THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
ACTION AGENDA SUMMARY

DEPT: Chief Executive Office **BOARD AGENDA #** *B-7

Urgent ☐ **Routine** ☒ **AGENDA DATE** August 12, 2014

CEO Concurs with Recommendation YES ☒ **NO** ☐ **4/5 Vote Required YES** ☐ **NO** ☒
(Information Attached)

SUBJECT:

Approval to Relocate the Sheriff's Bureau of Administrative Services Modular Office at the Public Safety Center to Prepare the Site for the Construction of Project One (Maximum-Security/Medical-Mental Health Housing Units) Using Existing Budgeted Funds from Other Project Savings; and Authorize the Project Manager to Award a Purchase Order for the Construction; and Related Actions

STAFF RECOMMENDATIONS:

1. Authorize the Project Manager to relocate the Sheriff's Bureau of Administrative Services Offices at the Public Safety Center to prepare the site for the construction of Project One (Maximum-Security/Medical-Mental Health Housing Units).

2. Authorize the Project Manager to use existing budgeted funds from project savings in the California Energy Efficiency Block Grant Capital project fund through an operating transfer of existing budgeted funds to the Chief Executive Office - Plant Acquisition budget.

(Continued on Page 2)

FISCAL IMPACT:

On April 29, 2014, the Board of Supervisors approved the various actions needed to move the AB 900 Phase II Public Safety Center Expansion Project forward toward construction within the approved Project Budget, the approved Project Schedule, consistent with the Agreements with the State of California.

(Continued on Page 2)

BOARD ACTION AS FOLLOWS:

No. 2014-418

On motion of Supervisor Withrow **, Seconded by Supervisor** Chiesa
and approved by the following vote,
Ayes: Supervisors: O'Brien, Chiesa, Withrow, Monteith, and Chairman De Martini
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

1) X **Approved as recommended**
2) _____ **Denied**
3) _____ **Approved as amended**
4) _____ **Other:**
MOTION:

ATTEST: Elizabeth A. King **ELIZABETH A. KING, Assistant Clerk** **File No.**

STAFF RECOMMENDATIONS: (Continued)

3. Delegate to the Project Manager the authority to award a purchase order for construction of the project consistent with the Public Contract Code Sections 22032 (b) and 22034 (e) which allow public projects of $175,000 or less to be let to contract by informal procedures and take any other necessary actions that are consistent with the procedures set forth in the informal bid provisions of the Public Contract Code.

4. Authorize the Project Manager to manage all aspects of the project, including to negotiate and sign contracts, work authorizations, and purchase orders for professional services needed in this phase of the project as long as they are within the approved project budget.

5. Authorize the Project Manager to negotiate and sign change orders up to $25,000, consistent with the County's Change Order Policy, as long as they are within the previously approved project budget.

FISCAL IMPACT: (Continued)

On June 17, 2014, the Board of Supervisors conditionally approved the total design-build construction contract awards for all three of the AB 900 Phase II Public Safety Center Jail Expansion projects conditioned upon State approval as outlined in the chart below:

AB 900 Phase II Public Safety Center Expansion Project	Design-Build Construction Contractor	Construction Award
Project One (Maximum-Security Units/Mental Health Units)	Hensel Phelps	$64,943,000
Project Two (Day Reporting Facility)	Simile Construction Service, Inc.	$3,777,000
AB 900 Phase II Public Safety Center Expansion Total Construction Award		$68,720,000
County Funded Project	**Design-Build Construction Contractor**	**Construction Award**
Project Three (Intake, Release, Transportation)	Hensel Phelps	$17,749,000

Since that time, the Department of Finance has approved the design-build construction contracts for all three projects, design has commenced on each of the projects, and staff has been working diligently to mobilize the construction site. Project One will result in the construction of 552 maximum-security and medical-mental health housing beds, and the Sheriff's Bureau of Administrative Services (BAS) modular office at the Public Safety Center site is currently located directly within the construction site.

At this time, Staff recommends the Board of Supervisors approve the relocation of the BAS modular office to an adjacent, vacant existing location within the Public Safety Center site and that the relocation coincide with the start of construction of Project One (Maximum-Security/Medical-Mental Health Housing Units). Staff also recommends the Board of Supervisors delegate to the Project Manager the authority to award a purchase order for construction of the relocation project consistent with Public Contract Code Sections 22032(b) and 22034(e) which allow public projects of $175,000 or less to be let to contract by informal procedures outlined in more detail in the discussion section below. This construction effort is recommended to be funded from existing budgeted funds from project savings in the California Energy Efficiency Block Grant Capital project fund through an operating transfer to the Chief Executive Office – Plant Acquisition, as this is not an AB 900 Phase II Jail Construction funding reimbursable expense. The total estimated project budget for the relocation of the BAS Modular is estimated to range from $90,000-$125,000, which will include the relocation of the modular office, grading, underground utilities, and site fencing.

DISCUSSION:

The Sheriff's Office Bureau of Administrative Services (BAS) oversees many different functions including adult detention classification, training, scheduling, Title 15 Compliance, Prison Rape Enforcement Act (PREA) compliance and support services, which include the kitchen, laundry, and commissary. BAS is composed of Sheriff's Office and Probation Department staff.

The function of BAS is wholly contained in a 2,100 square foot modular trailer located in the middle of the Public Safety Center and is now located within the footprint of Project One that will be constructed by the design-build team of Hensel Phelps. Time is of the essence to relocate the modular office at the Public Safety Center to ensure the project can proceed on schedule.

The current location of the BAS modular trailer is squarely in the carveout for the AB 900 Project One. Before construction can commence, it will be necessary to relocate the BAS trailer and the corresponding utility hookups to a different location outside the carveout so that the BAS functions may continue uninterrupted. Because the projected cost of the relocation is projected to be less than $175,000, the informal bidding approach contemplated by the Public Contract Code is appropriate.

Public Contract Code Section 22032(b) provides that public projects of one hundred seventy-five thousand dollars ($175,000) or less may be let to contract by informal procedures so long as the governing body has by resolution elected to become subject to the uniform construction cost accounting procedures, an action the County of Stanislaus took several years ago. Public Contract Code Section 22034(e) allows the

governing body of the public agency to delegate the authority to award informal contracts to an appropriate person. As with other public agency procurements, Public Contract Code Section 22038(a) empowers a public agency to reject any bids presented that exceed the budget for the project. In such a case, the agency has the authority to revise the project scope and relet the project.

Next Recommended Action

Delegate to the Project Manager the authority to award a purchase order for construction of the project consistent with the Public Contract Code Sections 22032 (b) and 22034 (e) which allow public projects of $175,000 or less to be let to contract by informal procedures and take any other necessary actions that are consistent with the procedures set forth in the informal bid provisions of the Public Contract Code.

Pursuant to authority granted at a Board of Supervisors meeting on April 29, 2014, the Project Manager has commenced an informal process to obtain pricing for the relocation of the BAS trailer. Because initial pricing exceeded the budget, the Project Manager has reduced scope in order to obtain reduced pricing.

Consistent with the Public Contract Code Sections 22032 (b) and 22034 (e), this action will delegate to the Project Manager the authority to award a purchase order using the informal bid process to procure the construction of the relocation of the BAS modular office Staff recommends the Board of Supervisors delegate the necessary authority to the Project Manager to complete the procurement process and expeditiously complete the relocation project so that construction on Project One is not delayed.

Schedule

The BAS Modular Relocation Project at the Public Safety Center has a construction duration of approximately 30 calendar days.

POLICY ISSUES:

Approval of this action supports the Board's Priorities of a Safe Community and Efficient Delivery of Public Services by improving site utility infrastructure for maintenance and expansion of the Public Safety Center.

STAFFING IMPACT:

There is no additional staffing impact associated with this item. Existing Chief Executive Office-Capital Projects staff will manage the project in coordination with Sheriff's Jail Transition Team.

CONTACT INFORMATION:

Patricia Hill Thomas. Chief Operations Officer. Telephone: (209) 525-6333

STANISLAUS COUNTY CHIEF EXECUTIVE OFFICE

1010 10TH STREET, SUITE 6800, MODESTO, CA 95354

PURCHASE ORDER FOR CONSTRUCTION WORK

STANISLAUS COUNTY PUBLIC SAFETY CENTER
BAS MODULAR RELOCATION PROJECT

DATE: September 3, 2014

1. IDENTIFICATION OF CONTRACTOR:

CONTRACTOR: Hensley's Paving and General Engineering, Inc.
P.O. Box 449
Hickman, California 95323

LICENSE NO: 828289

2. SCOPE OF THE WORK

Contractor shall provide for on-site improvements at the Stanislaus County Public Safety Center (PSC) 200 East Hackett Road, Ceres, California to relocate an existing 2,100 square foot modular facility and storage container at the PSC site. Contractor shall provide for the utility disconnection of the existing modular facility, in addition to improvements relating to development of a bare dirt site with grading improvements, sanitary sewer and domestic water service, electrical and associated conduits for data and communication. See plans and specifications for full description of the work hereto attached:

a. On-Site Improvement Plans and Specifications Stanislaus County Public Safety Center BAS Modular Relocation Project issued June 27, 2014.
b. Revised Plans and Specifications issued July 18, 2014.
c. Revised Plans and Specifications issued August 7, 2014.

3. COMPENSATION FOR WORK. Contractor's total compensation for the Work performed under this Order is $89,400.00, to be paid as: (1) X lump sum; (2) ☐ lump sum with progress payments; (3) ☐ per attached schedule of rates and charges, up to a guaranteed not to exceed amount of $_____.

4. SCHEDULE OF PERFORMANCE FOR THE WORK. Contractor shall commence and complete the Work by the following dates:

Commencement Date shall be on the date established in the Notice to Proceed. County reserves the right to modify or alter the Commencement Date of the Work.

Substantial Completion Date: Within twenty-one (21) calendar days of Commencement Date.

Final Completion Date: Within fifteen (15) calendar days of Substantial Completion.

4.01 Liquidated Damage Amounts.

A. As liquidated damages for delay Contractor shall pay Owner Five Hundred dollars ($500.00) for each Day that expires after the time specified herein for Contractor to achieve Substantial Completion of the entire Work, until achieved.
B. As liquidated damages for delay Contractor shall pay Owner Five Hundred dollars ($500.00) for each Day that expires after the time specified herein for Contractor to achieve Final Completion of the entire Work, until achieved.

4.02 Scope of Liquidated Damages

DO NOT SUBSTITUTE

A. Contractor and Owner agree that because of the nature of the Project, it would be impractical or extremely difficult to fix the amount of such actual damages incurred by Owner because of a delay in completion of all or any part of the Work. Contractor and Owner agree that specified measures of liquidated damages shall be presumed to be the amount of such damages actually sustained by Owner, and that because of the nature of the Project, it would be impracticable or extremely difficult to fix the actual damages.

B. Liquidated damages for delay shall cover administrative, overhead, interest on bonds, and general loss of public use damages suffered by Owner as a result of delay. Liquidated damages shall not cover the cost of completion of the Work, damages resulting from Defective Work, lost revenues or costs of substitute facilities, or damages suffered by others who then seek to recover their damages from Owner (for example, delay claims of other contractors, subcontractors, tenants, or other third-parties), and defense costs thereof. Owner may deduct from any money due or to become due to Contractor subsequent to time for completion of entire Work and extensions of time allowed pursuant to provisions hereof, a sum representing then-accrued liquidated damages.

5. TERMS AND CONDITIONS.

5.01 Contractor shall perform the Work in accordance with the terms and conditions of this Order (INCLUDING THE GENERAL TERMS AND CONDITIONS) and, if applicable, in accordance with all insurance, security, permit and other requirements. Contractor has read, negotiated and expressly accepts all terms on the reverse.

5.02 Order number must appear on all invoices and correspondence. Send invoices in duplicate to **Stanislaus County Chief Executive Office, 1010 10th Street, Suite 6800, Modesto, CA 95354** immediately upon performance of Work ordered hereon.

5.03 Changes made to printed Terms and Conditions on this Order are null and void unless approved in writing by Owner's counsel.

5.04 To the extent required by the General Terms and Conditions, Contractor must comply with Appendix A – Insurance, Appendix B – Construction Performance Bond, and Appendix C – Construction Labor and Materials Payment Bond.

CONTRACTOR: **Hensley's Paving and General Engineering, Inc.**

Signature

Tim Hensley

Print Name & Title

Tim Hensley – President

9-5-14

Date

OWNER: **Stanislaus County**

Signature

Patricia Hill Thomas

Chief Operations Officer / Assistant Executive Officer

Print Name & Title

9-17-14

Date

This Purchase Order will be without any force or effect if not properly signed and approved by the Owner as herein provided.

DO NOT SUBSTITUTE

GENERAL TERMS AND CONDITIONS

ARTICLE 1 – TERMS OF PERFORMANCE

1.01 **Purchase Order ("Order") Force and Effect.** This Order shall control over all inconsistent provisions in any proposal. The provisions of this Order (which may include attachments) constitute the entire agreement between the Contractor and Owner regarding the Work described herein. No representation, term or covenant not expressly specified in this Order shall, whether oral or written, be a part of this agreement. No modification of this Order shall be effective unless it is in writing. This Order shall govern the Work described herein (whenever performed), and shall supersede all other prior purchase orders and agreements between Contractor and Owner with respect to the Work described herein. This Order may not be modified, nor may compliance with any of its terms be waived, except by written instrument executed and approved by fully authorized representatives of Owner and Contractor. The headings in this Order are for convenience only and do not affect the construction of this Order.

1.02 **Performance of Work/No Assignment.** Time is of the essence in the performance of the Work. Contractor will perform the Work in a skillful and workmanlike manner; comply fully with criteria established by Owner, and with applicable laws, codes, and all applicable industry standards. Contractor shall maintain its work area in a clean and sanitary condition, clear debris and trash at the end of each work day, and shall not damage or disrupt any property unless specifically part of the scope of this Order. Contractor shall not contract any portion of the Work or otherwise assign this Order without prior written approval of Owner. (Contractor shall remain responsible for compliance with all terms of this Order, regardless of the terms of any such assignment.) The Contractor shall permit Owner (or its designees) access to the work area, Contractor's shop, or any other facility, to permit inspection of the Work at all times during construction and/or manufacture and fabrication. The granting of any progress payment, and any inspections, reviews, approvals or oral statements by any Owner representative, or certification by any governmental entity, shall in no way limit Contractor's obligations under this Order. Either party's waiver of any breach, or the omission or failure of either party, at any time, to enforce any right reserved to it, or to require strict performance of any provision of this Order, shall not be a waiver of any other right to which any party is entitled, and shall not in any way affect, limit, modify or waive that party's right thereafter to enforce or compel strict compliance with every provision hereof. Owner shall have, at all times, set-off rights with respect to any payment and Contractor's failure to perform the terms of this Order.

ARTICLE 2 – LEGAL AND MISCELLANEOUS

2.01 **Records and Payment Requests.** Contractor shall submit all billings with all necessary invoices or other appropriate evidence of proper performance, after which Owner shall make payment within thirty (30) days. Upon Owner's written request, Contractor shall make available to Owner, its authorized agents, officers, or employees, any and all ledgers, books of accounts, invoices, vouchers, cancelled checks, and other records or documents evidencing or relating to the Work or the expenditures and disbursement charged to Owner, and all correspondence, internal memoranda, calculations, books and accounts, records documenting its work under its Order, and invoices, payrolls, timecards, records and all other data related to matters covered by this Order. Contractor shall furnish to Owner, its authorized agents, officers, or employees, such other evidence or information as Owner may require with regard to the Work or any such expenditure or disbursement charged by Contractor. Contractor shall maintain all such documents and records prepared by or furnished to Contractor during the course of performing the Work for at least five (5) years following completion of the Work, except that all such items pertaining to hazardous materials shall be maintained for at least thirty (30) years. Contractor shall permit Owner to audit, examine and make copies, excerpts and transcripts from such records. The State of California or any federal agency having an interest in the subject of this Order shall have the same rights conferred to Owner by this section. Such rights shall be specifically enforceable.

2.02 **Independent Contractor.** Contractor is an independent Contractor and does not act as Owner's agent in any capacity, whatsoever. Contractor is not entitled to any benefits that Owner provides to Owner employees, including, without limitation, insurance, worker's compensation benefits or payments, pension benefits, health benefits or insurance benefits. Terms within this Order regarding direction apply to and concern the result of the Contractor's provision of Work not the means, methods, or scheduling of the Contractor's work. Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures with respect to its provision of Work under this Order. Contractor shall pay all payroll taxes imposed by any governmental entity and will pay all other taxes not specifically identified in this Order as Owner's responsibility.

2.03 **Indemnity/Liability.** Contractor shall defend, indemnify and save harmless, to the fullest extent permitted by law the Owner and all of its officers, directors, representatives, agents and employees, against all loss, cost, damage expense and liability arising from or related to bodily injury to or death of any person or damage to any property, or resulting from any breach and/or Contractor's negligence in performing this order. Notwithstanding any provision of this Order, Owner shall not be liable to Contractor or anyone claiming under it, in contract or tort, for any special, consequential, indirect or incidental damages arising out of or in connection with this Order or the Work. Owner's rights and remedies, whether under this Order or other applicable law, shall be cumulative and not subject to limitation.

2.04 **Compliance with Laws; Conflict of Interests.** Contractor agrees to comply with all applicable federal and state laws, regulations and policies, as amended, including those regarding discrimination, unfair labor practices, anti-kick-back, collusion, and the provisions of the Americans with Disability Act. Contractor, its officer, partners, associates, agents, and employees, shall not make, participate in making, or in anyway attempt to use the position afforded them by this purchase order to influence any governmental decision in which he or she knows or has reason to know that he or she has a financial interest under applicable state, federal and local conflict of interest regulations. Contractor warrants that no person or agency has been employed or retained to solicit or obtain this Order upon an agreement or understanding for a contingent fee, except a bona fide employee or agency.

2.05 **Termination; Suspension; Disputes.** Owner may direct Contractor to terminate, suspend, delay, interrupt or accelerate Work, in whole or in part, for such periods of time as Owner may determine in its sole discretion. Owner will issue such directives in writing, and may do so, in whole or in part, for its convenience or due to Contractor's fault. Owner will compensate Contractor for extra costs resulting from such directives only to the extent that Owner issues such directives for its convenience and not due to Contractor's fault (but Owner shall not compensate Contractor for costs, profit or overhead anticipated to be earned or incurred on Work terminated for Owner's convenience.) Contractor shall continue its work throughout the course of any dispute, and Contractor's failure to continue work during a dispute shall be a material breach of this Order. All claims by Contractor against Owner shall be submitted in writing to Owner, and shall be governed by Public Contract Code Sections 20104 – 20104.6, after which time the one year time period in Government Code Section 911.2 shall be, pursuant to Government Code Section 930.2, reduced to 90 days.

2.06 **Execution; Venue; Limitations.** This Order shall be deemed to have been executed in Stanislaus County, California. Enforcement of this Order shall be governed by the laws of the State of California, excluding its conflict of laws rules. Except as expressly provided in this Order, nothing in this Order shall operate to confer rights or benefits on persons or entities not party to this Order. As between the parties to this Order, any applicable statute of limitations for any act or failure to act shall commence to run on the date of Owner's issuance of the final Certificate for Payment, or termination of this Order, whichever is earlier, except for latent defects, for which the statute of limitation shall begin running upon discovery of the defect and its cause.

2.07 **Employee Wages; Records; Apprentices.** Contractor shall pay prevailing wages to its employees on any purchase order contract in excess of $1,000.00 (one thousand dollars). Copies of the prevailing rate of per diem wages are on file at Owner's principal office. Contractor shall comply with the 8-hours per day/40 hours per week/overtime/working hours restrictions for all employees, pursuant to the California Labor Code. Contractor and all subcontractors shall keep and maintain accurate payroll records of employees working in relation to this Order, and certify these records upon request, pursuant to Labor Code Section 1776. Contractor shall comply fully with Labor Code Section 1777.5 in the hiring of apprentices for work relating to this Order. If this contract exceeds $2000 and is funded with federal funds, then Contractor shall pay federal Davis Bacon wages and comply with applicable federal requirements.

2.08 **Worker's Compensation.** Pursuant to California Labor Code §§ 1860 and 1861, in accordance with the provisions of Section 3700 of the Labor Code, every contractor will be required to secure the payment of compensation to his employees. Contractor represents that it is 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 Contractor shall comply with such provisions before commencing the performance of the Work of this Order.

2.09 **Bidder's Security; Construction Performance Bond; Construction Labor and Materials Payment Bond; Securities in Lieu of Retention Escrow Account.**

A. For all Orders where the estimated cost of construction exceeds $6,500, Contractor's bid shall be accompanied by bidder's security in the form of (1) cash, (2) a cashier's check made payable to the County, (3) a certified check made payable to the County, or (4) a bidder's bond executed by an admitted surety insurer, made payable to the County. Upon an award to the lowest bidder, the security of an unsuccessful bidder shall be returned in a reasonable period of time, but in no event shall that security be held by the County beyond 60 days from the time the award is made.

B. For all Orders where the estimated cost of construction exceeds $25,000, the selected Contractor shall be required to provide both a construction performance bond and a construction labor and material payment bond, in accordance with Civil Code Section 3248 and Appendix B – Construction Performance Bond and Appendix C – Construction Labor and Materials Payment Bond. Contractor may not substitute cash in lieu of the required bond(s).

C. For all Orders where the estimated cost of construction exceeds $6,500, the selected Contractor shall be required to provide a construction performance bond in accordance with Appendix B – Construction Performance Bond. Contractor may not substitute cash in lieu of the required bond(s).

D. If the Order specifies performance retention, then Contractor may elect to substitute securities or direct payment to an escrow account, pursuant to Public Contract Code Section 22300 (incorporated herein by this reference).

2.010 **Earthwork and Underground Facilities.** Contractor shall notify Owner in writing of any unknown underground 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, pursuant to Section 7104 of the Public Contract Code. For any work under this Order involving trench shoring that costs in excess of $25,000.00 (twenty-five thousand dollars), Contractor shall submit and Owner (or a registered civil or structural engineer employed by Owner) must accept, in advance of excavation, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches, pursuant to Labor Code Section 6705. If such plan varies from the shoring system standards, the plan shall be prepared by a registered civil or structural engineer. Consistent with California Government Code §4215, as between Owner and Contractor, Owner will be responsible for the timely removal, relocation, or protection of existing main or trunk line utility facilities located on the Site only if such utilities are not identified in this Order or information made available for bidding.

Appendix A to Purchase Order for Construction Work

INSURANCE

1. Commercial General Liability Insurance, written on an "occurrence" basis, which shall provide coverage for bodily injury, death and property damage resulting from operations, liability for slander, false arrest and invasion of privacy, blanket contractual liability, broad form endorsement, and completed operations, personal and advertising liability, with limits of not less than **$1,000,000** general aggregate and **$1,000,000** each occurrence, subject to a deductible of not more than **$1,000** payable by Contractor.

2. Business Automobile Liability Insurance with limits not less than **$1,000,000** each occurrence including coverage for owned, non-owned and hired vehicles, subject to a deductible of not more than **$1,000** payable by Contractor.

3. Workers' Compensation Employers' Liability limits not less than **$1,000,000** each accident, **$1,000,000** per disease and **$1,000,000** aggregate. Contractor's Workers' Compensation Insurance policy shall contain a Waiver of Subrogation against Stanislaus County, its officers, directors, officials, agents, employees and volunteers. In the event Contractor is self-insured, it shall furnish Certificate of Permission to Self-Insure signed by Department of Industrial Relations Administration of Self-Insurance, State of California.

4. Professional Liability Insurance with limits not less than **$1,000,000** each claim and aggregate, all with respect to negligent acts, errors or omissions in connection with services to be provided under this Agreement, and any deductible not to exceed **$10,000** for each claim, with no exclusion for claims of one insured against another insured and with tail coverage for a period of five (5) years after the completion of the Services.

5. Builder's Risk Insurance, including but not limited to coverage against loss or damage to the work by fire, lightening, wind, hail, aircraft, riot, vehicle damage, explosion, smoke, falling objects, vandalism, malicious mischief, collapse, and other such hazards as are normally covered by such coverage. Such insurance shall be in amount equal to the replacement cost (without deduction for depreciation and subject to stipulated value in lieu of average clause) of all construction constituting any part of the work, excluding the cost of excavations, of grading and filling of the land, and except that such insurance may be subject to deductible clauses not to exceed **$10,000** for any one loss. Such insurance will not cover loss or damage to Contractor's equipment, scaffolding or other materials not to be consumed in the construction of the work. The insurer shall waive all rights of subrogation against Owner.

6. Insurance policies in Appendix A shall contain an endorsement containing the following terms:

6.01 Stanislaus County, its officers, directors, officials, agents, employees, and volunteers, shall be named as additional insureds, but only with respect to liability arising out of the activities of the named insured, and there shall be a waiver of subrogation as to each named and additional insured.

6.02 The policies shall apply separately to each insured against whom claim is made or suit is brought except with respect to the limits of the company's liability.

6.03 Written notice of cancellation, non-renewal or of any material change in the policies shall be mailed to Owner thirty (30) days in advance of the effective date thereof.

6.04 Insurance shall be primary insurance and no other insurance or self-insured retention carried or held by any named or additional insureds other than Contractor shall be called upon to contribute to a loss covered by insurance for the named insured.

7. Certificates of Insurance and Endorsements shall have clearly typed thereon the Project Name, shall clearly describe the coverage and shall contain a provision requiring the mailing of written notices of cancellation described in clause 6.03 above.

8. All policies of insurance shall be placed with insurers acceptable to County. The insurance underwriter(s) must be duly licensed to do business in the State of California and (other than for workers' compensation) must have an A. M. Best Company rating of **A-,VII** or better. Required minimum amounts of insurance may be increased should conditions of Work, in opinion of County, warrant such increase. Contractor shall increase required insurance amounts upon direction by County.

Appendix B to Purchase Order for Construction Work

CONSTRUCTION PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS:

1. THAT WHEREAS, **Stanislaus County**, a public agency of the State of California ("Owner") has awarded to **Hensley's Paving and General Engineering, Inc.** as Principal a Purchase Order dated the third day of September, 2014 (the "Contract"), titled BAS MODULAR RELOCATION PROJECT, located at 200 East Hackett Road, Ceres, California 95307 in the amount of $89,400.00, which Contract is by this reference made a part hereof, for the work described as follows:

   Contractor shall provide for on-site improvements at the Stanislaus County Public Safety Center (PSC) 200 East Hackett Road, Ceres, California to relocate an existing 2,100 square foot modular facility and storage container at the PSC site. Contractor shall provide for the utility disconnection of the existing modular facility, in addition to improvements relating to development of a bare dirt site with grading improvements, sanitary sewer and domestic water service, electrical and associated conduits for data and communication. See plans and specifications for full description of the work hereto attached:

   a. On-Site Improvement Plans and Specifications Stanislaus County Public Safety Center BAS Modular Relocation Project issued June 27, 2014.
   b. Revised Plans and Specifications issued July 18, 2014.
   c. Revised Plans and Specifications issued August 7, 2014.

2. AND WHEREAS, Principal is required to furnish a bond in connection with the Contract, guaranteeing the faithful performance thereof;

3. NOW, THEREFORE, we, the undersigned Principal and _____ as Surety are held and firmly bound unto Owner in the sum of 100% OF THE CONTRACT PRICE to be paid to Owner or its successors and assigns; for which payment, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

4. THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal, or its heirs, executors, administrators, successors, or assigns approved by Owner, shall promptly and faithfully perform the covenants, conditions, and agreements of the Contract during the original term and any extensions thereof as may be granted by Owner, with or without notice to Surety, and during the period of any guarantees or warranties required under the Contract, and shall also promptly and faithfully perform all the covenants, conditions, and agreements of any alteration of the Contract made as therein provided, notice of which alterations to Surety being hereby waived, on Principal's part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify, defend, protect, and hold harmless Owner as stipulated in the Contract, then this obligation shall become and be null and void; otherwise it shall be and remain in full force and effect.

5. No extension of time, change, alteration, modification, or addition to the Contract, or of the work required thereunder, shall release or exonerate Surety on this bond or in any way affect the obligation of this bond; and Surety does hereby waive notice of any such extension of time, change, alteration, modification, or addition.

6. Whenever Principal shall be and declared by Owner in default under the Contract, Surety shall promptly remedy the default, or shall promptly:

6.01 Undertake through its agents or independent contractors, reasonably acceptable to Owner, to complete the Contract in accordance with its terms and conditions and to pay and perform all obligations of Principal under the Contract, including without limitation, all obligations with respect to warranties, guarantees, indemnities, and the payment of liquidated damages; or

6.02 Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and, upon determination by Owner of the lowest responsible bidder, arrange for a contract between such bidder and Owner and make available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Sum, and to pay and perform all obligations of Principal under the Contract, including, without limitation, all obligations with respect to warranties, guarantees, and the

payment of liquidated damages; but, in any event, Surety's total obligations hereunder shall not exceed the amount set forth in the third paragraph hereof. The term "balance of the Contract Sum," as used in this paragraph, shall mean the total amount payable by Owner to the Principal under the Contract and any amendments thereto, less the amount paid by Owner to Principal.

