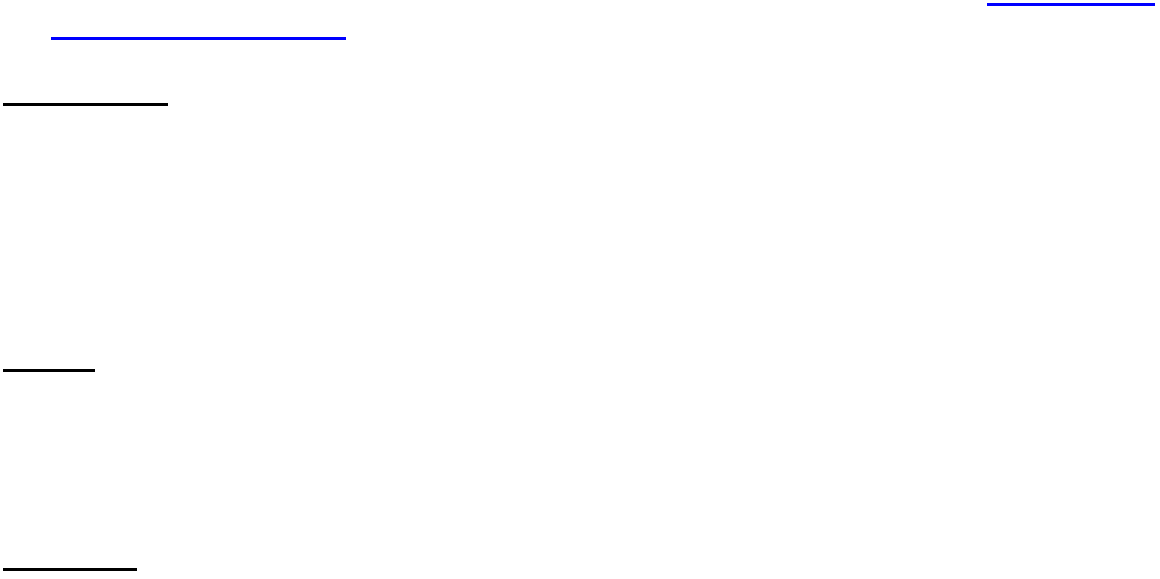


IMPERIAL COMMUNITY COLLEGE DISTRICT

TABLE OF CONIENIS

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IMPERIAL COMMUNITY COLLEGE DISTRICT

0021 13- INSTRUCTIONS TO AND INFORMATION FOR BIDDERS

1 V W R I I \

Contractor shall self perform at least thirty percent (30%) of the Work





IMPERIAL COMMUNITY COLLEGE DISTRICT

0041 43- BID FORMS

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ALTERNATE BIDDING PROPOSAL – Attachment “A”

| Project | Description of Bidder's |
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| Project | Description of Bidder's Work | Completion Date | Cost of Bidder's Work | Contact Name & Phone |
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| Work Client | Description of Bidder's Work | Period of Performance | Cost of Bidder's Work | Contact Name & Phone |
|--------------------|-------------------------------------|------------------------------|------------------------------|---------------------------------|
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| Work Client | Description of Bidder's Work | Period of Performance | Cost of Bidder's Work | Contact Name & Phone |
|--------------------|-------------------------------------|------------------------------|------------------------------|---------------------------------|
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Note:

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Notary Acknowledgment

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OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on this document and could prevent fraudulent removal and reattachment of this form to another document.

CAPACITY CLAIMED BY SIGNER

DESCRIPTION OF ATTACHED DOCUMENT

IMPERIAL COMMUNITY COLLEGE DISTRICT

0052 13- CONTRACT

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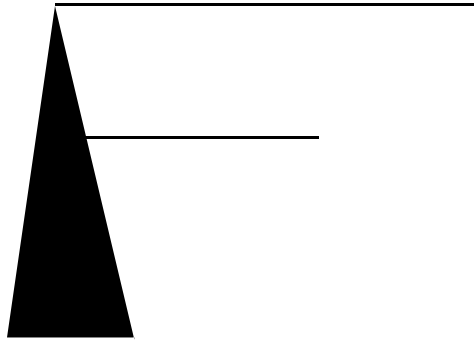
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IMPERIAL COMMUNITY COLLEGE DISTRICT

CONTRACTOR

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ARTICLE 11 - PAYMENTS TO CONTRACTOR AND COMPLETION

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D.

