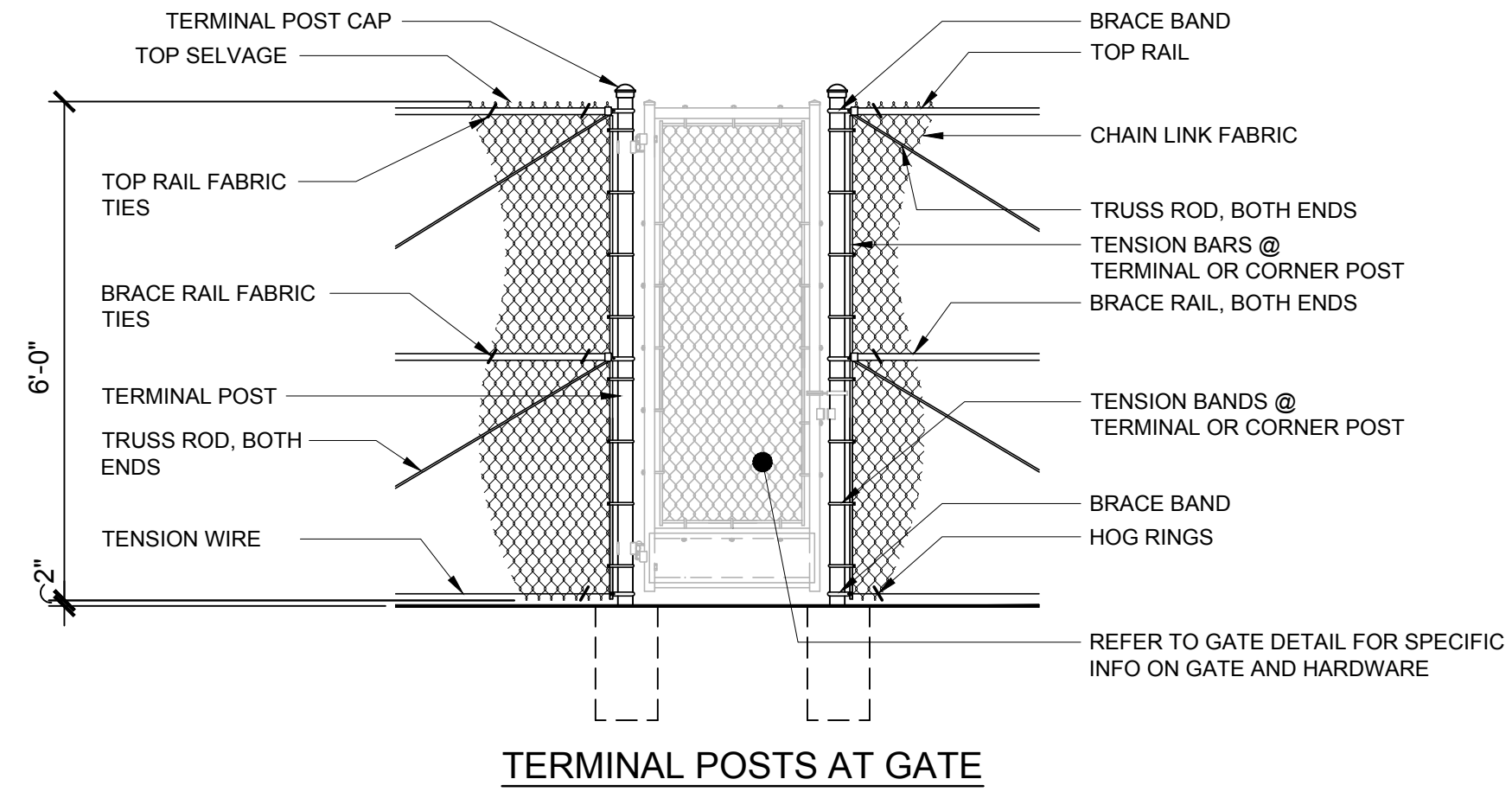
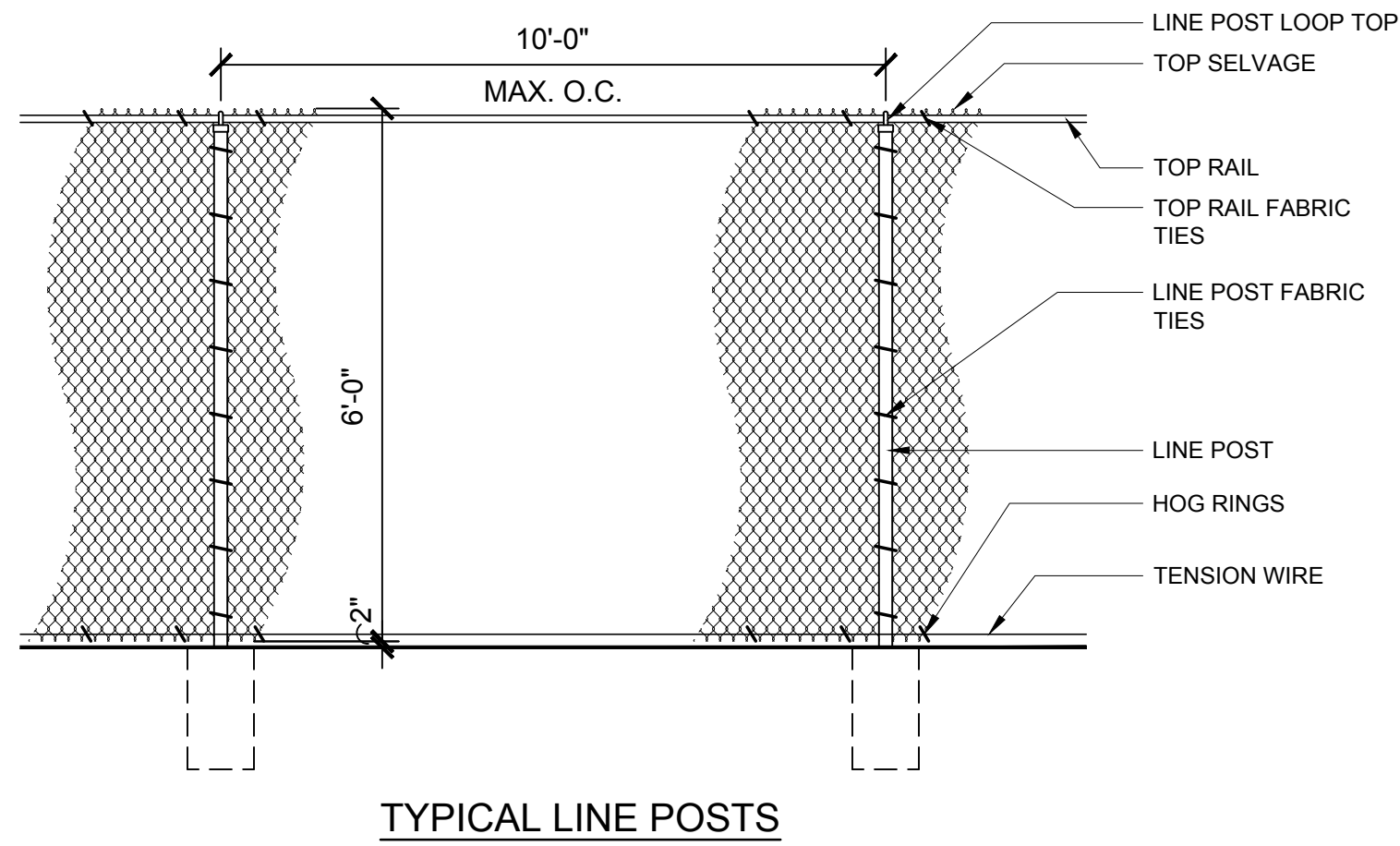
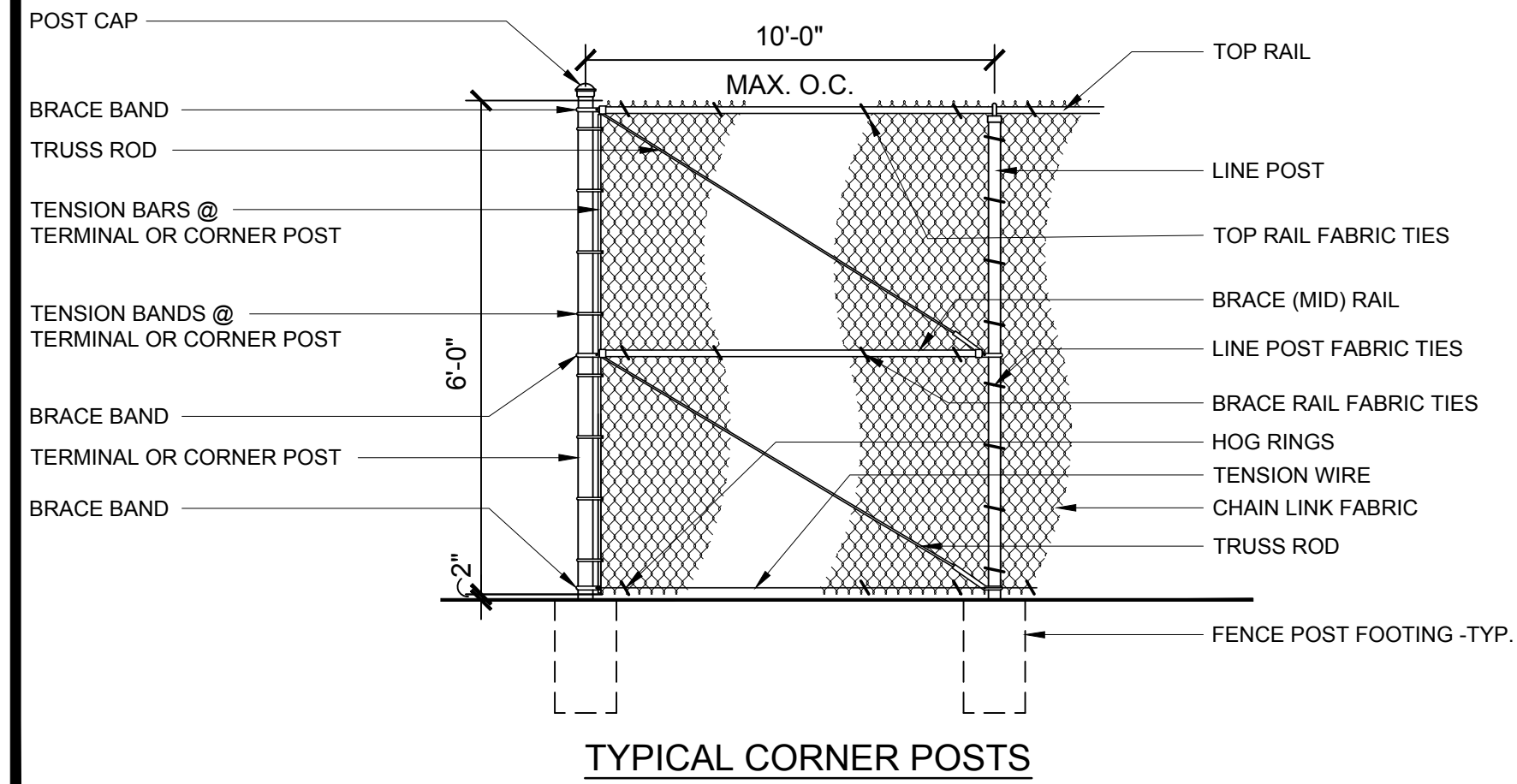
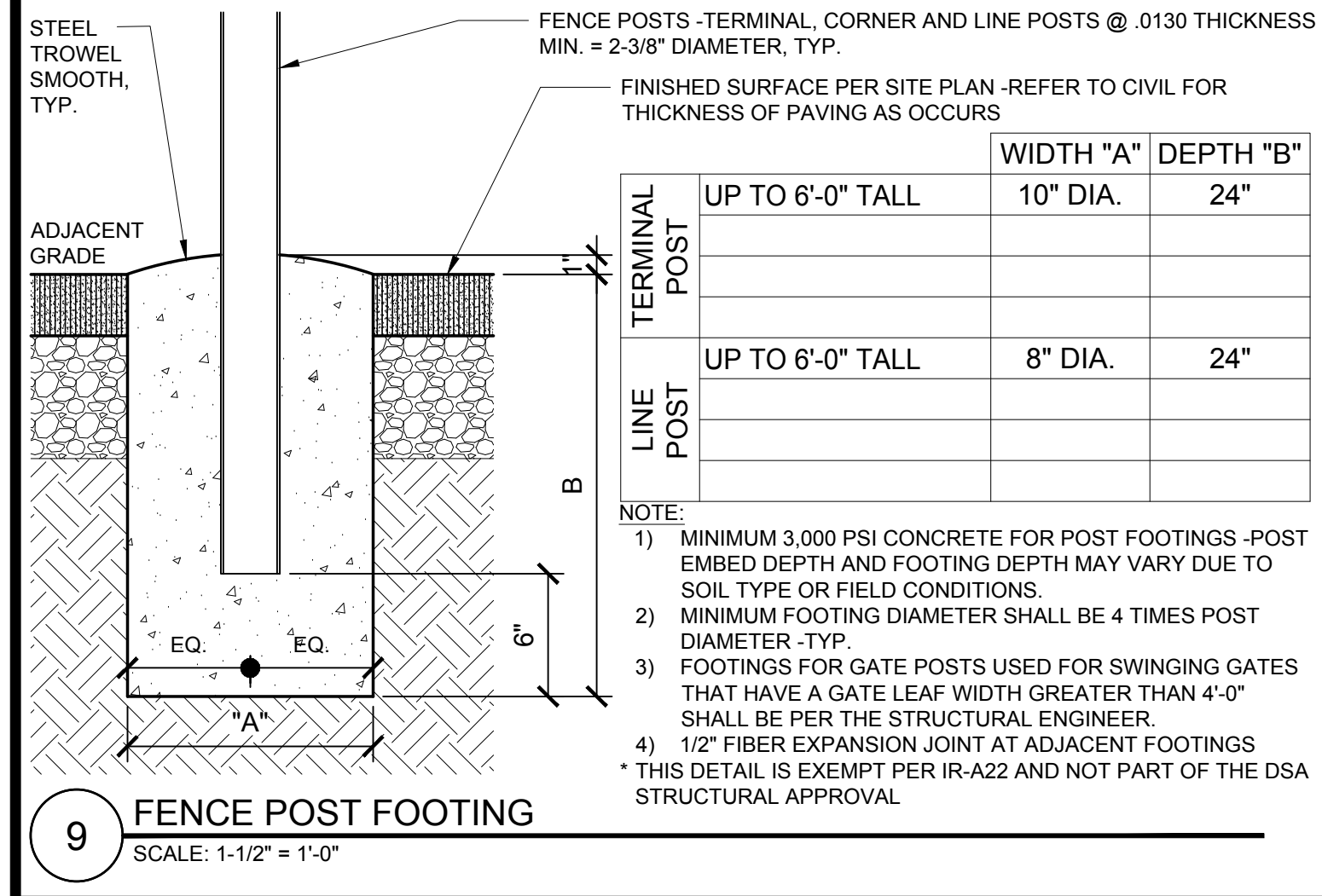
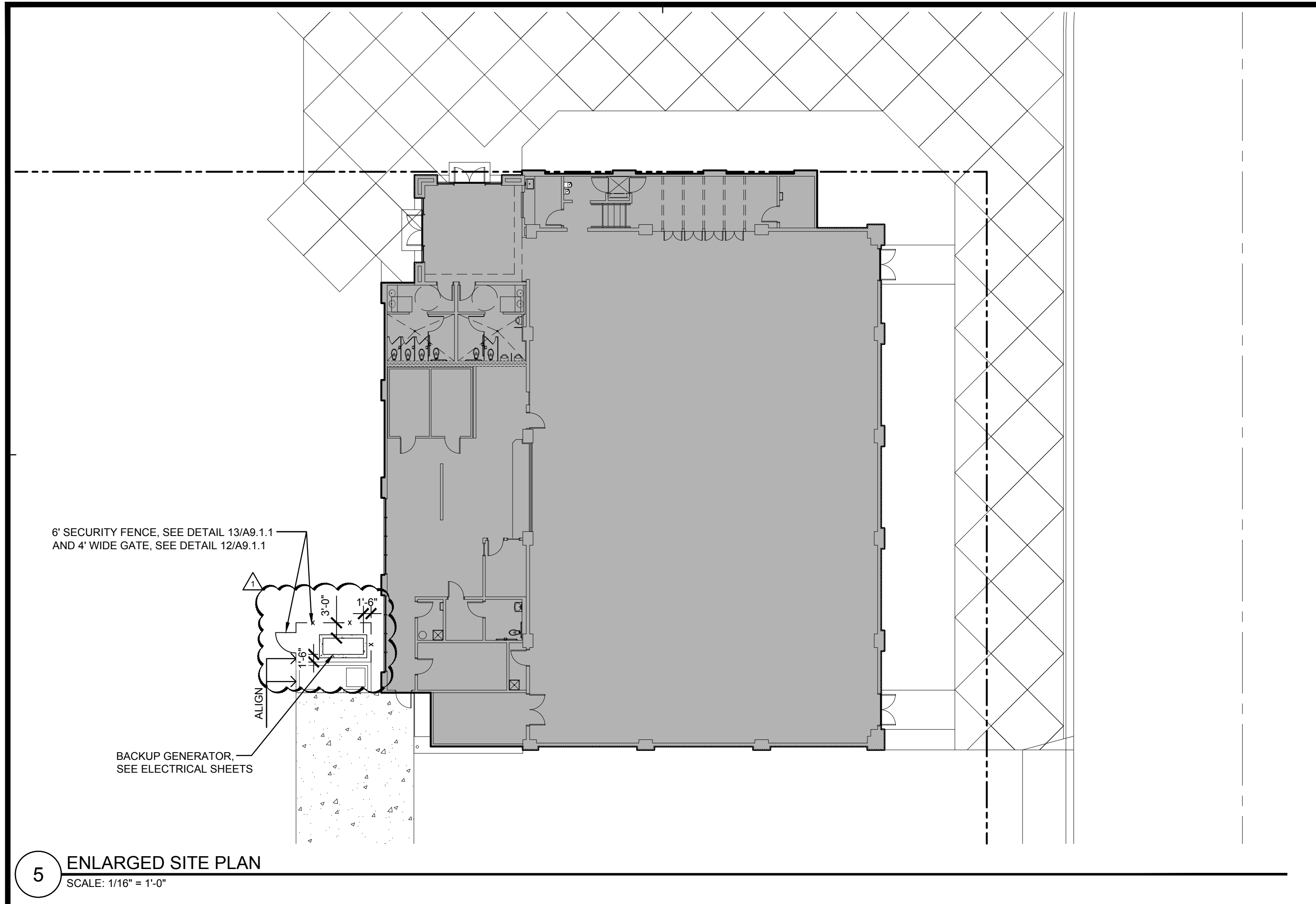
235 MONTEREY ST., SUITE B
SALINAS, CA 93901
(831) 424-4620
PEARTREEBELL.COM