7. Surety's obligations hereunder are independent of the obligations of any other surety for the performance of the Contract, and suit may be brought against Surety and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing Owner's rights against the others. Surety may not use Contractor to complete the Contract absent Owner's Consent.

8. No right of action shall accrue on this bond to or for the use of any person or corporation other than Owner or its successors or assigns.

9. Surety may join in any proceedings brought under the Contract and shall be bound by any judgment.

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

IN WITNESS WHEREOF, we have hereunto set our hands this _____ day of _____, 20___.

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

Appendix C to Purchase Order for Construction Work

CONSTRUCTION LABOR AND MATERIAL PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS:

1. THAT WHEREAS, the **Stanislaus County** ("Owner") has awarded to **Hensley's Paving and General Engineering, Inc.** as Principal a Purchase Order dated the third day of September, 2014 (the "Order"), titled BAS MODULAR RELOCATION PROJECT located at 200 East Hackett Road, Ceres, California 95307 in the amount of $89,400.00, which Order is by this reference made a part hereof, for the work described as follows:

   Contractor shall provide for on-site improvements at the Stanislaus County Public Safety Center (PSC) 200 East Hackett Road, Ceres, California to relocate an existing 2,100 square foot modular facility and storage container at the PSC site. Contractor shall provide for the utility disconnection of the existing modular facility, in addition to improvements relating to development of a bare dirt site with grading improvements, sanitary sewer and domestic water service, electrical and associated conduits for data and communication. See plans and specifications for full description of the work hereto attached:

   a. On-Site Improvement Plans and Specifications Stanislaus County Public Safety Center BAS Modular Relocation Project issued June 27, 2014.
   b. Revised Plans and Specifications issued July 18, 2014.
   c. Revised Plans and Specifications issued August 7, 2014.

2. AND WHEREAS, Principal is required to furnish a bond in connection with the Order to secure the payment of claims of laborers, mechanics, material suppliers, and other persons as provided by law;

3. NOW, THEREFORE, we, the undersigned Principal and _____ as Surety, are held and firmly bound unto Owner in the sum of 100% OF THE ORDER PRICE ($89,400.00), for which payment well and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

4. THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal, or its heirs, executors, administrators, successors, or assigns approved by Owner, or its subcontractors shall fail to pay any of the persons named in California Civil Code §3181, or amounts due under the State of California Unemployment Insurance Code with respect to work or labor performed under the Order, or for any amounts required to be deducted, withheld, and paid over to the State of California Employment Development Department from the wages of employees of Principal and subcontractors pursuant to Section 13020 of the State of California Unemployment Insurance Code with respect to such work and labor, that Surety will pay for the same in an amount not exceeding the sum specified in this bond, plus reasonable attorneys' fees, otherwise the above obligation shall become and be null and void.

5. This bond shall inure to the benefit of any of the persons named in California Civil Code §3181, as to give a right of action to such persons or their assigns in any suit brought upon this bond. The intent of this bond is to comply with the California Mechanic's Lien Law.

6. Surety, for value received, hereby expressly agrees that no extension of time, change, modification, alteration, or addition to the undertakings, covenants, terms, conditions, and agreements of the Order, or to the work to be performed thereunder, shall in any way affect the obligation of this bond; and it does hereby waive notice of any such extension of time, change, modification, alteration, or addition to the undertakings, covenants, terms, conditions, and agreements of the Order, or to the work to be performed thereunder.

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

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

IN WITNESS WHEREOF, we have hereunto set our hands this _____ day of _____, 20___.

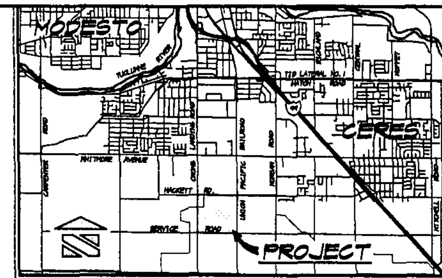
CONTRACTOR AS PRINCIPAL	**SURETY**
Company: (Corp. Seal)	Company: (Corp. Seal)
_____	_____
Signature	Signature
_____	_____
Name	Name
_____	_____
Title	Title
_____	_____
Street Address	Street Address
_____	_____
City, State, Zip Code	City, State, Zip Code

END OF DOCUMENT

Appendix D to Purchase Order for Construction Work

PLANS AND SPECIFICATIONS ATTACHED HERETO

ON-SITE IMPROVEMENT PLANS
STANISLAUS COUNTY PUBLIC SAFETY CENTER
BAS MODULAR RELOCATION PROJECT
CITY OF CERES CALIFORNIA

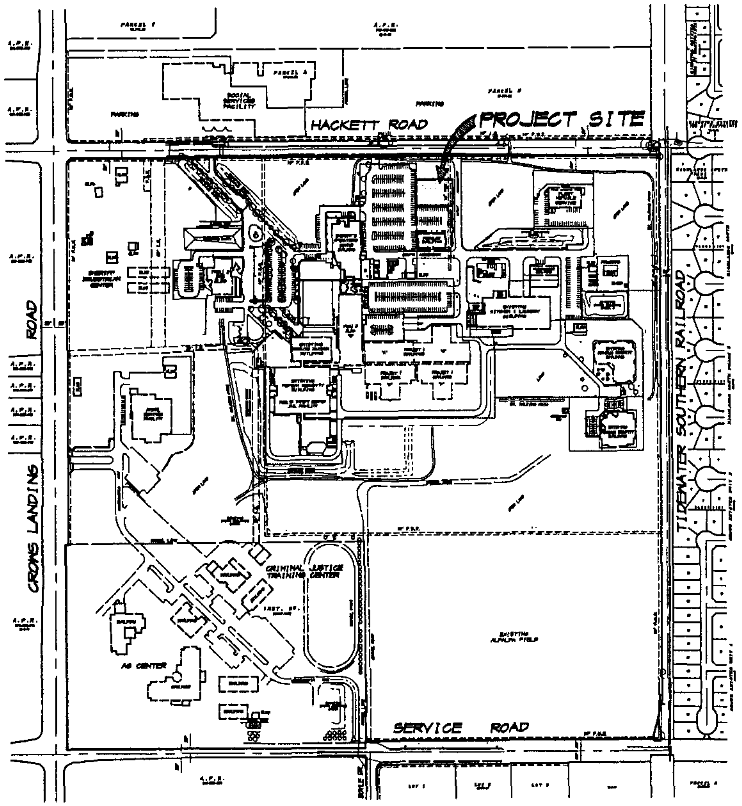


VICINITY MAP
NO SCALE

LEGAL DESCRIPTION

BEING A PORTION OF THE WEST HALF OF SECTION 16, TOWNSHIP 4 SOUTH, RANGE 9 EAST, MOUNT DIABLO MERIDIAN, CITY OF CERES, COUNTY OF STANISLAUS, CALIFORNIA

ASSESSOR'S PARCELS 086-015-050



COUNTY CENTER NO. 6
SITE KEY MAP
SCALE: 1"=250'

SPECIFICATIONS

1. ALL IMPROVEMENTS TO BE DONE SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF CERES'S DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS AND THE LATEST EDITION OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS.
2. BENCHMARK: STANISLAUS COUNTY BENCHMARK 404-17-4-A, TOP OF THE NORTHEAST BOLT ON THE TRAFFIC SIGNAL BASE AT THE SOUTH RADIUS RETURN AT THE SOUTHWEST CORNER OF CROWS LANDING ROAD AND HACKETT ROAD.
   ELEVATION = 82.01, NGS DATUM.
3. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR ANY WORK PERFORMED BY THE CONTRACTOR OR OWNER BASED ON PLANS WHICH HAVE NOT BEEN SIGNED AND SEALED BY THE ENGINEER AND APPROVED BY THE CITY OR COUNTY HAVING JURISDICTION. ALL INFORMATION SHOWN ON PRELIMINARY DRAWINGS IS SUBJECT TO CORRECTION AND CHANGE, AND THE CONTRACTOR OR OWNER SHALL PERFORM ANY AND ALL WORK AT THEIR OWN RISK.
4. ALL DISTANCES AND MEASUREMENTS ARE GIVEN AND WILL BE MADE IN A HORIZONTAL PLANE. GRADE WILL BE GIVEN FROM THE TOP OF NAILS OR STAKES, UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL PRESERVE ALL POINTS AND STAKES SET FOR LINES AND GRADES OR MEASUREMENTS OF THE WORK, IN THEIR PROPER LOCATION UNTIL AUTHORIZED TO REMOVE THEM BY THE ENGINEER. ALL EXPENSES INCURRED IN REPLACING STAKES THAT HAVE BEEN REMOVED WITHOUT PROPER AUTHORITY SHALL BE PAID FOR BY THE GENERAL CONTRACTOR.
5. WHERE THE PLANS OR SPECIFICATIONS DESCRIBE PORTIONS OF THE WORK IN GENERAL TERMS, BUT NOT IN COMPLETE DETAIL, IT IS UNDERSTOOD THAT ONLY THE BEST GENERAL PRACTICE IS TO PREVAIL AND THAT ONLY MATERIALS AND WORKMANSHIP OF THE FINEST QUALITY ARE TO BE USED.
6. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CALIFORNIA WATER RESOURCES CONTROL BOARD (SWRCB), ORDER NO. 2012-0006-DWQ, NPDES GENERAL PERMIT NO. CAS000002. THE CONTRACTOR SHALL IMPLEMENT AND MONITOR STORM WATER POLLUTION PREVENTION MEASURES IN ACCORDANCE WITH THE SWRCB REGULATIONS.
7. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL SAFETY REGULATIONS PERTAINING TO HIS OPERATIONS. HE SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAG MEN OR OTHER DEVICES NECESSARY FOR PUBLIC SAFETY IN ACCORDANCE WITH THE CURRENT ISSUE OF "MANUAL OF TRAFFIC CONTROLS WARNING SIGNS, LIGHTS AND DEVICES FOR USE IN PERFORMANCE OF WORK UPON HIGHWAYS" PUBLISHED BY THE STATE OF CALIFORNIA BUSINESS AND TRANSPORTATION AGENCY. THE CONTRACTOR'S ATTENTION IS ALSO CALLED TO THE REQUIREMENTS OF TITLE 8 OF THE CALIFORNIA ADMINISTRATIVE CODE, SUBCHAPTER 4, ARTICLE 6, "EXCAVATIONS, TRENCHES, EARTHWORK."
8. THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.
9. THE PAVING CONTRACTOR SHALL PROVIDE COMPACTION TESTS IN PAVED AREAS AS REQUIRED BY THE OWNER, AT THE CONTRACTOR'S EXPENSE. INCLUDE 3 TESTS IN BIDS.
10. ALL MANHOLE, CLEANOUT AND WATER VALVE FRAME AND COVERS SHALL BE ADJUSTED TO FINISH GRADE BY THE PAVING CONTRACTOR.
11. APPROPRIATE DUST CONTROL SHALL BE PROVIDED FOR THE ALLEVIATION OR PREVENTION OF DUST NUISANCE, AT THE CONTRACTOR'S EXPENSE.
12. AFTER CLEARING THE SITE AND DISKING, THE EXPOSED SOIL SURFACE SHALL BE SCARIFIED AND RECOMPACTED TO A DEPTH OF 8". THE RECOMMENDED DEGREE OF RECOMPACTION IS 90 PERCENT IN THE BUILDING AREA, AND 95 PERCENT IN ASPHALT, ROCK OR CONCRETE PAVEMENT AREAS. THESE PERCENTAGES REFER TO THE MAXIMUM DRY DENSITY AS OBTAINED BY THE ASTM D-1557 TEST PROCEDURE.
13. THE CONTRACTOR SHALL PROVIDE A COMPACTED PAD FOR THE BUILDING AND CONTAINER, GRADED AT THE ELEVATIONS SHOWN ON THE GRADING PLAN.
14. THE CONTRACTOR SHALL LOCATE AND PRESERVE ALL EXISTING FACILITIES INCLUDING GAS, WATER, IRRIGATION, POWER, TELEPHONE, SEWER OR OTHERS WHICH MAY BE PRESENT IN THE AREA OF CONSTRUCTION. THE RESPECTIVE UTILITY COMPANIES SHALL BE NOTIFIED PRIOR TO BEGINNING WORK.

CONCRETE PAVEMENT

15. CONCRETE: PORTLAND CEMENT CONCRETE PAVING SHALL BE CLASS 3 AS DEFINED IN THE STATE OF CALIFORNIA STANDARDS, WITH A 28 DAY COMPRESSIVE STRENGTH OF 2,500 POUNDS PER SQUARE INCH AS A MINIMUM, AND A MAXIMUM SLUMP OF 4 INCHES. CONCRETE SHALL CONSIST OF A MINIMUM OF A 5 SACK MIXTURE OF PORTLAND CEMENT, WATER, AND AGGREGATE. PORTLAND CEMENT SHALL BE TYPE II. AGGREGATES SHALL BE WASHED BEFORE USE AND BE FREE FROM ANY FOREIGN MATTER.
16. THE AGGREGATES SHALL BE GRADED TO PROVIDE A PLASTIC, WORKABLE MIXTURE OF MAXIMUM DENSITY WITH A MAXIMUM SIZE AGGREGATE OF 3/4 INCHES. THE WATER SHALL BE POTABLE AND NO ADMIXTURES SHALL BE USED WITHOUT APPROVAL OF THE ENGINEER. THE CEMENT, WATER AND AGGREGATES SHALL BE COMBINED AT THE BATCH PLANT AND BE THOROUGHLY MIXED. NO WATER SHALL BE ADDED TO THE MIXTURE AFTER LEAVING THE BATCH PLANT WITHOUT APPROVAL OF THE ENGINEER. ALL CONCRETE SHALL BE PLACED WITHIN 90 MINUTES AFTER THE INTRODUCTION OF WATER TO THE CEMENT. THE TEMPERATURE OF THE CONCRETE SHALL NOT BE LESS THAN 50 DEG. FAHRENHEIT AND NOT MORE THAN 90 DEG. FAHRENHEIT.
17. THE CONCRETE SHALL BE CONSOLIDATED BY VIBRATING. CONCRETE WHICH HAS ROCK POCKETS OR HONEY COMBING AFTER CURING SHALL BE REMOVED AND REPLACED.
18. ALL CONCRETE SHALL BE CURED IN ACCORDANCE WITH SECTION 90-7.01B OF THE STATE OF CALIFORNIA STANDARDS AND VEHICULAR TRAFFIC SHOULD NOT BE ALLOWED FOR 5 DAYS (AUTOMOBILE TRAFFIC) OR 7 DAYS (TRUCK TRAFFIC).
19. THE 4" THICK CONCRETE PAVEMENT SHALL BE REINFORCED WITH "FIBERMESH STEALTH E3" POLYPROPYLENE FIBER, OR AN APPROVED EQUAL. THE APPLICATION RATE SHALL BE A MINIMUM OF 1.0 POUND PER CUBIC YARD AND SHALL BE MIXED AS PER THE MANUFACTURERS RECOMMENDATIONS.
20. IF "FIBERMESH" IS NOT USED AND AN EQUAL IS PROVIDED, SUBMITTALS WITH SPECIFICATIONS SHALL BE SUPPLIED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER BEFORE USE ON THIS PROJECT.
21. CRACK CONTROL JOINTS SHALL BE PLACED AT 10 FOOT MAXIMUM INTERVALS AND SHALL PENETRATE THE CONCRETE SLAB A MINIMUM OF 1/4 OF THE SLAB THICKNESS.

UTILITIES

22. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CITY OF CERES'S STANDARD SPECIFICATIONS AND THE LATEST EDITION OF THE CALIFORNIA PLUMBING CODE.
23. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF CHAPTER 9, SECTION 6705, 6706, AND 6707 OF THE STATE LABOR CODE.
24. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A DETAILED PLAN SHOWING THE DESIGN OF SHORING, BRACING, SLOPING, OR OTHER PROVISIONS TO BE MADE FOR WORKER PROTECTION FOR ALL AREAS TO BE EXCAVATED TO A DEPTH OF FIVE FEET OR MORE. IF THE PLAN VARIES FROM THE SHORING SYSTEM STANDARDS, THE PLANS SHALL BE PREPARED BY A REGISTERED CIVIL OR STRUCTURAL ENGINEER.
25. WHERE THE PLANS NOTE THAT THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EXISTING UTILITY LINES PRIOR TO CONSTRUCTION, IT IS INTENDED THAT THE CONTRACTOR "POT HOLE" THE EXISTING UTILITIES. IF A CONFLICT EXISTS BETWEEN EXISTING AND PROPOSED UTILITY LINES, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO BEGINNING THE INSTALLATION OF THE PROPOSED UTILITIES. FIELD ADJUSTMENTS TO THE UTILITIES CAN BE MADE WITH THE APPROVAL OF THE ENGINEER.
26. ALL UTILITY LINE TRENCHES SHALL BE BACKFILLED AND RECOMPACTED IN ACCORDANCE WITH THE TRENCH SECTION AND PAVING DETAIL ON SHEET 7.

SANITARY SEWER

27. P.V.C. PIPE AS SHOWN ON THE PLANS SHALL BE POLYVINYL CHLORIDE PIPE CONFORMING TO ASTM D-3034, SDR 35, WITH RUBBER SEALING RINGS MEETING ASTM D-3212 "JOINTS FOR DRAINS AND SEWER PIPES USING FLEXIBLE ELASTOMERIC SEALS" OR AN APPROVED EQUAL. THE P.V.C. PIPE INSTALLATION AND TESTING SHALL CONFORM TO THE CITY OF CERES STANDARDS FOR SEWERS.
28. SANITARY SEWER LATERALS SHALL BE INSTALLED AT LOCATIONS AS SHOWN ON THE PLAN, OR AT LOCATIONS AS DETERMINED BY THE DEVELOPER, IF ADDITIONAL LATERALS ARE REQUIRED. ALL LATERALS SHALL BE EXTENDED TO WITHIN 5' OF STRUCTURES AND PLUGGED FOR FUTURE CONNECTION OR BE CONNECTED TO THE MODULAR BUILDING.

WATER SYSTEM

29. THE 1" P.V.C. WATER LINE SHOWN SHALL BE 1" POLYVINYL CHLORIDE, SCHEDULE 40 CONFORMING TO THE LATEST EDITION OF THE UNIFORM PLUMBING CODE AND THE REQUIREMENTS OF THE CITY OF CERES BUILDING DEPARTMENT.
30. ALL WATER LINES SHALL BE INSTALLED WITH 36" MINIMUM COVER FROM FINISH GRADE. THE CONTRACTOR SHALL VERIFY THE LOCATION AND THE ELEVATION OF EXISTING WATER LINES PRIOR TO BEGINNING CONSTRUCTION.
31. WATER SERVICES SHALL BE INSTALLED AT LOCATIONS AS SHOWN ON THE PLAN, OR AT LOCATIONS AS DETERMINED BY THE DEVELOPER, IF ADDITIONAL SERVICES ARE REQUIRED. ALL SERVICES SHALL BE EXTENDED TO WITHIN 5' OF THE STRUCTURE AND CAPPED FOR FUTURE CONNECTION OR BE CONNECTED TO THE MODULAR BUILDING.
32. ON-SITE WATER LINES SHALL BE CHLORINATED AND TESTED IN ACCORDANCE WITH THE CITY OF CERES STANDARD SPECIFICATIONS.

STORM DRAIN

33. P.V.C. PIPE AS SHOWN ON THE PLANS SHALL BE POLYVINYL CHLORIDE PIPE CONFORMING TO ASTM D-3034, SDR 35, WITH RUBBER SEALING RINGS MEETING ASTM D-3212 "JOINTS FOR DRAINS AND SEWER PIPES USING FLEXIBLE ELASTOMERIC SEALS" OR AN APPROVED EQUAL.
34. WHERE THE PLANS SHOW P.V.C. STORM DRAINS, THE CONTRACTOR MAY USE HIGH DENSITY POLYETHYLENE PIPE MEETING AASHTO DESIGNATION M 294M-98.

INDEX

UTILITY CONTACTS

STORM DRAINAGE ~ STANISLAUS COUNTY PUBLIC WORKS DEPT.
ATTN.: PAUL SAINI PH. (209) 525-7506

DOMESTIC WATER ~ CITY OF CERES
ATTN.: JOSEPH REYES PH. (209) 538-5797

SANITARY SEWER ~ CITY OF MODESTO
ATTN.: JACK COOKE PH. (209) 577-6234

ELECTRIC ~ TURLOCK IRRIGATION DISTRICT
ATTN.: PAUL RODRIGUEZ PH. (209) 883-8395

GAS ~ PACIFIC GAS AND ELECTRIC COMPANY
ATTN.: JIM MIRONEK PH. (209) 576-6648

TELEPHONE ~ A.T.& T.
ATTN.: DAN YODER PH. (209) 544-5885

CABLE TELEVISION ~ COMCAST
ATTN.: MELANIE HERNANDEZ PH. (209) 935-6545

IRRIGATION ~ TURLOCK IRRIGATION DISTRICT
ATTN.: TODD TROGLIN PH. (209) 883-8367

REVISION	DATE	DESCRIPTION	BY

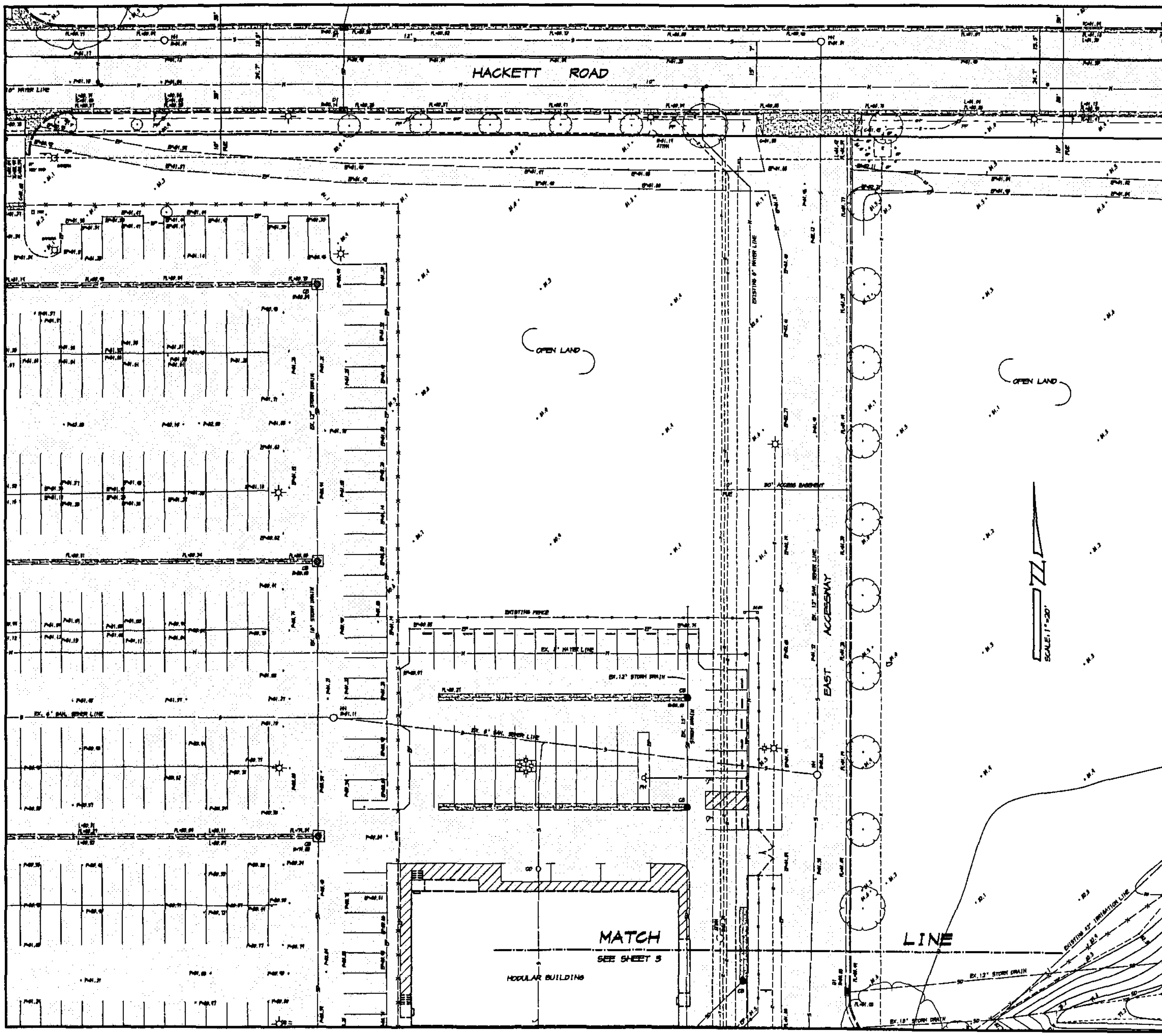
ASSOCIATED ENGINEERING GROUP
4206 TECHNOLOGY DRIVE, SUITE 4, MODESTO, CA 95356
PHONE: (209) 545-3390 FAX: (209) 545-3875 www.aeincorp.com

VICINITY MAP, SITE MAP, INDEX AND SPECIFICATIONS
BAS MODULAR RELOCATION PROJECT
PUBLIC SAFETY CENTER
CERES CALIFORNIA

RYAN CARREL, R.C.E. 51659
DAVE SKIDMORE, L.S. 7126
REGISTERED PROFESSIONAL ENGINEER RYAN D. CARREL No. 51659 CIVIL STATE OF CALIFORNIA

DRAWN BY: KEVIN
DATE: JUNE 1, 2014
SCALE: 1"=250'
DWG: 8251-CVR
CHECKED: R.D.C.
JOB #: 8251-14

SHEET 1 OF 13



LEGEND

- EX. ELEVATION
- EX. FLOWLINE ELEVATION
- EX. EDGE OF PAVEMENT ELEVATION
- EX. A.C. PAVEMENT ELEVATION
- EX. RIM ELEVATION
- EX. GUTTER LIP ELEVATION
- EX. CONCRETE ELEVATION
- EX. CURB AND GUTTER
- EX. EDGE OF PAVEMENT
- EX. SANITARY SEWER LINE
- EX. MANHOLE
- EX. CLEAN OUT
- EX. STORM DRAIN LINE
- EX. DROP INLET
- EX. CATCH BASIN
- EX. WATER LINE
- EX. FIRE WATER LINE
- EX. BOOSTED WATER LINE
- EX. FIRE HYDRANT
- EX. FIRE DEPT. CONNECTION
- EX. POST INDICATOR VALVE
- EX. GATE VALVE
- EX. HOSE BIB
- EX. WATER BACKFLOW PREVENTION DEVICE
- EX. WATER METER BOX
- EX. BLOW OFF
- EX. IRRIGATION LINE
- EX. IRRIGATION AIR VENT STAND PIPE
- EX. POWER POLE
- EX. SIGN
- EX. ELECTRICAL CONDUIT
- EX. TELEPHONE OR COMMUNICATION CONDUIT
- EX. TELEPHONE MANHOLE
- EX. TELEPHONE OR COMMUNICATIONS BOX
- EX. ELECTRICAL BOX
- EX. OVERHEAD POWER LINE
- EX. ELECTROLIER
- EX. GUARD POST
- EX. FENCE
- EX. TREE, SPREAD DRAWN TO SCALE
- EX. AREA OF CONCRETE
- EX. AREA OF ASPHALT PAVEMENT

BENCHMARK

STANISLAUS COUNTY BENCHMARK 454-17-4-A TOP OF THE NORTHEAST BOLT ON THE TRAFFIC SIGNAL BASE AT THE SOUTH RADIUS RETURN AT THE SOUTHWEST CORNER OF CROWS LANDING ROAD AND HACKETT ROAD.
ELEVATION = 82.01, N66 DATUM.

UTILITY LOCATIONS

EXISTING UNDERGROUND UTILITIES SHOWN ARE TAKEN FROM RECORD INFORMATION TO AID THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, BOTH VERTICAL AND HORIZONTAL, OF ALL EXISTING UNDERGROUND LINES AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO WORK.