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TECHNICAL CONDITIONS

E.

SECTION 01 20 00 – CONTRACT MODIFICATIONS AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Schedule of Values.
- B. Inspector of Record Payment Provisions
- C. Change Procedures.
- D. Progress Payment Coordination
- E. Payment for Contract Modifications
- F. Request for Information

1.02 RELATED DOCUMENTS OR SECTIONS

- A. Document 00 52 26 – Agreement Form.
- B. Document 00 72 26 – General Conditions.
- C. Document 01 33 00 – Submittal Procedures.

1.03 SCHEDULE OF VALUES

- A. Submit typed schedule on AIA Form G703-Application and Certificate for Payment Continuation Sheet. Contractor's standard form or electronic print-out format may be considered, at Architects and General Contractors

1.05 CHANGE PROCEDURES

- A. Architect's Supplemental Instructions (ASI): The Architect will advise of minor changes in the Work that does not involve an adjustment to Contract Price or Contract Time by issuing supplemental instructions on AIA Form G710.
- B. Proposal Request (PR): The Architect may issue a Proposal Request, which includes a detailed description of a proposed change with supplementary or revised drawings and specifications. Contractor shall prepare and submit an estimate within 10 days. If accepted by Owner, General Contractor will prepare Change Order.
- C. Change Order Request (COR):
 - 1. Contractor may submit a COR to the General Contractor for submittal to the Architect for changes in conditions, Owner changes, or other direction from the Architect, jurisdictional authority or Owners inspector
 - 2. Document the proposed change and its complete impact, including its effect on the cost and schedule of the work.
 - 3. General Contractor and Architect will review COR and either deny request or prepare a Change Order.

“Addenda and Change Orders”.

1.06

- C. RFI's shall be originated by the Contractor:
 - 1. RFI's from subcontractors or material suppliers shall be submitted through, reviewed by, and signed by the Contractor prior to submittal to the General Contractor for Architect's approval.
 - 2. RFI's sent by subcontractor directly to the General Contractor or Architect shall not be accepted and will be returned unanswered.
- D. Contractor shall carefully study the Contract Documents to assure that the requested information is not available therein. RFI's which request information available in the Contract Documents will be deemed either "improper" or "frivolous".
- E. In cases where RFI's are issued to request clarification of coordination issues, for example pipe and duct routing, clearances, specific locations of work shown diagrammatically, and similar items, the Contractor shall fully lay out a suggested solution using drawings or sketches drawn to scale, and submit same with the RFI. RFI's which fail to include a suggested solution will be returned unanswered with a requirement that the Contractor submit a complete request.
- F. The Architect will respond to legitimate and bonafide Requests for Information (RFI) initiated by Contractor.
- G. Contractor shall compensate the Architect, by Owner-Contractor Contract adjustment, for the Architects reasonable costs to respond to RFI's if the Architect determines:
 - 1. The RFI does not reflect careful study and review of the documents, or;
 - 2. Demonstrates a lack of knowledge or construction competency reasonably expected of a Contractor performing the work.
- H. The Architect's action will be taken with such reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review.
- I. In the event the Contractor believes that a clarification by the Architect results in additional

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SECTION 01 29 76 - APPLICATIONS FOR PAYMENT

PART 1 GENERAL

1.01 SUMMARY

- A. Coordinate the Schedule of Values and Applications for Payment with the Contractor's Construction Schedule.
- B. Schedule of Values: Coordinate preparation of the Schedule of Values with preparation of the Contractor's Construction Schedule.
 - 1. Submit the Schedule of Values at the earliest possible date but no later than seven days before the initial Applications for Payment submittal.
- C. Format and Content: Use the Project Manual table of contents as a guide to establish the format for the Schedule of Values. Provide at least one line item for each Specification Section.
- D. Applications for Payment shall be consistent with previous applications and payments as certified by the General Contractor and Architect and paid for by the Owner.
- E. Payment-Application Times: As per General Conditions, Article 58.
- F. Payment-Application Forms: Use AIA Document G702 and Continuation Sheets G703 (OR EQUAL) as the form for Applications for Payment.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01 29 76

SECTION 01 31 19 - COORDINATION AND MEETINGS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Coordination.
- B. Preconstruction meeting.
- C. Progress meetings.
- D. Preinstallation meetings.