TITLE SHEET
BACK-UP GENERATOR FOR:
CHUALAR UNION ELEMENTARY SCHOOL
24285 LINCOLN ST, CHUALAR, CA 93925
CHUALAR UNION SCHOOL DISTRICT

REV.	DATE	DESCRIPTION
06/16/25	BID SET	
06/23/25	ADDENDUM	

SCALE: AS NOTED
DRAWN: YP
JOB: 25050
SHEET: T1.0



SITE DETAILS
BACK-UP GENERATOR FOR:
CHUALAR UNION ELEMENTARY SCHOOL
24285 LINCOLN ST., CHUALAR, CA 93925
CHUALAR UNION SCHOOL DISTRICT

REV.	DATE	DESCRIPTION
06/16/25	BID SET	
06/23/25	ADDENDUM	
AS NOTED		
Y.P.		
25050		
9		
A9.1		

SYMBOL LEGEND			ABBREVIATIONS			LIST OF GOVERNING CODES			GENERAL NOTES			
SYMBOL	ABBRV.	IDENTIFICATION	SYMBOL	ABBRV.	IDENTIFICATION	& °F	AND DEGREES FAHRENHEIT	ESP	EXTERNAL STATIC PRESSURE	NO	NORMALLY OPEN NOT TO SCALE	
	CW	COLD WATER (DOMESTIC)		P.O.C.	POINT OF CONNECTION	AC	AIR CONDITIONER	EWB	ENTERING WET BULB	OA	OUTSIDE AIR	
	HW	HOT WATER			REMOVE EXISTING	AD	ACCESS DOOR	EW	ENTERING WATER	OC	ON CENTER	
	HWR	HOT WATER RETURN			LINE BREAK	AN	PIPE ANCHOR		TEMPERATURE	OCFI	OWNER FURNISHED, CONTRACTOR INSTALLED	
	V	VENT			TEE DOWN	AP	ACCESS PANEL	EXT	EXTERIOR	PD	PRESSURE DROP	
	TP	TRAP PRIMER LINE			90 DOWN	AF	ABOVE FINISH FLOOR	FD	FLOOR DRAIN	PH	PHASE	
	S OR W	SOIL OR WASTE ABOVE GRADE			RISER	AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	FFE	FLOOR FINISH ELEVATION	PRV	PRESSURE REDUCING VALVE	
	S OR W	SOIL OR WASTE BELOW GRADE			CONCENTRIC & ECCENTRIC REDUCERS	AL	AUSTRIALLY LINED	FLEX	FLEXIBLE	PSI	POUNDS PER SQUARE INCH	
	AW	ACID WASTE		AD, AP	ACCESS DOOR, ACCESS PANEL	AMP	AMPERE	FS	FLOOR SINK	PIT	PRESSURE/TEMPERATURE	
	GW	GREASE WASTE				ARCH	ARCHITECT/ARCHITECTURAL	FT	FEET	QTY	QUANTITY	
	RWL	RAIN WATER LEADER		MAV	MANUAL AIR VENT	AW	ACID WASTE	FT HD	FEET HEAD	RA	RETURN AIR	
	OD	OVERFLOW DRAIN		T	THERMOSTAT MOUNTED @ 48" AFF. MAX.	BFP	BACKFLOW PREVENTER	FTR	FLUE THRU ROOF	RM	ROOM	
	CD	CONDENSATE DRAIN		CO2	CARBON DIOXIDE (CO2) SENSOR	BHP	BRAKE HORSEPOWER	G	GAS - LOW PRESSURE	RP	REDUCED PRESSURE	
	CAP	CAP				BUD	BUILDING	GPM	GALLONS PER MINUTE	RPM	REVOLUTIONS PER MINUTE	
	CONT	CONTINUATION				BTU	BRITISH THERMAL UNIT	GPR	GAS PRESSURE REGULATOR	RV	RELIEF VALVE	
	BALL VALVE					BTUH	BRITISH THERMAL UNITS PER HOUR	GW	GREASE WASTE PIPING	SA	SUPPLY AIR	
	VALVE					CA	COMBUSTION AIR	HP	HORSEPOWER	SC	SENSIBLE COOLING	
	CKV	CHECK VALVE		AD	AREA DRAIN	CFH	CUBIC FEET PER HOUR	HR	HOUR	SEER	SEASONAL ENERGY EFFICIENCY RATIO	
	T&PRV	TEMP. & PRESS. RELIEF VALVE		FD	FLOOR DRAIN	CFM	CUBIC FEET PER MINUTE	HTG	HEATING	SOV	SHUT-OFF VALVE	
	GPR	GAS PRESSURE REGULATOR		FS	FLOOR SINK	CIRC	CIRCULATING	HZ	HERTZ	SP	STATIC PRESSURE	
		CIRCULATION PUMP (DOMESTIC)		VB	VALVE IN BOX	CL	CENTER LINE	IN	INCH	SPEC	SPECIFICATION	
	WHA	WATER HAMMER ARRESTOR		TH	THERMOMETER	CLG	CEILING	INV	INVERT	SQ	SQUARE	
	TP	TRAP PRIMER ACCESS PANEL				CONC	CONCRETE	KW	KILOWATTS	STRUCT	STRUCTURAL	
	GC/FCO	GRADE CLEAN-OUT/FLOOR CLEAN-OUT				CONN	CONNECTION	LAT	LEAVING AIR TEMPERATURE	TC	TOTAL COOLING	
	WCO	WALL CLEAN-OUT				CONT	CONTINUED, CONTINUATION	LBS	POUNDS	TDH	TOTAL DYNAMIC HEAD	
	HB	HOSE BIBB				COOL	COOLING	LWT	LEAVING WATER TEMPERATURE	TEMP	TEMPERATURE	
	UNION					COP	COEFFICIENT OF PERFORMANCE	LWB	LEAVING WET BULB	TSP	TOTAL STATIC PRESSURE	
	AN	PIPE ANCHOR				DB	DRY BULB	MAX	MAXIMUM	TV	TURNING VANES	
	FLEXIBLE CONNECTOR					DCV	DOUBLE CHECK VALVE	MBH	1000 BTU PER HOUR	TYL	TYPICAL	
						DF	DRINKING FOUNTAIN	MCA	MINIMUM CIRCUIT AMPS	UL	UNDERWRITERS LABORATORIES	
						DIL	DOOR LOUVER	MCP	MECHANICAL CONTROL PANEL	UON	UNLESS OTHERWISE NOTED	
						DN	DOWN			V	VOLT	
						DWGS	DRAWINGS	MECH	MECHANICAL	VB	VALVE IN VALVE BOX	
						(E)	EXISTING	MFR	MANUFACTURER	VTR	VENT THROUGH ROOF	
						EA	EXHAUST AIR	MG	GAS - MEDIUM PRESSURE	W	WITH	
						EAT	ENTERING AIR	MIN	MINIMUM	WB	WET BULB	
							EMERGENCY ENERGY EFFICIENCY RATIO	MOCP	MAXIMUM OVERCURRENT PROTECTION	WC	WATER COLUMN	
						EER	ELECTRICAL	(N)	NEW	WH	WATER HEATER	
						ELEV	ELEVATION	NC	NORMALLY CLOSED	WT	WEIGHT	
						EQUIP	EQUIPMENT	NIC	NOT IN CONTRACT			
						PLUMBING NOTES						
						1. ALL WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CODES, INCLUDING: LOCAL, STATE, NATIONAL, NFPA AGENCIES. INFORMATION INCLUDED WITHIN THESE DOCUMENTS SHALL NOT BE CONSTRUED AS TO BE IN CONFLICT WITH APPLICABLE CODES. WHERE A CONFLICT OCCURS, THE CONTRACTOR SHALL PERFORM THE WORK TO THE MORE RESTRICTING REQUIREMENT.						
						2. ALL EQUIPMENT FIXTURES AND DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.						
						3. ALL MECHANICAL UNITS ARE SHOWN FOR REFERENCE AND COORDINATION ONLY. SEE "M" SHEETS.						
						4. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION OF ALL BUILDING PENETRATIONS AND FRAMING REQUIREMENTS. THE CONTRACTOR SHALL VERIFY ALL PROPOSED BUILDING PENETRATIONS AND METHODS OF FLASHING AND WEATHERPROOFING WITH THE ARCHITECT BEFORE BEGINNING ANY INSTALLATION.						
						5. ALL PENETRATIONS THROUGH THE EXTERIOR BUILDING SURFACE SHALL BE PROPERLY SEALED AND CAULKED WEATHERTIGHT.						
						6. PENETRATIONS OF RATED ASSEMBLIES SHALL BE FIRE-STOPPED. FIRE STOPPING SHALL BE AN APPROVED MATERIAL OF THE ENFORCING AGENCY.						
						7. FOR PIPES PENETRATING WALL, PROVIDE ESCUTCHEON PLATES AROUND PIPES AT ALL EXPOSED LOCATIONS.						
						8. PIPING SHALL NOT PENETRATE INTO, OVER, OR THROUGH ELECTRICAL ROOMS UNLESS IT SERVES THE SPECIFIC ROOM. WHEN SERVICING ELECTRICAL ROOM, COMPLY WITH NATIONAL ELECTRICAL CODE REQUIREMENT.						
						9. INSULATE HOT WATER PIPING SUPPLY AND RETURN. INSULATE COLD WATER PIPING LOCATED EXPOSED IN TEMPERED ROOMS AND IN CEILING SPACE.						
						10. ALL RISERS AND PIPE DROPS SHALL BE IN WALL CAVITY OR PLUMBING CHASE SPARE. UNLESS OTHERWISE NOTED.						
						11. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION OF ALL PLUMBING FIXTURES.						
						12. COORDINATE AND FIELD VERIFY EXACT LOCATION, SIZE, POINT OF CONNECTION, AND ELEVATIONS OF ALL PIPING CONNECTIONS, OTHER FIELD WORK, ETC., PRIOR TO TRENCHING OR INSTALLING ANY NEW WORK.						
						13. COORDINATE AND VERIFY WITH STRUCTURAL DRAWINGS FOR EXACT LOCATIONS AND ELEVATIONS OF ALL GRADE BEAMS AND FOOTINGS.						
						14. COORDINATE AND VERIFY ALL LOCATIONS, SIZES AND ELEVATIONS OF ALL SLEEVES THROUGH BEAMS, COLUMNS, SLABS AND FOOTINGS WITH STRUCTURAL ENGINEER AND ARCHITECT PRIOR TO STARTING INSTALLATION OF THE PLUMBING SYSTEM.						
						15. ALL HORIZONTAL WASTE LINES SHALL BE RUN AT A MINIMUM SLOPE OF 1/4" PER FOOT UNLESS OTHERWISE NOTED ON PLAN.						
						16. ALL VENTS THROUGH ROOF SHALL BE 10'-0" MINIMUM AWAY FROM ANY FRESH AIR INTAKE OR WINDOW. COORDINATE WITH MECHANICAL CONTRACTOR.						
						17. THE LOCATION AND ELEVATION OF ALL PLUMBING PIPING SHALL BE VERIFIED AND COORDINATED WITH ALL OTHER TRADES, STRUCTURAL CONDITIONS AND BUILDING CONSTRUCTION PRIOR TO START OF INSTALLATION.						
						18. PROVIDE GAS SHUTOFF VALVE, UNION, FLEX CONNECTION, AND DIRT LEG AT EACH GAS CONNECTION TO MECHANICAL EQUIPMENT.						
						19. ALL VALVES AND COCKS SHALL BE LOCATED TO BE READILY ACCESSIBLE. WHERE VALVES ARE INSTALLED WITHIN OR BEHIND WALLS, PARTITIONS OR CEILINGS, AN ACCESS PANEL SHALL BE INSTALLED. COORDINATE ACCESS PANEL LOCATION WITH THE ARCHITECT, BEFORE BEGINNING INSTALLATION.						
						20. PROVIDE CLEANOUT AS REQUIRED BY PLUMBING CODE, WHETHER SHOWN ON THE DRAWINGS OR NOT.						
						21. ALL EQUIPMENT SHALL BE LISTED WITH AN APPROVED TESTING AGENCY.						
						22. ALL WORK IN THE PUBLIC RIGHT OF WAY SHALL BE COMPLETED IN ACCORDANCE WITH CITY STANDARDS & SHALL OBTAIN THE APPROVAL PERMITS FROM THE PUBLIC WORKS DEPARTMENT.						
						23. CAL GREEN: PLUMBING AND PIPING DESIGN SHALL BE IN ACCORDANCE WITH CAL GREEN STANDARDS AS LISTED BELOW. 5.303.1 BUILDING IS A SINGLE TENANT WITH ONE WATER METER. PROJECT IS IN COMPLIANCE 5.303.2 WATER SAVINGS TOILETS: MAX 1.28 GPF URINALS: MAX 0.125 GPF LAVATORIES: MAX 0.5 GPM METERING FAUCETS: MAX 0.2 GALLONS PER CYCLE. ADJUST TO OPERATE FOR MINIMUM OF 10 SECONDS, AND MAXIMUM OF 20 SECONDS. 5.303.6 PROVIDE PROOF THAT SPECIFIED PLUMBING FIXTURES MEET ASME, US EPA STANDARDS PER TABLE 5.303.6 IN CAL GREEN CODES.						
						MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E): MP [X] MD [X] PP [] E [] - OPTION 1: IR 16-13 SECTION 2.1: PROJECT-SPECIFIC DESIGN. SHEET NUMBERS: _____ MP [] MD [] PP [] E [] - OPTION 2: IR 16-13 SECTION 2.2: DESIGN BASED ON OSHPD OPM, WITHIN PROJECT SUBMITTAL. SHEET NUMBERS: _____ MP [] MD [] PP [] E [] - OPTION 3: IR 16-13 SECTION 2.2.6: DESIGN BASED ON OSHPD OPM, DEFERRED SUBMITTAL.						
						MEP COMPONENT ANCHORAGE NOTE ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA-APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30: 1. ALL PERMANENT EQUIPMENT AND COMPONENTS. 2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G., HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE. 3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA. THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE BUT NEED NOT DEMONSTRATE DESIGN COMPLIANCE WITH THE REFERENCES NOTED ABOVE. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS: A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT. B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL. THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL. IN GENERAL, RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.						
						MEP DISTRIBUTION SYSTEM BRACING NOTE FOR PIPING, DUCTWORK, AND ELECTRICAL CONDUIT PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7 SECTION 13.3 AS DEFINED IN ASCE 7 SECTIONS 13.6.5, 13.6.6, 13.6.7, AND 13.6.8, AND 2022 CBC SECTIONS 1617A.1.24, 1617A.1.25, AND 1617A.1.26. THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEMS ARE AS NOTED BELOW. THE MEP DESIGN PROFESSIONAL ENGINEER RESPONSIBLE FOR CONTENT ON THESE SHEETS HAS VERIFIED THAT THE DESIGN METHODS IDENTIFIED BELOW ARE IN ACCORDANCE WITH DSA IR 16-13. MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E): MP [X] MD [X] PP [] E [] - OPTION 1: IR 16-13 SECTION 2.1: PROJECT-SPECIFIC DESIGN. SHEET NUMBERS: _____ MP [] MD [] PP [] E [] - OPTION 2: IR 16-13 SECTION 2.2: DESIGN BASED ON OSHPD OPM, WITHIN PROJECT SUBMITTAL. SHEET NUMBERS: _____ MP [] MD [] PP [] E [] - OPTION 3: IR 16-13 SECTION 2.2.6: DESIGN BASED ON OSHPD OPM, DEFERRED SUBMITTAL.						
						DRAWING INDEX P0.1 SYMBOL LEGENDS, ABBREVIATIONS, NOTES - PLUMBING P2.1 FLOOR PLAN - PLUMBING						