A) EXISTING UTILITIES ARE SHOWN AS THEY ARE BELIEVED TO EXIST FROM RECORDS SUPPLIED BY OTHERS. THE OWNER AND ENGINEER DO NOT ACCEPT RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL HAVE EACH UTILITY COMPANY ACCURATELY LOCATE IN THE FIELD THEIR MAINS AND SERVICE LINES. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROTECT ALL EXISTING UTILITIES, SO THAT NO DAMAGE RESULTS TO THEM DURING THE PERFORMANCE OF THIS CONTRACT. CONTACT U.S.A. AT PH. 800-227-2600

NOTE: SECTION 1540 (A)(1) OF THE CONSTRUCTION SAFETY ORDERS (TITLE 8, CALIFORNIA ADMINISTRATION CODE SECTION 1540) ISSUED BY THE OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD PURSUANT TO THE CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ACT OF 1973, AS AMENDED, WHICH STATES:

"PRIOR TO OPENING AN EXCAVATION, EFFORT SHALL BE MADE TO DETERMINE WHETHER UNDERGROUND INSTALLATION I.E., SEWER, WATER, FUEL, ELECTRIC LINES, ETC. WILL BE ENCOUNTERED AND IF SO, WHERE SUCH UNDERGROUND INSTALLATIONS ARE LOCATED. WHEN EXCAVATION APPROACHES THE APPROXIMATE LOCATION OF SUCH AN INSTALLATION, THE EXACT LOCATION SHALL BE DETERMINED BY CAREFUL PROBING OR HAND DIGGING AND WHEN IT IS UNCOVERED, ADEQUATE PROTECTION SHALL BE PROVIDED FOR THE INSTALLATION. ALL KNOWN OWNERS OF UNDERGROUND FACILITIES IN THE AREA CONCERNED SHALL BE ADVISED OF PROPOSED WORK AT LEAST 48 HOURS PRIOR TO THE START OF ACTUAL EXCAVATION."

REVISION	DATE	DESCRIPTION	BY

ASSOCIATED ENGINEERING GROUP
4206 TECHNOLOGY DRIVE, SUITE 4, MODESTO, CA 95356
PHONE (209) 545-3390 FAX (209) 545-3875 www.aecorp.com

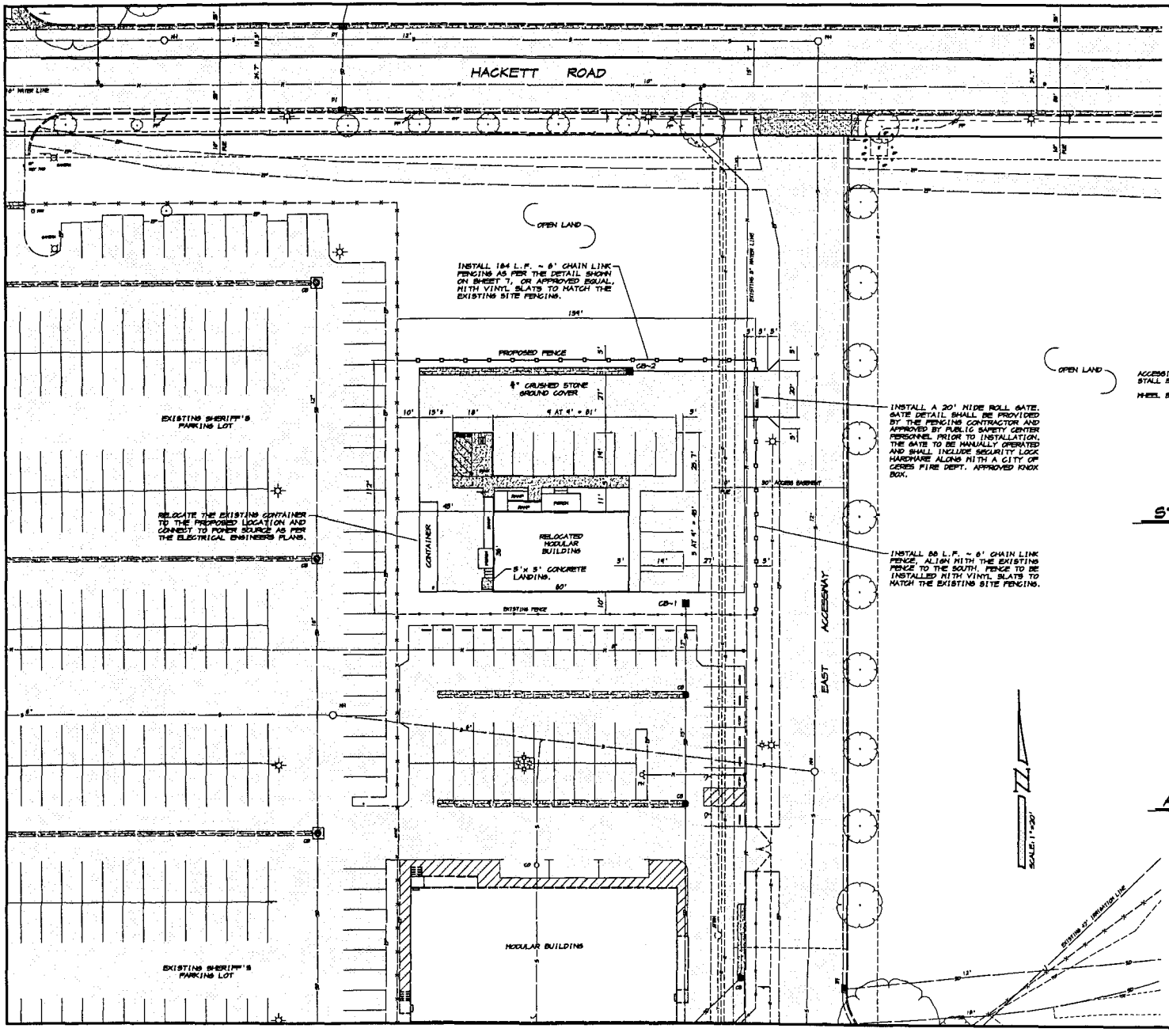
PROPOSED SITE AREA
EXISTING TOPOGRAPHY
BAS MODULAR RELOCATION PROJECT
PUBLIC SAFETY CENTER
CERES CALIFORNIA

RYAN CARREL, R.C.E. 61619
DAVE SKIOMORE, L.S. 7126

DRAWN BY: KEVIN
DATE: JUNE 1, 2014
SCALE: 1"=20'
DWG: 8251-TOPO
CHECKED: R.D.C.
JOB #: 8251-14

SHEET 2 OF 13

EXISTING MODULAR BUILDING AREA
EXISTING TOPOGRAPHY
BAS MODULAR RELOCATION PROJECT
PUBLIC SAFETY CENTER
CERES
CALIFORNIA
ASSOCIATED ENGINEERING GROUP
4206 TECHNOLOGY DRIVE, SUITE 4, MODESTO, CA 95356
PHONE (209) 545-3290 FAX (209) 545-3275
REVISION
DATE
DESCRIPTION
BY
SHEET 3 OF 13
MATCH
SEE SHEET 2
SOUTH ACCESSWAY
PARCEL B
EXISTING BAS MODULAR BUILDING TO BE RELOCATED TO THIS SITE AS SHOWN ON THE PLANS.
EXISTING CONTAINER TO BE RELOCATED TO THIS SITE AS SHOWN ON THE PLANS.



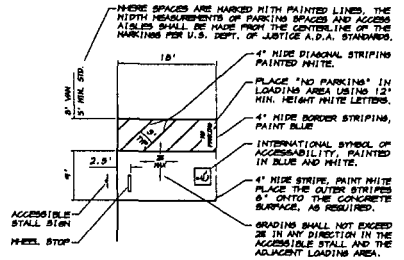
SUMMARY

FENCED AREA = 0.40 ACRES

MODULAR BUILDINGS = 2,160 SQ. FT.

PARKING

REGULAR STALLS.....14 EA.
ACCESSIBLE STALLS.....1 EA.
TOTAL PARKING PROVIDED....15 EA.
YIELD, 1 STALL PER 144 SQ. FT.



NOTE: ALL ACCESSIBILITY SYMBOLS, STRIPING AND SIGNAGE SHALL BE INSTALLED AS REQUIRED PER 118-302 OF C.B.C. TITLE 24

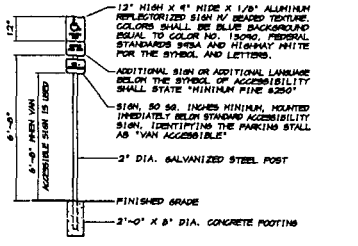
THE STALLS SHALL BE STRIPED AS SHOWN ON THE DETAIL. PAINTED LINE WIDTH SHALL BE FOUR INCHES (4") WIDE.

PAINT: ALL PAINT SHALL BE WHITE LATEX BASE CONFORMING TO FEDERAL SPECIFICATION TT-P-1952

TYPICAL ACCESSIBLE STALL

STRIPING & SIGNAGE DETAIL

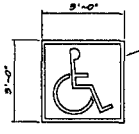
NO SCALE



ALL ACCESSIBILITY SYMBOLS, STRIPING AND SIGNAGE SHALL BE INSTALLED AS PER TITLE 24 (C.B.C.) REQUIREMENTS

ACCESSIBLE STALL SIGNAGE

NO SCALE



3'-0" X 3'-0" PAINTED SYMBOL, 2 COATS BLUE FIELD AND WHITE BORDER AND SYMBOL

SYMBOL TO BE CENTERED ON WIDTH OF PARKING STALL

ACCESSIBLE STALL SYMBOL

NO SCALE

REVISION	DATE	DESCRIPTION	BY

ASSOCIATED ENGINEERING GROUP
4206 TECHNOLOGY DRIVE, SUITE 4, MODESTO, CA 95356
PHONE (209) 545-3380 FAX (209) 545-3975 www.aeimodesto.com

HORIZONTAL CONTROL PLAN

BAG MODULAR RELOCATION PROJECT
PUBLIC SAFETY CENTER
CERES CALIFORNIA

RYAN CARREL, R.C.E. 61618
DAVE SKIDMORE, L.S. 7126

REGISTERED PROFESSIONAL ENGINEER RYAN D. CARREL No. 61618 CIVIL STATE OF CALIFORNIA

DRAWN BY: KEVIN
DATE: JAN 1, 2014
SCALE: 1"=20'
DWG: 8251-SITE
CHECKED: R.D.C.
JOB #: 8251-14

SHEET 4 OF 13

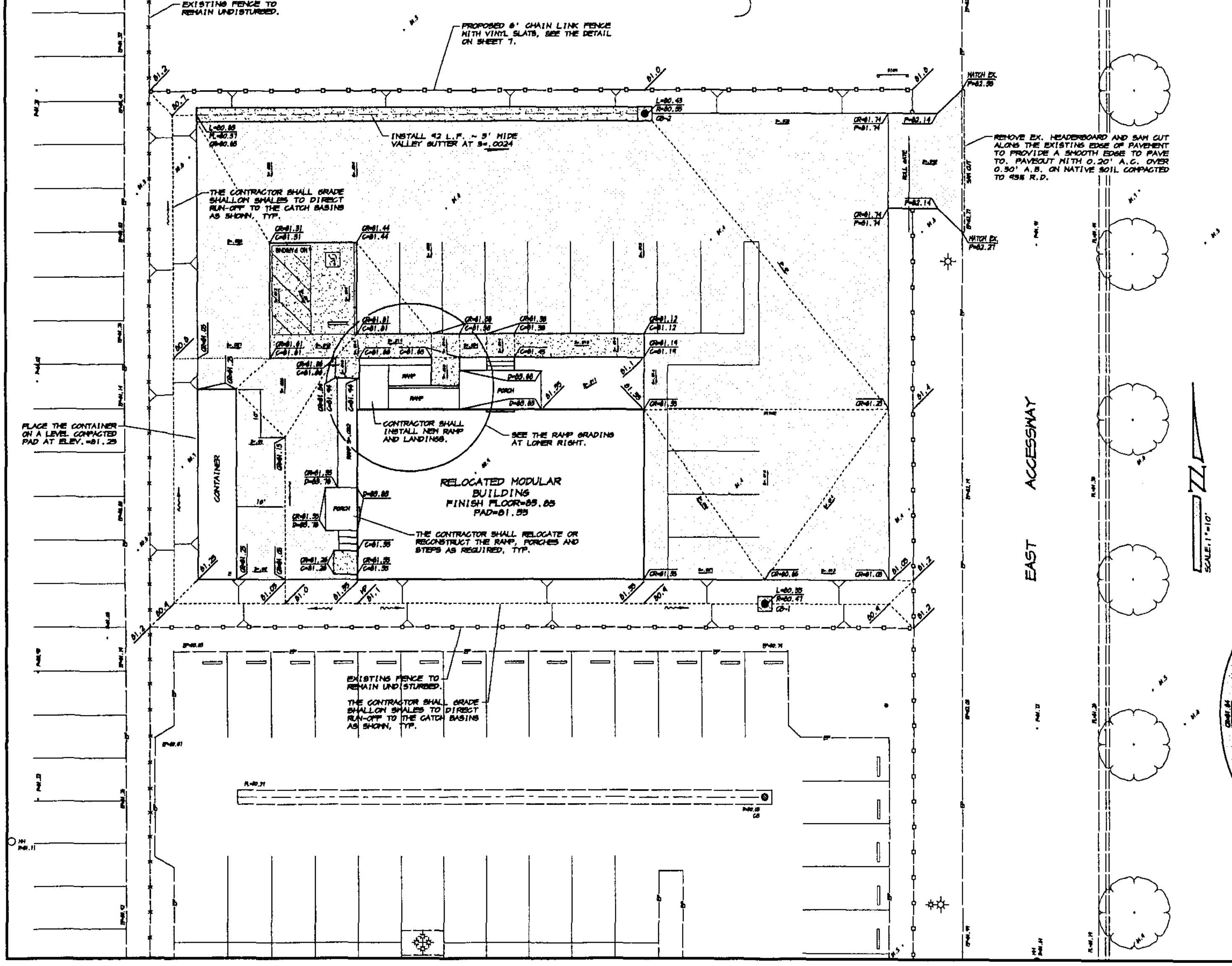
EARTHWORK QUANTITIES

THE EARTHWORK QUANTITIES SHOWN HEREON ARE TO AID THE CONTRACTOR IN DETERMINING THE AMOUNT OF DIRT TO BE MOVED. THE CUT AND FILL QUANTITIES SHOWN INDICATE A THEORETICAL YARDAGE FIGURE AND ARE GIVEN ONLY AS A CONVENIENCE TO THE CONTRACTOR.

TOTAL CUT REQUIRED................125 CU. YDS.

TOTAL FILL REQUIRED................78 CU. YDS.
(INCLUDES 25% COMPACTION)

EXCESS DIRT........................21 CU. YDS.



LEGEND

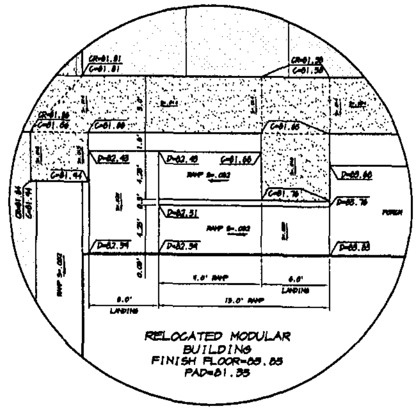
	EX. ELEVATION
	EX. FLOWLINE ELEVATION
	EX. EDGE OF PAVEMENT ELEVATION
	EX. A.C. PAVEMENT ELEVATION
	EX. RIM ELEVATION
	EX. VALLEY GUTTER
	EX. EDGE OF PAVEMENT
MH	EX. MANHOLE
CB	EX. CATCH BASIN
	EX. GATE VALVE
HB	EX. HOSE BIB
	EX. WATER BACKFLOW PREVENTION DEVICE
	EX. WATER METER BOX
	EX. SIGN
	EX. ELECTROLIER
	EX. FENCE
	EX. TREE, SPREAD DRAWN TO SCALE
CB-1	PROP. CATCH BASIN
	PROP. 6' CHAIN LINK FENCE
CR=81.26	PROP. CRUSHED ROCK FINISH ELEVATION
C=81.26	PROP. CONCRETE ELEVATION
P=81.26	PROP. A.C. PAVEMENT ELEVATION
D=81.26	PROP. DECK OR RAMP ELEVATION
81.0	PROP. FINISH DIRT ELEVATION
	PROP. SLOPE AND DIRECTION OF FLOW
	PROP. AREA OF CONCRETE PAVEMENT, USE 4" MIN. THICKNESS OVER 4" A.B. ON NATIVE SOIL COMPACTED TO 95% FOR THE ACCESSIBLE PARKING STALL AND LOADING AREA, AND USE 4" MIN. THICKNESS ON NATIVE SOIL COMPACTED TO 95% R.D. FOR THE ADJACENT FLATWORK.
	PROP. AREA OF ASPHALT PAVEMENT, USE SOIL 0.20' A.C. OVER 0.50' A.B. ON NATIVE COMPACTED TO 95% R.D.
	PROP. AREA OF COMPACTED 3/4" CRUSHED ROCK, USE 4" MIN. THICKNESS ON NATIVE COMPACTED TO 95% R.D.

BENCHMARK

STANISLAUS COUNTY BENCHMARK 489-17-4-A TOP OF THE NORTHEAST BOLT ON THE TRAFFIC SIGNAL BASE AT THE SOUTH RADIUS RETURN AT THE SOUTHWEST CORNER OF CROWS LANDING ROAD AND HACKETT ROAD.
ELEVATION = 82.01, N88 DATUM.

GENERAL NOTES

1. THE CONTRACTOR SHALL INCLUDE IN THE PRICES BID FOR THE MODULAR BUILDING RELOCATION, THE COSTS FOR EITHER RELOCATING THE EXISTING PORCHES, DECKS, STAIRS AND THE RAMP, OR RECONSTRUCTING NEW FACILITIES IN KIND. THE CONTRACTOR SHALL INCLUDE THE NEW SWITCHBACK RAMP AND LANDINGS INSTALLED TO MATCH IN KIND WITH THE EXISTING RELOCATED PORCHES, STEPS AND RAMP.
2. THE CONTRACTOR SHALL REPAIR AND REINSTALL ANY DAMAGED TRIM BOARDS ON THE MODULAR BUILDING AS REQUIRED TO COMPLETE THE MODULAR RELOCATION PROVIDING A COMPLETED BUILDING WITH NO LOOSE OR WARPED TRIM OR SKIRT BOARDS.



ACCESSIBLE RAMP
GRADING DETAIL
SCALE: 1"=5'

REVISION	DATE	DESCRIPTION	BY

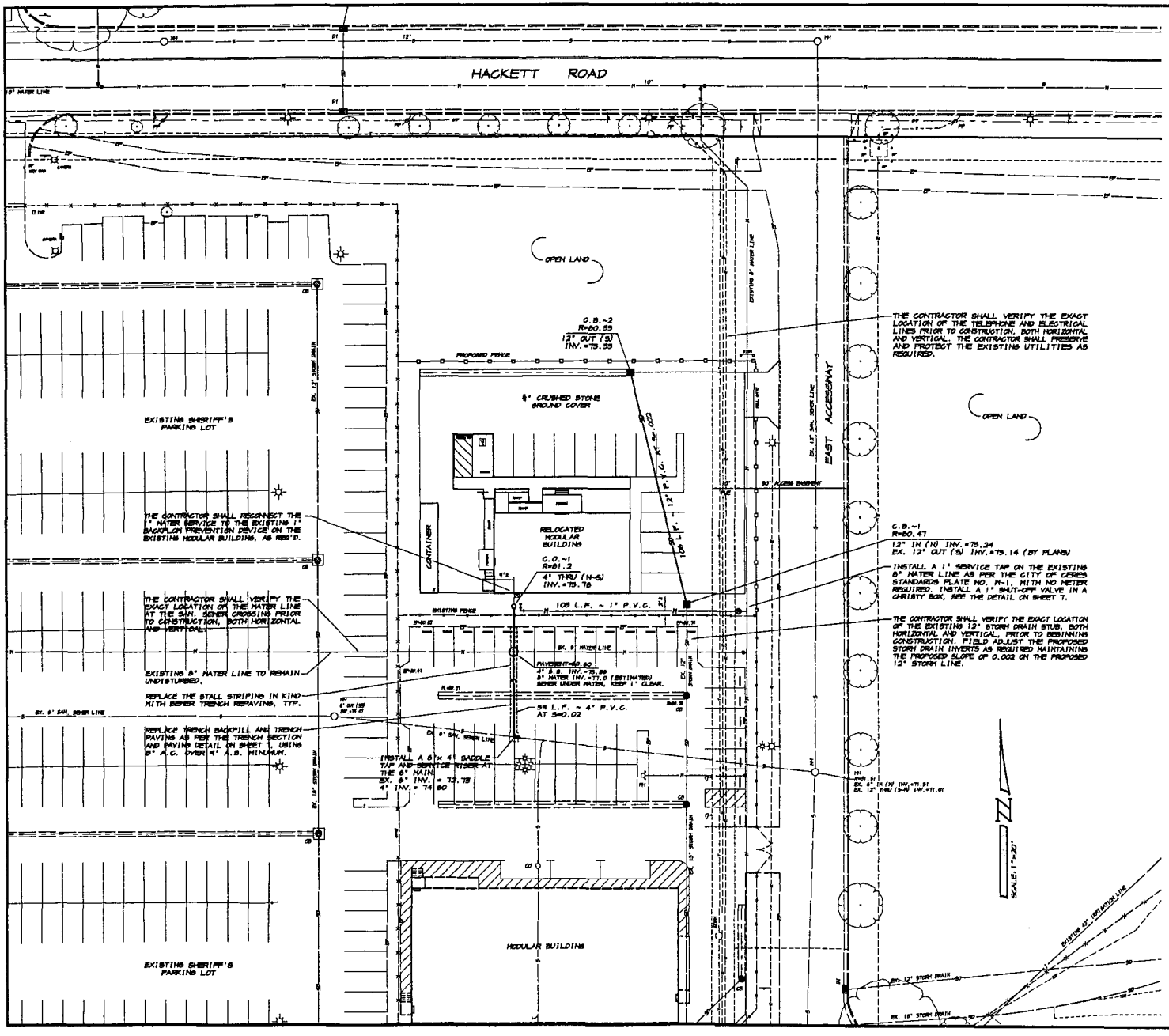
ASSOCIATED ENGINEERING GROUP
4206 TECHNOLOGY DRIVE, SUITE 4, MODESTO, CA 95356
PHONE (209) 545-3390 FAX (209) 545-3875 www.aeseng.com

GRADING AND DRAINAGE PLAN
BAS MODULAR RELOCATION PROJECT
PUBLIC SAFETY CENTER
CERES CALIFORNIA

RYAN CARREL, R.C.E. 61619
DAVE SKIDMORE, L.S. 7126

REGISTERED PROFESSIONAL ENGINEER RYAN D. CARREL No. 61619 CIVIL STATE OF CALIFORNIA

DRAWN BY: KEVIN
DATE: JUNE 1, 2014
SCALE: 1"=10'
DWG: 8251-GRD
CHECKED: R.D.C.
JOB #: 8251-14
SHEET 5 OF 13



LEGEND

- EX. CURB AND GUTTER
- EX. EDGE OF PAVEMENT
- EX. SANITARY SEWER LINE
- EX. MANHOLE
- EX. CLEAN OUT
- EX. STORM DRAIN LINE
- EX. DROP INLET
- EX. CATCH BASIN
- EX. WATER LINE
- EX. FIRE HYDRANT
- EX. GATE VALVE
- EX. HOSE BIB
- EX. WATER BACKFLOW PREVENTION DEVICE
- EX. WATER METER BOX
- EX. BLOW OFF
- EX. IRRIGATION LINE
- EX. POWER POLE
- EX. SIGN
- EX. ELECTRICAL CONDUIT
- EX. TELEPHONE OR COMMUNICATION CONDUIT
- EX. TELEPHONE MANHOLE
- EX. ELECTROLIER
- EX. FENCE
- PROP. STORM DRAIN LINE
- PROP. STORM DRAIN CATCH BASIN
- PROP. SANITARY SEWER LINE
- PROP. SANITARY SEWER CLEAN-OUT
- PROP. WATER LINE
- PROP. WATER GATE VALVE

BENCHMARK

STANISLAUS COUNTY BENCHMARK 464-17-4-A
TOP OF THE NORTHEAST BOLT ON THE TRAFFIC SIGNAL BASE AT THE SOUTH RADIUS RETURN AT THE SOUTHWEST CORNER OF CROWS LANDING ROAD AND HACKETT ROAD.
ELEVATION = 83.01, NGS DATUM.

GENERAL NOTES

1. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE PROPOSED NET UTILITIES WITH THE ELECTRICAL ENGINEERS PLANS TO AVOID CONFLICTS WITH THE PROPOSED DRY UTILITIES (ELECTRICAL, TELEPHONE AND CATV) TO BE INSTALLED ON THE PROJECT SITE.
2. THE CONTRACTOR SHALL INCLUDE THE RECONNECTION OF THE SANITARY SEWER AND THE DOMESTIC WATER FROM THE MODULAR BUILDING TO THE SITE INFRASTRUCTURE IN THE PRICE BID FOR THE MODULAR BUILDING RELOCATION. THE CONNECTIONS SHALL BE COMPLETE AND "MOVE IN" READY PRIOR TO THE ACCEPTANCE OF THE WORK.

BY	DESCRIPTION	DATE	REVISION

ASSOCIATED ENGINEERING GROUP
4206 TECHNOLOGY DRIVE, SUITE A, MODESTO, CA 95356
PHONE: (209) 543-3280 FAX: (209) 543-3285 www.aegcorp.com

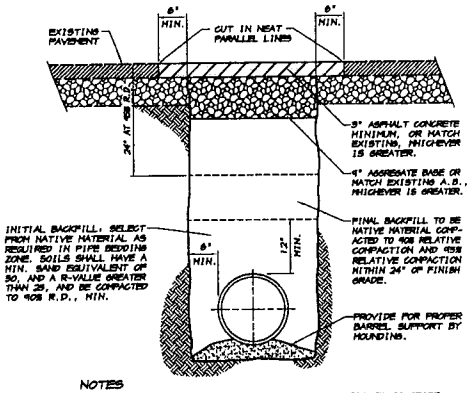
UTILITY PLAN

BAS MODULAR RELOCATION PROJECT
PUBLIC SAFETY CENTER
CERES CALIFORNIA

RYAN CAMEL, R.C.E. 61618
DAVE SKIDMORE, L.S. 7124

DRAWN BY: KEVIN
DATE: JUNE 1, 2014
SCALE: 1"=20'
DWG: 8291-UTIL
CHKD'D: R.D.C.
JOB #: 8291-14

SHEET 6 OF 13

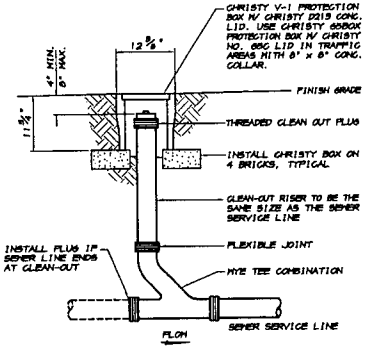


NOTES

1. TRENCH SETTLEMENT SHALL BE BACKFILLED AND COMPACTED TO GRADE.
2. WHERE THE SANITARY SEWER TRENCH CROSSES THE EXISTING 8' WIDE VALLEY GUTTER, THE CONTRACTOR CAN EITHER REMOVE AND REPLACE THE VALLEY GUTTER IN KIND, OR PLACE THE PROPOSED SEWER UNDER THE EXISTING VALLEY GUTTER PRESERVING IT IN PLACE. IF THE CONTRACTOR CHOOSES TO PRESERVE THE VALLEY GUTTER IN PLACE, THE BACKFILL WITHIN 24" OF THE FINISH GRADE SHALL BE MADE USING CONTROLLED DENSITY BACKFILL (1,000 P.S.I. CEMENT SLURRY). IF THE VALLEY GUTTER IS MAINTAINED IN PLACE, DRILL AND EPOXY 1/2" x 12" SMOOTH DOWELS 5" MINIMUM INTO THE EXISTING CONCRETE AT 12" O.C., MAX., GREASE OR WRAP BARS AS REQUIRED TO ALLOW FOR MOVEMENT. EPOXY SHALL BE HILTI "HIT HY-150 MAX" ADHESIVE MEETING ICC ESR-1967.