1.02 COORDINATION

- A. Coordinate scheduling, submittals, and Work of the various sections of the Project Manual to ensure an efficient and orderly sequence of installation of interdependent construction

- c. Work by Owner.
 - d. Access to Site - Owner Contact.
- 5. Construction Process:
 - a. Contractor will give

SECTION 01 32 16 PROJECT CONSTRUCTION SCHEDULE

PART 1 GENERAL

1.01 SUMMARY

- A. The work includes preparing and submitting the sub-schedules and reports specified herein, including the up-to-date maintenance as required by the GENERAL CONTRACTOR. The Conditions of the contract and the other sections of Division 1 apply to this section as fully as if repeated herein.

1.02 CONSTRUCTION SCHEDULE

- A. The enclosed "PROJECT CONSTRUCTION SCHEDULE" is composed of tentative starting dates and fixed durations for each significant activity of work on the project.

- 1. Within 14 days of the contractor's receipt of the project information, the contractor shall submit a project construction schedule to the project manager for review and approval. The schedule shall include, but not be limited to, the following information:
 - a. A list of all activities to be performed on the project, including a description of the activity, the location of the activity, and the estimated start and finish dates for the activity.
 - b. A list of all resources to be used on the project, including a description of the resource, the location of the resource, and the estimated start and finish dates for the resource.
 - c. A list of all materials to be used on the project, including a description of the material, the location of the material, and the estimated start and finish dates for the material.
 - d. A list of all equipment to be used on the project, including a description of the equipment, the location of the equipment, and the estimated start and finish dates for the equipment.
 - e. A list of all subcontractors to be used on the project, including a description of the subcontractor, the location of the subcontractor, and the estimated start and finish dates for the subcontractor.
 - f. A list of all other resources to be used on the project, including a description of the resource, the location of the resource, and the estimated start and finish dates for the resource.

- F. CONTRACTOR is expected to provide appropriately trained and skilled mechanics in adequate numbers and equipment needed and/or required to properly and efficiently complete all work activities per the schedule. Should the GENERAL CONTRACTOR have reason to believe at any time that the CONTRACTOR is not providing an adequate workforce armed with the proper materials and/or equipment, the GENERAL CONTRACTOR shall give the CONTRACTOR written notice of same. Activity Manpower loading submitted in item 1.02-A-2 above shall in no way limit the responsibility of the CONTRACTOR to perform to the fixed duration requirements of the PROJECT CONSTRUCTION SCHEDULE.
- G. The time for total project completion shall be within the total time specified in the Contract documents. The GENERAL CONTRACTOR will use established contract fixed durations (refer to 1.02A) to prepare and update a Critical Path Method Schedule (C.P.M.) by buildings and site. This schedule will be the basis of weekly production review meetings and the method of measuring each CONTRACTOR'S performance and impact on dependent CONTRACTORS, required cure, and the assessment of liquidated damages.

ATTACHMENT: CONSTRUCTION SCHEDULE

END OF SECTION 01 32 16

SECTION 01 33 00 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

- A. Submittal Procedures: Coordinate submittal preparation with construction, fabrication, other submittals, and activities that require sequential operations. Transmit in advance of construction operations to avoid delay.
 - 1. Coordinate submittals for related operations to avoid delay because of the need to review submittals concurrently for coordination. The Architect reserves the right to withhold action on a submittal requiring coordination until related submittals are received. Specifically, in order to assure proper coordination of all project colors, no submittals which require the selection of material colors will be processed and released until all submittals requiring the selection of material colors have been submitted.
 - 2. Processing: Allow 14 days for initial review. Allow more time if the Architect must delay processing to permit coordination. Allow 14 days for reprocessing.
 - a.