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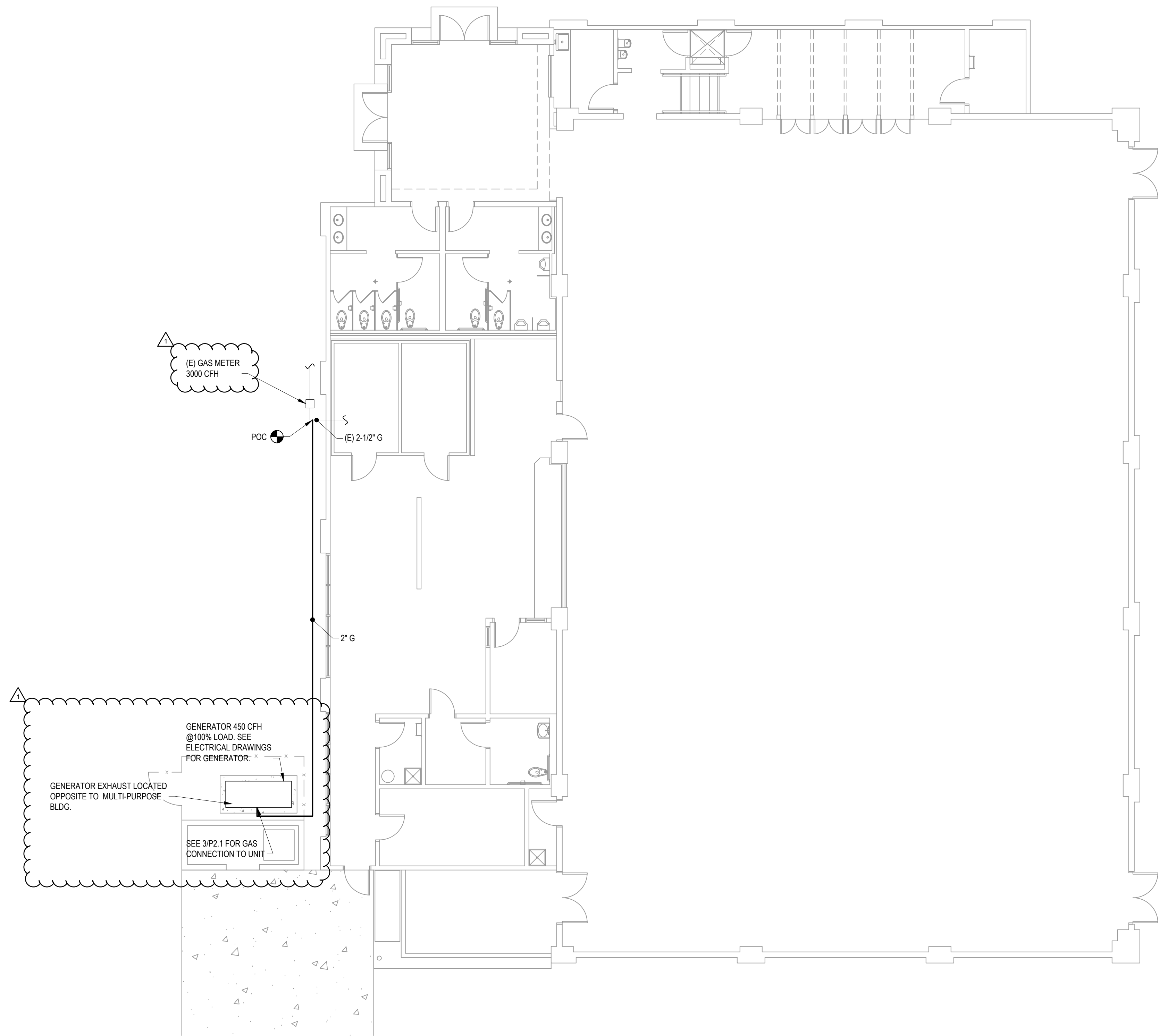
REGISTERED PROFESSIONAL ENGINEER
MECHANICAL
No. M31059
EXP. JUNE 30, 2027
STATE OF CALIFORNIA

BACK-UP GENERATOR FOR:
CHUALAR UNION ELEMENTARY SCHOOL
24285 LINCOLN ST. CHUALAR, CA 93925
CHUALAR UNION SCHOOL DISTRICT

SYMBOL LEGENDS, ABBREVIATIONS, NOTES - PLUMBING

REV. DATE DESCRIPTION

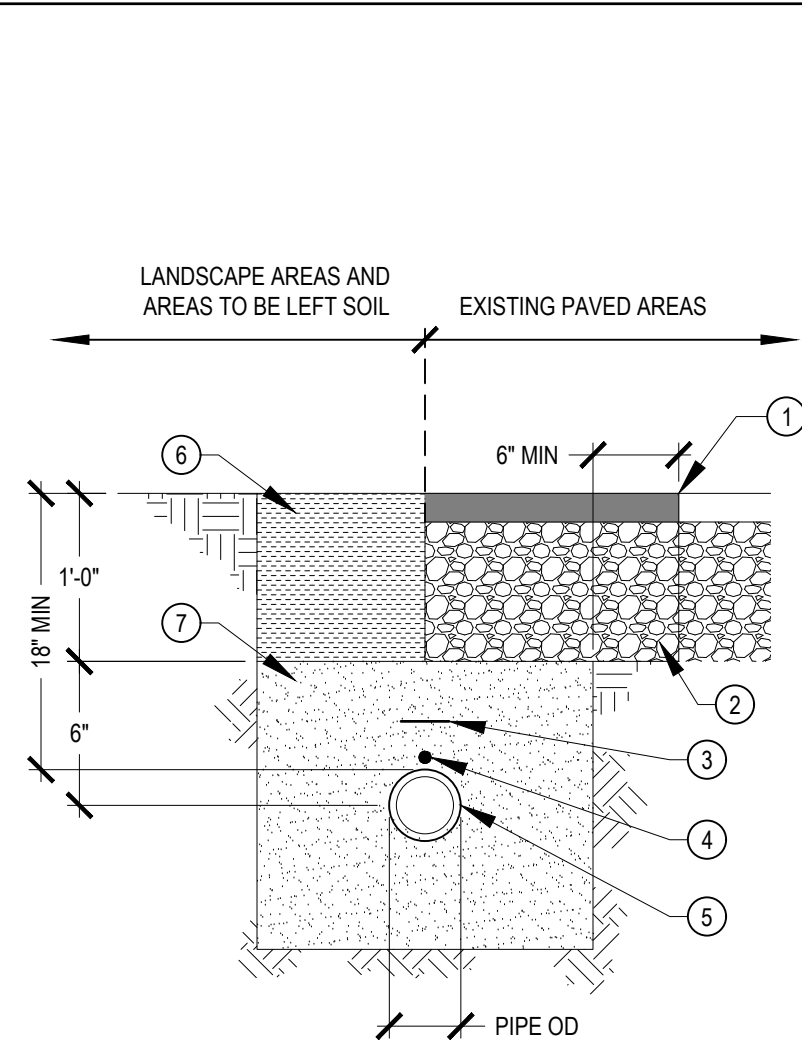
SCALE: AS NOTED
DRAWN: MS
JOB: 25050
SHEET: P0.1



1 NEW FLOOR PLAN - PLUMBING
SCALE: 1/8" = 1'-0"

GENERAL NOTES

- CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING AND NEW BUILDING STRUCTURES, SERVICES, AND OWNER'S PROPERTY DURING THE ENTIRE PERIOD OF CONSTRUCTION.
- COORDINATE THE LOCATIONS OF ROOF/WALL OPENINGS, PENETRATIONS, DUCTWORK, PIPING, AND ALL MECHANICAL AND PLUMBING EQUIPMENT WITH RESPECT TO BUILDING STRUCTURE AND OTHER BUILDING SERVICES TO AVOID CONFLICT.
- SEE ARCHITECT'S DRAWINGS FOR PATCHING AND REPAIR OF ROOF, WALL, AND FLOOR PENETRATIONS.
- INFORMATION SHOWN IS BASED ON AVAILABLE AS-BUILTS AND THE LOCATION OF ALL EQUIPMENT, DUCTS, PENETRATIONS, PIPING, AND OTHER PROJECTIONS SHOWN ON THE PLANS IS APPROXIMATE. NOT ALL EXISTING ITEMS ARE IDENTIFIED OR SHOWN ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING CONDITIONS, INCLUDING ALL RELEVANT DIMENSIONS, EQUIPMENT COUNTS, AND LOCATIONS PRIOR TO SUBMITTING A BID.
- SEE PLANS AND SPECIFICATIONS FOR ALL OTHER DISCIPLINES FOR ADDITIONAL SCOPE OF WORK THAT MAY NOT BE SHOWN HERE. COORDINATE WITH GENERAL CONTRACTOR TO CONFIRM ENTIRE SCOPE OF WORK HAS BEEN INCLUDED.
- GAS PIPE ROUTING IS DIAGRAMMATIC, COORDINATE WITH (E) FIELD CONDITIONS. LOCATE AND AVOID EXISTING UNDERGROUND UTILITIES.

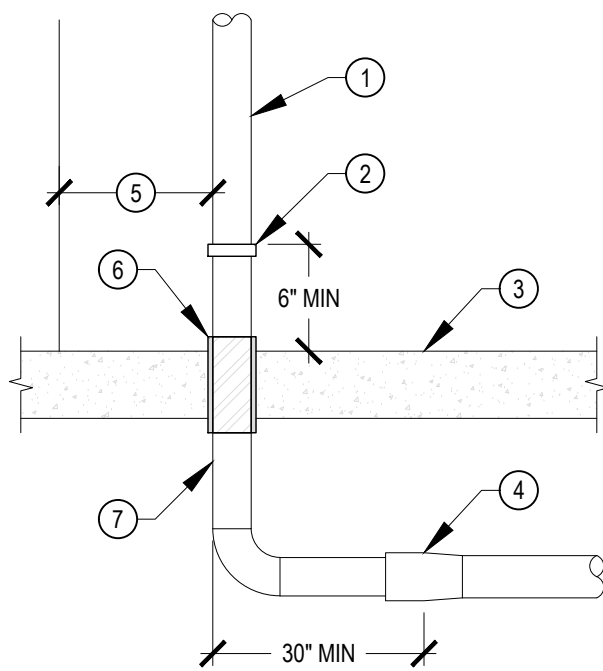


DETAIL NOTES:

- SAWOUT PAVEMENT EACH SIDE OF TRENCH 6" FROM TRENCH EDGE, REMOVE PAVEMENT AND BASEROCK, REPLACE AND RECOMPACT BASEROCK, TACKCOAT EDGE AND REPAVE.
- CLASS 2 AGGREGATE BASE ROCK.
- PLASTIC WARNING TAPE.
- COPPER TRACER WIRE TAPED ON TOP OF ALL NON-METALLIC PIPE.
- GAS PIPING. SEE PLANS FOR SIZE.
- SELECT NATIVE SOILS, 90% COMPACTION FOR AREAS TO BE LEFT IN NATIVE STATE ONLY, CAP AREAS IN UNPAVED ROADWAYS WITH 12" CLASS 2 AGGREGATE BASE, 95% COMPACTION.
- SELECT SAND BACKFILL AT 95% COMPACTION.

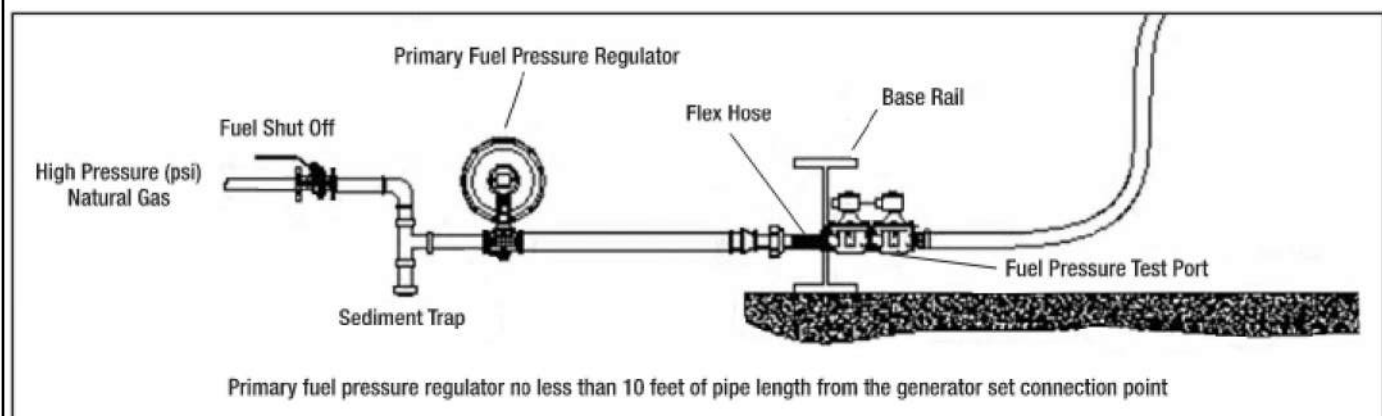
1 TRENCH DETAIL

N.T.S.



DETAIL NOTES:

- ABOVE GROUND GALV. STEEL PIPE
- TRANSITION TO METAL PIPE WITH GAS SEAL
- GRADE
- TRANSITION TO PLASTIC PIPE WITH MOISTURE SEAL AND SECONDARY GAS SEAL
- RISE AS CLOSE TO BUILDING AS POSSIBLE
- GALVANIZED STEEL OR PVC SLEEVE THROUGH THE CONCRETE SLAB ON GRADE. SLEEVE SIZE TO BE MIN. ONE NOMINAL SIZE LARGER THAN THE GAS PIPE UP TO 1" ANNULAR CLEAR SPACE BETWEEN PIPING AND SLEEVE. EXTEND SLEEVE MIN 3" ABOVE THE FLOOR. FILL THE ANNULAR SPACE WITH EPDM-RUBBER.
- STEEL PIPE CASING

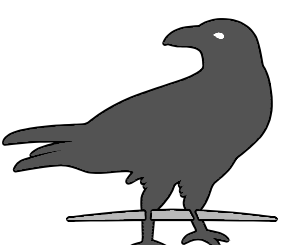


3 NATURAL GAS SUPPLY REGULATOR

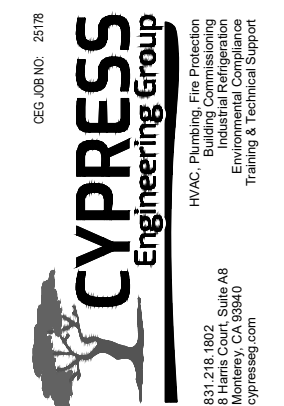
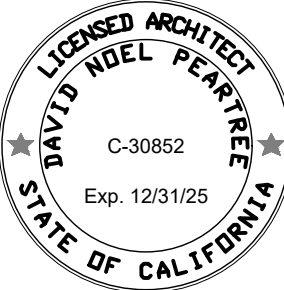
N.T.S.

2 GAS RISER

N.T.S.



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FLOOR PLAN - PLUMBING
BACK-UP GENERATOR FOR:
CHUALAR UNION ELEMENTARY SCHOOL
24285 LINCOLN ST., CHUALAR, CA 93925
CHUALAR UNION SCHOOL DISTRICT

REV.	DATE	DESCRIPTION

SCALE: AS NOTED

DRAWN: MS

JOB: 25050

SHEET:

P2.1

THE USE OF THESE PLANS AND SPECIFICATIONS SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY WERE PREPARED AND PUBLICATION THEREOF IS EXPRESSLY LIMITED TO SUCH USE. REUSE, REPRODUCTION, OR PUBLICATION BY ANY METHOD, IN WHOLE OR IN PART, IS PROHIBITED. TITLE TO THE PLANS AND SPECIFICATIONS REMAINS WITH THE ARCHITECT, AND VISUAL CONTACT WITH THEM CONSTITUTES PRIMA FACIE EVIDENCE OF THE ACCEPTANCE OF THESE RESTRICTIONS.