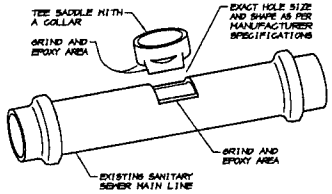
TRENCH SECTION & PAVING DETAIL

NO SCALE



CLEAN-OUT DETAIL

NO SCALE



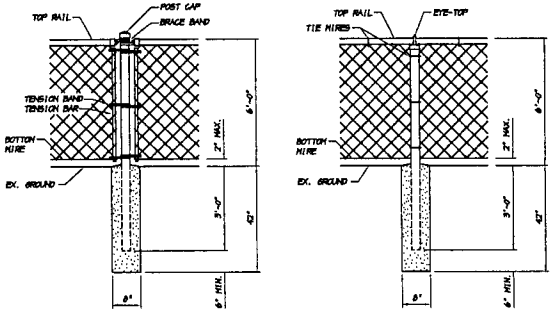
NOTES

1. ALL RECOMMENDATIONS FROM THE MANUFACTURER OF THE SADDLE SHALL BE FOLLOWED, INCLUDING BANDING THE SADDLE TO THE RECEIVING PIPE WITH STAINLESS STEEL STRAPS AFTER THE SADDLE IS GLUED IN PLACE.
2. ONLY FACTORY MANUFACTURED AND MOLDED SADDLE WYE CONNECTORS SHALL BE USED. NO PART OF THE TAP SADDLE SHALL PROTRUDE INTO THE BORE OR WATERWAY OF THE PIPE. THE SADDLE SHALL BE OF THE DESIGN THAT WILL ACCOMMODATE THE CONNECTION OF BRANCH USING PIPING MATERIAL OF VITRIFIED CLAY, CAST IRON, DUCTILE IRON OR P.V.C. WITH A FITTING OF THE COMPRESSION, MECHANICAL OR SEALING TYPE.
3. THE SADDLE SHALL PROPERLY MATCH THE SANITARY SEWER MAIN PIPE. THE PRIMER AND GLUE USED MUST MATCH THE MANUFACTURERS RECOMMENDATION.
4. SEWER TAP SHALL BE MADE TO ENSURE A FLEXIBLE, WATERTIGHT CONNECTION. THE HOLE IN THE SEWER MAIN, TO RECEIVE THE TAP SADDLE, SHALL BE MADE USING NON-IMPACT ROTARY EQUIPMENT USING DIAMOND OR CARBIDE TIPPED CUTTING DRILLS. THE TAPPING MACHINE SHALL BE CAPABLE OF CUTTING HOLES, SIZED TO RECEIVE A SEWER SADDLE IN VITRIFIED CLAY, CAST IRON, DUCTILE IRON OR P.V.C. WITHOUT TUNNELING OR DISRUPTION OF THE PIPE BEDDING.

SANITARY SEWER LINE

SADDLE TAP DETAIL

NO SCALE



TYPICAL CORNER POST

END POST AND GATE POSTS TO BE SIMILAR TO CORNER POST.

TYPICAL LINE POST

FENCING GENERAL NOTES

FABRIC ~ CHAIN LINK WIRE, ZINC COATED, NO. 9 GAGE WOVEN INTO A 2" x 2" MESH.

POSTS ~ CORNER POSTS TO BE 2.875" O.D. X 9' LONG ~ 5.79 LBS. PER FOOT, GALV. GATE POSTS TO BE 2.875" O.D. ~ 5.79 LBS. PER FOOT, GALV. LINE POSTS TO BE 1.90" O.D. ~ 2.72 LBS. PER FOOT, GALV.

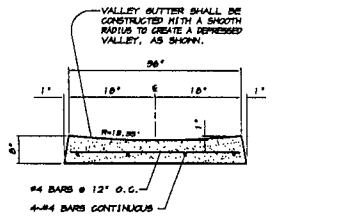
RAILS ~ TOP RAILS TO BE 1 3/8" O.D. ~ 16 GAGE, GALV.

WIRE ~ 7 GAGE BOTTOM TENSION WIRE.

1. POSTS TO BE SPACED AT 10' ~ 0" ON CENTER MAXIMUM.
2. POSTS TO BE PLACED IN 42" x 8" DIA. HOLE FILLED WITH CONCRETE.
3. ALL FENCING COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE FENCING MANUFACTURERS REQUIREMENTS.

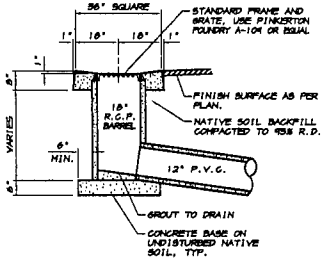
CHAIN LINK FENCE DETAILS

NO SCALE



VALLEY GUTTER DETAIL

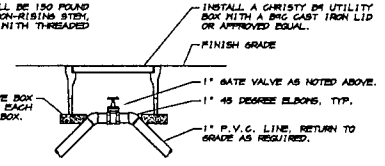
SCALE: 1"=1'



CATCH BASIN DETAIL

SCALE: 1"=2'

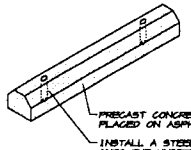
GATE VALVE SHALL BE 150 POUND BRONZE BODY, NON-RISING STEM, SINGLE WEDGE WITH THREADED CONNECTIONS.



1" WATER LINE

GATE VALVE DETAIL

NO SCALE



WHEEL STOP DETAIL

NO SCALE

REVISION	DATE	DESCRIPTION	BY

ASSOCIATED ENGINEERING GROUP
4206 TECHNOLOGY DRIVE, SUITE A, MODESTO, CA. 95356
PHONE (209) 545-3380 FAX (209) 545-3875 www.aeg-eng.com

CONSTRUCTION DETAILS

BMS MODULAR RELOCATION PROJECT

PUBLIC SAFETY CENTER

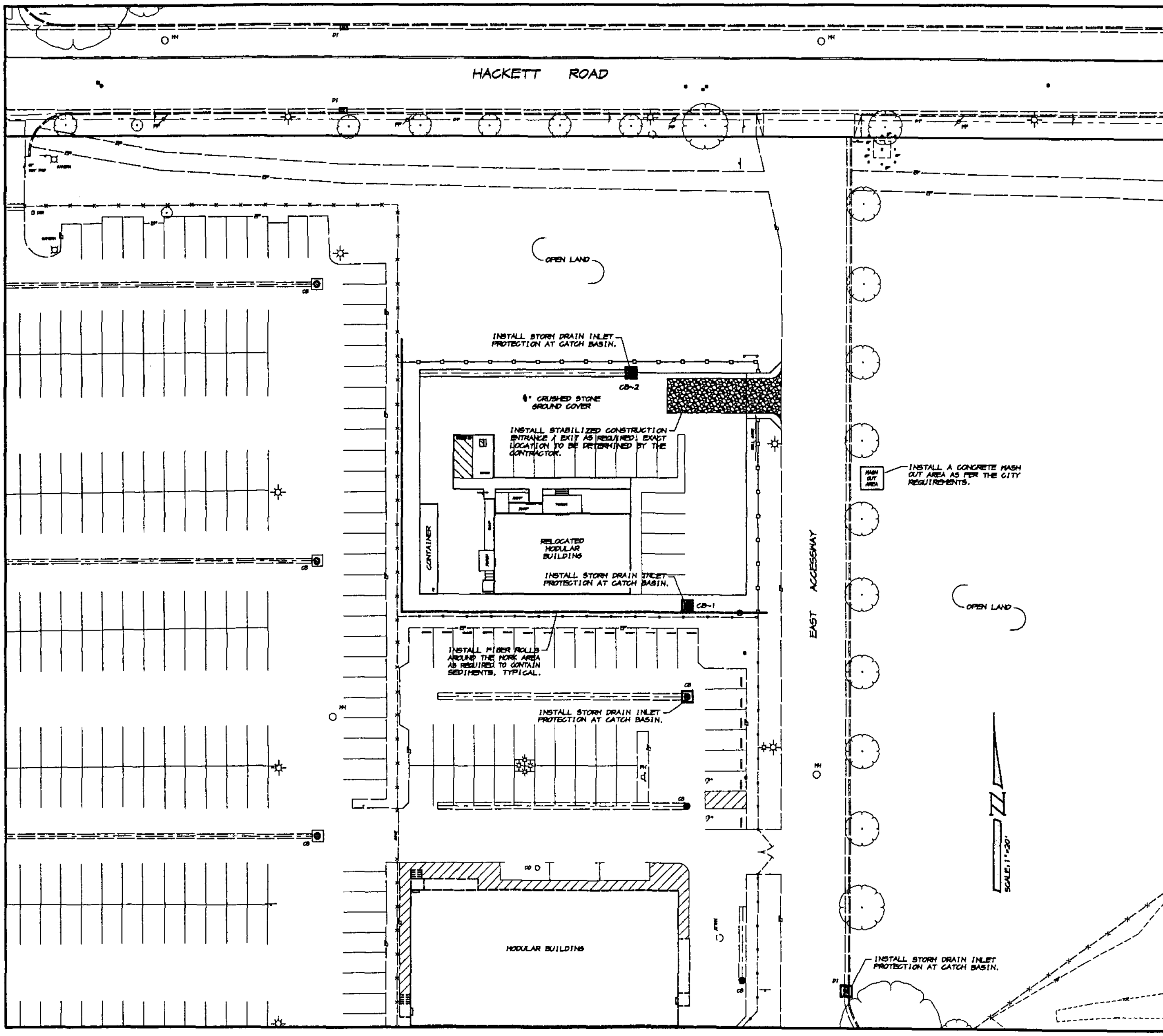
CERES CALIFORNIA

RYAN CARROL, R.C.E. 61619
DAVE SATDHOME, L.S. 7176

REGISTERED PROFESSIONAL ENGINEER RYAN D. CARROL No. 61619 CIVIL STATE OF CALIFORNIA

DRAWN BY: KEVIN
DATE: JUNE 1, 2014
SCALE: NOTED
DWG: 8251-DETL
CHECKED: R.D.C.
JOB #: 8251-14

SHEET 7 OF 13



LEGEND

- EX. CURB AND GUTTER
- EX. EDGE OF PAVEMENT
- MH — EX. MANHOLE
- CO — EX. CLEAN OUT
- DI — EX. DROP INLET
- CB — EX. CATCH BASIN
- FH — EX. FIRE HYDRANT
- EX. GATE VALVE
- HB — EX. HOSE BIB
- EX. WATER BACKFLOW PREVENTION DEVICE
- EX. WATER METER BOX
- PP — EX. POWER POLE
- EX. SIGN
- ATMH — EX. TELEPHONE MANHOLE
- EX. ELECTROLIER
- EX. GUARD POST
- EX. FENCE
- EX. TREE, SPREAD DRAWN TO SCALE
- CB-1 — PROP. CATCH BASIN
- PROP. EROSION CONTROL METHOD AS NOTED AND AS PER DETAILS ON SHEET 4

GENERAL NOTES

1. IN CASE OF EMERGENCY CALL: ______________
2. THE CONTRACTOR SHALL IMPLEMENT THE "2010 CALIFORNIA GREEN BUILDING STANDARDS CODE, SECTION 5.106.1 STORM WATER SOIL LOSS PREVENTION PLAN". THE CONTRACTOR SHALL PREVENT SOIL LOSS FROM STORM WATER RUN-OFF AND/OR WIND EROSION, OF SEDIMENTATION AND/OR OF DUST/PARTICULATE MATTER AIR POLLUTION. THE CONTRACTOR SHALL IMPLEMENT THE NECESSARY BEST MANAGEMENT PRACTICES (BMP'S) AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MONITORING AND MAINTENANCE OF BMP'S TO ENSURE THEIR EFFECTIVENESS THROUGH THE DURATION OF THE CONSTRUCTION PROCESS.
3. CHANGES TO THIS EROSION AND SEDIMENT CONTROL PLAN SHALL BE MADE TO MEET FIELD CONDITIONS BY THE CONTRACTOR.
4. THE APPROXIMATE AREA OF DISTURBED SOILS WITH THIS PROJECT IS APPROXIMATELY 0.4 ACRES.
5. THE CONTRACTOR'S SWLPPM SHALL HAVE PRIMARY RESPONSIBILITY AND SIGNIFICANT AUTHORITY FOR THE IMPLEMENTATION, MAINTENANCE, INSPECTION OF THE MEASURES AS SHOWN ON THE PLAN. THE CONTRACTOR SHALL BE AVAILABLE AT ALL TIMES THROUGHOUT THE DURATION OF THE PROJECT.
6. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED. THIS PLAN MAY NOT COVER ALL THE SITUATIONS THAT ARISE DURING CONSTRUCTION DUE TO UNANTICIPATED FIELD CONDITIONS. REVISIONS MAY BE MADE TO THE PLAN IN THE FIELD BY THE CONTRACTOR.
7. WHILE NO STATE PERMIT IS REQUIRED, CONSTRUCTION BEST MANAGEMENT PRACTICES (BMPS) SHALL BE FOLLOWED. BMP'S INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:
   1. EROSION AND SEDIMENT CONTROL BMPS:
      - A. SCHEDULING CONSTRUCTION ACTIVITY
      - B. PRESERVATION OF NATURAL FEATURES, VEGETATION AND SOIL
      - C. DRAINAGE SWALES OR LINED DITCHES TO CONTROL STORM WATER FLOW
      - D. MULCHING OR HYDROSEEDING TO STABILIZE DISTURBED SOILS
      - E. EROSION CONTROL TO PROTECT SLOPES
      - F. PROTECTION OF STORM DRAIN INLETS (GRAVEL BAGS OR CATCH BASIN INSERTS)
      - G. PERIMETER SEDIMENT CONTROL (PERIMETER SILT FENCE, FIBER ROLLS)
      - H. SEDIMENT TRAP OR SEDIMENT BASIN TO RETAIN SEDIMENT ON SITE
      - I. STABILIZED CONSTRUCTION EXITS
      - J. WIND EROSION CONTROL
   2. HOUSEKEEPING BMPS:
      - A. MATERIAL HANDLING AND WASTE MANAGEMENT
      - B. BUILDING MATERIALS STOCKPILE MANAGEMENT
      - C. MANAGEMENT OF WASHOUT AREAS (CONCRETE, PAINTS, STUCCO, ETC.)
      - D. CONTROL OF VEHICLE/EQUIPMENT FUELING TO CONTRACTOR'S STAGING AREA
      - E. VEHICLE AND EQUIPMENT CLEANING PERFORMED OFF-SITE
      - F. SPILL PREVENTION AND CONTROL

REVISION	DATE	DESCRIPTION	BY

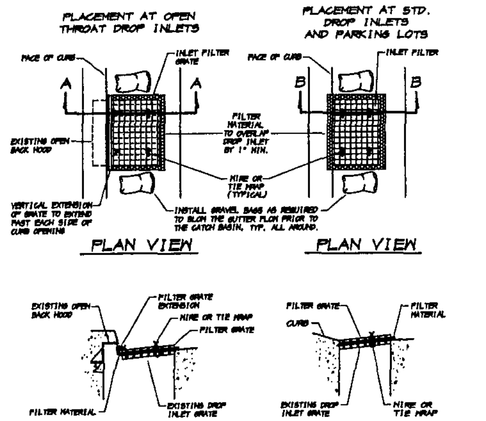
ASSOCIATED ENGINEERING GROUP
4206 TECHNOLOGY DRIVE, SUITE 4, MODESTO, CA 95356
PHONE: (209) 545-3390 FAX: (209) 545-3875

EROSION CONTROL PLAN
BAS MODULAR RELOCATION PROJECT
PUBLIC SAFETY CENTER
CERES CALIFORNIA

RYAN CARREL, R.C.E. 61619
DAVE SKIDMORE, L.S. 7126

DRAWN BY: KEVIN
DATE: JUNE 1, 2014
SCALE: 1"=20'
DWG: 8251-EROS
CHECKED: R.D.C.
JOB #: 8251-14

SHEET 8 OF 13



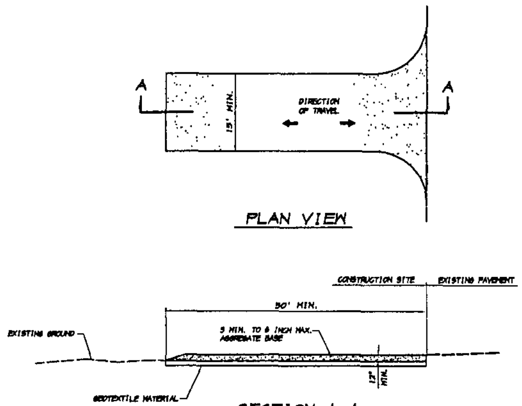
NOTES

1. THE MAXIMUM DRAINAGE AREA PER FILTER SHALL BE NO MORE THAN 1 ACRE.
2. THE FILTER PAD SHALL BE CLEANABLE POLYESTER FIBER AND ACRYLIC LATEX RESIN OR APPROVED EQUAL. THE FILTER PAD SHALL OVERLAP DROP INLET ON ALL SIDES BY A MINIMUM OF 1 INCH.
3. THE FILTER GRATE SHALL BE MADE OF EXPANDED METAL OF REBAR AND BE OF SUFFICIENT STRENGTH TO PREVENT BENDING WHEN DRIVEN OVER. GRATE MATERIAL SHALL NOT EXCEED 0.5" THICK. THE GRATE SHALL HAVE A MINIMUM 60% OPEN AREA. GRATES USED AT TYPE B AND E INLETS SHALL HAVE A VERTICAL EXTENSION TO COVER THE CURB OPENING. THE FILTER GRATE SHALL BE THE SAME SIZE AS THE DROP INLET GRATE.
4. THE FILTER PAD AND GRATE SHALL BE SECURELY ATTACHED TO THE DROP INLET BY WIRE OR TIE-WRAPS.
5. INLET FILTERS SHALL BE INSPECTED WEEKLY AND AFTER EACH RAINFALL. REPAIRS AND SEDIMENT AND DEBRIS REMOVAL SHALL BE MADE AS NECESSARY.
6. THE CONTRACTOR SHALL IMPLEMENT INLET PROTECTION AS PER THE REQUIREMENTS IN THE CALIFORNIA STORMWATER BMP HANDBOOK (CASQA) CONSTRUCTION FACT SHEET SE-10.

STORM DRAIN

INLET PROTECTION

NO SCALE



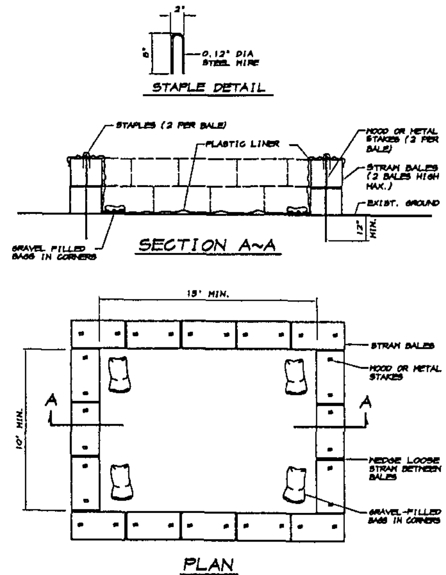
NOTES

1. STABILIZED CONSTRUCTION SITE ACCESS SHALL BE CONSTRUCTED OF 3" TO 6" MAX. AGGREGATE BASE MATERIAL CONFORMING TO CITY OR COUNTY STANDARDS. MATERIAL SHALL BE PLACED TO A MINIMUM THICKNESS OF 12". THE METHOD OF PLACING, SPREADING AND COMPACTING AGGREGATE BASE MATERIAL SHALL CONFORM TO SECTION 26 OF THE STATE SPECIFICATIONS.
2. LENGTH OF ENTRANCE SHALL BE A MINIMUM OF 50 FEET. WIDTH SHALL BE A MIN. OF 15 FEET OR GREATER IF NECESSARY TO COVER ALL VEHICULAR INGRESS AND EGRESS. PROVIDE AMPLE TURNING RADII.
3. THE ENTRANCE SHALL BE KEPT IN GOOD CONDITION BY OCCASIONAL TOP DRESSING WITH AGGREGATE ROCK MATERIAL OR CLEANING THE EXISTING ROCK.
4. ACCESSES SHALL BE INSPECTED WEEKLY DURING PERIODS OF HEAVY USAGE, MONTHLY DURING NORMAL USAGE, AND AFTER EACH RAINFALL, WITH MAINTENANCE PROVIDED AS NECESSARY. PERIODIC TOP DRESSING SHALL BE DONE AS NEEDED.
5. THE CONTRACTOR SHALL INSTALL AND MAINTAIN THE STABILIZED CONSTRUCTION ENTRANCE / EXIT AS PER THE REQUIREMENTS IN THE CALIFORNIA STORMWATER BMP HANDBOOK (CASQA) CONSTRUCTION FACT SHEET TC-1.

STABILIZED

CONSTRUCTION ENTRANCE / EXIT

NO SCALE



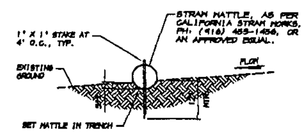
NOTE

1. THE CONTRACTOR SHALL INSTALL AND MAINTAIN THE CONCRETE WASHOUT AS PER THE REQUIREMENTS IN THE CALIFORNIA STORMWATER BMP HANDBOOK (CASQA) CONSTRUCTION FACT SHEET WM-8.

CONCRETE WASTE MANAGEMENT

CONCRETE WASHOUT

NO SCALE



NOTES

1. CONTRACTOR SHALL INSPECT FIBER ROLLS WEEKLY AND AFTER EACH RAINFALL. REPAIRS SHALL BE MADE AS NECESSARY AND SEDIMENT SHALL BE REMOVED WHEN IT HAS ACCUMULATED TO A DEPTH OF 4 INCHES. WATTLES SHALL BE REPLACED WHEN THEY HAVE BEEN DAMAGED, COLLAPSED OR DECOMPOSED.
2. WHERE FIBER ROLLS ARE TO BE PLACED ON EXISTING ASPHALT OR CONCRETE PAVEMENTS, THE ROLLS SHALL BE SECURED IN PLACE BY PLACING GRAVEL BAGS ON THE FIBER ROLL AT 8 FOOT MAXIMUM SPACING.
3. THE CONTRACTOR SHALL INSTALL AND MAINTAIN THE FIBER ROLLS AS PER THE REQUIREMENTS IN THE CALIFORNIA STORMWATER BMP HANDBOOK (CASQA) CONSTRUCTION FACT SHEET SE-5.

FIBER ROLLS

NO SCALE

REVISION	DATE	DESCRIPTION	BY

ASSOCIATED ENGINEERING GROUP
4208 TECHNOLOGY DRIVE, SUITE 4, MODESTO, CA 95356
PHONE (209) 545-3390 FAX (209) 545-3875 www.aeassocaeng.com

EROSION CONTROL DETAILS

BAS MODULAR RELOCATION PROJECT

PUBLIC SAFETY CENTER

CERES CALIFORNIA

RYAN CARREL, R.C.E. 63619
DAVE SKIDMORE, L.S. 7126

DRAWN BY: KEVIN
DATE: JUNE 1, 2014
SCALE: 1"=20'
DWG: 8251-EROS
CHECKED: R.D.C.
JOB #: 8251-14

SHEET 9 OF 13

ELECTRICAL ABBREVIATIONS

Δ	DELTA CONNECTED
Y	WYE CONNECTED
Ø	PHASE
&	AND
@	AT
'	FEET
"	INCHES
A	AMPERES
AC	ALTERNATING CURRENT
ACT	ABOVE COUNTERTOP/BACKSPLASH
ADJ	ADJACENT, ADJUSTING
AFD	ADJUSTABLE FREQUENCY DRIVE
AFF	ABOVE FINISHED FLOOR
AL	ALUMINUM
APPROX	APPROXIMATE
ARCH	ARCHITECT
AUTO	AUTOMATIC
AUX	AUXILIARY
ALT	ALTERNATE
AWG	AMERICAN WIRE GAUGE
B	BARE
BC	BARE COPPER GROUND
BKBD	BACKBOARD
BRKR	BREAKER
BLDG	BUILDING
C	CONDUIT OR CONTRACTOR
CAB	CABINET
CATV	CABLE TELEVISION
CKT	CIRCUIT
CLG	CEILING
CO	CONDUIT ONLY
COMM	COMMUNICATION
CONC	CONCRETE
CONN	CONNECT
CONT	CONTINUATION OR CONTROLLER
CORRG	CORRUGATE
CR	CONTROL RELAY
CT	CURRENT TRANSFORMER
COMP	COMPRESSOR
CU	COPPER
DC	DIRECT CURRENT
DET	DETAIL
DISC	DISCONNECT
DIST	DISTRIBUTION
DSA	DIVISION OF THE STATE ARCHITECT
DWG	DRAWING
(E), EXIST	EXISTING
EC	ELECTRICAL CONTRACTOR
EL, ELEV	ELEVATION
EL	EMERGENCY LIGHT
ELECT	ELECTRICAL
EMS	ENERGY MANAGEMENT SYSTEM
EMT	ELECTRICAL METALLIC TUBING
EOL	END OF LINE
ENCL	ENCLOSURE
EP	EXPLOSION PROOF
EQUIP	EQUIPMENT
ETC	ET CETERA
EVAP	EVAPORATOR

(F)	FUTURE
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FATC	FIRE ALARM TERMINAL CABINET
FIXT	FIXTURE
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FLUOR	FLUORESCENT
FS	FLOW SWITCH
FOR	FORWARD-OFF-REVERSE
FT	FEET
GALV	GALVANIZED
GND	GROUND
GC	GENERAL CONTRACTOR
H	HIGH
HOA	HAND-OFF-AUTO
HOS	HAND-OFF-STANDBY
HV	HIGH VOLTAGE
HVAC	HEATING, VENTILATION, AIR CONDITIONING
IDF	INTERMEDIATE DISTRIBUTION FRAME
INCAN	INCANDESCENT
IDC	INITIATING DEVICE CIRCUIT
IN	INCHES
INST	INSTANTANEOUS
J	JUNCTION BOX
KV	KILOVOLTS
KVA	KILOVOLT AMPERES
KW	KILOWATTS
L	LINE
LB	ELBOW
LF	LINEAR FEET
LOS	LOCKOUT-STOP
LOH	LOCK-OFF-HALT
LV	LOW VOLTAGE
M	MOTOR
MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMPS
MCC	MOTOR CONTROL CENTER
MCM	THOUSAND CIRCULAR MILLS
MCP	MOTOR CIRCUIT PROTECTOR
MDF	MAIN DISTRIBUTION FRAME
MECH	MECHANICAL
MFG	MANUFACTURER
MIN	MINIMUM
MPOE	MAIN POINT OF ENTRY
MSB	MAIN SWITCHBOARD
N	NEUTRAL
(N)	NEW
NA	NON-AUTOMATIC
NAC	NOTIFICATION APPLIANCE CIRCUIT
NC	NORMALLY CLOSED
NIES	NOT IN ELECTRICAL SECTION
NIC	NOT IN ELECTRICAL CODE
NO., #	NUMBER
NO	NORMALLY OPEN
NL	NIGHT LIGHT

OC	ON CENTER
OH	OVERHEAD
OL	THERMAL OVERLOAD RELAY
OT	OVER TEMPERATURE
OSHPD	OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
PA	PUBLIC ADDRESS
PB	PULL BOX
PNL	PANEL
PH	PHASE
PR	PAIR
PRI	PRIMARY
PS	PRESSURE SWITCH
PWR	POWER
(R)	REMOVE(D)
RA	REMOTE ANNUNCIATOR
RD	ROAD
REQD	REQUIRED
REQMTS	REQUIREMENTS
RCP	REDUNDANT CABLING PATH
RM	ROOM
RECP	RECEPTACLE
RT	RAIN TIGHT
SCH	SCHEDULE
SEC	SECONDS, SECONDARY
SHT	SHEET
SIG	SIGNAL
SPECS	SPECIFICATIONS
SW	SWITCH
SWS	SWITCHES
SP	SPARE
STD	STANDARD
STR	STRANDED
SWBD	SWITCHBOARD
TELE	TELEPHONE
TEMP	TEMPERATURE
TOA	TEST OFF AUTOMATIC
TH	THERMOSTAT
TRANSF	TRANSFORMER
TYP	TYPICAL
TSP	TWISTED SHIELDED PAIR
THRU	THROUGH
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
V	VOLTS
VA	VOLT AMPS
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLT METER
W	WIRE
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
WHD	WATT HOUR DEMAND METER
WM	WATT METER
WH	WATER HEATER
XFMR	TRANSFORMER
(XX)	REMOVE AND RELOCATE(D)

GENERAL ELECTRICAL NOTES

1. PROVIDE ALL LABOR, MATERIALS, TOOLS, PLANT EQUIPMENT, TRANSPORTATION AND ALL PERFORM ALL OPERATIONS NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF ALL ELECTRICAL WORK REQUIRED FOR THE COMPLETE AND OPERATING SYSTEMS AS OUTLINED WITHIN THE SCOPE OF WORK.
2. UNDERWRITERS LABORATORIES, INC., SHALL MEET THEIR REQUIREMENTS AND SHALL BEAR THEIR LABEL WHEREVER STANDARDS HAVE BEEN ESTABLISHED AND LABEL SERVICE IS REGULARLY FURNISHED BY THAT AGENCY.
3. THE SIZE AND LOCATIONS OF EQUIPMENT ARE SHOWN TO SCALE WHEREVER POSSIBLE, CONTRACTOR SHALL MAKE USE OF ALL DATA IN ALL CONTRACT DOCUMENTS AND VERIFY THIS INFORMATION AT THE SITE.
4. CONDUCTORS SHALL BE COPPER CONDUCTORS TYPE AS NOTED ON CONSTRUCTION DOCUMENTS.
5. DO NOT PENETRATE STRUCTURAL MEMBERS, INCLUDING BEAMS, COLUMNS, OR FOOTINGS, WITHOUT PRIOR WRITTEN CONSENT OF THE DISTRICT'S STRUCTURAL ENGINEER. SHOULD IT BECOME NECESSARY TO PENETRATE SUCH MEMBERS, NOTIFY THE DISTRICT IN WRITING WITHOUT DELAY, PRIOR TO PROCEEDING WITH CONSTRUCTION AROUND SUCH MEMBERS.
6. WHERE EXISTING CONSTRUCTION IS CUT, DAMAGED, OR REMODELED, PATCH WITH MATERIALS TO MATCH IN KIND, QUALITY, AND PERFORMANCE.
7. WORK SHALL BE EXECUTED IN A CAREFUL AND ORDERLY MANNER WITH THE LEAST POSSIBLE DISTURBANCE TO PUBLIC AND TO OCCUPANTS OF EXISTING BUILDING.
8. CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR SAFETY OF ALL PERSONS ON OR ABOUT THE CONSTRUCTION SITE, IN ACCORDANCE WITH APPLICABLE LAWS AND CODES. GUARD ALL HAZARDS IN ACCORDANCE WITH THE SAFETY PROVISIONS OF THE LATEST MANUAL OF ACCIDENT PREVENTION PUBLISHED BY THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA.
9. CLEAN ALL EXPOSED SURFACES AND NEW EQUIPMENT AFTER COMPLETION.
10. ALL PERSONNEL WORKING WITH ENERGIZED EQUIPMENT WITHIN THE RESTRICTED ZONE PER NFPA-70E SHALL COMPLY WITH ALL NFPA-70E AND OSHA REQUIREMENTS AND BE ARC FLASH SAFETY CERTIFIED.