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SUBMITTAL

3. The Contractor will ensure his employees cooperate with and coordinate safety matters with other contractors to form a joint safety effort.
4. Employees who have been, or will be exposed to excessive (measured against applicable standards) levels of toxic materials or harmful physical agents shall be notified by the Contractor. Notice of corrective action being taken shall be provided to the employees. Accurate records must be kept of all exposures which are required to be monitored under the State and Federal Codes.
5. In the event of a defense by the Contractor against unsafe independent employee actions, the Appeals Board requires that you must show evidence of the following:
 - a. That the employee was experienced in the job being performed;
 - b. That you as the employer have a well devised safety program which includes training employees in safety matters relating to their individual job assignments;
 - c. That you effectively enforce your safety program;
 - d. That you have and enforce a policy of sanctions against employees who violate your safety program; and
 - e. That the employee caused a safety infraction which he or she knew was in violation of your safety requirement.

C. SAFETY ACTIVITIES

1. Contractors will conduct or initiate:
 - a. Safety program as required by current State of California requirements.
 - b. Weekly “tool box” safety meetings between Contractor and Contractor’s supervisors, foremen, employees, and subcontractors working on the project; and
 - c. Weekly safety inspections of your work area and those areas of work under your responsibility or shared responsibility as well as taking any other necessary safety precautions.

D. REPORTS

1. Submit all preliminary, weekly, periodic and special reports to the General Contractor. The Contractor is in no way relieved of the requirements for submission of reports to any agency or authority.
 - a. All reports listing deficiencies, accidents, or injuries shall show corrective action taken.
 - b. A weekly status and summary report of each “tool box” meeting held and items discussed. Each report shall also contain attendance names, signatures and company affiliation.
 - c. A weekly status report of inspection results. The attached status forms are for your convenience only.
 - d. A continuing list of deficiencies found, date identified, responsible party, corrective action and date corrected.
 - e. Accident reports and injury forms. Submit a copy of one of the following to the General Contractor for each case:
 - 1) California Division of Labor Statistics and Research Form 5020 (latest rev.), or;
 - 2) Federal OSHA Form 101, or;
 - 3) Insurance Company form similar to 1 or 2 above.
 - f. A copy of CAL/OSHA Form 200 “Log and Summary of Occupational Injuries and Illness”.

2. Special Reports
 - a. Notify the General Contractor immediately of any accident involving injury to personnel or property; and complete written reports within 24 hours of a death or injury of five (5) or more employees as a result of one accident.
 - b. Copies of all toxic or harmful agent reports (See paragraph B.4.)
3. Governmental Reports
 - a. Notification of governmental authorities is the responsibility of each affected contractor.

E. SAFETY DEFICIENCY CORRECTION

1. All safety deficiencies will be corrected by contractors in accordance with the following priorities.
 - a. Immediate correction of items with any probability of major or minor injury to people.
 - b. Correction immediately of any accident probability which could involve people an/or equipment.
 - c. Correction within one day (or sooner) of potential injury or damage to property.

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END OF SECTION 01 35 23

SECTION 01 45 24 TESTING AND INSPECTION REQUIREMENTS FOR SCHOOL CONSTRUCTION

PART 1 - GENERAL

1.01 SUMMARY

- A. Regulatory Requirements:
 - 1. Part 1, Title 24, Section 4-335, California Code of Regulations: Testing required by the Division of the State Architect (DSA).
 - 2. Part 2, Title 24, California Code of Regulations (2015 IBC and 2016 California Amendments): Inspections, testing and approvals required by individual sections therein.
- B. Selection of the material required to be tested shall be by the laboratory or the Owner's representative and not by the Contractor.
- C. Minimum test and inspections required: See Structural Tests and Inspections, Division of the State Architect form DSA 103 (2016 CBC).
- D. Any material shipped by the Contractor from the source of supply prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice from said representative that such testing and inspection will not be required shall not be incorporated in the job.
- E. Selection and Payment of Testing Laboratory:
 - 1. Owner will employ and pay for services of an independent Testing Laboratory approved by the Architect, DSA, and the Structural Engineer to perform inspection and testing in accordance with Part 1, Title 24, Section 4-335, California Code of Regulations.