GENERAL CONSTRUCTION NOTES

- CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS. MATERIALS AND EQUIPMENT SHALL BE U.L. LISTED AND LABELED FOR THE APPLICATION.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES AND INSPECTION FEES REQUIRED BY THIS CONTRACT WORK.
- CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO BIDDING AND ALLOW FOR ALL FIELD CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL WORK NOTED AND CALLED OUT ON ALL CONTRACT DOCUMENTS. THE CONTRACTOR SHALL OBTAIN INFORMATION AND BE FAMILIAR WITH ALL OTHER TRADES WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN OTHER TRADES ON PROJECT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONS AND PROPERTY AND SHALL PROVIDE INSURANCE COVERAGE AS NECESSARY FOR LIABILITY AND PERSONAL PROPERTY DAMAGE. TO FULLY PROTECT THE OWNER, ARCHITECT AND ENGINEER FROM ANY AND ALL CLAIMS RESULTING FROM THIS WORK.
- CONTRACTOR SHALL MAINTAIN RECORD DRAWINGS AT THE PROJECT SITE INDICATING ALL MODIFICATIONS TO ELECTRICAL SYSTEMS. THE CONTRACTOR SHALL AT THE CONCLUSION OF THE PROJECT PROVIDE ACCURATE "AS-BUILT" DRAWINGS ACCEPTABLE TO THE ARCHITECT.
- ALL MATERIALS PROVIDED TO THE PROJECT SHALL BE NEW. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND INSTALL ALL INCIDENTAL MATERIALS REQUIRED FOR A COMPLETE INSTALLATION.
- CONTRACTOR SHALL PROVIDE TO THE ARCHITECT A CONSTRUCTION SCHEDULE OF ELECTRICAL WORK. THE CONSTRUCTION SCHEDULE SHALL IDENTIFY ALL SIGNIFICANT MILESTONES WITH COMPLETION DATES.
- CONTRACTOR SHALL PROVIDE ALL REQUIRED "CUTTING, PATCHING, EXCAVATION, BACKFILL AND REPAIRS" NECESSARY TO RESTORE DAMAGED SURFACES TO EQUAL OR BETTER THAN ORIGINAL CONDITIONS EXISTING AT START OF WORK.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PAINTING ALL EXPOSED CONDUITS AND ELECTRICAL EQUIPMENT. REFER TO ARCHITECTS PAINTING SECTION FOR REQUIREMENTS.
- ALL ELECTRICAL EQUIPMENT INSTALLED OUTDOORS SHALL BE WEATHERPROOF. EXTERIOR CONDUITS RUN INTO BUILDINGS SHALL BE INSTALLED WITH FLASHING, CAULKED AND SEALED. CONDUITS FOR EXTERIOR ELECTRICAL DEVICES SHALL BE RUN INSIDE BUILDING UNLESS OTHERWISE NOTED ON DRAWINGS.
- ALL CONDUITS UNLESS OTHERWISE NOTED ON DRAWINGS SHALL HAVE AS A MINIMUM TWO (2) #12s WITH ONE (1) #12 GROUND. "TICK" MARKS SHOWN ON CIRCUITRY ARE FOR ROUGH ESTIMATING ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WIRES AND WIRE SIZES REQUIRED BY LATEST CODE.
- ALL BRANCH CIRCUITS SHALL HAVE INDIVIDUAL NEUTRALS. SHARED NEUTRALS ON MULTIWIRED CIRCUITS IS NOT ALLOWED.
- COORDINATE ALL CONDUIT RUNS, ELECTRICAL EQUIPMENT AND PANELS WITH ALL OTHER WORK TO AVOID CONFLICTS.
- CONTRACTOR SHALL, PRIOR TO BID, FIELD VERIFY ALL REQUIREMENTS FOR MODIFYING THE EXISTING CLOCK, DATA, AND INTERCOM SYSTEMS TO ACCOMMODATE ADDITIONS NOTED. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS NEEDED TO MAKE A FULLY OPERATIONAL SYSTEM AT THE CONCLUSION OF PROJECT WORK.
- CONTRACTOR SHALL PROVIDE IN EVERY NEW EMPTY CONDUIT A DRAW STRING FOR USE IN FUTURE CONSTRUCTION.
- ALL CONDUIT SHALL BE CONCEALED WHERE POSSIBLE. CUT AND PATCH EXISTING WALLS WHERE NECESSARY. WHERE IT IS NECESSARY TO CUT OR BORE EXISTING STRUCTURAL WALLS FOR NEW ELECTRICAL WORK OBTAIN PERMISSION FROM THE ARCHITECT PRIOR TO STARTING WORK. REUSE EXISTING CONDUIT WHERE POSSIBLE.
- WHERE IT IS NOT POSSIBLE TO REUSE EXISTING CONDUIT OR RUN NEW CONCEALED CONDUIT USE NON-METALLIC SURFACE RACEWAY AND BOXES. ROUTING OF ALL NON-METALLIC RACEWAYS SHALL BE APPROVED BY THE ARCHITECT OR OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
- EXTENSION RINGS OR RESET BOXES TO BE FLUSH WITH NEW WALL THICKNESS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO EXISTING UNDERGROUND SYSTEMS (GAS, WATER, TELEPHONE, ELECTRICAL, SEWER, ETC.). THE CONTRACTOR SHALL REPAIR & PAY ALL EXPENSES FOR DAMAGE TO EXISTING UNDERGROUND SYSTEMS AS A RESULT OF NEW WORK. REPAIR TO DAMAGED UNDERGROUND SYSTEMS SHALL BE TO THE OWNERS SATISFACTION WITHOUT EXTRA EXPENSE TO THE OWNER.
- EXISTING WIRING SHOWN HAS BEEN TAKEN FROM OLD PLANS AND IS ASSUMED TO BE CORRECT. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS AND MAKE ADJUSTMENTS TO SUIT ACTUAL CONDITIONS AND TO MEET THE INTENT OF THE CONTRACT DOCUMENTS.
- WHERE NON-METALLIC SHEATHED CONDUCTORS ARE FOUND, THE CONTRACTOR SHALL REMOVE TO FULLEST EXTENT PER THE GENERAL DEMOLITION NOTES AND REPLACE WITH CONDUIT. METAL CLAD CABLE WILL BE PERMITTED ON A CASE-BY-CASE BASIS ONLY BY WRITTEN APPROVAL FROM THE ARCHITECT.
- ALL INSTALLATION OF EXPOSED SURFACE MOUNTED RACEWAY IN PUBLIC AREAS SHALL BE REVIEWED BY [ARCHITECT] [ELECTRICAL ENGINEER] BEFORE ROUGH-IN. CONTRACTOR IS TO DETERMINE THE ACCESSIBILITY OF ATTIC, FURRED SPACE, HOLLOW MULLIONS, ETC. IN EACH AREA AND REVIEW WITH ARCHITECT. IF SYSTEM CAN BE ROUTED CONCEALED EITHER BY FISHING OR ACCESSIBILITY, CONTRACTOR IS TO DO SO. IF INACCESSIBILITY IS DETERMINED, CONTRACTOR SHALL INSTALL SURFACE MOUNTED RACEWAY IN THE MOST AESTHETICALLY PLEASING MEANS AS DETERMINED BY THE ARCHITECT. NO ALLOWANCE FOR ADDITIONAL COMPENSATION DUE TO ROUTING AS DIRECTED BY THE ARCHITECT WILL BE MADE.

ELECTRICAL SYMBOLS & ABBREVIATIONS

SYMBOLS & ABBREVIATIONS SHOWN ARE FOR GENERAL USE. DISREGARD THOSE WHICH DO NOT APPEAR ON THE PLANS.

	FLUORESCENT OR LED LUMINAIRE - SEE SCHEDULE		SECURITY DOOR CONTACTS		PANELBOARD - FLUSH MOUNTED		DETAIL NOTE REFERENCE SYMBOL SEE ASSOCIATED NOTE ON SAME DETAIL
	EMERGENCY OR NIGHT LIGHT		SECURITY MOTION DETECTOR		EQUIPMENT PANEL - FLUSH MOUNTED		DETAIL NUMBER DETAIL OR SECTION REFERENCE SHEET NUMBER
	STRIP FLUORESCENT OR LED LUMINAIRE - SEE SCHEDULE		CCTV CAMERA		PANELBOARD - SURFACE MOUNTED		FEEDER DESIGNATION; SEE ASSOCIATED NOTE ON SAME DETAIL
	LUMINAIRE - RECESSED - SEE SCHEDULE		SECURITY SYSTEM KEYPAD		EQUIPMENT PANEL - SURFACE MOUNTED		ABBREVIATIONS
	RECESSED WALL WASHER		DOOR BELL PUSHBUTTON		METER W/ CURRENT TRANSFORMER		
	LUMINAIRE - SURFACE MOUNTED - SEE SCHEDULE		DOOR CHIME WITH LED		JUNCTION BOX - CEILING OR WALL MOUNTED, SIZE PER CODE, TAPE AND TAG WIRES		
	LUMINAIRE - POLE OR POST MOUNTED - SEE SCHEDULE		RECEPTACLE - DUPLEX *		SURGE PROTECTIVE DEVICE		
	LUMINAIRE - WALL MOUNTED SEE SCHEDULE		DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER - FIELD VERIFY HEIGHT		MOTOR CONNECTION		
	BOLLARD OR PATH LIGHT - SEE SCHEDULE		GFCI CONVENIENCE RECEPTACLE - DUPLEX *		NON-FUSED DISCONNECT SWITCH		
	EXIT LIGHT - DIRECTIONAL ARROWS AS INDICATED - SEE SCHEDULE		GFCI CONVENIENCE DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER - FIELD VERIFY HEIGHT		FUSED DISCONNECT SWITCH; FUSED WITH DUAL-ELEMENT FUSES SIZED PER EQUIPMENT MFG'S NAMEPLATE DATA		
	TRACK LIGHTING - SEE SCHEDULE		RECEPTACLE - DOUBLE DUPLEX *		COMBINATION STARTER/FUSED DISCONNECT SWITCH; FUSED DISCONNECT SWITCH ELEMENT FUSES SIZED PER EQUIPMENT MFG'S NAMEPLATE DATA		
	EMERGENCY LIGHT		HALF SWITCHED DUPLEX RECEPTACLE *		MAGNETIC STARTER - NEMA SIZE INDICATED NEMA 3R ENCLOSURE UNLESS OTHERWISE SPECIFIED		
	DIGITAL DUAL TECHNOLOGY OCC. SENSOR		SINGLE RECEPTACLE *		CIRCUIT BREAKER		
	LIGHTING CONTROL OCCUPANCY SENSOR CORNER MOUNTED		DUPLEX RECEPTACLE - CEILING MOUNTED		GROUND ROD WITH GROUNDWELL BOX		
	DIMMER ROOM CONTROLLER		LETTER INDICATES DUPLEX HALF CONTROLLED RECEPTACLE *		GROUND ELECTRODE		
	PLUG LOAD CONTROLLER		LETTER INDICATES DUPLEX FULLY CONTROLLED RECEPTACLE *		NORMALLY OPEN CONTACT		
	ROOM LIGHTING CONTROLLER		FLOOR MOUNTED DUPLEX RECEPTACLE		NORMALLY CLOSED CONTACT		
	LIGHTING CONTROL PANEL		FLOOR MOUNTED DUPLEX RECEPTACLE		TRANSFORMER - SEE SINGLE LINE FOR SIZE		
	DIGITAL DAYLIGHT SENSOR		FLOOR MOUNTED DUPLEX RECEPTACLE		PULLBOX		
	SINGLE POLE SWITCH **		POWER OUTLET - SEE PLANS FOR NEMA TYPE*		ERMS		
	SINGLE POLE SWITCH, ** a = CIRCUIT CONTROLLED		POWER POLE		FLEX CONDUIT WITH CONNECTION		
	THREE WAY SWITCH**		WALL TELEPHONE OUTLET **		CONDUIT - UP		
	FOUR WAY SWITCH**		VOICE/DATA WALL OUTLET *		CONDUIT - DOWN		
	MANUAL MOTOR STARTER		VOICE/DATA OUTLET MOUNTED ABOVE COUNTER - FIELD VERIFY HEIGHT		CONDUIT EMERGENCY SYSTEM		
	KEY OPERATED SWITCH**		SURFACE MOUNTED VOICE/DATA WALL OUTLET *		LOW VOLTAGE WIRING		
	LIGHTING DIMMER**		SURFACE MOUNTED VOICE/DATA OUTLET MOUNTED ABOVE COUNTER - FIELD VERIFY HEIGHT		SURFACE METAL OR NON-METALLIC RACEWAY		
	DIGITAL ON/OFF SWITCH **		WIRELESS ACCESS POINT (WAP) - CEILING MOUNTED		CONDUIT - CONCEALED IN WALLS OR CEILING		
	DIGITAL DIMMER SWITCH **		WIRELESS ACCESS POINT (WAP) - WALL MOUNTED - FIELD VERIFY HEIGHT		CONDUIT - EXISTING		
	DIGITAL MULTI SCENE LIGHTING SWITCH **		VOICE/DATA OUTLET - FLOOR MOUNTED		CONDUIT - BELOW SLAB OR UNDERGROUND; 3/4" MIN.		
	DIGITAL DUAL TECHNOLOGY WALL OCC. SENSOR **		TV OUTLET *		CAPPED OR STUB-OUT CONDUIT		
	WALL OCCUPANCY SENSOR **		VOICE/DATA OUTLET - CEILING MOUNTED		CONDUIT CONTINUATION		
	DOUBLE SWITCHED WALL OCCUPANCY SENSOR **		INTERIOR SPEAKERS CEILING MOUNTED		CONDUIT - HOME RUN TO PANEL, TERMINAL CABINET, ETC. RUNS MARKED WITH CROSSHATCHES INDICATE NUMBER OF #12 AWG WIRES WHEN MORE THAN TWO. SIZE CONDUIT ACCORDING TO SPECIFICATIONS AND APPLICABLE CODE. CROSS HATCHES WITH NUMBER ADJACENT INDICATES WIRE SIZE OTHER THAN #12 AWG.		
	DIMMING DUAL TECHNOLOGY WALL SWITCH OCCUPANCY SENSOR **		INTERIOR SPEAKERS WALL MOUNTED		SHEET NOTE REFERENCE SYMBOL; SEE ASSOCIATED NOTE ON SAME SHEET		
	2-BUTTON DIMMING DUAL TECHNOLOGY WALL SWITCH OCCUPANCY SENSOR **		CLOCK +8-0' AFF U.O.N. VERIFY BEFORE INSTALLATION		SCHEDULE SYMBOL; SEE ASSOCIATED NOTE ON SAME SHEET		

EQUIPMENT ANCHORAGE

ME/P COMPONENT ANCHORAGE NOTES:

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA-APPROVED CONSTRUCTION DOCUMENTS. THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2022 CBC SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTERS 13, 26, AND 30:

- ALL PERMANENT EQUIPMENT AND COMPONENTS.
- TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (e.g. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110 / 220 VOLT RECEPTACLES HAVING A FLEXIBLE CABLE.
- TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT IS REQUIRED TO BE RESTRAINED IN A MANNER APPROVED BY DSA.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT BE DETAILED IN THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT. FLEXIBLE CONNECTIONS MUST ALLOW MOVEMENT IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS.

- COMPONENTS WEIGHTING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
- COMPONENTS WEIGHTING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

THE ANCHORAGE OF ALL MECHANICAL, ELECTRICAL AND PLUMBING COMPONENTS SHALL BE SUBJECT OF THE APPROVAL OF THE DESIGN PROFESSIONAL. IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND ACCEPTANCE BY DSA. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

MEP DISTRIBUTION SYSTEM BRACING NOTE FOR PIPING, DUCTWORK, AND ELECTRICAL CONDUIT

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7 SECTION 13.3 AS DEFINED IN ASCE 7 SECTION 13.6.5, 13.6.6, 13.6.7, 13.6.8 AND 2022 CBC SECTIONS 1617A.1.24, 1617A.1.25 AND 1617A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. THE MEP DESIGN PROFESSIONAL ENGINEER RESPONSIBLE FOR CONTENT ON THESE SHEETS HAS VERIFIED THAT THE DESIGN METHODS IDENTIFIED BELOW ARE IN ACCORDANCE WITH DSA IR 16-13.

MECHANICAL PIPING (MP), MECHANICAL DUCTS (MD), PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP □ MD □ PP □ E ■ - OPTION 1: PROJECT-SPECIFIC DESIGN.

MP □ MD □ PP □ E □ - OPTION 2: DESIGN BASED ON OSHPOD OPM, WITHIN PROJECT SUBMITTAL.

MP □ MD □ PP □ E □ - OPTION 3: DESIGN BASED ON OSHPOD OPM, DEFERRED SUBMITTAL.

APPLICABLE CODES & STANDARDS

CODES:

- 2022 CALIFORNIA ADMINISTRATIVE CODE C.A.C., PART 1, TITLE 24, C.C.R.
- 2022 CALIFORNIA BUILDING CODE (CBC) C.C.R., TITLE 24, VOL. 1 & 2 BASED ON THE 2021 INTERNATIONAL BUILDING CODE (IBC) WITH CALIFORNIA AMENDMENTS.
- 2022 CALIFORNIA RESIDENTIAL CODE C.C.R., TITLE 24, PART 2.5 BASED ON THE 2021 INTERNATIONAL RESIDENTIAL CODE WITH CALIFORNIA AMENDMENTS.
- 2022 CALIFORNIA ELECTRICAL CODE (CEC) C.C.R., TITLE 24, PART 3 BASED ON THE 2020 NATIONAL ELECTRICAL CODE (NEC) WITH CALIFORNIA AMENDMENTS.
- 2022 CALIFORNIA MECHANICAL CODE (CMC) C.C.R., TITLE 24, PART 4 BASED ON THE 2021 UNIFORM MECHANICAL CODE (UMC) WITH CALIFORNIA AMENDMENTS.
- 2022 CALIFORNIA PLUMBING CODE (CPC) C.C.R., TITLE 24, PART 5 BASED ON THE 2021 UNIFORM PLUMBING CODE (UPC) WITH CALIFORNIA AMENDMENTS.
- 2022 CALIFORNIA ENERGY CODE C.C.R., TITLE 24, PART 6.
- 2022 CALIFORNIA FIRE CODE (CFC) C.C.R., TITLE 24, PART 9 BASED ON THE 2021 INTERNATIONAL FIRE CODE (IFC) WITH CALIFORNIA AMENDMENTS.
- 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE C.C.R., TITLE 24, PART 11.
- 2022 CALIFORNIA REFERENCED STANDARDS CODE C.C.R., TITLE 24, PART 12.
- TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.
- NATIONAL FIRE ALARM CODE (NFPA 72) 2022.

STANDARDS:

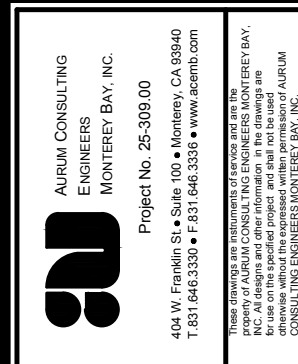
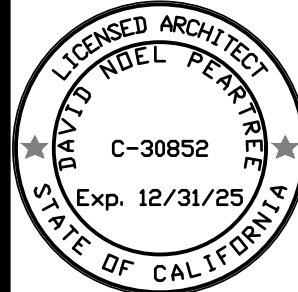
- AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
- ELECTRONICS INDUSTRIES ASSOCIATION (EIA)
- INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
- NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
- NATIONAL ELECTRICAL TESTING ASSOCIATION (NETA)
- UNDERWRITER LABORATORIES (UL)
- CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ACT STANDARDS (CAL/OSHA)

SHEET INDEX

E001	SYMBOLS, ABBREVIATIONS, GENERAL CONSTRUCTION NOTES, EQUIPMENT ANCHORAGE NOTES, CODES & SHEET INDEX.
E101	ELECTRICAL SINGLE LINE DIAGRAM & PANELBOARD SCHEDULE.
E201	ELECTRICAL SITE PLAN.
E401	POWER & SYSTEMS PLAN.
E601	ELECTRICAL DETAILS.
E701	ELECTRICAL SPECIFICATIONS.