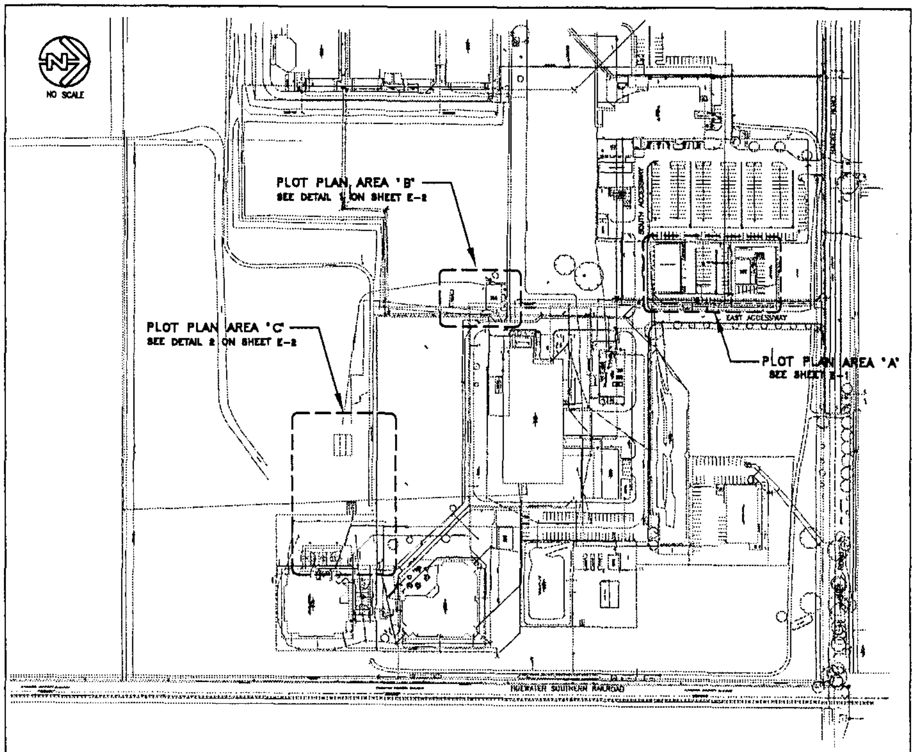
ELECTRICAL COMPLIANCE NOTES

THE INTENT OF THE DRAWINGS AND SPECIFICATION IS TO CONSTRUCT THE PROPOSED BUILDING IN ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS. ALL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF TITLE 22, DIVISION 7, CHAPTER 7, CALIFORNIA CODE OF REGULATIONS AND TITLE 24 -- ALL APPLICABLE PARTS OF LATEST EFFECTIVE EDITIONS.

ALL WORK PERFORMED UNDER THIS CONTRACT SHALL CONFORM TO THE FOLLOWING CODES AND REGULATIONS AS APPLICABLE:

2013 CALIFORNIA ADMINISTRATIVE CODE (CAC)
PART 1, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)
2013 CALIFORNIA BUILDING CODE (CBC)
PART 2, TITLE 24, CCR
BASED ON THE 2012 INTERNATIONAL BUILDING CODE (IBC)
2013 CALIFORNIA ELECTRICAL CODE (CEC)
PART 3, TITLE 24, CCR
BASED ON THE 2011 NATIONAL ELECTRICAL CODE (NEC)
2013 CALIFORNIA MECHANICAL CODE (CMC)
PART 4, TITLE 24, CCR
BASED ON THE 2012 UNIFORM MECHANICAL CODE (UMC)
2013 CALIFORNIA PLUMBING CODE (CPC)
PART 5, TITLE 24, CCR
BASED ON THE 2012 UNIFORM PLUMBING CODE (UPC)
2013 CALIFORNIA FIRE CODE (CFC)
PART 9, TITLE 24, CCR
BASED ON THE 2012 INTERNATIONAL FIRE CODE (IFC)

UNLESS OTHERWISE STATED, IT IS INTENDED THAT THE ABOVE CODES AND REGULATIONS REFER TO THE LATEST EDITION OR REVISION IN EFFECT ON THE DATE OF THE CONTRACT. NOTHING ON THE DRAWING IS TO BE CONSTRUED AS REQUIRING OR PERMITTING WORK THAT IS CONTRARY TO THE ABOVE LISTED CODES AND REGULATIONS, OR OTHER LOCAL, STATE OR FEDERAL CODES OR REGULATIONS WHICH MAY BE APPLICABLE.



1 PROJECT KEY SITE PLAN
SCALE: NONE

GENERAL ELECTRICAL LEGEND

- CONCRETE PULL BOX -SIZE AS NOTED - LIDS AS NOTED "P" POWER, "S" SIGNAL, "F" FIRE ALARM & "D" DATA; "-T" DENOTES TRAFFIC LID
- CONDUIT -SURFACE MOUNTED OR ABOVE CEILING -EMT WITH COMPRESSION FITTING UNLESS NOTED ON PLANS
- CONDUIT -CONCEALED BELOW FLOOR IN EMT OR UNDERGROUND IN PVC SCH 40 WITH RMC ELBOWS
- HOMERUN TO PERSPECTIVE PANEL OR CABINET -BRANCH CIRCUIT WITH OUT FURTHER DESIGNATION IS A #12 WIRE CIRCUIT
- FLEX
- TERMINAL CABINET
- PANEL BOARD -SEE SCHEDULE
- MOTOR/EXHAUST FAN -N.I.E.S. -CONNECT AS REQUIRED
- DUPLEX RECEPTACLE +18" A.F.F. U.O.N.
- QUADPLEX RECEPTACLE +18" A.F.F. U.O.N.
- FLOOR POWER RECEPTACLE -WALKER OR EQUAL
- 30A. -4 WIRE GROUND RECEPTACLE +18" A.F.F. - HUBBELL, BRYANT, OR EQUAL
- 50A. -4 WIRE GROUND RECEPTACLE +18" A.F.F. - HUBBELL, BRYANT, OR EQUAL
- GFCI RECEPTACLE +18" A.F.F. U.O.N.
- JUNCTION BOX -4 11/16" x 2 1/8" SQUARE OR SMALL
- JUNCTION BOX -LARGER THAN 4 11/16" x 2 1/8" SQUARE
- FLOOR JUNCTION BOX -WALKER OR EQUAL
- FUSED DISCONNECT SWITCH -SIZE AS NOTED -30A. SHOWN
- FULL VOLTAGE STARTER -SIZE AS NOTED -SIZE 3 SHOWN
- COMBINATION STARTER -SIZE AS NOTED -SIZE 3 SHOWN

GROUND — XX — NEUTRAL
WIRE SIZE — CKT. WIRE

GENERAL ELECTRICAL NOTES & ABBREVIATIONS

REVISIONS	BY
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REGISTERED PROFESSIONAL ENGINEER
KEVIN L. PEZZONI
NO. 18300
EXP. 9/14
ELECTRICAL
STATE OF CALIFORNIA

ELECTRICAL PLAN
B.A.S. MODULAR
STANISLAUS COUNTY
CERES, CALIFORNIA

DRAWN BY	CAL
CHECK BY	KLP
SCALE	AS SHOWN
DATE	6/1/14
JOB	14-218
SHEET NO.	E-0
OF	SHEETS

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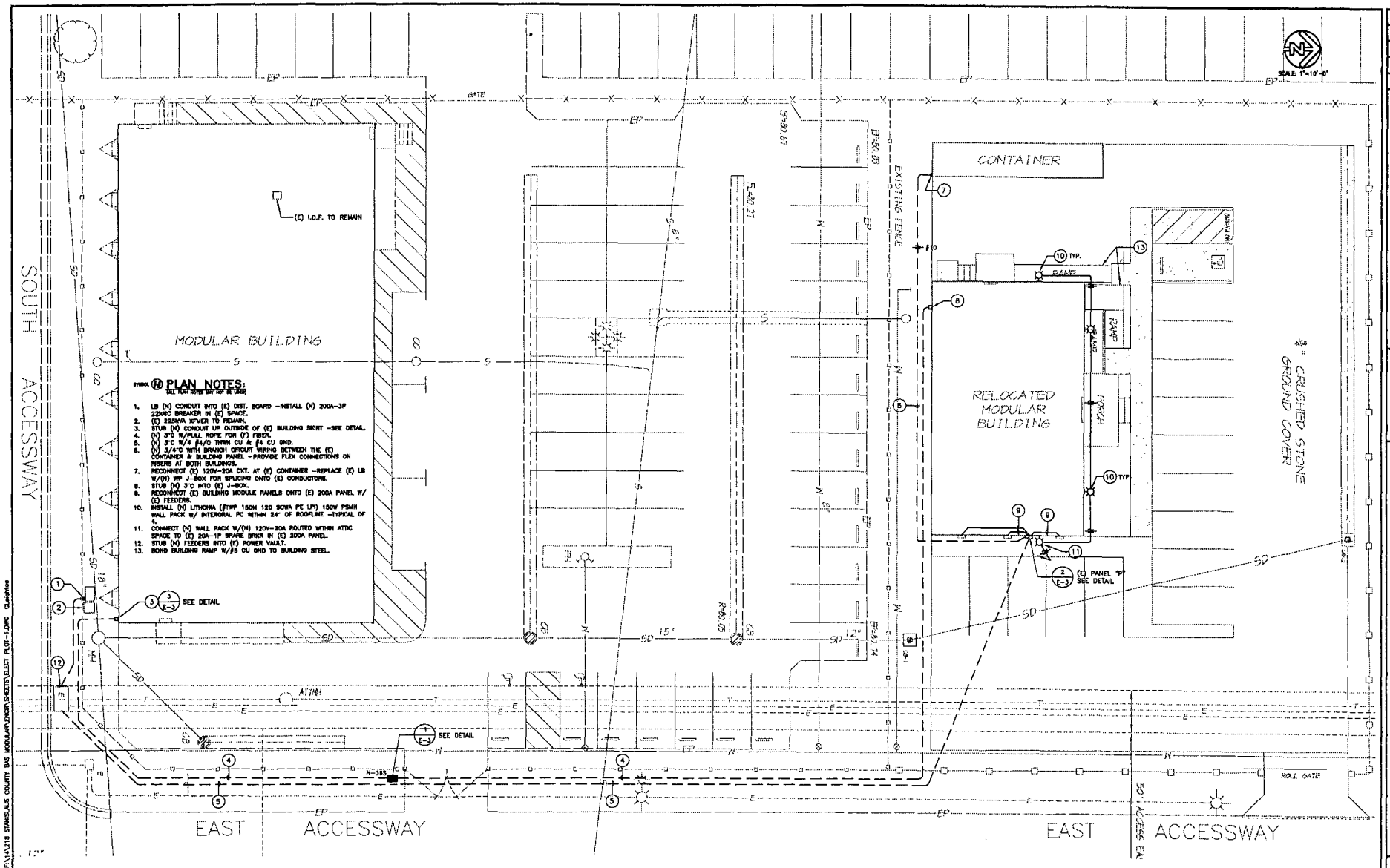

CONNECTION NOTE:

VERIFY EXACT CONNECTION POINTS FOR POWER, DATA, TELEPHONE, SECURITY, CATV, CLOCK & FIRE ALARM PRIOR TO CONSTRUCTION. APPROXIMATE ONLY LOCATIONS INDICATED FOR TRANSFORMER LOCATION, ETC. COMPLY WITH ALL UTILITY COMPANY REQUIREMENTS. PROVIDE ALL RELATED CONDUITS, PULL BOXES AND RISERS.

DIGALERT

DIAL TOLL FREE 1-800-227-2600 AT LEAST TWO DAYS BEFORE YOU DIG

UNDERGROUND SERVICE ALERT OF NORTHERN CALIFORNIA

1 ELECTRICAL PLOT PLAN "A"
SCALE: 1"=10'-0"

REVISIONS	BY

MILLER-PEZZONI & ASSOCIATES, INC.
CONSULTING ELECTRICAL ENGINEERS

ELECTRICAL PLAN

B.A.S. MODULAR

STANISLAUS COUNTY

CERES, CALIFORNIA

DRAWN BY	CAL
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JOB	14-218
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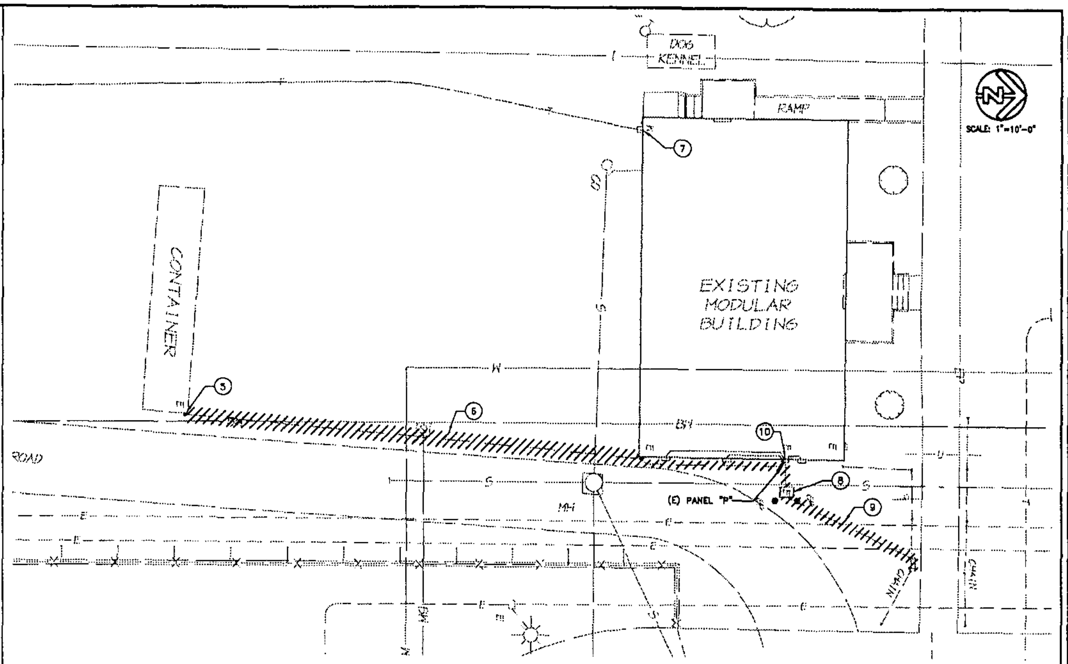
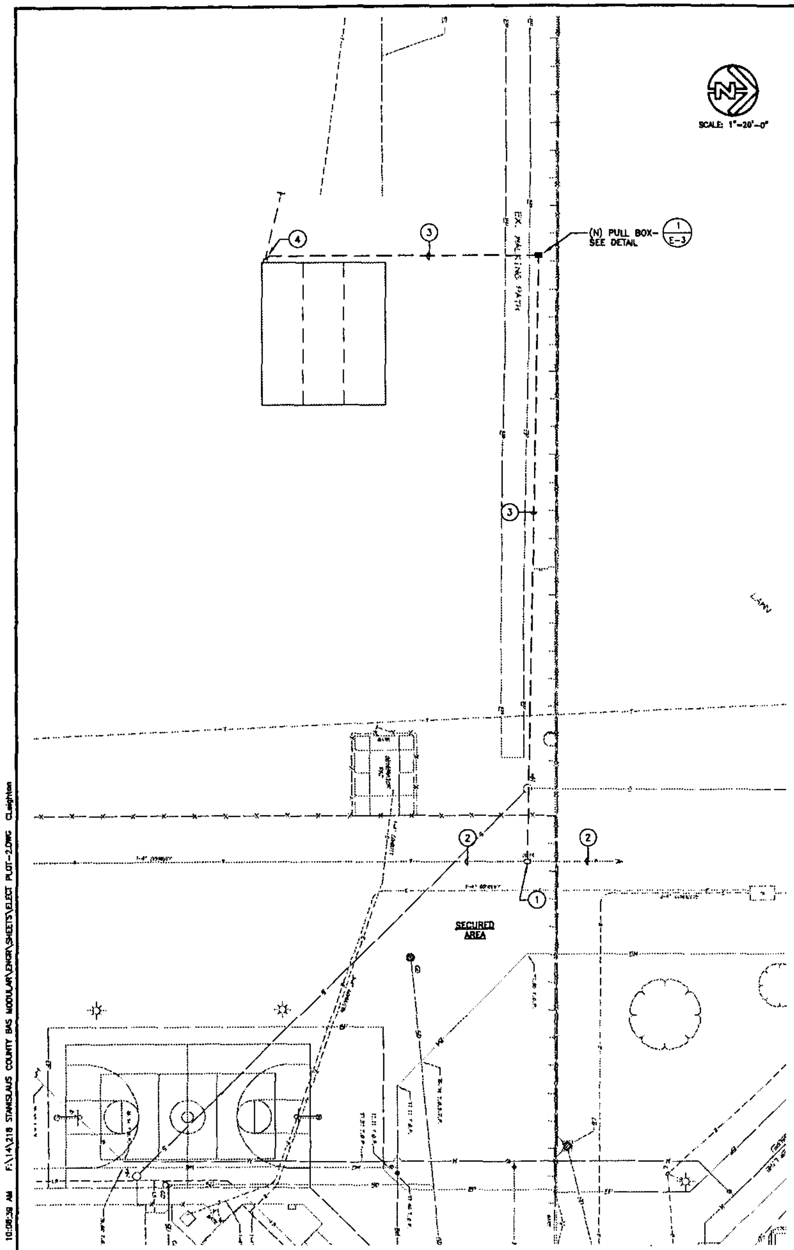
OF	SHEETS



① ELECTRICAL PLOT PLAN "B" – MODULAR BLDG.
SCALE: 1"=10'-0"



② ELECTRICAL PLOT PLAN "C" – MODULAR BLDG.
SCALE: 1"=20'-0"

PLAN NOTES:
(ALL PLAN NOTES MAY NOT BE USED)

1. STUB (N) CONDUIT INTO (E) DATA/TELE PULLBOX.
2. (E) TELECOMM/DATA RACEWAY.
3. (N) 3"C W/ PULL ROPE –INSTALL AT 24" DEPTH.
4. INTERCEPT (E) SWEEP WITH (N) CONDUIT AT (E) BUILDING J–BOX –CAP & ABANDON (E) IN TRENCH.
5. DISCONNECT (E) BRANCH CIRCUIT INTO CONTAINER & PRESERVE FOR (F) RECONNECTION AT (N) LOCATION.
6. REMOVE (E) CKT & ABANDON (E) CONDUIT IN PLACE.
7. DISCONNECT (E) TELECOMM CONDUIT RISER AT GUTTER TO RECONNECTION AT (N) LOCATION –CAP & ABANDON (E) CONDUIT IN PLACE.
8. DISCONNECT & REMOVE (E) XFMER & FEEDER TO (E) BUILDING PANEL L
9. DISCONNECT & REMOVE (E) FEEDER INTO (E) ELECTRICAL YARD & LABEL (E) BREAKER AS "SPARE" –TOTAL LENGTH OF (E) FEEDER IS 330 FEET –VERIFY ROUTING & EXISTING CONDITIONS W/ COUNTY.
10. DISCONNECT (E) FEEDERS FROM MAIN PANEL TO 2 (E) BUILDING PANELS TO ALLOW FOR RELOCATION OF ALL 3 BUILDING SECTIONS –REMOVE (E) EXPOSED CIRCUIT/CONDUIT TO (E) CONTAINER.

CONNECTION NOTE:

VERIFY EXACT CONNECTION POINTS FOR POWER, DATA, TELEPHONE, SECURITY, CATV, CLOCK & FIRE ALARM PRIOR TO CONSTRUCTION. APPROXIMATE ONLY LOCATIONS INDICATED FOR TRANSFORMER LOCATION, ETC. COMPLY WITH ALL UTILITY COMPANY REQUIREMENTS. PROVIDE ALL RELATED CONDUITS, PULL BOXES AND RISERS.

REVISIONS	BY
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△	
△	
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REGISTERED PROFESSIONAL ENGINEER KEVIN L. PEZZONI NO. 17269 ELECTRICAL STATE OF CALIFORNIA

ELECTRICAL PLAN
B.A.S. MODULAR
STANISLAUS COUNTY
CERES, CALIFORNIA

DRAWN BY	CAL
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SCALE	AS SHOWN
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JOB	14-218
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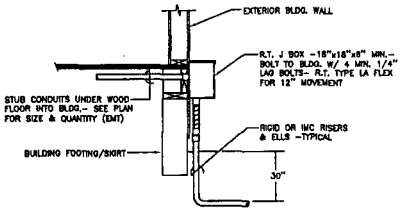
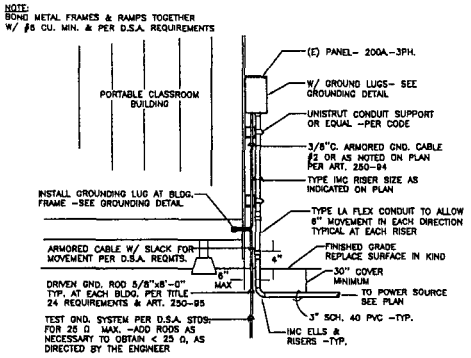
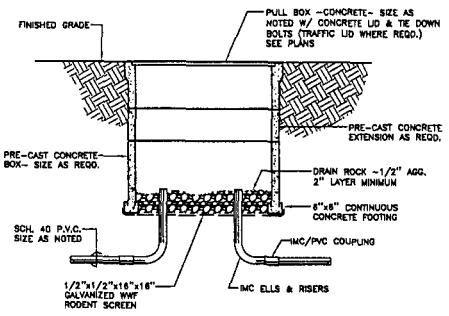
OF	SHEETS



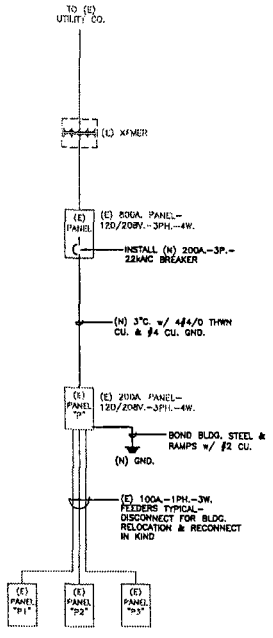
3 DATA CONNECTION AT BUILDING
SCALE: N.T.S.



UNDERGROUND TERMINATION AT PORTABLE BUILDING -TYPICAL
2 SCALE: N.T.S.



1 PULL BOX -TYPICAL
SCALE: N.T.S.



4 PARTIAL SINGLE LINE DIAGRAM
SCALE: N.T.S.

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MILLER-PEZZONI & ASSOCIATES, INC.
CONSULTING ELECTRICAL ENGINEERS

ELECTRICAL PLAN
B.A.S. MODULAR
STANISLAUS COUNTY
CERES, CALIFORNIA

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OF	SHEETS

SECTION 26 05 00

BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes

1. Provide all labor, materials and equipment necessary to complete the installation required for the items specified under Division 26.

B. Related work under this section

1. Labor and materials required to furnish and install the electrical systems in a complete and operational fashion.
2. Carpentry, masonry, steel and concrete materials and labor required for construction of proper stands, bases and supports for electrical materials and equipment.
3. Cutting and patching of holes required by installation including flashing and counter-flashing of roof and exterior wall penetrations.
4. Excavating, pumping and backfilling required for installation.
5. Repair of damage to the premises resulting from construction activities under this Section to Owner's satisfaction.
6. Removal of work debris from construction activities to Owner's satisfaction.
7. Testing and cleaning of equipment installed.

C. Work not under this section

1. Furnishing of motors, fans, compressors, water heaters, thermostats and motor starters included under Division 15, or as noted otherwise.
2. Finish painting of exposed metal surfaces included under Division 9, or as otherwise noted.
3. Electrical Contractor shall provide connections to mechanical equipment where voltage exceeds 50 V and all necessary raceways for low voltage controls.

D. Related sections

1. Where items specified in other Division 26 sections conflict with the requirements of this Section, the most stringent requirement shall govern.
2. The requirements of this Section apply to all Division 26 work, as applicable.
3. Consult all other sections, determine the extent and nature of related work and properly coordinate work specified herein with that specified elsewhere to provide a complete and working installation.

a. The General Conditions and General Requirements, Division 1, are a part of and are to apply to all the work of this Division.

b. Site Construction –Division 2: Earthwork, Boring

c. Concrete –Division 3: All sections

d. Metals –Division 5: Structural Metal Framing

e. Thermal and Moisture Protection – Division 7:Dampproofing and Waterproofing, Flashing, Fire and Smoke Protection

f. Finishes – Division 9: Painting and Coatings

g. Equipment – Division 11: As provided

1.02 REFERENCES

A. Comply with the latest edition of the following applicable specifications and standards except as otherwise shown or specified:

1. CCR –California Code of Regulations
   a. Title 8 –Industrial Relations; Division 1 –Department of Industrial Relations
      1) Chapter 3.2 -California Occupational Safety and Health Regulations (CAL/OSHA)
      2) Chapter 4 –Division of Industrial Safety
         a) Subchapter 4 -Construction Safety Orders (CSO)
         b) Subchapter 5 -Electrical Safety Orders (ESO)
   b. Title 24 –California Building Standards
      1) Part 1 -Building Standards Administrative Code
      2) Part 2 -California Building Code (CBC); ICBO Uniform Building Code (UBC) with California amendments
      3) Part 3 -California Electrical Code(CEC); NFPA 70 National Electrical Code (NEC) with California amendments
      4) Part 4 -California Mechanical Code (MEC); IAPMO Uniform Mechanical Code (UMC) with California amendments
      5) Part 5 -California Plumbing Code; IAPMO Uniform Plumbing Code (UPC) with California amendments
      6) Part 6 -California Energy Code
      7) Part 7 -California Elevator Safety Construction Code
      8) Part 9 -California Fire Code; WFCA Uniform Fire Code (UFC) with California amendments
      9) Part 12 -California Reference Standards Code
2. CPUC –California Public Utilities Commission

a. GO-95; Rules for Overhead Electric Line Construction

b. GO-128; Rules for Construction of Underground Electric Supply and Communication Systems

3. IEEE –Institute of Electrical and Electronic Engineers

a. C2; National Electrical Safety Code (NESC)

4. NECA –National Electrical Contractors Association

a. 1; Standard Practices for Good Workmanship in Electrical Contracting

b. 4090; Manual of Labor Units

5. All applicable local municipal codes and ordinances.

6. Applicable rules and regulations of local utility companies.

1.03 SUBMITTALS

A. Product data

1. Prior to commencement of work and within 35 days after award of Contract, submit in ample time for approval in accordance with Division 1 a complete list of furnished equipment, material and shop drawings, including all substitutions. Partial or incomplete lists of materials will not be considered. Substitutions will be considered thereafter.

a. Where it is in the best interest of Owner, Engineer may give written consent to a submittal received after expiration of designated time limits or for an additional re-submittal.