G. Laboratory Reports:

1. After each inspection and test, the testing facility shall promptly (no later than 14 days after test is complete) submit one copy of laboratory report to the following.
 - a. Owner
 - b. Architect
 - c. Project Inspector
 - d. General Contractor
 - e. Structural Engineer
 - f. Mechanical and Electrical Engineers (Related Tests and Inspections)
 - g. Division of the State Architect
2. Test reports shall include all tests made, regardless of whether such tests indicate that the material is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported.

2. The Owner shall have the right to reject materials and workmanship which are defective or to require their correction. Rejected workmanship shall be satisfactorily corrected and rejected material shall be removed from the premises without cost to owner the Owner. If the Contractor fails to correct such rejected work within a reasonable time, fixed by written notice, the Owner will correct same and charge the expense to the Contractor by Change Order.
3. Should it be considered necessary or advisable by the Owner at any time before final acceptance of the entire work to make an examination of work already completed by removing or tearing out the same, the Contractor shall on request promptly furnish all necessary facilities, labor and materials. If such work is found to be defective in any respect due to fault of the Contractor or his subcontractor, he shall defray all expenses of such examinations and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the of thei(f)-3() 9 reW0DF1 9a reason

3.

- B. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of accessible concealed spaces.
- C. Clean glass and surfaces exposed to view. Remove temporary labels, stains, and foreign substances.
- D. Repair, patch, and touch-up marred surfaces to specified finish, and to match adjacent surfaces.
- E. Broom-clean paved surfaces.
- F. Polish transparent and glossy surfaces.
- G. Vacuum carpeted and soft surfaces.
- H. Wax and polish resilient floor surfaces.
- I. Wash and polish ceramic surfaces.
- J. Clean machinery and equipment.
- K. Clean plumbing fixtures to a sanitary condition. Use non-corrosive, non-abrasive cleaning materials.
- L. Replace filters of operating equipment.
- M. Clean and polish light fixtures.
- N. Clean and polish hardware and metal surfaces.
- O. Clean walls and ceilings of dust, dirt, stains, hand marks, paint spots, plaster drops, and like defects.
- P. Clean construction site. Sweep paved areas and rake clean landscaped surfaces.
- Q. Clean out and flush drains from construction debris. Flood-test prior to occupancy.
- R. Remove waste and surplus materials, rubbish, and construction facilities from the site. Do not use
- S. Keep project clean until it is occupied by the Owner.
- T. Schedule final cleaning as accepted by the CONSTRUCTION MANAGER to enable the ARCHITECT and SCHOOL DISTRICT to accept a completely clean project.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION 01 74 00

IMPERIAL

H. Mixed Debris Recycling Facility: A solid resources processing facility that accepts loads of

- b. Concrete, concrete block, slump stone (decorative concrete block), and rocks
- c. Dirt
- d. Metal, ferrous and non-ferrous
- e. Wood
- f. Green materials (i.e. tree trimmings)
- g. Other materials, as appropriate, such as red clay brick and corrugated cardboard

Off-site Recyclables shall be legally transported to a source separated or mixed debris-recycling facility. On-site Recycling program shall produce a quality product to meet the requirements identified in the Contract Documents. On-site recycling Plans shall also estimate the amount to be used in the Work and include a program for off-site recycling of any excess material that cannot be used in the Work. At no time shall the on-site recycling, stock piling of separated or to-be-separated materials cause or create any nuisance or health menace to the site, other public or private properties.

- 2. Mixed Debris Recycling: Develop and implement a program to transport loads of commingled construction and demolition materials that cannot be feasibly source-separated to a mixed recycling facility.
- 3. Salvageable Items: Perform a site pre-assessment, identify materials that are feasible for salvage, determine requirements for site storage, and transportation of materials to a salvage facility.
- 4. Disposal Operations:
 - a. Using a permitted waste hauler or its own trucking services, SUBCONTRACTOR shall legally transport and dispose of materials that cannot be delivered to a source separated or mixed recycling facility, to a transfer station or disposal facility that can legally accept the materials for the purpose of disposal.
 - b.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION 01 74 19

- e. Changes made by change orders and other modifications, including all clarification drawings, instruction bulletins, and other construction correspondence.
 - f. Details not on original drawings.
- C. Specifications and Addenda: Legibly mark and record at each product section description of actual products installed to include the following:
- 1.