235 MONTEREY ST., SUITE B
SALINAS, CA 93901
(831) 424-4620
PEAR TREE@BELL I.COM



SYMBOLS, ABBREVIATIONS, GENERAL CONSTRUCTION NOTES, CODES & SHEET INDEX
BACKUP GENERATOR FOR:
CHUALAR UNION ELEMENTARY SCHOOL
24285 LINCOLN ST., CHUALAR, CA 93925
CHUALAR UNION SCHOOL DISTRICT

REV.	DATE	DESCRIPTION

SCALE: AS NOTED

DRAWN: CADD

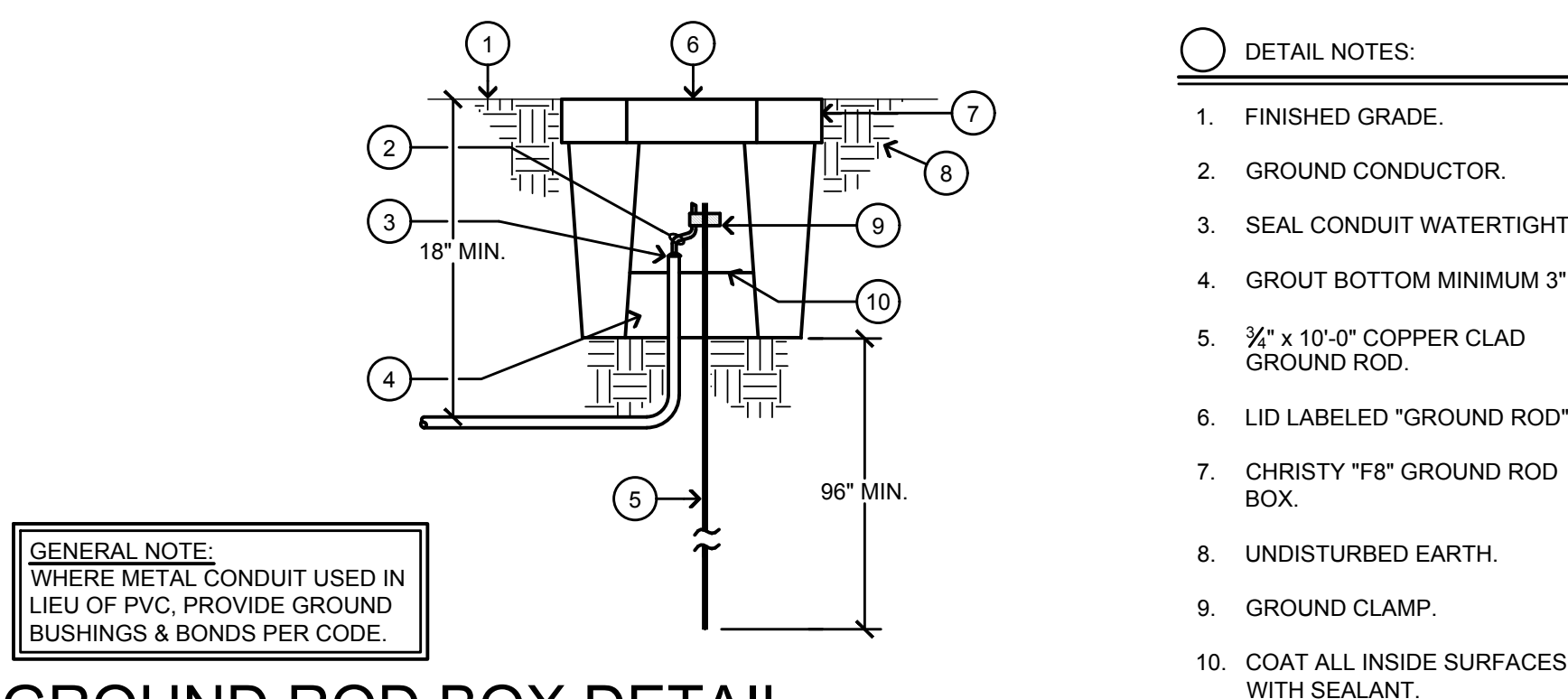
JOB: 25050

SHEET:

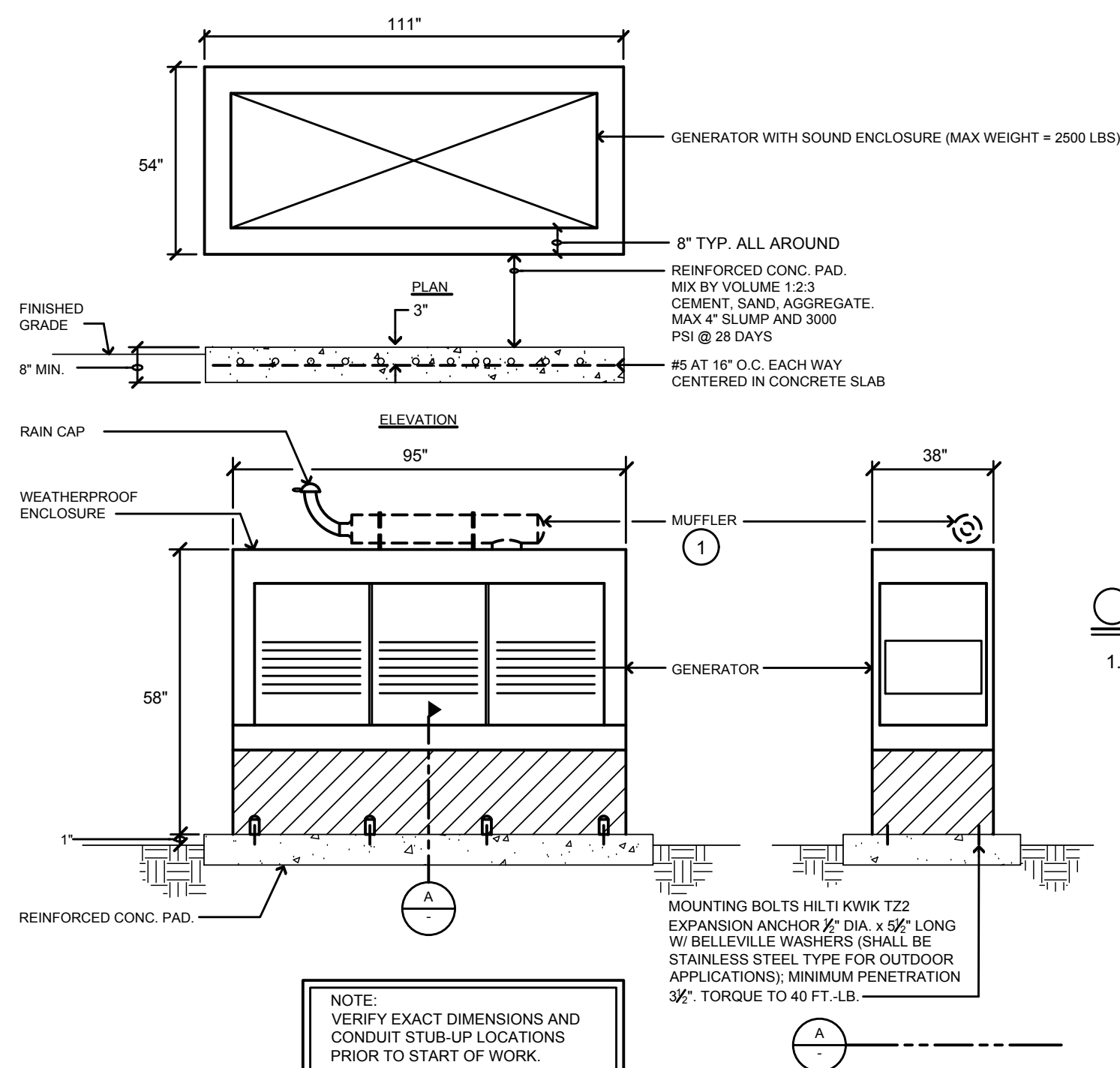
E001

PANEL SCHEDULES																																																																																																																																																																																																								
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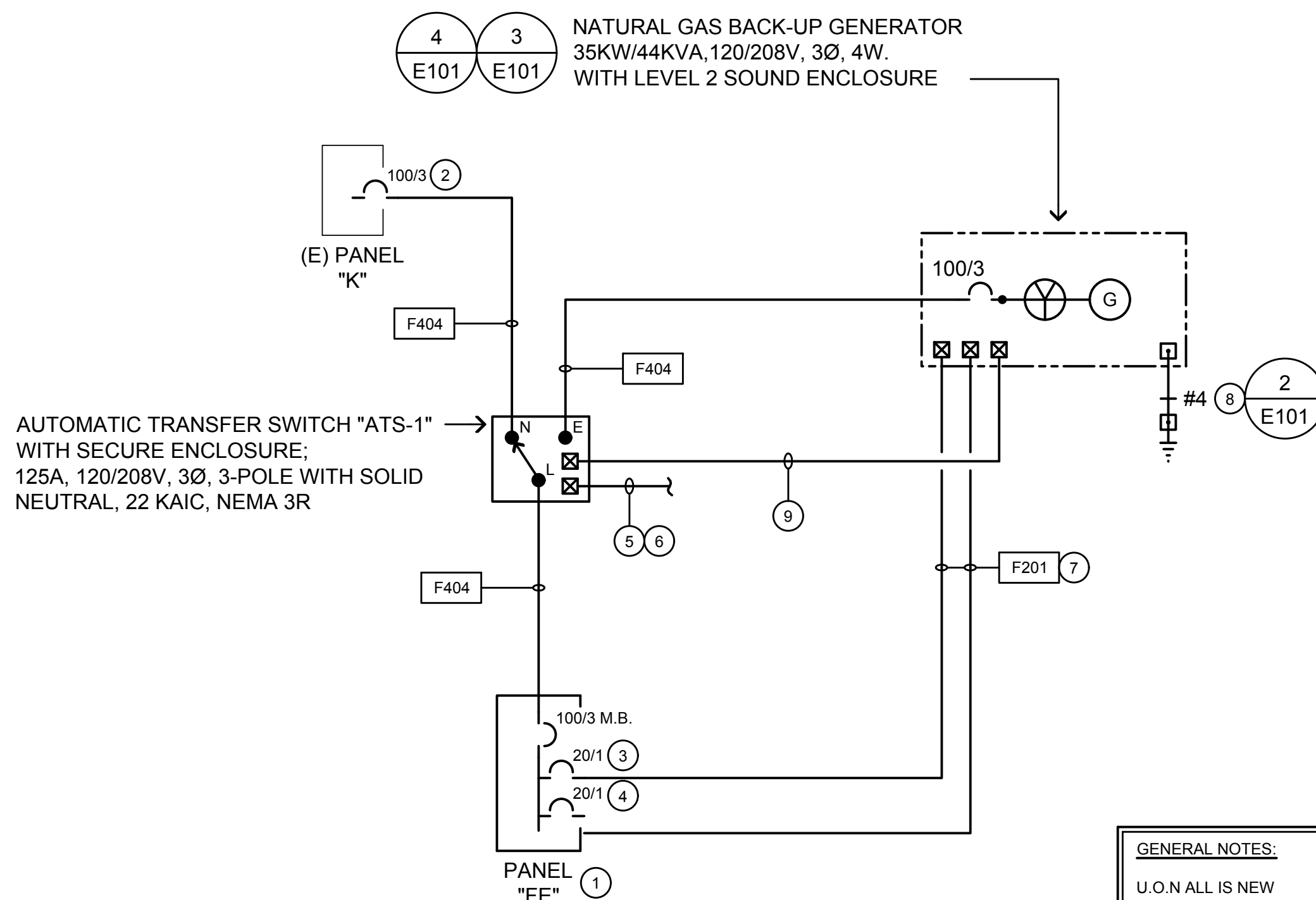
3 NO SCALE



2) NO SCALE



4 NO SCALE



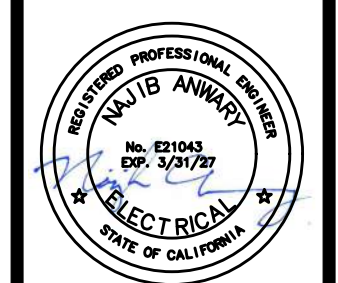
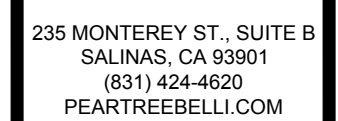
NO SCALE

- DETAIL NOTES:**

 1. PROVIDE & INSTALL A RED LAMICOID SIGN WITH WHITE LETTERS READING "PANEL IS FED FROM AN ALTERNATE POWER SOURCE".
 2. PROVIDE AND INSTALL NEW BREAKER AND ALL NECESSARY MOUNTING HARDWARE; NEW BREAKER SHALL MATCH EXISTING IN TYPE AND RATING.
 3. FOR WATER JACKET HEATER; 120V.
 4. FOR BATTERY CHARGER; 120V.
 5. PROVIDE & INSTALL 1" C. WITH CABLES TO ANNUNCIATOR PANEL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
 6. LOCATE ANNUNCIATOR PER DISTRICT DIRECTION.
 7. BOTH CIRCUITS MAY BE INSTALLED IN (1) 1" C SHARED.
 8. CONTRACTOR SHALL BOND GENERATOR FRAME TO GROUND. DO NOT BOND GENERATOR NEUTRAL.
 9. FOR ENGINE START TO AUTOMATIC TRANSFER SWITCH. INSTALL 1" CONDUIT AND CABLES.

FEEDER SCHEDULE		
DESIGNATION	AMPACITY	CONDUIT & CONDUCTORS SIZES
F201	20	3/4" C., 2 #12 & 1 #12 GND.
F404	100	1 1/2" C., 4 #2 & 1 #8 GND.

_____ (EXISTING)
 _____ (NEW)
 - - - - - (N) FLOOR/PAD MOUNTED EQUIPMENT



ELECTRICAL SINGLE LINE DIAGRAM & PANELBOARD SCHEDULE

BACK-UP GENERATOR FOR:

CHUALAR UNION ELEMENTARY SCHOOL

242485 LINCOLN ST, CHUALAR, CA 93925

CHUALAR UNION SCHOOL DISTRICT

REV.	DATE	DESCRIPTION
	-	.
	-	.
	-	.
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SCALE: AS NOTED

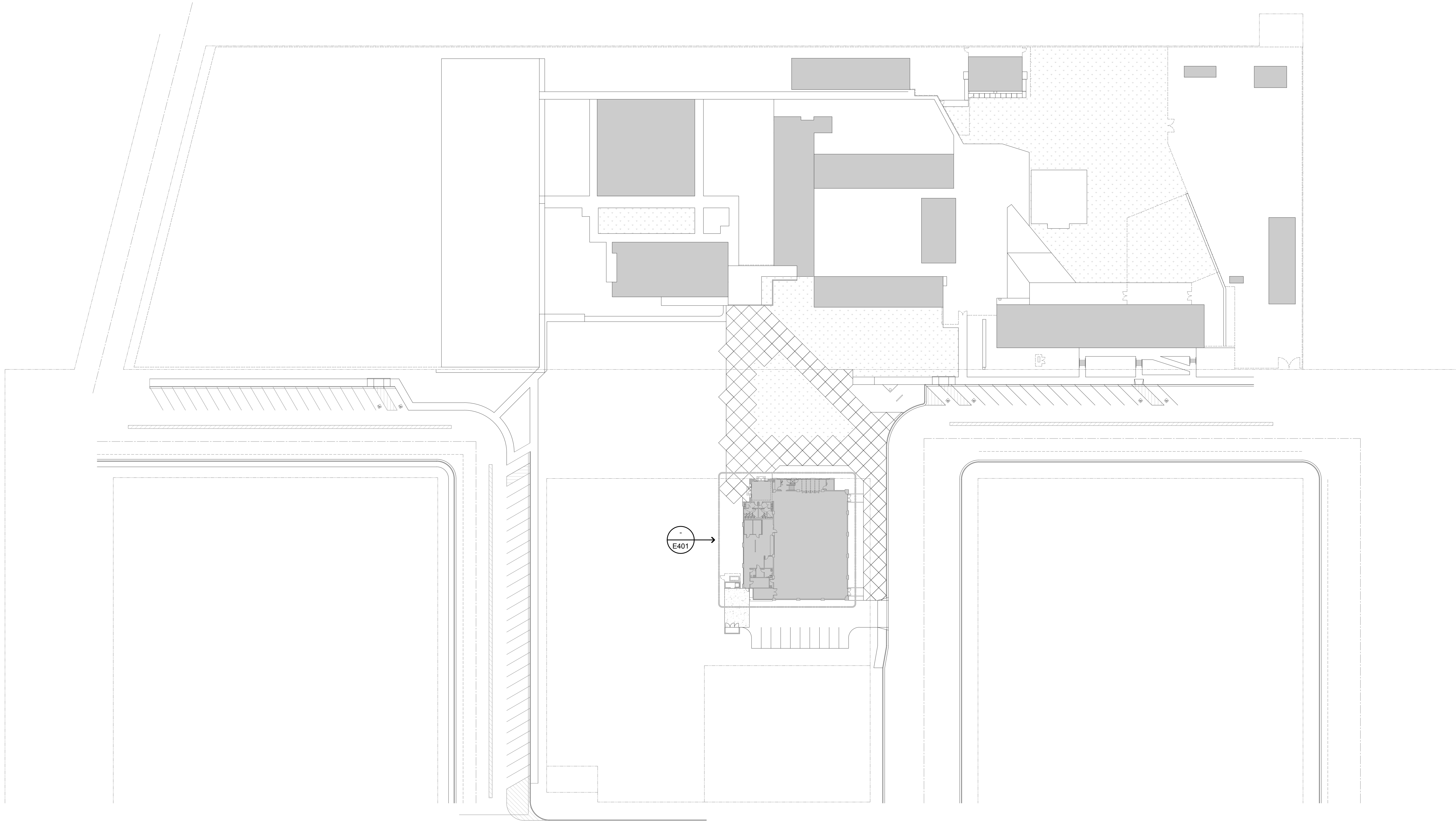
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JOB:	25050
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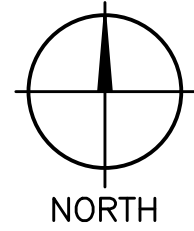
SHEET:

5101

E101



50' 0' 25' 50'
SCALE: 1"=50'-0"



REV.	DATE	DESCRIPTION

SCALE: AS NOTED
DRAWN: CADD
JOB: 25050
SHEET:

E201

ELECTRICAL SITE PLAN
BACK-UP GENERATOR FOR:
CHUALAR UNION ELEMENTARY SCHOOL
24285 LINCOLN ST., CHUALAR, CA 93925
CHUALAR UNION SCHOOL DISTRICT



DAVID A. BELLI
ARCHITECT
235 MONTEREY ST., SUITE B
SALINAS, CA 93901
(831) 424-4620
PEARTREEBELLI.COM



GENERAL NOTES:

- A. SEAL ALL EXTERIOR/INTERIOR BUILDING PENETRATIONS. CUT AND PATCH WALLS/CEILINGS FOR CONDUIT ROUTING AS NECESSARY. PAINT/FINISH EXPOSED CONDUITS/BOXES TO MATCH BUILDING FINISH. COORDINATE WITH DISTRICT & ARCHITECT FOR EXACT REQUIREMENTS.
- B. CONTRACTOR SHALL LOCATE ALL (E) UNDERGROUND UTILITIES PRIOR TO TRENCHING AND TAKE CAUTION TO AVOID DAMAGE DURING TRENCHING. HAND TRENCH IF NECESSARY. CONTRACTOR SHALL MAKE ALL REPAIRS TO DAMAGED UTILITIES AT NO CHARGE TO OWNER.