B. Closeout submittal

1. Furnish three complete sets of maintenance and operating instructions bound in a binder and indexed to Owner. Start compiling data upon approval of materials and equipment. Final inspection will not be made until Engineer approves binders. Refer also to Division 1 for additional requirements.

2. Provide one of each tool required for proper equipment operation and maintenance provided under this Section. All tools shall be delivered to the Owner at project completion.

3. Provide two keys to Owner for each lock furnished under Division 26.

4. Record drawings

a. Upon completion of Work, furnish Engineer with complete sets of plans (not marked blueprints) upon which shall be shown all work installed under Contract, which are not in accordance with the Construction Documents. Refer to Division 1 requirements.

b. All symbols and designations used in preparing Record Drawings shall match those used in Construction Documents.

1.04 SUBSTITUTIONS

A. If it is desired to make a substitution, the Contractor shall clearly identify each substitution on the submittal, and to submit complete information or catalog data to shown equality of equipment or material offered to that specified. Substitutions will be interpreted to be all manufacturers other than those specifically listed by model or catalog number within these Specifications and Drawings. No substitution will be allowed unless identified, requested and approved in writing. Materials of equal merit and appearance, in the opinion of the Engineer, will be approved for use. Architect and Engineer reserve the right to require originally specified items at no additional costs to Owner. Only one request for substitutions will be considered on each item of material or equipment.

B. Acceptance of a substitute is not to be considered a release from the Specifications. Correct any deficiencies in an item, even though approved at the Contractor's expense.

C. Responsibility for installation of approved substitution is included herein. Make any changes required for installation of approved substituted equipment without additional costs.

D. Failure to comply with any of the requirements of the above will necessitate that the specified materials be submitted and supplied.

1.05 CHANGE ORDER PROPOSALS

A. Shall comply with the requirements set forth by the General Conditions

B. All change order proposals and requests, both additive and deductive, shall be accompanied by a detailed materials and labor breakdown for each specific task and/or item.

1. All change order proposals and change orders, both additive and deductive, shall be based upon and be accompanied by a detailed materials and labor breakdown for each specific task and/or item. The breakdown shall include actual materials costs plus overhead and profit, as well as labor units base upon the most recent NECA Manual of Labor Units (NECA Index #4090) or equivalent publication for each specific task and item. Labor costs shall be computed as outlined within the General Conditions, based upon the NECA labor tables for each task required. Materials costs shall include actual Contractor invoice plus no more than 15% markup. The Owner and Contractor agree to the above change order cost procedure, for both additive and deductive change orders.

1.06 QUALITY ASSURANCE

A. References to codes, standards, specifications and recommendations of technical societies, trade organizations and governmental agencies shall mean that latest edition of such publications adopted and published prior to bid submittal. Such codes or standards shall be considered a part of this Specification as though fully repeated herein.

B. Work and materials shall be in full accordance with the latest rules and regulations of applicable state of local laws or regulations and standards of following:

1. National Fire Protection Association (NFPA)
2. California Electrical Code (CEC)
3. California Occupational Safety Health Act (Cal-OSHA)
4. California State Fire Marshall (CSFM)
5. California Code of Regulations (CCR)
6. Electrical Safety Orders, CAC Title 8 (ESO)
7. California Public Utilities Commissions, General Order 95 (GO-95)
8. Applicable rules and regulations of local utility companies.
9. NECA 1-2000, Standard Practices for Good Workmanship in Electrical Contracting

C. All electrical equipment and material furnished under Division 26 shall conform to all CEC/NEC requirements and bear the Underwriters' Laboratories (UL) label where applicable.

D. Nothing in the Construction Documents shall be construed to permit work not conforming to these Codes. Whenever the indicated material, workmanship, arrangement or construction is of high quality or capacity than that required by the above rules and regulations, the Construction Documents shall take precedence. Should there be any direct conflict between the rules and regulations and Construction Documents, the rules shall govern.

E. All electrical equipment and material furnished under this Section shall conform to NEMA and ASTM standards, NEC/CEC and bear the Underwriters' Laboratories (UL) label where such label is applicable.

F. All electrical work shall conform to manufacturer's written instruction, and the NECA Standard Practices for Good Workmanship in Electrical Contracting and all published recommended practices at the time of project. The Contractor shall use the requirements within the Specifications whenever they exceed NECA guidelines.

G. Follow manufacturer's direction where these direction cover points not included with the Construction Documents.

1.07 DELIVERY, STORAGE AND HANDLING

A. Packing, shipping, handling and unloading

1. Damage to the equipment delivered to the site or in transit to the job shall be the responsibility of the Electrical Contractor.
2. Equipment and material delivery of shall be scheduled as required for timely, expeditious progress of work.

B. Storage and protection of job equipment is the responsibility Contractor.

C. Comply with Division 1 requirements with regards to waste management and disposal.

1.08 PROJECT CONDITIONS

A. Discrepancies

1. In the event of discrepancies with the Contract Documents, Engineer shall be notified with sufficient time as stated within Division 1 to allow the issuing of an addendum prior to the bid opening.
2. If, in the event that time does not permit notification of clarification of discrepancies prior to the bid opening, the following shall apply:
   a. The drawings govern in matters of quantity and specifications govern in matters of quality.
   b. In the event of conflict within the drawings and specifications involving quantities or quality, the greater quantity or higher quality shall apply. Such discrepancies shall be noted and clarified within the contractor's bid. No additional allowances will be made because of errors, ambiguities or omissions which reasonably should have been discovered during the bid preparation.

B. Verify all power and communication utilities' requirements prior to commencement of any utility work. Make proper adjustments to the construction to satisfy the serving utility.

C. Information shown relative to services is based upon available records and data, but shall be regarded as approximate only. Make minor deviations found necessary to conform to actual locations and conditions without extra cost. Verify locations and elevations of utilities prior to commencement of excavation for new underground installation.

D. Exercise extreme care in excavating near existing utilities to avoid any damage thereto; be responsible for any damage caused by such operations. Contact all utility companies to obtain exact locations prior to commencement of construction.

E. The electrical plans indicate the general layout and arrangement; the architectural drawings and field conditions shall determine exact locations. Field verify all conditions and modify as required to satisfy design intent. Maintain all required working clearances.

F. Fees, permits and utility services

1. Obtain and pay for all permits and service charges required for the installation of this work. Arrange for required inspections and secure approvals from authorities having jurisdiction. Arrange for all utility connections and pay charges incurred including excess service charges if any.
2. Extra charges imposed by the electrical and communication utility companies shall be included in the bid, if available. Unless otherwise stated, these charges will be assumed to include in the bid.

G. Provide and maintain temporary construction power. The General Contractor or Owner will pay for electric energy charges; refer to Division 1 for details. Should the Electrical Contractor be the prime contractor, the Electrical Contractor shall pay for energy charges unless negotiated with Owner.

1.09 SEQUENCING

A. Coordinate work within phasing plans as provided by the Owner.

1.10 WARRANTY

A. Furnish one-year minimum guarantee in accordance with and in form required under Division 1. Repair or replace as may be necessary any defective work, material, or part without cost to the Owner, include repair or replacement of other work, furnishing, equipment or premises caused by such repair or replacement of defective work.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Materials mentioned herein or on Drawings require that the items be provided and of quality noted or an approved equal. All materials shall be new, full weight, standard in all respects and in first-class condition. Insofar as possible, all materials used shall be of the same brand or manufacturer throughout for each class of material or equipment.

B. Trade names or catalog numbers stated herein indicts grade or quality of material desired. Materials, where applicable, shall UL labeled and in accordance with NEMA standards.

C. Dimensions, sizes and capacities shown are a minimum. Do not make changes without written permission of Engineer

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine Construction Documents and Site; be familiar with types of construction where electrical installation is involved. Note carefully other sections of Specifications with their individual cross-references, standard details, etc.

B. Any electrical work or materials shown either in Construction Documents, but not mentioned herein, or vice versa, shall be executed the same as if mentioned herein, in a workmanlike manner in accordance with all published NECA Standards of Installation.

C. Coordinate work with other crafts to avoid conflicts, and check all outlet locations with Architectural and Mechanical drawings and specifications. Make minor adjustments without additional cost to Owner.

D. Engineer will make clarifications and rulings concerning any obvious discrepancies or omissions in work prior and after bidding. Perform all work involved in correcting obvious errors or omissions after award of contract as directed by Engineer at Contractor's expense.

E. Examine site dimensions and locations against Drawings and become informed of all conditions under which work is to be done before submitting proposals. No allowance will be made for extra expense due to error.

F. Layouts of equipment, accessories and wiring systems are diagrammatic (not pictorial), but shall be followed as closely as possible. Construction Documents are for assistance and guidance, and exact locations, distance, levels, etc., will be governed by construction; accept same with this under standing.

G. Horsepower of motors or wattage of equipment indicated in Construction Documents is estimated horsepower or wattage requirement of equipment furnished under other sections of Specifications. Size all feeders (conduit and wiring), motor starters, overload protection and circuit breakers to suit horsepower of motors or wattage of equipment actually furnished under various sections of specifications. However, in no case shall feeders and branch circuits (conduit and wiring) and circuit breakers be of smaller capacities or sizes than those indicated on Drawings or specified, unless approved in writing by Engineer.

3.02 PREPARATION

A. Seal all exterior wall penetrations in an approved watertight manner and to the satisfaction of Engineer and Architect.

B. Channels, joiners, hangers, caps, nuts and bolts and associated parts shall be plated electrolytically with zinc followed immediately thereafter by treating freshly deposited zinc surfaces with chromic acid to obtain a surface which will not form a white deposit on surface for an average of 120 hours when subjected to a standard salt spray cabinet test, or shall be hot dipped galvanized

3.03 INSTALLATION

A. Equipment identification

1. Properly identify panelboards, remote control switches, push buttons, terminal boxes, etc. with a descriptive nameplate. Make nameplate with 3/32" laminated plastic with black background and white letters. Machine engraved letters 1/8" high for equipment in device box(es) and 1/4" high for panelboards, terminal cabinets or larger items. Punched strip type nameplates and cardholders in any form are not acceptable. Fasten nameplates with oval head machine screws, tapped into front cover/panel.

B. Working spaces

1. Provide adequate working space around electrical equipment in compliance with Article 4 of Electrical Safety Orders and CEC/NEC 110.26. In general provide 78" of headroom and 30" wide minimum clear workspace in front of panelboards

and controls. In addition to the above, provide the following minimum working clearances:

a. 0V – 150V (line-to-ground) provide 36" minimum clear distance.

b. 151V – 600V (line-to-ground) provide 42" minimum clear distance.

C. Equipment supports

1. Anchor all electrical equipment to structure. Support systems shall be adequate to withstand seismic forces per CBC.

D. Excavating and backfilling

1. Excavate and backfill as required for installation of Work. Restore all surfaces, roadways, walks, curbs, walls existing underground installations, etc., cut by installations to original condition in an acceptable manner. Maintain all warning signs, barricades, flares and lanterns as required by ESO and local ordinances.

2. Dig trenches straight and true to line and grade, with bottom clear of any rock points. Support conduit for entire length on undisturbed original earth. Minimum conduit depth of pipe crown shall be 24" below finished or natural grade, unless otherwise noted.

E. Forming, cutting and patching

1. In new construction, General Contractor shall provide any special forming, recesses, chased, etc., and provide wood blocking, backing and grounds as necessary for the proper installation of electrical work. Be responsible for notifying General Contractor that such provision is necessary; layout work and check to see that it suits his requirements.

a. Provide metal backing plates, anchor plates and such that are required for anchorage of electrical work under Division 26; securely weld or bolt to metal framing. Wood blocking or backing will not be permitted in combination with metal framing.

2. Be responsible for proper placement of pipe sleeves, hangers, inserts and supports for this Work.

F. Concrete work

1. Provide concrete work related solely to electrical work. Concrete work, including forming and reinforcing steel installed for all electrical work, shall comply with all applicable requirements of Division 3, or in accordance with the State of California Standard Specifications issued by the Department of Transportation (CALTRANS).

3.04 REPAIR/RESTORATION

A. Cutting, patching and repairing of existing construction to permit installation of work under Division 26 is the responsibility of Contractor. Repair or replace all damage to existing work in kind to Owner's satisfaction.

B. Obtain Engineer's approval prior to performing any cutting or patching of concrete, masonry, wood or steel structure within building.

3.05 FIELD QUALITY CONTROL

A. Inspection of work

1. Working parts shall be readily accessible for inspection, repair and renewal. The right is reserved to make reasonable changes in equipment location shown on Drawings prior to rough in without additional costs to the Owner.
2. During construction all work will be subject to observation by the Engineer and his representatives. Assist in ascertaining any information that maybe required.
3. Do not allow or cause any work installed hereunder to be covered up or enclosed before it has been inspected and approved. Should any work be enclosed or covered prior to approval, uncover work, and after it has been inspected and approved, restore work of all others to the condition in which it was found at the time of cutting, all without additional costs to Owner.

B. Furnish all testing equipment as maybe required.

C. Test all wiring and connections for continuity and grounds; where such tests indicate faulty insulation or other defects, locate, repair and re-test.

D. Check rotation of all motors and correct if necessary.

3.06 CLEANING

A. Repair or replace all broken, damaged or otherwise defective parts without additional cost to Owner, and leave entire work in a condition satisfactory to Engineer. At completion, carefully clean and adjust all equipment, fixtures and trim installed as part of this work; leave systems and equipment in satisfactory operating condition.

B. Clean out and remove from the site all surplus materials and debris resulting from this work; this includes surplus excavated materials.

3.07 DEMONSTRATION

A. At project completion, Contractor shall allot a period of not less than 8 hours for instruction of operating and maintenance personnel in the use of all systems installed under this Section. This time is in addition to any instruction time stated in the Specifications of other sections for other equipment (i.e., fire alarm, security, intercom, etc.). All personnel shall be instructed at one time, the Contractor shall make all necessary arrangements with manufacturer's representatives as may be required. Contractor, if any, for the above services shall pay all costs.

3.08 PROTECTION

A. In performance of work, protect work of other trades as well as work under this Section from damage.

B. Protect electrical equipment, stored and installed, from dust, water or other damage.

END OF SECTION

SECTION 26 06 00

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes

1. Provide all labor, materials and equipment necessary to complete the installation required for the item specified under this Section, including but not limited to power system grounding

B. Related sections

1. Where items specified in other Division 26 sections conflict with the requirements of this Section, the most stringent requirement shall govern.
2. The requirements of this Section apply to all Division 26 work, as applicable.
3. Consult all other sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.

1.02 REFERENCES

A. Comply with the latest edition of the following applicable specifications and standards except as otherwise shown or specified:

1. CCR –California Code of Regulations, Title 24
   a. Part 3 -California Electrical Code(CEC); NFPA 70 National Electrical Code (NEC) with California amendments
2. IEEE –Institute of Electrical and Electronic Engineers
   a. 142; Recommend Practices for Grounding of Industrial and Commercial Power Systems
3. NFPA –National Fire Protection Association
   a. 780; Lightning Protection Code
4. UL –Underwriters Laboratories, Inc.
   a. 467; Grounding and Bonding Equipment

1.03 SYSTEM DESCRIPTION

A. This Section provides for the grounding and bonding of all electrical and communication apparatus, machinery, appliances, components, fittings and accessories where required to provide a permanent, continuous, low impedance,

grounded electrical system.

B. Ground the electrical service system neutral at service entrance equipment as shown on the Drawings.

C. Ground each separately derived system, as defined in CEC/NEC 250-5(d) and on the Drawings, unless specifically noted otherwise.

D. Except as otherwise indicated, the complete electrical installation including the neutral conductor, equipment and metallic raceways, boxes and cabinets shall be completely and effectively grounded in accordance with all CEC/NEC requirements, whether or not such connections are specifically shown or specified.

1.04 SUBMITTALS

A. Submit manufacturer's data for equipment and materials specified within this Section in accordance to Section 26 05 00.

1.05 QUALITY ASSURANCE

A. All materials, equipment and parts comprising the materials specified herein shall be new and unused, bearing UL labels where applicable.

PART 2 - PRODUCTS

2.01 CONCRETE ENCASED GROUNDING ELECTRODE (UFER GROUND)

A. #3/O AWG minimum bare stranded copper conductor.

2.02 DRIVEN (GROUND) RODS

A. Copper clad steel, minimum ¾" diameter by 10'-0" length, sectional type with copper alloy couplings and carbon steel driving stud; Weaver, Cadweld or equal.

2.03 INSULATED GROUNDING BUSHINGS

A. Plated malleable iron body with 150°C molded plastic insulated throat and lay-in ground lug; OZ/Gedney BLG, Thomas & Betts #TIGB series or equal.

2.04 CONNECTION TO PIPE

A. Cable to pipe connections; OZ/Gedney G-100B series, Thomas & Betts #290X series or equal.

2.05 CONNECTIONS TO STRUCTURAL STEEL, GROUND RODS OR SPICES

A. Where required by the Drawings, grounding conductors shall be spliced together, connected to ground rods or connected to structural steel using exothermic welds,

Cadweld or equal, or high pressure compression type connectors, Cadweld, Thomas & Betts or equal.

2.06 BONDING JUMPERS

A. OZ/Gedney Type BJ, Thomas & Betts #3840 series or equal.

2.07 GROUND CONDUCTOR

A. Ground conductor shall be code size UL labeled, Type THWN insulated copper wire, green in color.

2.08 MAIN BUILDING REFERENCE GROUND BUS (BGB)

A. Provide 1 24"x4"x1/4" TK copper bus bar mounted on wall with insulating stand-offs at +18" AFF. Furnish complete with cast copper alloy body Thomas Betts Series 310 or equal lugs for connecting grounding conductors. Attach lugs to bus with appropriate size bronze bolt, flat washer and Belleville washer. All connections shall be torque, and all holes shall be drilled and tapped for single hole lugs. Provide 4 spare lugs with respective spaces.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Grounding electrodes

1. Concrete encased grounding electrode (Ufer ground)
    a. Provide a #3/O AWG minimum bare copper conductor encased along the bottom of concrete foundation, footing or trench which is in direct contact with the earth and where there is no impervious waterproofing membrane between the footing and soil. The electrode shall extend through a horizontal length of 30' minimum and shall be encased in not less than 2" or more than 5" of concrete separating it from surrounding soil. The electrode shall emerge from the concrete slab through a protective non-metallic sleeve and shall be extended to BGB or as shown on Drawings.
2. Supplementary grounding electrode (ground ring, grid and driven rod)
    a. Provide as shown driven ground rod(s). Interconnect ground rod with structural steel and adjacent rods with code size bare copper conductor. Ground rods shall be space no less than 6'-0" on centers from any other electrode or electrodes of another electrical system.
3. Separately derived electrical system grounding electrode
    a. Ground each separately derived system per CEC/NEC 250-26 or as shown on Drawings, whichever is greater.
4. Metal underground water pipe

a. Contractor shall install am accessible grounding electrode conductor from the main incoming cold water line to BGB. The electrode conductor shall be sized per CEC/NEC Table 250-94 or as shown on Drawings, whichever is greater.

B. Grounding electrode conductor

1. Provide grounding electrode conductors per CEC/NEC Table 250-94 or as shown on Drawings, whichever is greater.

C. Power system grounding

1. Connect the following items using code size copper grounding conductors to BGB or as shown on Drawings:
   a. Concrete encased electrode (Ufer ground)
   b. Ground rod(s)
   c. Incoming cold and fire water pipes
   d. Gas pipe
   e. Structural steel
   f. Distribution transformer secondary

D. Equipment Bonding/Grounding

1. Provide a code sized copper ground conductor, whether indicated or noted on the drawings, in each of the following:
   a. All power distribution conduits and ducts
   b. Distribution feeders
   c. Motor and equipment branch circuits
   d. Device branch circuits
2. Provide a separate grounding bus at distribution panelboards, loadcenters, switchboards and motor control centers. Connect all metallic enclosed equipment so that with maximum fault current flowing, shall be maintained at not more than 35V above ground.
3. Metallic conduits terminating in concentric, eccentric or oversized knockouts at panelboards, cabinets, gutters, etc. shall have grounding bushings and bonding jumpers installed interconnecting all such conduits.
4. Provide bonding jumpers across expansion and deflection coupling in conduit runs, pipe connections to water meters and metallic cold water dielectric couplings.
5. Provide ground wire in flexible conduit connected at each end via grounding bushing.
6. Provide bonding jumpers across all cable tray joints.

7. Bond each end of metallic conduit longer than 36" in length to grounding conductor using a #6 AWG pigtail.

3.02 FIELD QUALITY CONTROL

A. Contractor using test equipment expressly designed for that purpose shall perform all ground resistance tests in conformance with IEEE quidelines. Contractor shall submit typewritten records of measured resistance values to Engineer for review and approval prior to energizing the system.

B. Obtain and record ground resistance measurements both from electrical equipment ground bus to the ground electrode and from the ground electrode to earth. Furnish and install additional bonding and add grounding electrodes as required to comply with the following resistance limits:

1. Resistance from ground bus to ground electrode and to earth shall not exceed 5 ohms unless otherwise noted.

2. Resistance from the farthest panelboard, loadcenter, switchboard or motor control center ground bus to the ground electrode and to earth shall not exceed 20 ohms maximum.

C. Inspection

1. The Engineer or Inspector prior to encasement, burial or concealment thereto shall review the grounding electrode and connections.

END OF SECTION

SECTION 26 12 00

CONDUCTORS AND CABLES

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes

1. Provide all labor, materials and equipment necessary for the installation of all conductors and cables under this Section related to lighting, power, mechanical, control and signal systems.

B. Related sections

1. Where items specified in other Division 26 sections conflict with the requirements of this Section, the most stringent requirement shall govern.
2. The requirements of this Section apply to all Division 26 work, as applicable.
3. Consult all other sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.

1.02 REFERENCES

A. Comply with the latest edition of the following applicable specifications and standards except as otherwise shown or specified:

1. ASTM -American Society for Testing and Materials
   a. B3; Standard Specification for Soft or Annealed Copper Wire
   b. B8; Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft
   c. B787/B787M; Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation
   d. D1000; Standard Test Method for Pressure-Sensitive Adhesive-Coated Tapes Used for Electrical and Electronic Applications
2. CCR –California Code of Regulations, Title 24
   a. Part 3 -California Electrical Code(CEC); NFPA 70 National Electrical Code (NEC) with California amendments
3. UL -Underwriters Laboratories, Inc.
   a. UL 83; Thermoplastic-Insulated Wire and Cables
   b. UL 486A 486B; Wire Connectors
   c. UL 486C; Splicing Wire Connectors

d. UL 486D; Standard for Insulated Wire Connector Systems For Underground Use Or In Damp Or Wet Locations

e. UL 486E; Standard for Equipment Wiring Terminals for Use with Aluminum and/or Copper Conductors

f. UL 493; Thermoplastic-Insulated Underground Feeders and Branch Circuit Cables

g. UL 510; Standard for Polyvinyl Chloride, Polyethylene and Rubber Insulating Tape

h. UL 854; Service-Entrance Cables

4. NEMA –National Electrical Manufacturer's Association

   a. WC 70-1999; Nonshielded Power Cables Rated 2000 Volts or less for the Distribution of Electrical Energy

5. IEEE –Institute of Electrical and Electronic Engineers

   a. 82; Standard Test Procedure for Impulse Voltage Tests on Insulated Conductors

1.03 DELIVERY

A. Wire shall be in original unbroken package. Obtain approval of Inspector or Engineer before installation of wires.

PART 2 - PRODUCTS

2.01 BUILDING WIRE

A. Conductor material

1. Provide annealed copper for all wire, conductor and cable of not less than 98% conductivity.
2. Wire #8 AWG and larger shall be stranded.
3. Wire #10 AWG and smaller shall be solid.

B. Insulation material

1. All insulated wire, conductor and cable shall be 600 Vac rated.
2. Feeder and branch circuits larger than #6 AWG shall be type THW, XHHW or THHN/THWN.
3. Feeder and branch circuits #6 AWG and smaller shall be type TW, THW, XHHW or THHN/THWN.
4. Control circuits shall be type THW or THHN/THWN.
5. Wires shall bear the UL label, be color-coded and marked with gauge, type and manufacturer's name on 24" centers.

2.02 FLEXIBLE CORDS AND CABLES

A. Provide flexible cords and cables of size, type and arrangement as indicated on Drawings.

B. Type S flexible cords and cable shall be manufactured in accordance with NEC Article 400 and composed of two or more conductors and a full sized green insulated grounding conductor with an outer rubber or neoprene jacket.

C. Flexible cords and cables shall be fitted with wire mesh strain relief grips either as a integral connector component or an idependently supported unit.

D. Suspended flexible cords and cables shall incorporate safety spring(s).

2.03 WIRE CONNECTIONS AND TERMINATIONS

A. Electrical spring wire connectors

1. Provide multi-part construction incorporating a non-restricted, zinc coated square cross-sectional steel spring enclosed in a steel sheet with an outer jacket of plastic and insulating skirt.

2. Self-striping pigtail and tap U-contact connectors are not acceptable.

B. Compression type terminating lugs

1. Provide tin-plated copper high compression type lugs for installation with hand or hydraulic crimping tools as directed by manufacturer. Notch or single point type crimps are not acceptable.

2. Two hole, long barrel lugs shall be provided for size #4/O AWG and larger wire where terminated to bus bars. Use minimum of three crimps per lug where possible.

C. Splicing and insulating tape

1. Provide black, UV resistant, self extinguishing, 7 mil thick vinyl general purpose electrical tape per UL 510 and ASTM D1000. 3M Scotch 33 or equal.

D. Insulating putty

1. Provide pads or rolls of non-corrosive, self-fusing, 125 mil thick rubber putty with PVC backing sheet per UL 510 and ASTM D1000. 3M Scotchfil or equal.

E. Insulating resin

1. Provide two-part liquid epoxy resin with resin and catalyst in pre-measured, sealed mixing pouch. 3M Scothcast 4 or equal.

2. Use resin with thermal and diaelectric properties equal to the cable's insulating properties.

F. Terminal strips

1. Provide box type terminal strips in the required quantities plus 25% spare. Install in continuous rows.

2. Use the box type terminal strips with barrier open backs and with ampere ratings as required.
3. Identify all terminals strips and circuits.

G. Crimp type connectors

1. Provide insulated fork or ring crimp terminals with tinned electrolytic copper-brazed barrel with funnel wire entry and insulation support.
2. Fasten crimp type connectors or terminals using a crimping tool recommended by the manufacturer.
3. Provide insulated overlap splices with tinned seamless electrolytic copper-brazed barrel with funnel wire entry and insulation support.
4. Provide insulated butt splices with tinned seamless electrolytic copper-brazed barrel with center stop, funnel wire entry and insulation support.

H. Cable ties

1. Provide harnessing and point-to-point wire bundling with nylon cable ties. Install using tool supplied by manufacturer as required.

I. Wire lubricating compound

1. UL listed for the wire insulation and conduit type, and shall not harden or become adhesive.
2. Shall not be used on wire for isolated type electrical power systems.

J. Bolt termination hardware

1. Bolts shall be plated, medium carbon steel heat-treated, quenched and tempered equal to ASTM A-325 or SAE Grade 5; or silicon bronze alloy ASTM B-9954 Type B.
2. Nuts shall be heavy semi-finished hexagon, conforming to ANSI B18.2.2, threads to be unified coarse series (UNC), class 2B steel or silicon bronze alloy.
3. Flat washers shall be steel or silicon bronze, Type A plain standard wide series, conforming to ANSI B27.2. SAE or narrow series shall be used.
4. Belleville conical spring washers shall be hardened steel, cadmium plated or silicon bronze.
5. Each bolt connecting lug(s) to a terminal or bus shall not carry current exceeding the following values:
   a. 1/4" bolt – 125 A
   b. 5/16" bolt – 175 A
   c. 3/8" bolt – 225 A
   d. 1/2" bolt – 300 A
   e. 5/8" bolt – 375 A

f. 3/4" bolt – 450 A

PART 3 - EXECUTION

3.01 EXAMINATION

A. Thoroughly examine site conditions for acceptance of wire and cable installation to verify conformance with manufacturer and specification tolerances. Do not commence with work until all conditions are made satisfactory.

3.02 INSTALLATION

A. All wire, conductor, and cable with their respective connectors, fittings and supports shall be UL listed for the installed application and ambient conditions.