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PART 2 ó PRODUCTS ó Not Used

PART 3 ó EXECUTION

- D. Existing to Remain: Protect construction indicated to remain against damage and soiling during demolition. When permitted by the Architect, items may be removed to a suitable, protected storage location during demolition and then cleaned and reinstalled in their original locations.

1.05 ENVIRONMENTAL CONDITIONS

- A. Hazardous Materials: Prior to starting work, obtain from the Owner certification that hazardous materials have been removed. In the event additional material which is suspected to be friable asbestos or other regulated hazardous material is encountered during the demolition work, the Contractor shall stop work in such areas and notify the Owner. The materials will be inspected and tested, if necessary, by the Owner. If the material is found to be friable asbestos or other hazardous material, the Owner will provide for its removal or encapsulation without delay at Owner's expense. After treatment the Owner will test and certify that the contamination has been removed or controlled to within legal requirements and Contractor will be notified to proceed with the work in writing.
- B. Noise Control: Perform all work in a manner and at times which will keep production of objectionable noise to a minimum amount of noise. Instruct all workers in noise control procedures. Noise that adversely affects adjacent properties will not be tolerated. Such conditions shall be the Owner's determination.
- C. Dust Control: Take appropriate action to check the spread of dust, and to avoid the creation of a nuisance in the surrounding area. Do not use water if it results in hazardous or objectionable conditions, such as flooding or pollution. Comply with all dust regulations imposed by local air pollution agencies. Remove dust and dirt from work area at least daily or more frequently as needed or directed.
- D. Pest Control: Take appropriate measures to prevent the spread of pests and vermin from areas where work is being performed to other areas including the site and adjacent buildings.

1.06 PROJECT SITE CONDITIONS

- A. The intent of the drawings is to show existing site and building conditions with information developed from the original construction documents, field surveys, and Owner's records, and to generally show the amount and types of demolition and removals required to prepare existing areas for new work. Contractor shall make a detailed survey of existing conditions pertaining to the work before commencing demolition.
- B. Extent: perform removals to extent required plus such additional removals as are necessary for completion even though not indicated or specified.

1.07 PROTECTION

- A. Existing Work: Protect existing work which is to remain in place.
- B. Trees: Protect trees within the project site which might be damaged during demolition.

1.08 EXPLOSIVES: Use of explosives will not be permitted.

1.09 BURNING: Burning will not be permitted.

PART 2 – PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3. Underwriters' Laboratories, Inc. (UL)
 4. Certified Ballast Manufacturers' Association (CBM)
 5. National Electrical Manufacturers' Association (NEMA)
 - 6.05 Institute of Electrical & Electronics Engineers (IEEE)
 7. American Society for Testing & Materials (ASTM)
 8. National Board of Fire Underwriters (NBFU)
 9. National Board of Standards (NBS)
 10. American National Standards Institute (ANSI)
 11. Insulated Power Cable Engineers Association (IPECS)
 12. Electrical Testing Laboratories (ETL)
 13. National Electrical Safety Code (NESC)
 14. California Electrical Code Title 24, Part 3
 15. California Building Code
 16. Americans with Disability Act (ADA)
- B. Comply with all applicable laws, ordinances, rules, regulations, codes, or rulings of governmental units having jurisdiction as well as standards of NFPA, and serving utility requirements.
- C. Owner shall pay all permit fees and inspections required by any public authority having jurisdiction. Contractor shall coordinate work and arrange inspections with any public authority having jurisdiction.
- D. Installation procedures methods and conditions shall comply with the latest requirements of the Federal Occupational Safety and Health Act (OSHA).
- E. Cover no work until inspected, tested, and approved by the Architect. Where work is covered before inspection and test, uncover it and when inspected, tested, and approved, restore all work to original proper condition at no additional cost to Owner.

1.05 DRAWINGS AND SPECIFICATIONS

- A. Drawings and specifications are intended to complement each other. Where a conflict exists between the requirements of the drawings and/or the specifications, request clarification.
- B. The Architect shall interpret the drawings and the specifications, and his decision as to the true intent and meaning thereof and the quality, quantity, and sufficiency of the materials and workmanship furnished there under shall be accepted as final and conclusive.
- C. In case of conflicts not clarified prior to Bidding deadline, use the most costly alternative (better quality, greater quantity, or larger size) in preparing the Bid. A clarification will be issued to the successful Bidder as soon as feasible after the Award and if appropriate, a deductive change order will be issued.
- D. All provisions shall be deemed mandatory except as expressly indicated as optional by the word

manner and locations to avoid obstructions, preserve headroom, keep openings and passageways clean, and maintain proper clearances.