BRANCH CIRCUIT CONDUCTOR SIZING TABLE

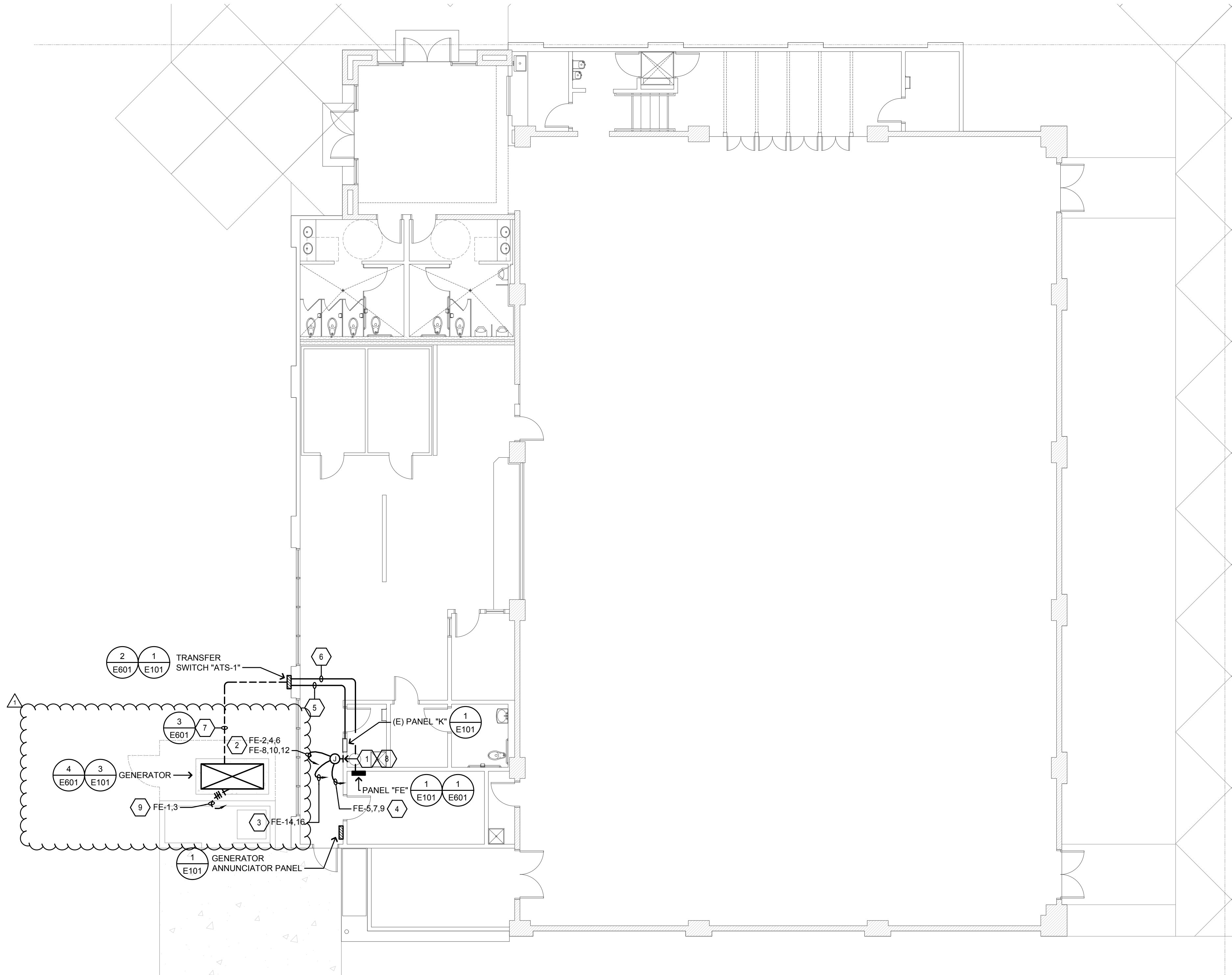
CIRCUIT AMPACITY/VOLTAGE	CIRCUIT LENGTH	REQUIREMENT
20/120	56'-90'	½" C., 2 #10 & 1 #10 GND.
20/120	91'-140'	½" C., 2 #8 & 1 #8 GND.
20/277	131'-205'	½" C., 2 #10 & 1 #10 GND.
20/277	206'-330'	½" C., 2 #8 & 1 #8 GND.

NOTE:

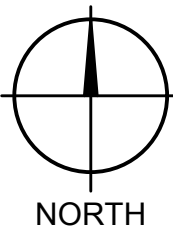
- A. CONTRACTOR SHALL SIZE BRANCH CIRCUIT CONDUCTORS PER THE TABLE ABOVE AS DETERMINED BY THE CIRCUIT CONDUCTOR LENGTH, U.O.N. CONTRACTOR SHALL SPLICE TO #12 AWG WITHIN TERMINATION BOX FOR DEVICE CONNECTION IF NECESSARY.
- B. WHERE THE UNGROUNDED CONDUCTORS IS INCREASED IN SIZE, INCLUDING FOR VOLTAGE DROP, THE GROUNDED CONDUCTOR SHALL BE INCREASED IN SIZE PROPORTIONATELY PER CEC 250.122(B)

SHEET NOTES

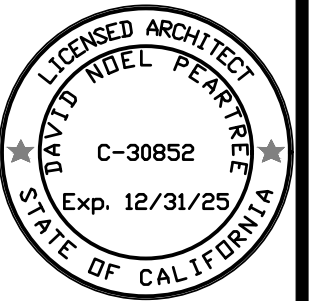
- CONTRACTOR SHALL PROVIDE AND INSTALL 8" SQ x 4" DEEP ABOVE PANEL FOR INTERCEPT OF (E) FREEZER & COOLER CIRCUITS.
- PROVIDE AND INSTALL ¾" C., 6 #10 & 2 #10 GND FOR FREEZER AND REFRIGERATOR CONDENSERS.
- PROVIDE AND INSTALL ½" C., 2 #10 & 1 #10 GND FOR FREEZER EVAP.
- PROVIDE AND INSTALL ¾" C., 6 #10 & 3 #10 GND FOR REFRIGERATOR EVAP, REFRIGERATOR LIGHTS AND FREEZER LIGHTS.
- PROVIDE AND INSTALL FEEDERS FROM (E) PANEL "K" TO TRANSFER SWITCH "ATS-1". FOR FEEDER SIZE AND REQUIREMENTS SEE 1/E101.
- PROVIDE AND INSTALL FEEDERS FROM TRANSFER SWITCH "ATS-1" TO NEW PANEL "FE". FOR FEEDER SIZE AND REQUIREMENTS SEE 1/E101.
- PROVIDE AND INSTALL FEEDERS FROM NEW GENERATOR TO TRANSFER SWITCH "ATS-1". FOR FEEDER SIZE AND REQUIREMENTS SEE 1/E101.
- SPLICE AND INTERCEPT (E) FREEZER & REFRIGERATOR CIRCUITS AT (E) PANEL K.
- PROVIDE & INSTALL FEEDERS FOR WATER JACKET HEATER & BATTERY CHARGER FROM GENERATOR TO DISTRIBUTION PANEL "FE". FOR FEEDER SIZE AND REQUIREMENTS SEE 1/E1.1.



8' 0' 2' 4' 6' 8'
SCALE: 1/8"=1'-0"



PearTree+Bell
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1000 N. F STREET, SUITE 100 • SALINAS, CA 93901
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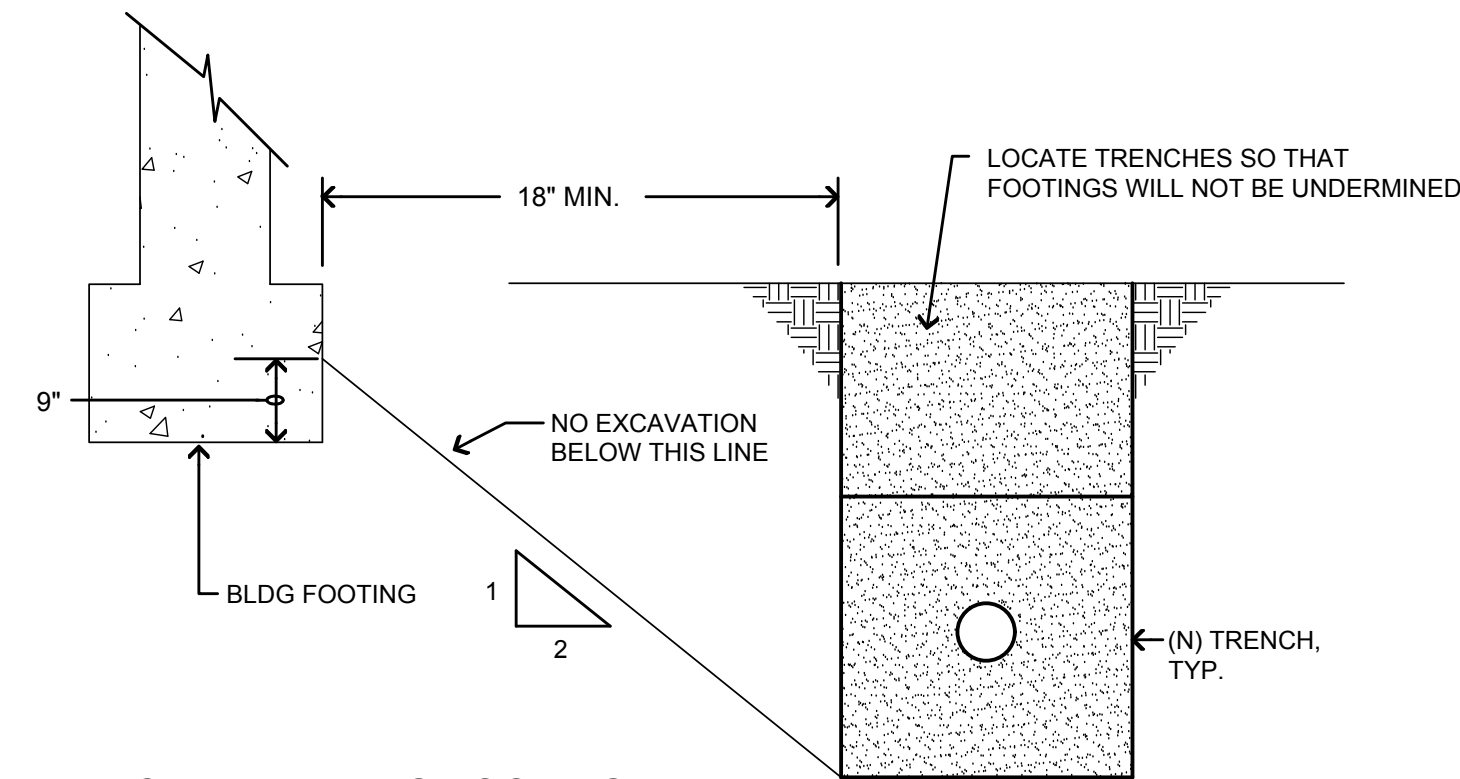
POWER & SYSTEMS PLAN
BACK-UP GENERATOR FOR:
CHUALAR UNION ELEMENTARY SCHOOL
24285 LINCOLN ST., CHUALAR, CA 93925
CHUALAR UNION SCHOOL DISTRICT

REV.	DATE	DESCRIPTION

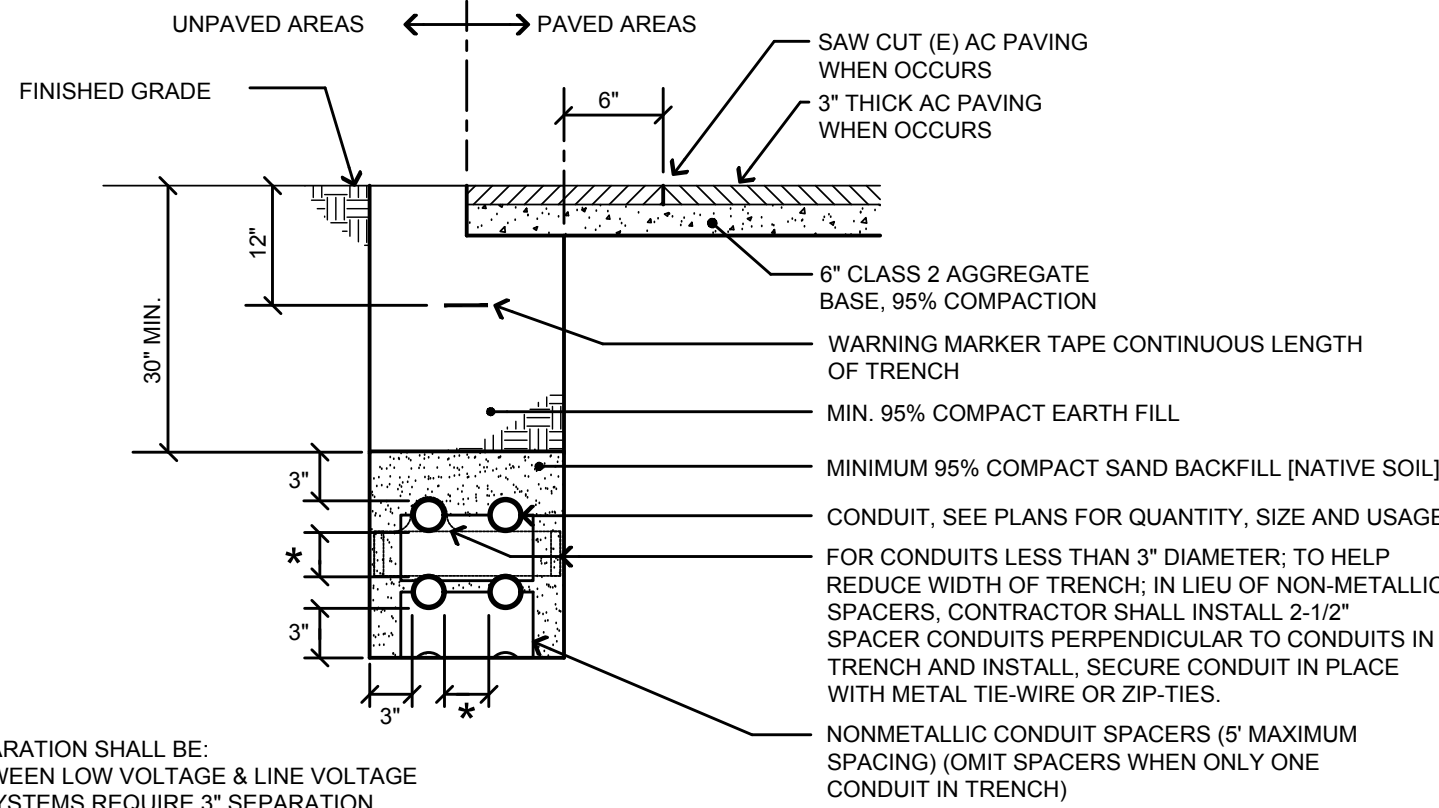
SCALE: AS NOTED
DRAWN: CADD
JOB: 25050
SHEET:

E401

THE USE OF THESE PLANS AND SPECIFICATIONS SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY WERE PREPARED AND CIRCULATION THEREOF IS EXPRESSLY LIMITED TO SUCH USE. REUSE, REPRODUCTION, OR PUBLICATION IN ANY MANNER IS PROHIBITED. TITLE TO THE PLANS AND SPECIFICATIONS REMAINS WITH THE ARCHITECT AND VISUAL CONSULTANT. THESE CANNOT BE USED WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT AND VISUAL CONSULTANT. ANY VIOLATION OF THESE CONDITIONS SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO THE ARCHITECT AND VISUAL CONSULTANT.