B. Feeders and branch circuits in wet locations shall be rated 75°C minimum.

C. Feeders and branch circuits in dry locations shall be rated 90°C minimum.

D. Minimum conductor size

1. #12 AWG copper for all power and lighting branch circuits.
2. #14 AWG copper for all line voltage signal and control wiring, unless otherwise indicated.
3. Aluminum conductors may be substituted on the basis of equal performance for sizes greater than #10 AWG with the approval of Engineer.

E. Remove and replace conductors under the following conditions at no additional costs to the Owner:

1. Installed within wrong specified conduit or raceway.
2. Damaged during installation.
3. Of insufficient length to facilitate proper splice of conductors

3.03 WIRING METHODS

A. Install wires and cable in accordance with manufacturer's written instructions, as shown on Drawings and as specified herein.

B. Install all single conductors within raceway system, unless otherwise indicated.

C. Parallel circuit conductors and terminations shall be equal in length and identical in all aspects.

D. Provide adequate length of conductors within electrical enclosures and neatly train to termination points with no excess. Terminate such that there is no bare conductor at the terminal.

E. Splice cables and wires only in junction boxes, outlet boxes, pull boxes, manholes or handholes.

F. Group and bundle with tie wrap each neutral with it's associated phase conductors where more than one neutral conductor is present within a conduit.

G. Install cable supports for all vertical feeders in accordance with NEC Article 300. Provide split wedge type fittings, which firmly clamp each individual cable and tighten due to cable weight.

H. Seal cable where exiting a conduit from an exterior underground raceway with a non-hardening compound (i.e., duct seal or equal).

I. Provide UL listed factory fabricated, solder-less metal connectors of size, ampacity rating, material, type and class for applications and for services indicated. Use connectors with temperature ratings equal or greater than the conductor or cable being terminated.

J. Stranded wire shall be terminated using fittings, lugs or devices listed for the application. Under no circumstances shall stranded wire be terminated solely by wrapping it around a screw or bolt.

K. Flexible cords and cables supplied as part of a pre-manufactured assembly shall be installed according to manufacturer's published instructions.

3.04 WIRING INSTALLATION IN RACEWAYS

A. Install wire in raceway after interior of building has been physically protected from weather, and all mechanical work likely to injure conductors has been completed.

B. Pull all conductors into raceway at the same time.

C. Use UL listed, non-petroleum base and insulating type pulling compound as needed.

D. Completely mandrel all underground or concrete encased conduits prior to installation.

E. Completely and thoroughly swab raceway system prior to installation

F. Do not use block and tackle, power driven winch or other mechanical means for pulling conductors smaller than #1 AWG.

G. Wire pulling

1. Provide installation equipment that will prevent cutting or abrasion of insulation during installation.
2. Maximum pull tension shall not exceed manufacturer's recommended value during installation for cable being measured with tension dynometer.
3. Use rope made of non-metallic material for pulling.
4. Attach pulling lines by means of either woven basket grips or pulling eyes attached directly to the conductors.
5. Pull multiple conductors simultaneously within same conduit.

3.05 WIRE SPLICES, JOINTS AND TERMINATIONS

A. Join and terminate wire, conductors and cables in accordance with UL 486, NEC and manufacturer's instructions.

B. Thoroughly clean wires before installing lugs and connectors.

C. Make splices, taps and terminations to carry full conductor ampacity without perceptible temperature rise, and shall be made mechanically and electrically secure.

D. Terminate wires in terminal cabinets using terminal strips, unless otherwise indicated.

E. Insulate spare conductors with electrical tape and leave sufficient length to terminate anywhere within panel or cabinet.

F. Encapsulate splices in wet locations using specified insulating resin kits.

G. Make up all splices and taps in accessible junction or outlet boxes with connectors as specified herein. Pigtails and taps shall be the same color as feed conductor with at least 6 inches of tail, all neatly packed within box.

H. Where conductors are to be connected to metallic surfaces, coated surfaces shall be cleaned to base metal surface before installing connector. Remove lacquer coating of conduits where ground clamps are to be installed.

I. Branch circuits (#10 AWG and smaller) connectors shall comply with 2.01.D.2 and 2.01.D.2 above.

J. Branch circuits (#8 AWG and larger)

   1. Join or tap conductors using insulated mechanical compression taps with pre-molded, snap-on insulating boots or specified conformable insulating pad and over-wrapped with two half-lapped layers of vinyl insulating tape starting and ending at the middle of joint.

   2. Terminate conductors using mechanical compression lugs in accordance with manufacturer's recommendation or as specified elsewhere.

   3. Field installed compression connectors for 250 MCM and larger shall have not less than two clamping elements or compression indents per wire.

   4. Insulate splices and joints with materials approved for the particular use, location, voltage and temperature.

K. Termination hardware assemblies

   1. Al/Cu lugs connected to aluminum plated or copper bus shall be secured with steel bolt, flat washer (two per bolt), Belleville washer and nut.

   2. Copper lugs connected to copper buss shall bus shall be secured using silicon bronze alloy bolt, flat washer (two per bolt), Belleville washer and nut.

   3. The crown of Belleville washers shall be under the nut.

   4. Bolt assemblies shall be torque to manufacturer's recommendations. Where manufacturer recommendation is not obtainable, the following shall be used:

      a. 1/4" -20 bolt at 80 inch-pound torque

      b. 5/16" -18 bolt at 180 inch-pound torque

c. 3/8" -20 bolt at 20 inch-pound torque

d. 1/2" -20 bolt at 40 inch-pound torque

e. 5/8" -20 bolt at 55 inch-pound torque

f. 3/4" -20 bolt at 158 inch-pound torque

3.06 IDENTIFICATION

A. Securely tag all branch circuits. Mark conductors with specified vinyl wrap-around markers. Where more than two conductors run through a single outlet, mark each conductor with the corresponding circuit number.

B. Provide all terminal strips with each individual terminal identified using specified vinyl markers.

C. In manholes, pullboxes and handholes provide tags of embossed brass type with cable type and voltage rating. Attach tags to cable with slip-free plastic cable lacing units.

D. Color coding

1. For 120/208 Volt (or 120/240 Volt), 1 phase, 3 wire systems:
   a. Phase A – Black
   b. Phase B – Red
   c. Neutral – White
   d. Ground – Green
2. For 120/208 Volt, 3 phase, 4 wire systems:
   a. Phase A – Black
   b. Phase B – Red
   c. Phase C – Blue
   d. Neutral – White
   e. Ground – Green
3. For 277/480 Volt, 3 phase, 4 wire systems:
   a. Phase A – Brown
   b. Phase B – Orange
   c. Phase C – Yellow
   d. Neutral – Gray
   e. Ground – Green
4. Switch leg individually installed shall be the same color as the branch circuit to which they originate, unless otherwise indicated.
5. Travelers for 3-way and 4-way switches shall be a distinct color and pulled with the circuit switch leg or neutral.

3.07 FIELD QUALITY CONTROL

A. Supply labor, materials and test equipment required to perform continuity and ground tests.

B. Electrical testing

1. Perform feeder and branch circuit insulation test after installation and prior to connection to device.
2. Tests shall be performed by 600 Vdc megger for a continuous 10 seconds from phase-to-phase and phase-to-ground.
3. Torque test conductor connections and terminations for conformance to Specifications.
4. If any failure is detected, locate failure, determine cause and replace or repair cable to Engineer's satisfaction at no additional costs.
5. Furnish test results in type written report form for review by Engineer.

END OF SECTION

SECTION 26 13 00

RACEWAYS AND BOXES

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes

1. Provide all labor, materials and equipment necessary to complete the installation required for the items specified under this Section, including but not limited to electrical conduits; outlet, junction and pull boxes; and related supports.

B. Related sections

1. Where items specified in other Division 26 sections conflict with the requirements of this Section, the most stringent requirement shall govern.
   a. 26 06 00 – Grounding and Bonding for Electrical Systems
2. The requirements of this Section apply to all Division 26 work, as applicable.
3. Consult all other sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.

1.02 REFERENCES

A. Comply with the latest edition of the following applicable specifications and standards except as otherwise shown or specified:

1. ANSI –American National Standards Institute
   a. C33.91; Specification for Rigid PVC Conduit
   b. C80.1; Specification Rigid Steel Conduit, Zinc-Coated
   c. C80.3; Specification for Electrical Metallic Tubing, Zinc-Coated
   d. C80.6; Intermediate Metal Conduit (IMC), Zinc-Coated
2. CCR –California Code of Regulations, Title 24
   a. Part 2 -California Building Code (CBC); ICBO Uniform Building Code (UBC) with California amendments
   b. Part 3 -California Electrical Code(CEC); NFPA 70 National Electrical Code (NEC) with California amendments
3. NECA –National Electrical Contractors Association
   a. 101, Standard for Installing Steel Conduit (Rigid, IMC, EMT)
   b. 111, Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC) (ANSI)

4. NEMA –National Electrical Manufacturer's Association
    a. FB 1; Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable
    b. FB 2.10; Selection and Installation Guidelines for Fittings for Use with Non-flexible Electrical Metal Conduit or Tubing (Rigid Metal Conduit, Intermediate Metal Conduit, and Electrical Metallic Tubing)
    c. FB 2.20; Selection and Installation Guidelines For Fittings for Use With Flexible Electrical Conduit and Cable
    d. OS 1; Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports
    e. OS 3; Selection and Installation Guidelines for Electrical Outlet Boxes
    f. RN 1; Polyvinyl-Choride Externally Coated Galvanized Rigid Steel Conduit and Electrical Metallic Tubing
    g. TC 2; Electrical Plastic Tubing and Conduit
    h. TC 3; PVC Fittings for Use with Rigid PVC Conduit and Tubing
    i. TC 14; Reinforced Thermosetting Resin Conduit (RTRC) and Fittings
5. OSHPD Anchorage Pre-approvals
    a. OPA-0003; Superstrut Seismic Restraint System
    b. OPA-0114; B-Line Seismic Restraints
    c. OPA-0120; Unistrut Seismic Bracing System
    d. OPA-0242; Power-Strut Seismic Bracing System
6. UL –Underwriter's Laboratories, Inc.
    a. 1; Standard for Flexible Metal Conduit
    b. 6; Rigid Metal Electrical Conduit
    c. 360; Standard for Liquid-Tight Flexible Steel Conduit
    d. 514A; Metallic Outlet Boxes, Electrical
    e. 514B; Fittings for Conduit and Outlet Boxes
    f. 651; Schedule 40 & 80 PVC Conduit
    g. 797; Electrical Metallic Tubing
    h. 1242; Intermediate Metal Conduit
    i. 1684; Reinforced Thermosetting Resin Conduit (RTRC) and Fittings

1.03 SYSTEM DESCRIPTION

A. Furnish, assemble, erect, install, connect and test all electrical conduits and related raceway apparatus required and specified to form a complete installation.

1.04 SUBMITTALS

A. Submit manufacturer's data for materials specified within this Section in accordance to Section 26 05 00.

1.05 QUALITY ASSURANCE

A. All materials, equipment and parts comprising the materials specified herein shall be new and unused, bearing UL labels where applicable.

B. Installation shall conform to the NECA installation guidelines unless otherwise indicated within this Section

PART 2 - PRODUCTS

2.01 MATERIALS

A. Conduits and Fittings

1. Rigid steel conduit (RMC)

   a. Conduit: Standard weight, mild steel pipe, and zinc coated on both inside and outside by a hot dipping or shearardizing process manufactured in accordance with UL 6 and ANSI C80.1 specifications.

   b. Fittings (couplings, elbows, bends, etc.)

      1) Shall be steel or malleable iron.

      2) Coupling and unions shall be threaded type, assembled with anti-corrosion, conductive and anti-seize compound at joints made absolutely tight to exclude water.

   c. Bushings

      1) Insulating bushings: Threaded polypropylene or thermosetting phenolic rated at 150°C minimum.

      2) Insulating grounding bushing: Threaded cast body with insulating throat and steel "lay-in" ground lug.

      3) Insulating metallic bushing: Threaded cast body with plastic insulated throat rated at 150°C minimum.

2. Coated rigid steel conduit (CRMC)

   a. Conduit: Equivalent to RMC with a Polyvinyl chloride (PVC) coated bonded to the galvanized outer surface of the conduit. The bonding between the PVC coating and conduit surface shall be ETL PVC-001 compliant. The coating thickness shall be a minimum of 40mil.

   b. Fittings (couplings, elbows, bends, etc.)

      1) Equivalent to RMC above with bonded coating same as conduit.

2) The PVC sleeve over fittings shall extend beyond hub or coupling approximately one diameter or 1 1/2" whichever is smaller.

c. Bushing equivalent to RMC above.

3. Intermediate metallic conduit(IMC)

   a. Conduit: Intermediate weight, mild steel pipe, meeting the same requirements for finish and material as rigid steel conduit manufactured in accordance with UL 1242 and ANSI C80.6 specifications.

   b. Fittings (couplings, elbows, bends, etc.) equivalent to RMC above.

   c. Bushing equivalent to RMC above.

4. Electrical metallic tubing (EMT)

   a. Conduit: Cold rolled steel tubing with zinc coating on outside and protective enamel on inside manufactured in accordance with UL 797 and ANSI C80.3 specifications.

   b. Couplings: Steel or malleable iron with compression type fastener via a nut.

   c. Connectors: Steel or malleable iron with compression type fastener via a nut with plastic insulated throat rated at 150°C minimum.

5. Rigid non-metallic conduit (PVC)

   a. Conduit: PVC composed Schedule 40, 90°C manufactured in accordance with NEMA TC 2 and UL 651 specifications.

   b. Fittings: Molded PVC, slip on solvent welded type in accordance to NEMA TC 3.

6. Reinforced thermosetting resin conduit (RTRC)

   a. Conduit: Fiber impregnated with a cured thermosetting resin compound in accordance with NEMA TC 14 and UL1684.

   b. Fittings: Molded resin with glass reinforcement manufactured in the same process as the conduit bonded with an epoxy adhesive.

7. Flexible metallic conduit (FMC)

   a. Conduit: Continuous, flexible steel spirally wound with zinc coating on both inside and outside in accordance with UL 1.

   b. Connectors: Steel or malleable iron with compression type fastener via a nut with plastic insulated throat rated at 150°C minimum.

8. Liquidtight flexible metallic conduit (LFMC)

   a. Conduit: PVC coated, continuous, flexible steel spirally wound with zinc coating on both inside and outside in accordance with UL 360.

   b. Connectors: Steel or malleable iron with compression type fastener via a nut with plastic insulated throat rated at 150°C minimum.

9. Miscellaneous Fittings and Products

a. Conduit sealing bushings: Steel or cast malleable iron body and pressure clamps with PVC sleeve, neoprene sealing grommets and PVC coated steel pressure rings. Supplied with neoprene sealing rings between body and PVC sleeve.

b. Watertight cable terminators: One piece, compression molded sealing ring with PVC coated steel pressure disks, stainless steel screws and zinc plated cast iron locking collar.

c. Watertight cable/cord connectors: Liquidtight steel or cast malleable iron body with sealing neoprene bushing and stainless steel retaining ring.

d. Expansion fittings: Multi-piece unit of hot dip galvanized malleable iron or steel body and outside pressure bussing design to allow a maximum of 4" movement (2" in either direction). Furnish with external braid tinned copper bonding jumper. UL listed for both wet and dry locations.

e. Expansion/deflection couplings: Multi-piece unit comprised of a neoprene sleeve, internal flexible tinned copper braid attached to bronze end couplings with stainless steel bands. Coupling to provide minimum of 3/4" movement and 30 degrees deflection from normal. UL listed for both wet and dry locations.

f. Conduit bodies: Raintight, malleable iron, hot-dip galvanized body with threaded hubs, stamped steel cover, stainless steel screws and neoprene gasket.

g. Other couplings, connectors and fittings shall be equal in quality, material and construction to items specified herein.

B. Boxes

1. Outlet boxes

a. Standard: Galvanized one-piece of welded pressed steel type in accordance with NEMA OS 1 and UL 514. Boxes shall not be less than 4" square and at least 1 1/2" deep.

b. Concrete: Galvanized steel, 4" octagon ring with mounting lug, backplate and adapter ring type in accordance with NEMA OS 1 and UL 514. Depth as required by application.

c. Masonry: Galvanized steel, 3.75" high gang box in accordance with NEMA OS 1 and UL 514.

d. Surface cast metal: Cast malleable iron body, surface mounted box with threaded hubs and mounting lugs as required in accordance with NEMA OS 1 and UL 514. Furnish with ground flange, steel cover and neoprene gasket.

2. Pull and junction boxes

a. Sheet metal boxes: Standard or concrete outlet box wherever possible; otherwise use 16 gauge galvanized sheet metal, NEMA 1 box sized per CEC with machine screwed cover.

b. Cast metal boxes: Install standard cast malleable iron outlet or device box when possible.

c. Flush mounted boxes: Install overlapping cover with flush head screws.

d. In-ground mounted pull holes/boxes: Install pre-cast concrete box, sized per Drawing or CEC with pre-cast or traffic rated lid.

3. Floor boxes

a. Floor boxes shall be adjustable, cast metal body with threaded conduit openings, adjustable rings, brass flange or Lexan ring and cover plate with threaded plug. Include provisions to accommodate surface mounted telephone or receptacle outlet, or flush floor mounted telephone or receptacle outlet where shown on Drawings.

C. Pull line/cord

1. Polypropylene braided line or Let-line #232 or equal of 1/8" diameter with a minimum break strength of 200 pounds.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Thoroughly examine site conditions for acceptance of wire and cable installation to verify conformance with manufacturer and specification tolerances. Do not commence with work until all conditions are made satisfactory.

3.02 PREPARATION

A. Conduit

1. Provide all necessary conduit fittings, connectors, bushings, etc. required to complete conduit installation to meet the CEC/NEC and intended application whether noted, shown or specified within.

2. Location of conduit runs shall be planned in advance of the installation and coordinated with other trades.

3. Where practical, install conduits in groups in parallel vertical or horizontal runs that avoid unnecessary offsets.

4. All conduits shall be parallel or at right angles to columns, beams and walls whether exposed or concealed.

5. Conduits shall not be placed closer than 12" to a flue, parallel to hot water, steam line or other heat sources; or 3" when crossing perpendicular to the above said lines when possible.

6. Install exposed conduit as high as practical to maintain adequate headroom. Notify Engineer if headroom will be less than 102".

7. Do not obstruct spaces required by Code in front of electrical equipment, access doors, etc.
8. The largest trade size conduit in concrete floors and walls shall not exceed 1/3 thickness or be spaced a less than three conduit diameters apart unless permitted by Engineer. All conduits shall be installed in the center of slab or wall, and never between reinforcing steel and bottom of floor slab.
9. Install additional pull boxes, not shown on Drawings, in sufficient quantities to facilitate pulling of conductors and cables such that total spacing does not exceed 150 feet or 270 degrees, total; and maximum pulling tension will not be exceeded.
10. When installing underground conduits to specified depth; depth shall be taken from finished grade as it will be at project completion. Should finish grade be above existing grade by an amount equal to or greater than specified depth, conduit shall be installed not less than 6" below existing grade.
11. Verify that information concerning finish grade is accurate, for should the underground run be less than the specified depth, Contractor may be required to re-install conduit to meet the required depth.
12. Unless otherwise specified, underground conduits shall be installed with top side not less than 24" below finished grade; this depth applies to all conduits outside of building foundations including those under walks, open corridors or paved areas.
13. Utility company service conduits installation depth shall be as directed by their respective specifications and requirements.

B. Boxes

1. Before locating outlet boxes, check Construction Documents for type of construction and make sure that there is no conflict with other equipment. Locate outlet boxes as shown and locate so as not to interfere with other Work or equipment.
2. Install all outlet boxes flush within walls, ceiling and floors except where installed within non-finished rooms, cabinetry, attic spaces or as indicated on Drawings.
3. Locate pull boxes and junction boxes within concealed, accessible locations where possible.
4. Do not install outlet boxes back-to-back with same stud space. Where shown back-to-back, offset as required, and fill void with sound dampening material where requested by Owner.
5. In fire rated walls separate boxes by 24" minimum and with stud member.
6. Adjust position of outlet boxes within masonry wall to accommodate course lines.

3.03 INSTALLATION

A. Conduit

1. Minimum conduit size shall be 3/4" unless otherwise indicated.

2. All conduit work shall be concealed unless otherwise indicated. Exposed conduits shall be permitted within unfinished rooms/spaces to facilitate installation.
3. Install conduit in complete runs prior to installing conductors or cables.
4. Make long radius conduits bends free from kink, indentations or flattened surfaces. Make bends carefully to avoid injury or flattening. Bends 1 1/4" size and larger shall be factory made ells, or be made with a manufactured mechanical bender. Heating of steel conduit to facilitate bending or that damage galvanized coating will not be permitted.
5. Remove burrs and sharp edges at end of conduit with tapered reamer.
6. Protect and cover conduits during construction with metallic bushings and bushing "pennies" to seal exposed openings.
7. Assemble conduit threads with anti-corrosion, conductive, anti-seize compound and tighten securely.
8. Install conduits shall that no traps to collect condensation exist.
9. Fasten conduit securely to boxes with locknuts and bushings to provide good grounding continuity.
10. Install pull cords/line within any spare or unused conduits of sufficient length to facilitate future cable installation.
11. Penetrations
    a. Locate penetrations within structural members as shown on Drawings and as directed by Architect or Engineer. Should it be necessary to notch any framing member, make such notching only at locations and in a manner as approved by Engineer.
    b. Do not chase concrete or masonry to install conduit unless specifically approved by Engineer.
    c. Cutting or holes
        1) Install sleeves for cast-in-place concrete floors and walls. After installing conduit through penetration, seal using dry-pack grouting compound (non-iron bearing, chloride free and non-shrinking) or fire rated assembly if rated floor or wall. Use escutcheon plate on floor underside to contain compound as necessary.
        2) Cut holes with a hole saw for penetrations through non-concrete or non-masonry members.
        3) Provide chrome plated escutcheon plates at all publicly exposed wall, ceiling and floor penetrations.
    d. Sealing
        1) Non-rated penetration openings shall be packed with non-flammable insulating material and sealed with gypsum wallboard taping compound.

2) Fire rated penetration shall be sealed using a UL classified fire stop assembly suitable to maintain the equivalent fire rating prior to the penetration.

3) Use escutcheon plates to hold sealing or fire rated compound as necessary.

e. Waterproofing

1) Make penetrations through any damp-proofed/waterproofed surfaces within damp/wet locations as such as to maintain integrity of surface.

2) Install specified watertight conduit entrance seals at all below grade wall and floor penetrations.

3) At roof penetrations furnish roof flashing, counter flashing and pitch-pockets compatible to roof assembly.

4) Where possible conduits that horizontally penetrate a waterproof membrane shall fall away from and below the penetration's exterior side.

5) Make penetrations through floors watertight with mastic, even when concealed within walls or furred spaces.

12. Supports

a. Conduits shall be support and braced per OSHPD pre-approved anchorage systems when those methods are implemented and installed.

b. Sizes of rods and cross channels shall be capable of supporting 4 times and 5 times actual load, respectively. Anchorage shall support the combined weight of conduit, hanger and conductors.

c. Support individual horizontal conduit 1 1/2" and smaller by means of 2 hole straps or individual hangers.

d. Galvanized iron hanger rods sizes 1/4" diameter and larger with spring steel fasteners, clips or clamps specifically design for that purpose for 1 1/2" conduits and larger.

e. Support multi-parallel horizontal conduits runs with trapeze type hangers consisting of 2 or more steel hanger rods, preformed cross channels, 'J' bolts, clamps, etc.

f. Support conduit to wood structures by means of bolts or lag screws in shear, to concrete by means of insert or expansion bolts and to brickwork by means of expansion bolts.

g. Support multi-parallel vertical conduits runs with galvanized Unistrut, Power-Strut or approved equal type supports anchored to wall. Where multi-floored conduits pass through floors, install riser clamps at each floor.

h. Maximum conduit support spacing shall be in accordance with NECA Standard of Installation:

1) Horizontal runs:

a) 3/4" and smaller at 60" on centers, unless building construction prohibits otherwise, then 84" on centers.

b) 1" and larger at 72" on centers, unless building construction prohibits otherwise or any other condition, then 120" on centers.

2) Vertical runs:

a) 3/4" and smaller @ 84" on centers.

b) 1" and 1 1/4" @ 96" on centers.

c) 1 1/2" and larger @ 120" on centers.

d) Any vertical condition such as shaftways and concealed locations for any sized conduit, 120" on centers.

i. Anchorage for RMC/IMC supports unless otherwise specified:

1) < 1" IMC/RMC = #10 bolt/screw.

2) 1" IMC/RMC = 1/4" bolt/screw.

3) 1 1/2" and 2" IMC/RMC = 3/8" bolt/screw.

4) 3" IMC/RMC, 4" EMT = 1/2" bolt/screw.

5) > 3"IMC/RMC = 5/8" bolt/screw.

j. Anchorage for EMT supports unless otherwise specified:

1) < 1 1/2" EMT = #10 bolt/screw.

2) 1 1/2" EMT = 1/4" bolt/screw.

3) 2, 2 1/2" and 3" EMT = 3/8" bolt/screw.

4) 4" EMT = 1/2" bolt/screw.

5) > 4"EMT = 5/8" bolt/screw.

B. Boxes

1. Install boxes as shown on Drawings and as required for splices, taps, wire pulling, equipment connections and Code compliance.
2. Install additional pull boxes, not shown on Drawings, in sufficient quantities to facilitate pulling of conductors and cables such that total spacing does not exceed 150 feet or 270 degrees, total; and maximum pulling tension will not be exceeded.
3. Install plaster rings on all outlet boxes in stud walls or in furred, suspended or exposed ceilings. Covers shall be of a depth suited for installation.
4. Provide gasketed cast metal cover plates where boxes are exposed in damp or wet locations
5. Install access door for boxes installed within concealed locations without access.
6. Install approved factory made knockout seal where knockouts are not present.

7. Refer to Architectural interior elevations and details shown for exact mounting heights of all electrical outlets. In general, locate outlets as shown or specific and complies with Americans with Disabilities Act:
    a. Convenience outlets: +18"AFF or +6" above counter or splash.
    b. Local switches: +48"AFF or +6" above counter or splash.
    c. Telecommunication outlets: +18"AFF or +48"AFF for wall telephone or intercom device.
    d. Verify all mounting heights with Architectural Drawings, and where heights are not suited for construction or finish please consult Engineer or Architect.
8. Use conduit bodies to facilitate pulling of conductor or cables or change conduit direction. Do not splice within conduit bodies.
9. Enclose pull box with additional rated gypsum board as necessary to maintain wall's original fire rating.
10. Install galvanized steel coverplates on all open boxes within dry listed areas.
11. Install in-ground pull holes/boxes flush to grade finish at finished areas or 1" above finished landscaped grade. Seal all conduits terminating in pull hole/box watertight. Install and grout around bell ends where shown. Cover and lids shall be removable without damage to adjacent finish surfaces.
12. Support
    a. Accurately place boxes for finish, independently and securely supported by adequate blocking or manufacturer channel type heavy-duty box hangers for stud walls. Do not use nails to support boxes.
    b. Support boxes independent of conduit system.
    c. Mount boxes installed within ceilings to 16 gauge metal channel bars attached to main runners or joists.
    d. Support boxes within suspended acoustical tile ceilings directly from structure above when light fixture are to be installed from box.
    e. Use auxiliary plates, bar or clips and grouted in place for masonry, block or pour-in-place concrete construction.

3.04 APPLICATION

A. Conduit
1. RMC/IMC suitable for all damp, dry and wet locations except when in contact with earth. IMC not suitable for hazardous locations as stated within CEC/NEC.
2. CRMC suitable for damp or wet locations, concealed within concrete or in contact with earth.
3. EMT suitable for exposed or concealed dry, interior locations.

4. PVC/RTRC suitable for beneath ground floor slab, except when penetrating, and direct earth burial. Do not run exposed within concrete walls or in floor slab unless indicated on Drawings or per Engineer's permission.
5. FMC suitable for dry locations only for connections to motors, transformers, vibrating equipment/machinery, controllers, valves, switches and light fixtures in less than 6 foot lengths.
6. LFMC application same as FMC above but for damp or wet locations.