1.12 CLEANUP

- A. In addition to cleanup specified under other sections, thoroughly clean all parts of the equipment. Where exposed parts are to be painted, thoroughly clean off any spattered construction materials and remove all oil and grease spots. Wipe the surface carefully and scrape out all cracks and corners.
- B.

2. Uwt hceg'r cpgnu 'ecd lpgvu'cpf 'y kt gy c {u<"Uco g'cu'õ30Hwuj 'Rcp gnuõ"cdq xg'gzegr v'cnuq'r c kpv'v'j g" enclosure (can) using the same paint as is on adjacent surface in lieu of semi-gloss paint. Apply etching compound (galvanized surfaces) and undercoater prior to finish coat.
3. Uwt hceg'cpf 'hwuj "dqz gu<"Rclpv'v'q'o cvej "cf lcegpv'uw hcegu'cu'f guet kdgf "lp"õ40Uwt hceg'r cpgnuõ" above.
4. Gzr qugf "eqpf wkv<"Rclpv'v'q'o cvej "cf lcegpv'uw hcegu'cu'f guet kdgf "lp"õ40Uwt hceg'r cpgnuõ"cdq xg0
5. Ferrous metal miscellaneous parts (except stainless steel): Galvanized in accordance with ASTM A123 or A153.
6. Nli j vpi 'hzw tgu'lp'r wdne "ct gcu<"Uc p f ctf 'o cpw hcewt gtu'õ'hpkuj "gzegr v'cu'o qf kdgf "d { 'v'j g" LIGHTING section, including Fixture Schedule. Exception: Paint the trims of recessed fixtures v'q'o cvej "cf lcegpv'y cni'qt "eg k lpi "uw hceg'hw'v'q'f kt ge vgf "d { 'Qy pgt'õ'tgr t gupvc'v'xg0
7. Wiring devices, device plates and floor boxes in public areas: As specified in WIRING DEVICES and DEVICE PLATES Sections.

3.04 UTILITY SERVICES

- A. Upon notification of award of contract, notify the serving power, telephone utilities of the following:
 1. Name and address of Contractor.
 2. Estimated times of construction start, completion and required service connections.
 3. Project service voltage, phase load, and service size.

3.05 TEMPORARY LIGHTING AND POWER

- A. Contractor shall provide on-site generation, labor, materials and/or any required utility fees associated y kj "v'j g'lpw cnu'v'q'p'cpf "o c kpv'cpeg"qh'c"vgo r qtct { 'r qy gt "uq w teg'hw'v'q' "Eqp v'cev'qt'õ'gs wkr o gpv'qt "hw'v'q' offices during the period of construction.
- B. Building and site shall be sufficiently illuminated so that construction work can be safely performed. Lights shall be controlled by switches located with consideration for safety, security, and convenience.

3.06 RECORD DRAWINGS

- A. The Electrical Division shall maintain record drawings as specified in Section 01 78 39.
- B. Drawings shall show locations of all concealed and exposed conduit runs, giving the number and size of conduit wires. Underground ducts shall be shown with cross section elevations. Drawing changes uj cni'p'v'v'q'v'g'kf g'p'v'v'q'v'g' "qpn' "y kj "t ght g'p'ekpi "EQT"u'c'p'f "THK"u' "v'j g'f tcy kpi u'uj cni'p'v'v'q'v'g' "cew'cni' changes made.
- C. Two sets of reproducible as-built drawings shall be delivered to the Architect. See Section 01 78 39 for additional requirements.