TRENCH NEAR BLDG FOOTING



* = REQUIRED SEPARATION SHALL BE:
12" MINIMUM BETWEEN LOW VOLTAGE & LINE VOLTAGE
CONDUITS LIKE SYSTEMS REQUIRE 3" SEPARATION

NOTES FOR CLEARANCES:

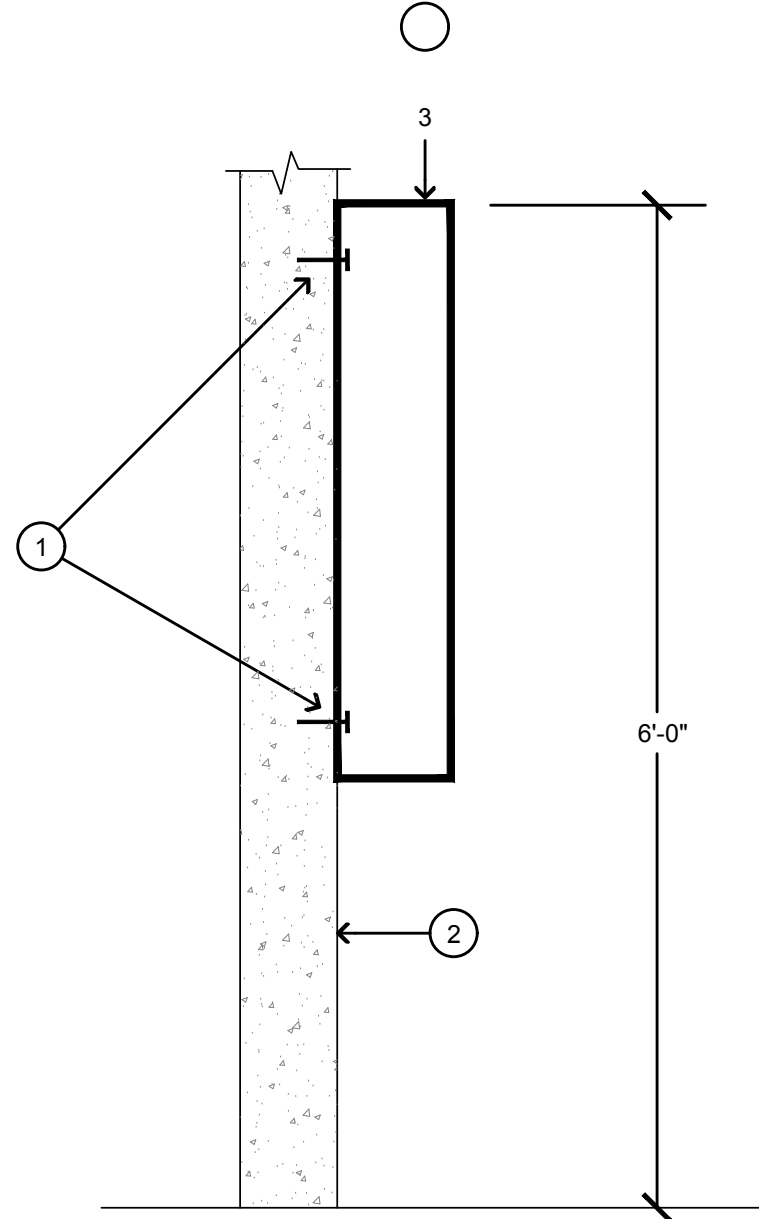
- THE MINIMUM RECOMMENDED SEPARATIONS BETWEEN TELECOMMUNICATIONS CONDUIT SYSTEMS AND OUTSIDE SURFACES OF FOREIGN STRUCTURES VARY IN ACCORDANCE WITH REGIONAL STANDARDS, CODES, AND REGULATIONS:
 - 6" MIN. WHEN CROSSING PIPES (E.G., GAS, WATER, OIL)
 - 12" MIN. WHEN PARALLEL TO PIPES (E.G., GAS, WATER, OIL)
 - 3" MIN. CONCRETE FOREIGN CONDUIT (POWER OR OTHER)
 - 4" MIN. MASONRY (POWER OR OTHER)
 - 12" MIN. OF WELL-TAMPED EARTH (POWER OR OTHER)
- THE TOP OF CONDUIT SHOULD BE LOCATED AT A SUFFICIENT DEPTH (NORMALLY 24"-30") BELOW SURFACE GRADE SO BOTH LIVE OR DYNAMIC AND DEAD (STATIC) OR EARTH LOADS CAN BE SUSTAINED BY THE CONDUIT STRUCTURE.

NOTES:

- SAW CUT, TRENCH & BACKFILL FOR NEW CONDUITS. PATCH WALKWAY TO MATCH (E) SURROUNDING SURFACES. CARE SHALL BE TAKEN TO PROTECT EXISTING TREES. RESEED OR RESOD (E) DISTURBED PLANTED AREAS TO ARCHITECT'S SATISFACTION.
- BASE MATERIAL TO BE REPLACED TO THE DEPTH OF EXISTING BASE AND COMPACTED TO A MIN. 95% RELATIVE COMPACTION. A.C. MAY BE SUBSTITUTED FOR BASE MATERIAL. WHEN USED AS BACKFILL, CLASS 100-E-100 P.C.C. MAY BE SUBSTITUTED FOR BASE MATERIAL.

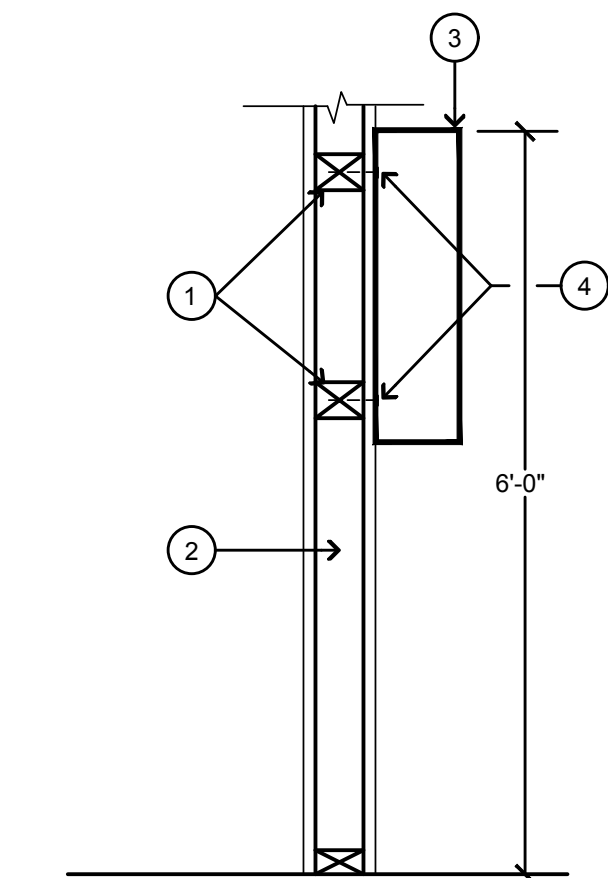
3 TYPICAL TRENCH SECTION

NO SCALE



2 SURFACE MOUNTED PANEL DETAIL

NO SCALE

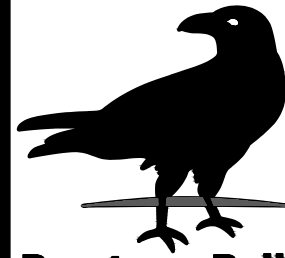


DETAIL NOTES:

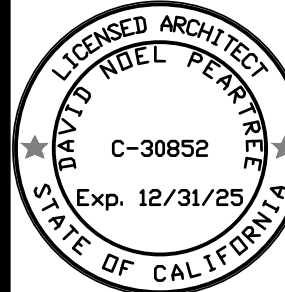
- 4" x 4" BLOCKING BETWEEN STUDS WITH SIMPSON STRONG-TIE FRAMING CLIP A35. TOP AND BOTTOM EACH END
- WALL STUDS
- PANEL
- 1/2" DIA. LAG SCREW INTO BLOCKING MIN. 2 1/2" PENETRATION; PER-DRILL TO AVOID SPLITTING; TYP. (4) PER PANEL AT CORNERS

1 SURFACE MOUNTED PANEL DETAIL

NO SCALE



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ELECTRICAL DETAILS
BACK-UP GENERATOR FOR:
CHUALAR UNION ELEMENTARY SCHOOL
24285 LINCOLN ST., CHUALAR, CA 93925
CHUALAR UNION SCHOOL DISTRICT

REV.	DATE	DESCRIPTION
1		
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SCALE: AS NOTED

DRAWN: CADD

JOB: 25050

SHEET:

E601

SECTION 26 05 73

GENERAL ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

- 1.01 Description of Work:
 - A. Furnish and install all required in-place equipment, conduits, conductors, cables and any miscellaneous materials for the satisfactory interconnection and operation of all associated electrical systems.
- 1.02 Submittals:
 - A. As specified in Division 1. Submit to the Facilities Manager & Architect shop drawings, manufacturer's data and certificates for equipment, materials and finish, and pertinent details for each system specified. Information to be submitted includes manufacturer's descriptive literature of cataloged products, equipment, drawings, diagrams, performance and characteristic curves as applicable, test data and catalog cuts. Obtain written approval before procurement, fabrication, or delivery of the items to the job site.
 - B. Proposed substitutions of products will not be reviewed or approved prior to awarding of the Contract.
 - C. Substitutions shall be proven to the Facilities Manager & Architect to be equal or superior to the specified product. Facilities Manager & Architect's decision is final. The Contractor shall pay all costs incurred by the Facilities Manager & Architect in reviewing and processing any proposed substitutions whether or not a proposed substitution is accepted.
 - D. If a proposed substitution is rejected, the contractor shall furnish the specified product at no increase in contract price.
 - E. If a proposed substitution is accepted, the contractor shall be completely responsible for all dimensional changes, electrical changes, or changes to other work which are a result of the substitution. The accepted substitution shall be made at no additional cost to the owner or design consultants.
- 1.03 Quality Assurance:
 - A. Codes: All electrical equipment and materials, including installation and testing, shall conform to the latest editions of the following applicable codes:
 1. California Electrical Code (CEC)
 2. Occupational Safety and Health Act (OSHA) standards.
 3. All applicable local codes, rules and regulations.
 - B. Electrical Contractor shall possess a C-10 and D-21 license and all other licenses as may be required. Licenses shall be in effect at start of this contract and be maintained throughout the duration of this contract.
 - C. Variances: In instances where two or more codes are at variance, the most restrictive requirement shall apply.
 - D. Standards: Equipment shall conform to applicable standards of American National Standards Institute (ANSI), Electronics Industries Association (EIA), Institute of Electrical and Electronics Engineers (IEEE), and National Electrical Manufacturers Association (NEMA).
 - E. Underwriter Laboratories (UL) listing is required for all equipment and materials where such listing is offered by the Underwriters Laboratories. Provide service entrance labels for all equipment required by the NEC to have such labels.
 - F. The electrical contractor shall guarantee all work and materials installed under this contract for a period of one (1) year from date of acceptance by owner.
 - G. All work and materials covered by this specification shall be subject to inspection at any and all times by representatives of the Owner. Work shall not be closed in or covered before inspection and approval by the owner or his representative. Any material found not conforming with these specifications shall, within 3 days after being notified by the owner, be removed from premises; if said material has been installed, entire expense of removing and replacing same, including any cutting and patching that may be necessary, shall be borne by the contractor.
- 1.04 Contract Documents:
 - A. Drawings: The Electrical Drawings shall govern the general layout of the completed construction.
 - B. Locations of equipment, panels, pullboxes, conduits, stub-ups, ground connections are approximate unless dimensioned; verify locations with the Facilities Manager & Architect prior to installation.
 - C. The general arrangement and location of existing conduits, piping, apparatus, etc., is approximate. The drawings and specifications are for the assistance and guidance of the contractor, exact locations, distances and elevations are governed by actual field conditions. Accuracy of data given herein and on the drawings is not guaranteed. Minor changes may be necessary to accommodate work. The contractor is responsible for verifying existing conditions. Should it be necessary to deviate from the design due to interference with existing conditions or work in progress, claims for additional compensation shall be limited to those for work required by unforeseen conditions as determined by the Facilities Manager & Architect.
 - D. All drawings and divisions of these specifications shall be considered as whole. The contractor shall report any apparent discrepancies to the Facilities Manager & Architect prior to submitting bids.
 - E. The contractor shall be held responsible to have examined the site and compared it with the specifications and plans and to have satisfied himself as to the conditions under which the work is to be performed. It shall be the contractor's responsibility to know all field conditions, whether or not accurately described. No subsequent allowance shall be made for any extra expense due to failure to make such examination.
- 1.05 Closeout Submittals:
 - A. Manuals: Furnish manuals for equipment where manuals are specified in the equipment specifications or are specified in Division 1.
- 1.06 Coordination:
 - A. Coordinate the electrical work with the other trades, code authorities, utilities and the Facilities Manager & Architect.
 - B. Contractor shall pay all inspection and other applicable fees and procure all permits necessary for the completion of this work.
 - C. Where connections must be made to existing installations, properly schedule all the required work, including the power shutdown periods.
 - D. When two trades join together in an area, make certain that no electrical work is omitted.
- 1.07 Job Conditions:
 - A. Operations: Perform all work in compliance with Division 1
 - B. Keep the number and duration of power shutdown periods to a minimum.
 - C. Show all proposed shutdowns and their expected duration on the construction schedule. Schedule and carry out shutdowns so as to cause the least disruption to operation of the Owner's facilities.
 - D. Carry out shutdown only after the schedule has been approved, in writing, by the owner. Submit power interruption schedule 15 days prior to date of interruption.
 - E. Construction Power: Unless otherwise noted in Division 1 of these specifications, contractor shall make all arrangements and provide all necessary facilities for temporary construction power from the owner's on site source. Energy costs shall be paid for by the Owner.
- 1.08 Safety and Indemnity:
 - A. The Contractor is solely and completely responsible for conditions of the job site including safety of all persons and property during performance of the work. This requirement will apply continually and not be limited to normal working hours. The contractor shall provide and maintain throughout the work site proper safeguards including, but not limited to, enclosures, barriers, warning signs, lights, etc. to prevent accidental injury to people or damage to property.
 - B. The Contractor performing work under this Division of the Specifications shall hold harmless, indemnify, and defend the Owner, the Engineer, their consultants, and each of their officers, agents and employees from any and all liability claims, losses, or damage arising out of or alleged to arise from bodily injury, sickness, or death of a person or persons and for all damages arising out of injury to or destruction of property arising directly or indirectly out of or in connection with the performance of the work under this Division of the Specifications, and from the Contractor's negligence in the performance of the work described in the construction contract documents, but not including liability that may be due to the sole negligence of the Owner, the Engineer, their Consultants or their officers, agents and employees.
 - C. If a work area is encountered that contains hazardous materials, the contractor is advised to coordinate with the owner and it's abatement consultant for abatement of hazardous material by the Owner's Representative. "Hazardous materials" means any toxic substance regulated or controlled by OSHA, EPA, State of California or local rules, regulations and laws. Nothing herein shall be construed to create a liability for Asbestos Consulting Engineers regarding hazardous materials abatement measures, or discovery of hazardous materials.
- 1.09 Access Doors:
 - A. The contractor shall install access panels as required where floors, walls or ceilings must be penetrated for access to electrical, control, fire alarm or other specified electrical devices. The minimum size panel shall be 14" x 14" in usable opening. Where access by a service person is required, minimum usable opening shall be 18" x 24".
- 1.10 Arc Flash:
 - A. The contractor shall install a clearly visible arc flash warning to the inside door of all panelboards and industrial control panels, as well as to the front of all switchboards and motor control centers that are a part of this project.
 - B. The warning shall have the following wording: line 1 "WARNING" (in large letters), line 2 "Potential Arc Flash Hazard" (in medium letters), line 3 & 4 "Appropriate Personal Protective Equipment and Tools required when working on this equipment".
- 1.11 All boxes and enclosures for emergency circuits shall be permanently marked with a readily visible red spray painted mark.

PART 2 - PRODUCTS

- 2.01 Nameplates:
 - A. Identify each piece of equipment and related controls with a rigid laminated engraved plastic nameplate. Unless otherwise noted, nameplates shall be melamine plastic 0.125 inch thick, white with black center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the core. Minimum size of nameplates shall be 0.5 by 2.5 inches unless otherwise noted. Letting and engraving shall be to the satisfaction of the Facilities Manager.
 - B. Normal block style. Engrave nameplates with the inscriptions indicated on the Drawings and, if not so indicated, with the equipment name. Securely fasten nameplates in place using two stainless steel or brass screws.
- 2.02 Finish requirements:
 - A. Equipment: Refer to each electrical equipment section of these Specifications for painting requirements of equipment enclosures. Repair any final paint finish which has been damaged or is visibly constructed, revised, delisted and adding to the Drawing Sheets as required. As built Drawings shall be delivered to the Architect within ten (10) days of completion of construction.
 - B. Wiring System: In finished areas, paint all exposed conduits, boxes and fittings to match the color of the surface to which they are affixed.