B. Termination and joints

1. Use raceway fittings compatible with associated raceway and suitable for the location.
2. Raceways shall be joined using specified couplings or transitions where dissimilar raceway systems are joined.
3. Conduits shall be securely fastened to cabinets, boxes and gutters using (2) two locknuts and insulating bushing or specified insulated connector. Where joints cannot be made tight and terminations are subject to vibration, use bonding jumpers, bonding bushings or wedges to provide electrical continuity of the raceway system. Use insulating bushings to protect conductors where subjected to vibration or dampness. Install grounding bushings or bonding jumpers on all conduits terminating at concentric or eccentric knockouts.
4. Terminations exposed at weatherproof enclosures and cast outlet boxes shall be made watertight using specified connectors and hubs.
5. Stub freestanding equipment conduits through concrete floors for connections with top of coupling set flush with finished floor. Install plugs to protect threads and entrance of debris.
6. Install specified cable sealing bushings on all conduits originating outside the building walls and terminating within interior switchboard, panel, cabinet or gutters. Install cable sealing bushings or raceway seal for conduit terminations in all grade level or below grade exterior pull, junction or outlet boxes.
7. Where conduits enter building from below grade inject into filled raceways pre-formulated rigid 2 lbs. density polyurethane foam suitable for sealing against water, moisture, insects and rodents.
8. Install expansion fitting or expansion/deflection couplings per manufacturer's recommendations where:
    a. Any conduit that crosses a building structure expansion joint; secure conduit on both sides to building structure and install expansion fitting at joint.
    b. Any conduit that crosses a concrete expansion joint; install expansion/deflection at joint.
    c. Any conduit greater than 1-1/4" is routed along roof top in runs greater than 100 feet; install expansion fittings every 100 feet.

d. Engineer may allow FMC or LFMC in lieu of expansion fitting or expansion/deflection couplings on conduits 2" and smaller within accessible locations upon further review and written consent.

C. Boxes

1. Standard type suitable for all flush installations and all dry concealed locations.
2. Concrete type suitable for all flush concrete installations.
3. Masonry type suitable for all flush concrete and block installations.
4. Surface cast meta type suitable for all exposed damp and wet surface mounted locations, and dry surface mounted locations less than 96" from finished floor

END OF SECTION

SECTION 26 41 00

SAFETY SWITCHED AND INDIVIDUAL MOUNTED CIRCUIT BREAKERS

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes

1. Provide all labor, materials and equipment necessary to complete the installation required for the items specified under this Section, including but not limited to heavy duty fusible, non-fusible and double throw safety switches.

B. Related sections

1. Where items specified in other Division 26 sections conflict with the requirements of this Section, the most stringent requirement shall govern.
   a. 26 06 00 – Grounding and Bonding for Electrical Systems
2. The requirements of this Section apply to all Division 26 work, as applicable.
3. Consult all other sections, determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete installation.

1.02 REFERENCES

A. Comply with the latest edition of the following applicable specifications and standards except as otherwise shown or specified:

1. CCR –California Code of Regulations, Title 24
   a. Part 3 -California Electrical Code(CEC); NFPA 70 National Electrical Code (NEC) with California amendments
2. NEMA –National Electrical Manufacturer's Association
   a. KS 1; Enclosed Switches
   b. 250; Enclosures for Electrical Equipment
3. UL -Underwriters Laboratories, Inc.
   a. 98; Enclosed and Dead Front Switches
   b. 489; Molded-Case Circuit Breakers and Circuit Breaker Enclosures

1.03 SUBMITTALS

A. Submit manufacturer's data for materials specified within this Section in accordance to Section 26 05 00.

1.04 QUALITY ASSURANCE

A. All materials, equipment and parts comprising the materials specified herein shall be new and unused, bearing UL labels where applicable.

1.05 DELIVERY, STORAGE AND HANDLING

A. Handle carefully to avoid damage to internal components, enclosure and finish.

B. Store in a clean, dry environment. Maintain factory packaging and, if required, provide an additional cover to protect enclosure in harsh environments.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Square D, Cutler Hammer or approved equal.

2.02 MATERIALS

A. Heavy-duty safety switches

1. Switch interior

   a. All switches shall have switch blades which are visible when the switch is OFF and the cover is open.

   b. Lugs shall be front removable and UL Listed for 75°C conductors, aluminum or copper.

   c. 30A through 100A switches shall be equipped with factory or field installed fuse pullers.

   d. Switches required for Type 12, 12K or Type 4-4X-5 stainless steel applications shall have all copper current carrying parts.

   e. All current carrying parts shall be plated to resist corrosion.

   f. Switches shall have removable arc suppressors to facilitate easy access to line side lugs.

   g. Switches shall have provisions for a field installable electrical interlock.

2. Switch mechanism

   a. Switch operating mechanism shall be quick-make, quick-break such that, during normal operation of the switch, the operation of the contacts shall not be capable of being restrained by the operating handle after the closing or opening action of the contacts has started.

   b. The operating handle shall be an integral part of the box, not the cover.

   c. Provisions for padlocking the switch in the OFF position with at least three padlocks shall be provided.

   d. The handle position shall travel at least 90° between OFF and ON positions to clearly distinguish and indicate handle.

e. All switches shall have a dual cover interlock mechanism to prevent unintentional opening of the switch cover when the switch is ON and prevent turning the switch ON when the cover is open. The cover interlock mechanism shall have an externally operated override but the override shall not permanently disable the interlock mechanism. The tool used to override the cover interlock mechanism shall not be required to enter the enclosure in order to override the interlock.

3. Switch enclosures
   a. All enclosures shall be NEMA 1 general purpose unless otherwise noted.
   b. Switch covers shall be attached:
      1) with welded pin-type hinges (Type 1, 12, 12K, 4-4X-5 stainless steel).
      2) top hinged, attached with removable screws and securable in the open position (Type 3R).
      3) by molded hinges and type 316 stainless steel hinge pins (Type 4X polyester).
      4) by type 316 stainless steel bolts (Type 7/9).
   c. The enclosure shall be finished with:
      1) gray baked enamel paint which is electrodeposited on cleaned, phosphate pre-treated steel (Type 1).
      2) gray baked enamel paint which is electrodeposited on cleaned, phosphate pre-treated galvannealed steel (Type 3R, 12, 12K).
      3) a brush finish on type 304 stainless steel (Type 4-4X-5 stainless steel).
      4) Gray baked enamel on copper free cast aluminum alloy (Type 7/9).
   d. The enclosure shall have ON and OFF markings:
      1) stamped into the cover (Type 1, 3R, 4-4X-5 stainless steel, 12, 12K).
      2) cast into the cover (Type 7/9).
      3) inked on a adhesive label (Type 4X polyester).
   e. The operating handle shall be provided with a dual colored, red/black position indication.
   f. All switches shall have provisions to accept up to three 3/8" hasp padlocks to lock the operating handle in the OFF position.
4. Switch ratings
   a. Switches shall be horsepower rated for ac and/or dc as indicated on Drawings.
   b. The UL Listed short circuit current rating of the switches shall be:
      1) 10,000 rms symmetrical amperes when used with or protected by Class H or K fuses (30-600A).

2) 200,000 rms symmetrical amperes when used with or protected by Class R or Class J fuses (30-600A switches employing appropriate fuse rejection schemes).

3) 200,000 rms symmetrical amperes when used with or protected by Class L fuses (800-1200A)

PART 3 -EXECUTION

3.01 INSTALLATION

A. The equipment shall be installed per the manufacturer's recommendations.

B. Anchor safety switches to structural members and as shown on Drawings. Provide additional support as required.

C. Mount safety switches level and plumb.

3.02 FIELD QUALITY CONTROL

A. Inspect complete installation prior to energizing for physical damage, proper alignment, anchorage and grounding.

B. Check tightness of bolted connections per manufacturer's written specifications.

END OF SECTION

Stanislaus County
Striving to be the Best

ADDENDUM NO. 1
July 18, 2014

To all bidders for furnishing all labor and materials necessary and required for:

COUNTY OF STANISLAUS
BUREAU OF ADMINISTRATIVE SERVICES (BAS)
MODULAR RELOCATION PROJECT
AT THE PUBLIC SAFETY CENTER (PSC)

This addendum forms a part of the Bidding Documents and modifies the original Bidding Documents issued June 27, 2014 as noted below. All Bidders shall acknowledge all addenda in the space provided on the Bid Form, Document 00 41 00. Failure to do so may subject Bidder to disqualification.

1. AMEND ITEM 4 OF THE NOTICE INVITING BIDS DATED JUNE 27, 2014:

4. PRE-BID SITE VISIT: The County will conduct a ~~**Mandatory**~~ Pre-Bid Conference and Site Visit at 10:00AM on July 11, 2014 at the Stanislaus County Public Safety Center-BAS Modular Facility at 200 East Hackett Road, Modesto, California 95358.

   The PRE-BID Conference is ***not mandatory*** to bid the Project.

2. WATER SERVICE TAP

On sheet 6 of 13, Associated Engineering Group Utility Plan, June 1, 2014, delete 1 Inch Service Tap Connection Noted:

INSTALL A 1" SERVICE TAP ON THE EXISTING 8" WATER LINE AS PER THE CITY OF CERES STANDARDS PLACE NO. W-1, WITH NO METER REQUIRED. INSTALL A 1" SHUT-OFF VALVE IN A CHRISTY BOX, SEE THE DETAIL ON SHEET 7.

Amend to:
"1 Inch Service tap connection and 1 Inch shut-off valve have been installed ON THE EXISTING 8" WATER LINE.

3. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

Clarification: Contractor to provide a strategy for construction projects to comply with State storm water regulations. Filing of SWPP Plan is required. Contractor to obtain Waste Discharger Identification (WDID) number.

4. COMPACTION TESTING

Clarification: Compaction testing is required for this work. County will hire and pay the costs of compaction testing. Contractor is allowed one (1) retest before it assumes responsibility of said services and costs for compaction testing.

5. SURVEYING WORK

Clarification: County shall hire and pay the costs of surveying services for installation of concrete and asphalt as part of this work.

6. STORM DRAINAGE

On Sheet 6 of 13, Associated Engineering Group Utility Plan, June 1, 2014, Clarification to verbal field instruction on Storm Drainage connection.

Clarification: At the pre-bid conference of July 11, 2014, County provided verbal information that storm drainage connection was at parking lot south of BAS Trailer work site. Please reference plans and specifications for proper connection locations as noted.

7. DATA CONDUIT

On sheet E-2, Associated Engineering Group Utility Plan, June 1, 2014, connection of data path of conduit raceway to be amended as shown in Exhibit 1, Correction to Sheet E-2, Associated Engineering Group Utility Plan as Noted:

Contractor is advised that location of data path of conduit/raceway has been amended as noted in Exhibit 1, Correction to Sheet E-2 relating to installation of data for County Public Safety Center Unit No. 2 data box to new Construction Management Trailer.

8. **QUESTION:** Is a bacteria test required for water lines and if so does the County pay for this?

ANSWER: The disinfection will be performed as per the City of Ceres Standards 5-1.3H. Testing will be performed by the County's construction testing personnel that will be at the project during construction.

9. **QUESTION:** Is a pressure test or TV test of storm and sewer lines required and if so does the County pay for this?

   ANSWER: Contractor to supply certified test report.

10. **QUESTION:** Does the modular building pad consist of dirt or is there any AB or AC required?

    ANSWER: The pad will consist of native soils compacted to 90% R.D. as per Notes No. 12 and 13 on sheet 1 of the plans, finished to the elevation shown on the grading and drainage plan, sheet 5.

11. **QUESTION:** Appendix A, Item #4 calls for Professional Liability Insurance with limits not less than $1 Million. This type of insurance is not carried by most subcontractors and is very expensive to purchase. Will the subcontractor performing the fence and gates scope of work be required to furnish the Professional Liability Insurance as specified?

    ANSWER: "General Contractor, the contracting entity, shall provide all insurance to County for approval as required by the Bid Documents"

12. **QUESTION:** Appendix A, Item #5 calls for Builders Risk Insurance. This type of insurance is not carried by most subcontractors and is very expensive to purchase. Will the subcontractor performing the fence and gates scope of work be required to furnish the Builders Risk Insurance as specified?

    ANSWER: "General Contractor, the contracting entity, shall provide all insurance to County for approval as required by the Bid Documents"

13. **QUESTION:** Sheet 7 (Chain Link Fence Details) calls for chain link wire with a 2" x 2" mesh size. Industry standard for slatted chain link wire uses a 3 ½" x 5" mesh size. Will the industry standard 3 ½" x 5" mesh be acceptable for use on this project?

    ANSWER: The industry standard mesh size of 3 ½" x 5" will be acceptable for use on this project.

14. **QUESTION:** Sheet 4 states that the "Fencing Contractor" shall provide a gate detail for approval by Public Safety Center Personnel prior to installation.
    a. Will a standard shop drawing of the slide gate be acceptable? Or,
    b. Will the drawing be required to have a wet seal by a Civil Engineer?

    ANSWER:
    a. Standard shop drawings of the slide gate and its installation will be acceptable. The drawing will need to show details what will be installed so that the county staff can understand and approve the installation that is proposed.
    b. The drawing will not require a civil engineer's wet signature or seal.

15. QUESTION: Can a class A Contractor's License bid on this project as a Prime Contractor?

ANSWER: Yes, class "B" or better includes class "A" contractors as eligible to bid the work.

If you have any questions, please call Rick Rodrigues at (209) 525-4380. Holders of documents for the subject project are hereby informed that these documents are modified as noted in this Addendum, and that all conditions not modified herein remain unchanged.

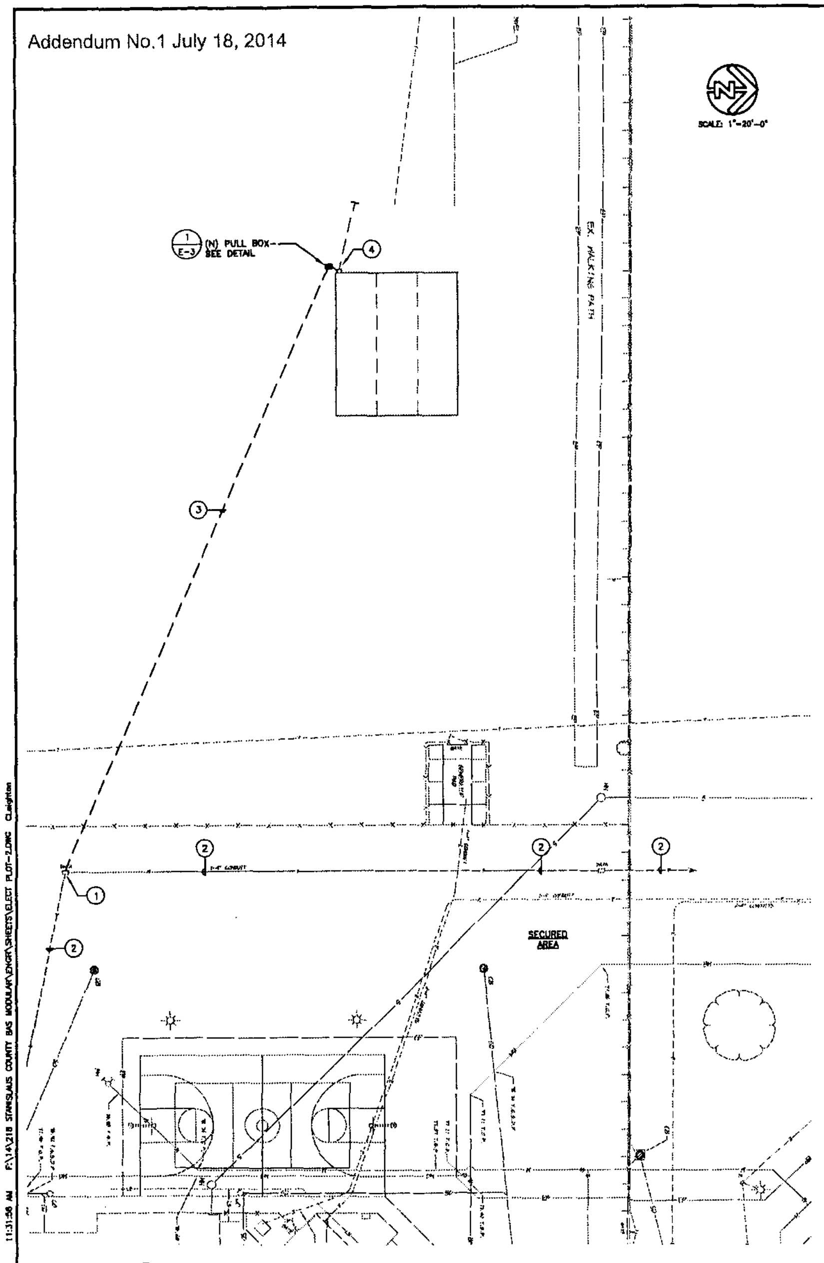
Sincerely,

Patricia Hill Thomas
Chief Operations Officer/
Assistant Executive Officer

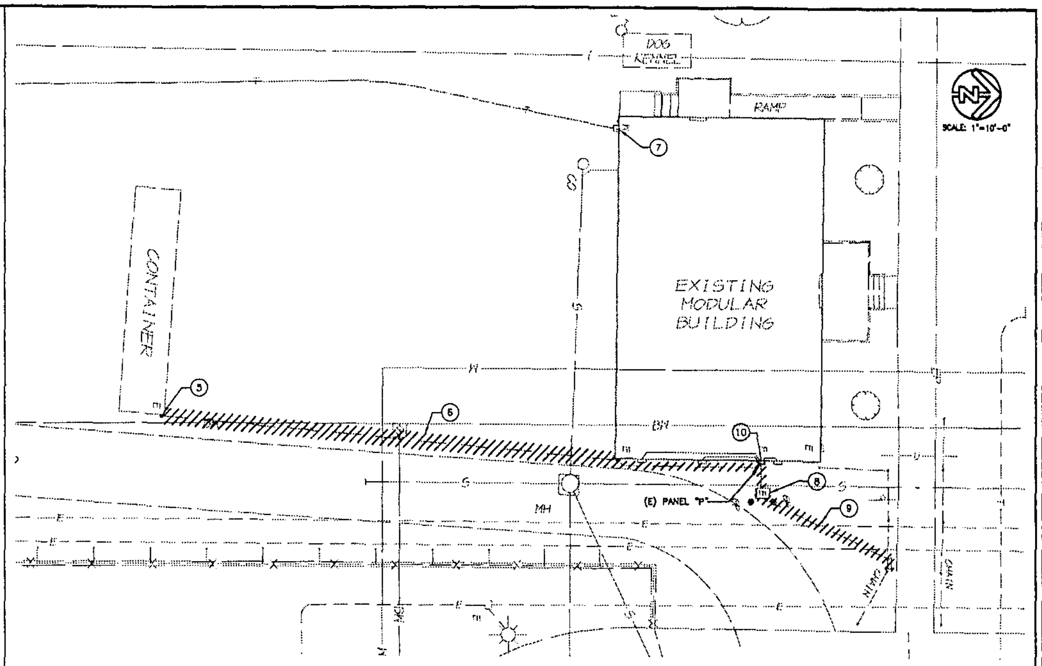
cc: Patricia Hill Thomas
Rick Rodrigues
Josh Ewen
X 2.1.1 (3627)
X 15.105.5.2.2

END OF ADDENDUM NO. 1

Addendum No.1 July 18, 2014



2 ELECTRICAL PLOT PLAN "C" – MODULAR BLDG.
SCALE: 1"=20'-0"



1 ELECTRICAL PLOT PLAN "B" – MODULAR BLDG.
SCALE: 1"=10'-0"

PLAN NOTES:

(ALL PLAN NOTES MAY NOT BE USED)

1. STUB (N) CONDUIT INTO (E) DATA/TELE PULLBOX.
2. (E) TELECOMM/DATA RACEWAY.
3. (N) 3"C W/ PULL ROPE –INSTALL AT 24" DEPTH.
4. INTERCEPT (E) SWEEP WITH (N) CONDUIT AT (E) BUILDING J–BOX –CAP & ABANDON (E) IN TRENCH.
5. DISCONNECT (E) BRANCH CIRCUIT INTO CONTAINER & PRESERVE FOR (F) RECONNECTION AT (N) LOCATION.
6. REMOVE (E) CKT & ABANDON (E) CONDUIT IN PLACE.
7. DISCONNECT (E) TELECOMM CONDUIT RISER AT GUTTER TO RECONNECTION AT (N) LOCATION –CAP & ABANDON (E) CONDUIT IN PLACE.
8. DISCONNECT & REMOVE (E) XFMER & FEEDER TO (E) BUILDING PANEL.
9. DISCONNECT & REMOVE (E) FEEDER INTO (E) ELECTRICAL YARD & LABEL (E) BREAKER AS "SPARE" –TOTAL LENGTH OF (E) FEEDER IS 330 FEET –VERIFY ROUTING & EXISTING CONDITIONS W/ COUNTY.
10. DISCONNECT (E) FEEDERS FROM MAIN PANEL TO 2 (E) BUILDING PANELS TO ALLOW FOR RELOCATION OF ALL 3 BUILDING SECTIONS –REMOVE (E) EXPOSED CIRCUIT/CONDUIT TO (E) CONTAINER.

CONNECTION NOTE:

VERIFY EXACT CONNECTION POINTS FOR POWER, DATA, TELEPHONE, SECURITY, CATV, CLOCK & FIRE ALARM PRIOR TO CONSTRUCTION. APPROXIMATE ONLY LOCATIONS INDICATED FOR TRANSFORMER LOCATION, ETC. COMPLY WITH ALL UTILITY COMPANY REQUIREMENTS. PROVIDE ALL RELATED CONDUITS, PULL BOXES AND RISERS.

DIGALERT
DIAL TOLL FREE
1-800-227-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF NORTHERN CALIFORNIA

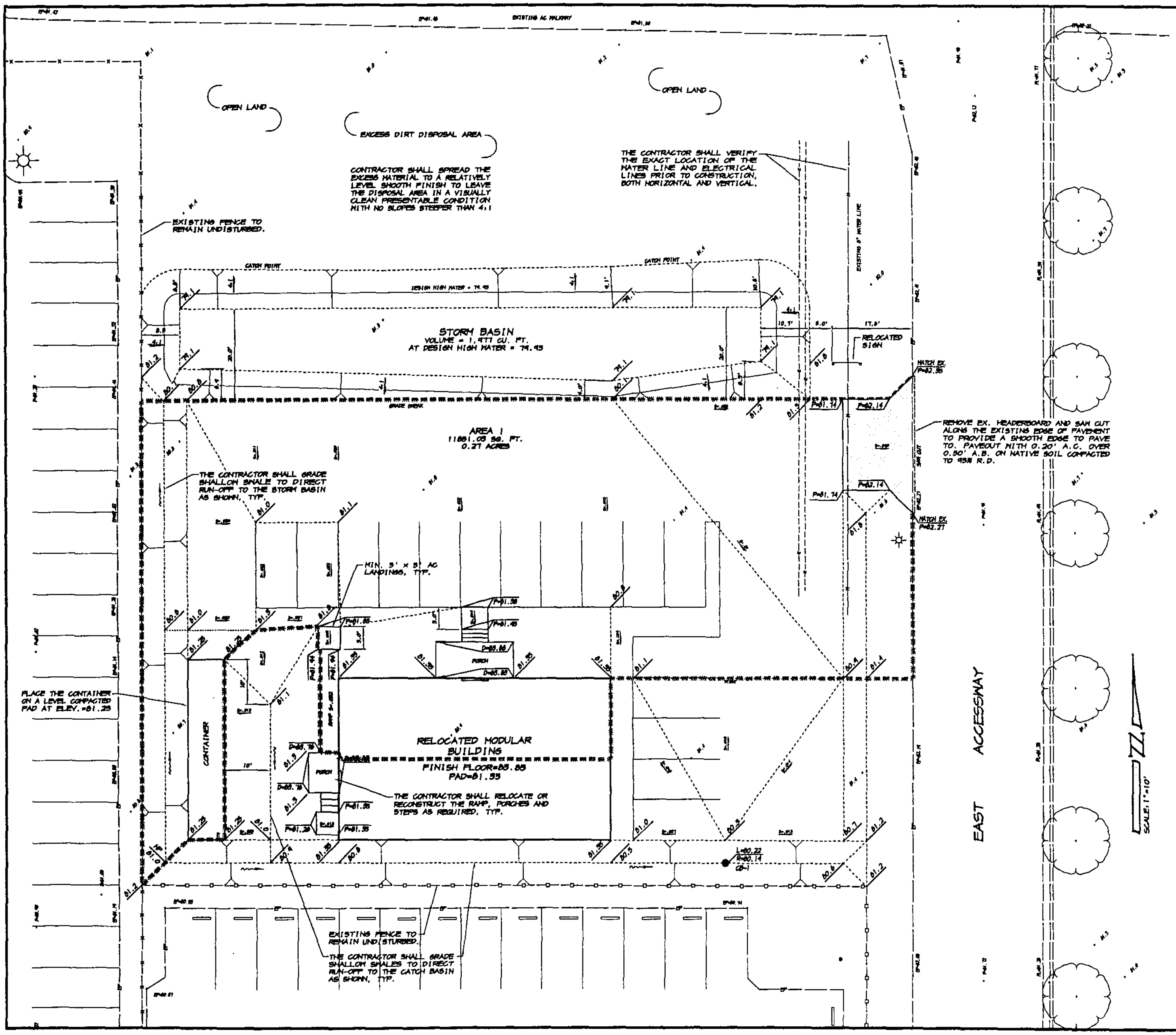
REVISIONS	BY
△	
△	
△	
△	

MILLER - PEZZONI & ASSOCIATES, INC.
CONSULTING ELECTRICAL ENGINEERS
909 FIFTEENTH ST., STE 7
MODESTO, CA 95354
PHONE (209) 575-0312
FAX (209) 575-0813
795 FOLSOM ST., 1st FLR.
SAN FRANCISCO, CA 94107
PHONE (415) 655-6582
REGISTERED PROFESSIONAL ENGINEER KEVIN L. PEZZONI

ELECTRICAL PLAN
B.A.S. MODULAR
STANISLAUS COUNTY
CERES, CALIFORNIA

DRAWN BY	CAL
CHECK BY	KLP
SCALE	AS SHOWN
DATE	8/1/14
JOB	14-218
SHEET NO.	E-2

OF SHEETS



LEGEND

- EX. ELEVATION
- EX. FLOWLINE ELEVATION
- EX. EDGE OF PAVEMENT ELEVATION
- EX. A.C. PAVEMENT ELEVATION
- EX. RIM ELEVATION
- EX. VALLEY GUTTER
- EX. EDGE OF PAVEMENT
- EX. MANHOLE
- EX. CATCH BASIN
- EX. GATE VALVE
- EX. HOSE BIB
- EX. WATER BACKFLOW PREVENTION DEVICE
- EX. WATER METER BOX
- EX. SIGN
- EX. ELECTROLIER
- EX. FENCE
- EX. TREE, SPREAD DRAWN TO SCALE
- CB-1 PROP. CATCH BASIN
- P=81.28 PROP. A.C. PAVEMENT ELEVATION
- D=81.28 PROP. DECK OR RAMP ELEVATION
- 81.0 PROP. FINISH DIRT ELEVATION
- PROP. SLOPE AND DIRECTION OF FLOW
- PROP. AREA OF ASPHALT PAVEMENT, USE SOIL 0.20' A.C. OVER 0.50' A.B. ON NATIVE COMPACTED TO 95% R.D.

BENCHMARK

STANISLAUS COUNTY BENCHMARK 464-17-4-A TOP OF THE NORTHEAST BOLT ON THE TRAFFIC SIGNAL BASE AT THE SOUTH RADIUS RETURN AT THE SOUTHWEST CORNER OF CROWS LANDING ROAD AND HACKETT ROAD.
ELEVATION = 82.01, N88 DATUM.

S.D. CALCULATION

PONDING VOLUME REQUIRED

USE 2" OVER TRIBUTARY AREA
11881 x 0.1666 = 1975 CU. FT.

DISPOSAL PROVIDED

PROPOSED BASIN BOTTOM AREA = 1835 SQ. FT.
PERCOLATION RATE = 2" IN 10 MIN. OR 5 MIN. PER INCH
5 MIN. PER INCH = 3.84 CU. FT. / SQ. FT. / 48 HOURS
DISPOSAL PROVIDED = 1835 x 3.84 = 7046 CU. FT.
DISPOSAL TIME = 1975 / 7046 x 48 = 13.45 HOURS

BY	DESCRIPTION	DATE	REVISION

ASSOCIATED ENGINEERING GROUP
4206 TECHNOLOGY DRIVE, SUITE 4, MODESTO, CA 95356

ADDENDUM GRADING PLAN

BAS MODULAR RELOCATION PROJECT

PUBLIC SAFETY CENTER

CERES CALIFORNIA

RYAN CARREL, R.C.E. 61619
DAVE SKIDMORE, L.S. 7126

REGISTERED PROFESSIONAL ENGINEER RYAN D. CARREL No. 61619 CIVIL STATE OF CALIFORNIA

DRAWN BY: KEVIN
DATE: AUG. 5, 2014
SCALE: 1"=10'
DWG: 8251-GRD
CHECKED: R.D.C.
JOB #: 8251-14

SHEET 1A OF 1