PART 3 - EXECUTION

- 3.01 Workmanship:
 - A. All electrical equipment and materials shall be installed in a neat and workmanship manner in accordance with the "NECA-I Standard Practices For Good Workmanship in Electrical Contracting". Workmanship of the entire job shall be first class in every respect.
- 3.02 Equipment Installations:
 - A. Provide the required inserts, bolts and anchors, and securely attach all equipment and materials to their supports.
 - B. Do all the cutting and patching necessary for the proper installation work and repair any damage done.
 - C. Earthequake restraints: all electrical equipment, including conduits over 2 inches in diameter, shall be braced or anchored to resist a horizontal force acting in any direction as per CBC Section 1616A Title 24, part 2 and ASCE7-10, section 13.3 and 13.6 and table 13.6-1.
 - D. Structural work: All core drilling, bolt anchor insertion, or cutting of existing structural concrete shall be approved by a California registered structural consulting engineer prior to the execution of any construction. At all floor slabs and structural concrete walls to be drilled, cut or bolt anchors inserted, the contractor shall find and mark all reinforcing in both faces located by means of x-ray, pinch-ometer, or proof-ometer. Submit sketch showing location of rebar and proposed cuts, cores, or bolt anchor locations for approval.
- 3.03 Field Test:
 - A. Perform equipment field tests and adjustments. Properly calibrate, adjust and operationally check all circuits and components, and demonstrate as ready for service.
 - B. Operational Tests: Operationally test all circuits to demonstrate that the circuits and equipment have been properly installed and adjusted and are ready for full-time service. Demonstrate the proper functioning of circuits in all modes of operation, including alarm conditions.
- 3.04 Records:
 - A. Maintain one copy of the contract Drawing Sheets on the site of the work for recording the "as built" condition. After completion of the work, the Contractor shall carefully mark the work as actually constructed, revised, delisted and adding to the Drawing Sheets as required. As built Drawings shall be delivered to the Architect within ten (10) days of completion of construction.
- 3.05 Clean Up:
 - A. Upon completion of electrical work, remove all surplus materials, rubbish, and debris that accumulated during the construction work. Leave the entire area neat, clean, and acceptable to the Facilities Manager & Architect.
- 3.06 Mechanical and Plumbing Electrical Work:
 - A. The requirements for electrical power and/or devices for all mechanical and plumbing equipment supplied and/or installed under this contract shall be coordinated and verified with the following:
 1. Mechanical and Plumbing Drawings.
 2. Mechanical and Plumbing sections of these Specifications.
 3. Manufacturers of the Mechanical and Plumbing equipment supplied.
 - B. The coordination and verification shall include the voltage, ampacity, phase, location and type of disconnect, control, and connection required. Any changes that are required as a result of this coordination and verification shall be a part of this Contract.
 - C. The Electrical Contractor shall furnish and install the following for all mechanical and plumbing equipment:
 1. Line voltage conduit and wiring.
 2. Disconnect switches.
 3. Manual line motor starters.
 - D. All low voltage control wiring for Mechanical and Plumbing equipment shall be installed in conduit. Furnishing, installation and connection of all low voltage conduit, boxes, wiring and controls shall be by the Mechanical and Plumbing Contractor.
 - E. Manual motor starters, where required, shall have toggle type operators with pilot light and melting alloy type overload relays. SQUARE D COMPANY, Class 2510, Type FG-1P (surface) or Type FS-1P (flush) or ITE, WESTINGHOUSE or GENERAL ELECTRIC equal.

SECTION 26 05 26

GROUNDING

PART 1 - EXECUTION

- 1.1 Grounding and Bonding:
 - A. Grounding and bonding shall be as required by codes and local authorities.
 - B. All electrical equipment shall be grounded, including, but not limited to, panel boards, terminal cabinets and outlet boxes.
 - C. The ground pole of receptacles shall be connected to their outlet boxes by means of a copper ground wire connecting to a screw in the back of the box.
 - D. A green insulated copper ground wire, sized to comply with codes, shall be installed in all conduit runs.
 - E. All metal parts of pull boxes shall be grounded per code requirements.
 - F. All ground conductors shall be green insulated copper.

SECTION 26 05 42

CONDUITS, RACEWAYS AND FITTINGS

PART 1 - EXECUTION

- 1.01 Conduit, Raceway and Fitting Installation:
 - A. For conduit runs exposed to weather provide rigid metal (GRS).
 - B. For conduit run underground, in concrete or masonry block wall and under concrete slabs, install minimum 1/2" size nonmetallic (PVC) with PVC elbows. Where conduits transition from underground or under slab to above grade install wrapped rigid metal (GRS) elbows and risers.
 - C. For conduit runs concealed in steel or wood framed walls or in ceiling spaces or exposed in interior spaces above six feet over the finished floor, install EMT.
 - D. Flexible metal conduit shall be used only for the connection of recessed lighting fixtures and motor connections unless otherwise noted on the Drawings. Liquid-tight steel flexible conduit shall be used for motor connections.
 - E. The minimum size raceway shall be 1/2-inch unless indicated otherwise on the Drawings.
 - F. Installation shall comply with the CEC.
 - G. From pull point to pull point, the sum of the angles of all of the bends and offset shall not exceed 360 degrees.
 - H. Conduit Supports: Properly support all conduits as required by the NEC. Run all conduits concealed except where otherwise shown on the drawings.
 1. Exposed Conduits: Support exposed conduits within three feet of any equipment or device and at intervals not exceeding NEC requirements; wherever possible, group conduits together and support on common supports. Support exposed conduits fastened to the surface of the concrete by one-hole clamps, or with channels. Use conduit spacers with one-hole clamps.
 - a. Conduits attached to walls or columns shall be as unobtrusive as possible and shall avoid windows. Run all exposed conduits parallel or at right angles to building lines.
 - b. Group exposed conduits together. Arrange such conduits uniformly and neatly.
 2. Support all conduits within three feet of any junction box, coupling, bend or fixture.
 3. Support conduit risers in shafts with Unistrut Supportstrut, or approved equal, channels and straps.
 4. Moisture Slabs: Provide in accordance with NEC paragraphs 230-8 and 300-5(g).
 5. Where PVC conduit transitions from underground to above grade, provide rigid steel 90's with risers. Rigid steel shall be half-lap wrapped with 20 mil tape and extend minimum 12" above grade. Provide a nylon pull cord in each empty raceway.
 6. Provide galvanized rigid steel factory fittings for galvanized rigid steel conduit.
 7. Slope all underground raceways to provide drainage; for example, slope conduit from equipment that is located inside a building to the pull box or manhole located outside the building.
 - N. Conduits shall be blown out and swabbed prior to pulling wires.

SECTION 26 05 16

LINE VOLTAGE WIRE AND CABLE

PART 1 - PRODUCTS

- 1.01 Conductors:
 - A. Conductors shall be copper, type THHN/THWN/MTW oil and gasoline resistant, 90°C, 600 volt rated insulation.
 - B. Conductors shall be stranded copper.
 - C. Minimum power and control wire size shall be No. 12 AWG unless otherwise noted.
 - D. All conductors used on this Project shall be of the same type and conductor material.
- 1.02 Terminations:
 - A. Manufacturer - Terminals as manufactured by T&B, Burndy or equal.
 - B. Wire Termination: Stranded conductors shall be terminated in clamping type terminations which serve to contain all the strands of the conductor. Curling of a stranded conductor around a screw type terminal is not allowed. For screw type terminations, use a fork type stake-on termination on the stranded conductor. Use only a stake-on tool approved for the fork terminals selected.
 - C. End Slacks - Heat shrink plastic caps of proper size for the wire on which used.
- 1.03 Tape:
 - A. Tape used for terminations and cable marking shall be compatible with the insulation and jacket of the cable and shall be of plastic material.

PART 2 - EXECUTION

- 2.01 Cable Installation:
 - A. Provide the required inserts, bolts and anchors, and securely attach all equipment and materials to their supports.
 - B. Do all the cutting and patching necessary for the proper installation work and repair any damage done.
 - C. Earthequake restraints: all electrical equipment, including conduits over 2 inches in diameter, shall be braced or anchored to resist a horizontal force acting in any direction as per CBC Section 1616A Title 24, part 2 and ASCE7-10, section 13.3 and 13.6 and table 13.6-1.
 - D. All branch circuit wiring shall be run concealed in ceiling spaces, walls, below floors or in crawl spaces unless noted otherwise.
- 2.02 Cable Terminations and Splices:
 - A. Splices - UL Listed wirenuts.
 - B. Terminations - Shall comply with the following:
 1. Make up and form cable and orient terminals to minimize cable strain and stress on device being terminated on.
 2. Burnish oxide from conductor prior to inserting in oxide breaking compound filled terminal.
- 2.03 Circuit and Conductor Identification:
 - A. Color Coding - Provide color coding for all circuit conductors. Insulation color shall be white for neutrals and green for grounding conductors. Conductor colors shall be as follows:

VOLTAGE	PHASE	Color
208/120V	Phase A	Black
	Phase B	Red
	Phase C	Blue
	Neutral	White
	Ground	Green
 - B. Color coding shall be in the conductor insulation for all conductors #10 AWG and smaller; for larger conductors, color shall be either in the insulation or in colored plastic tape applied at every location where the conductor is readily accessible.
 - C. Circuit Identification - All underground distribution and service circuits shall be provided with plastic identification tags in each secondary box and at each termination. Tags shall identify the source transformer of the circuit and the building number(s) serviced by the circuit.
- 2.04 Field Tests:
 - A. All systems shall test free from short circuits and grounds, shall be free from mechanical and electrical defects, and shall show an insulation resistance between phase conductors and ground of not less than the requirements of the CEC. All circuits shall be tested for proper neutral connections.

SECTION 26 05 33

OUTLET, JUNCTION AND PULL BOXES

PART 1 - PRODUCTS

- 1.01 Outlet boxes, Junction and Pull Boxes
 - A. Standard Outlet Boxes: Galvanized, steel, knock-out type of size and configuration best suited to the application indicated on the Drawings. Minimum box size shall be 4 inches square (octagon for most light fixtures) by 1-1/2 inches deep with mud rings as required. Boxes used with conduit "1" or larger shall be minimum 2" deep.
 - B. Switch Boxes: Minimum box size shall be 4 inches square by 1-1/2 inches deep with mud rings as required. Install multiple switches in standard gang boxes with raised device covers suitable for the application indicated.
 - C. Conduit bodies: Cadmium plated, cast iron alloy. Conduit bodies with threaded conduit hubs and neoprene gasketed, cast iron covers. Bodies shall be used to facilitate pulling of conductors or to make changes in conduit direction only. Splices are not permitted in conduit bodies. Crouse-Hinds Form 8 Condulets, Appleton Form 35 Unilets or equal.
 - D. Sheet Metal Boxes: Use standard outlet or concrete ring boxes wherever possible; otherwise use a minimum 16 gauge galvanized sheet metal, NEMA 1 box sized to Code requirements with covers secured by cadmium plated machine screws located six inches on centers. Circle AW Products, Hoffman Engineering Company or equal.
 - E. Flush Mounted Pull boxes and Junction boxes: Provide overlapping covers with flush head cover retaining screws, prime coated.

PART 2 - EXECUTION

- 2.01 Outlet Boxes
 - A. General:
 1. All outlet boxes shall finish flush with building walls, ceilings and floors except in mechanical and electrical rooms above accessible ceiling or where exposed work is called for on the Drawings.
 2. Install raised device covers (plate rings) on all switch and receptacle outlet boxes installed in masonry or stud walls or in furled, suspended or exposed concrete ceilings. Covers shall be of a depth to suit the wall or ceiling finish.
 3. Leave no unused openings in any box. Install close-up plugs as required to seal openings.
 - B. Box Layout:
 1. Outlet boxes shall be installed at the locations and elevations shown on the drawings or specified herein. Make adjustments to locations as required by structural conditions and to suit coordination requirements of other trades.
 2. Locate switch outlet boxes on the latch side of doorways.
 3. Outlet boxes shall not be installed back to back nor shall through-wall boxes be permitted.
 4. Outlet boxes on opposite sides of a common wall shall be separated horizontally by at least one stud or vertical structural member.
 5. For outlets mounted above counters, benches or backslashes, coordinate location and mounting heights with built-in units. Adjust mounting height to agree with required location for equipment served.
 6. On fire rated walls, the total face area of the outlet boxes shall not exceed 100 square inches per 100 square feet of wall area.
 - C. Supports:
 1. Outlet Boxes installed in metal stud walls shall be equipped with brackets designed for attaching directly to the studs or shall be mounted on specified box supports.
 2. Fixture outlet boxes installed in suspended ceiling of gypsum board or lath and plaster construction shall be mounted to 1/2 gauge metal channel bars attached to main ceiling runners.
 3. Fixture outlet boxes installed in suspended ceilings supporting acoustical tiles or panels shall be supported directly from the structure above where pendant mounting lighting fixture are to be installed on the box.
 4. Fixture Boxes above tile ceilings having exposed suspension systems shall be supported directly from the structure above.
 5. Outlet and/or junction boxes shall not be supported by grid or fixture hanger wires at any locations.
- 2.02 Junction And Pull Boxes
 - A. General:
 1. Install junction or pull boxes where required to limit bends in conduit runs to not more than 360 degrees or where pulling tension achieved would exceed the maximum allowable for the cable to be installed. Note that these boxes are not shown on the Drawings.
 2. Locate pull boxes and junction boxes in concealed locations above accessible ceilings or exposed in electrical rooms, utility rooms or storage areas.
 3. Install raised covers (plate rings) on boxes in stud walls or in furled, suspended or exposed concrete ceilings. Covers shall be of a depth to suit the wall or ceiling finish.
 4. Leave no unused openings in any box. Install close-up plugs as required to seal openings.
 5. Identify circuit numbers and panel on cover of junction boxes with black marker pen.
 - B. Box Layouts:
 1. Boxes above hung ceilings having concealed suspension systems shall be located adjacent to openings for removable recessed lighting fixtures.
 - C. Supports:
 1. Boxes installed in metal stud walls shall be equipped with brackets designed for attaching directly to the studs or shall be mounted on specified box supports.
 2. Boxes installed in suspended ceilings of gypsum board or lath and plaster construction shall be mounted to 1/2 gauge metal channel bars attached to main ceiling runners.
 3. Boxes installed in suspended ceilings supporting acoustical tiles or panels shall be supported directly from the structure above.
 4. Boxes mounted above suspended acoustical tile ceilings having exposed suspension systems shall be supported directly from the structure above.

SECTION 26 28 16

CIRCUIT BREAKERS

PART 1 - PRODUCTS

- 1.01 Circuit Breaker: Each circuit breaker shall consist of the following:
 - A. A turn-on case breaker with an over center toggle type mechanism, providing quick-make, quick-break action. Each circuit breaker shall have a permanent trip unit containing individual thermal and magnetic trip elements in each pole. Multiple circuit breakers shall have variable magnetic trip elements which are set by a single adjustment to assure uniform tripping characteristics in each pole. Circuit breakers shall be of the bolt-on type unless otherwise noted.
 - B. Breaker shall be calibrated for operation in an ambient temperature of 40°C.
 - C. Each circuit breaker shall have trip indication by handle position and shall be trip-free.
 - D. Three pole breakers shall be common trip.
 - E. The circuit breakers shall be constructed to accommodate the supply connection at either end of the circuit breaker. Circuit breaker shall be suitable for mounting and operation in any position.
 - F. Breaker shall be rated as shown on Drawings.
 - G. Circuit breaker and/or Fuse/circuit breaker combinations for series connected interrupting ratings shall be listed by UL as recognized component combinations for use in the end-use equipment in which it is installed. Any series rated combination used shall be marked on the end use equipment per CEC section 110-22.
 - H. Breakers shall be UL listed. Circuit breakers shall have removable lugs.
 - I. Lugs shall be UL listed for copper and aluminum conductors.
 - J. Breakers shall be UL listed for installation of mechanical screw type lugs.
 - K. Circuit breakers serving HACR rated loads shall be HACR type. Circuit breakers serving other motor loads shall be motor rated.
 - L. Breakers having an "current limiting" ("CL") shall be of the non-fused type; Square D I-Limiter, Westinghouse Limit-R, or ITE Sentron only.

SECTION 26 32 13

STANDY POWER GENERATOR SYSTEM

PART 1 - GENERAL

- 1.01 RELATED DOCUMENTS:
 - A. The requirements of the General Conditions, Supplementary General Conditions, and Division 1 General Requirements apply to the work of this Section.
- 1.02 DESCRIPTION OF WORK:
 - A. Work included in this Section: Emergency Generator and Automatic transfer switch systems.
 - B. Related work included in other Sections: All other Sections of Division 26.
- 1.03 SUBMITTALS
 - A. Engine:
 1. Automatic Transfer Switch.
 2. Schematic wiring diagrams.
 3. Dimension drawing for actual unit being provided.
 4. Remote annunciator panel.
 5. Submittal heat rate, fuel consumption, and emissions data necessary to apply for and receive Authority to Construct and Permit to operate from local City/County Air Pollution Control District. Generator must include BACT as determined by local City/County Air Resource District.
- 1.04 PRODUCT HANDLING:
 - A. All material shall be carefully loaded, crated, or otherwise protected for shipment.
 - B. The generator shall be delivered to the job site in good condition and ready for installation.
 - C. Inlets and outlets shall be blanked off or plugged with metal caps or covers properly secured before shipment.
- 1.05 WARRANTY:
 - A. The complete standby electric power system, including engine-generator set, shall be warranted for a period of five (5) year or fifteen hundred (1500) operating hours, whichever occurs first, from the date of initial start-up. Multiple warranties for individual components (engine, alternator, controls, etc.) will not be acceptable. Satisfactory warranty documents must be provided. In the judgment of the specifying authority, the manufacturer supplying the warranty for the complete system must have necessary financial strength and technical expertise warranting for individual components (engine, alternator, controls, etc.) will not be acceptable. Satisfactory warranty documents must be provided. In the judgment of the specifying authority, the manufacturer supplying the warranty for the complete system must have necessary financial strength and technical expertise warranting for individual components (engine, alternator, controls, etc.) will not be acceptable. 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