3.07 EXCAVATION AND BACKFILL

- A. Perform all necessary excavation, shoring, and backfilling required for the proper laying of all conduits inside the building and premises, and outside as may be necessary. Remove all excess excavated materials from the site, or as otherwise directed by the Architect.
- B. Excavate all trenches open cut, keep trench banks as nearly vertical as practicable, and sheet and brace trenches where required for stability and safety. Excavate trenches true to line and make bottoms no wider than necessary to provide ample work room. Grade trench bottoms accurately. Machine grade only to the top line of the conduits, doing the remainder by hand. Do not cut any trench near or under

- A. Provide the work in compliance with the most stringent seismic requirements for site specific, of applicable Codes including the Title 24 and California Code of Regulations (CCR) Uniform Building Code, but with the requirements herein as minimum standards. Provide seismic restraints for materials and equipment of this Division, including (but not limited to) the items listed below. The attachments shall resist forces applied to the center of gravity of the components. Criteria shall be the operating weight of the item times .5g for horizontal forces and .33g for vertical forces. Design for the horizontal force to be applied in any direction. Wall mounted or suspended components shall, in addition, resist a downward force of 200 pounds minimum added to the operating weight.
- B. All switchgear and other free standing electrical equipment shall be anchored to withstand seismic forces in this area.
- C. Switchboards, transformers, and all free-standing panels or cabinets and similar equipment.
- D. Suspended lighting fixtures.
- E. Lighting fixtures integral with ceiling or directly mounted to ceiling.
- F. Suspended conduit hangers and trapezes.
- G. Suspended electrical conduit, 2-3/4"ø pvc lpcnuk g'cpl' hcti gt. 'lj cmj' cxc' lpf kxf wcnj' cpi gtu'pqv' hpi gt" vj cp' 34ø' hqo 'vj g'vqr 'qh'vj g'r k g'vq' vj g'dqvqo 'qh'vj g'uw r qtv' hqt' vj g'j' cpi gt' 0" k' c' hpi gt' j' cpi gt' k'" used, Contractor shall apply seismic restraints. Supporting calculations and details shall be submitted for Title 24 compliance review.
- H. Four #9-12 gauge hanger wires shall be provided to each recessed troffer one located at each diagonal corner. In addition troffers shall be fastened with two self tapping screws at each end of fixture through housing to main runners of the T-bar grid. Installation of these screws shall in no way deform the fixture housing. Provide spacers between the fixture housing and the T-bar grid where required.
- I.

1. Hot-dipped galvanized shall be applied after forming of angle-iron, bolts, anchors, etc.
2. Hot-dipped galvanized shall be applied after fabrication for junction boxes and pull boxes cast in concrete.

3.21 GENERAL WIRING

- A. Where located adjacent in walls, outlet boxes shall not be placed back to back, nor shall extension rings be used in place of double boxes, all to limit sound transmission between rooms. Provide short horizontal nipple between adjacent outlet boxes, which shall have depth sufficient to maintain wall coverage in rear by masonry wall.
- B. In those isolated instances in which construction conditions will not permit staggered outlet boxes, provide "Flamesafe" FSD 1077 fire stopping pads or approved equal, over the outlet box.
- C. Complete rough-in requirements of all equipment to be wired under the contract are not indicated. Coordinate with respective trades furnishing equipment or with the Architect as the case may be for complete and accurate requirements to result in a neat, workmanlike installation.
- D. Provide proper size and type of feeds from proper sources for all such items indicated, checking drawings of all trades to ensure inclusion of all items.

3.22 SEPARATE CONDUIT SYSTEMS

- A. Each electrical and signal system shall be contained in a separate conduit system as shown on the drawings and as specified herein. This includes each power system, each lighting system, each signal system of whatever nature, telephone, emergency system, sound system, control system, fire alarm system, etc.
- B. Further, each item of building equipment must have its own run of power wiring. Control wiring may be included in properly sized conduit for equipment feeders of #6 AWG and smaller, having separate conduit for larger sizes.

3.23 SPECIAL CONDUIT REQUIREMENTS

- A. The electrical contractor shall furnish and install all conduits for the total and complete conduit for the following communication systems.
 1. Clock and Bell
- B. The fire alarm system shall be in conduit at all areas.
- C. Conduit for all low voltage systems, including fire alarm and clock and bell located above suspended ceiling shall be installed below gypsum board on bottom chord of truss, exposed.
- D. Provide a pull chord in all spare conduit and where conductors are installed by others.

END OF SECTION 26 05 00

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SECTION 26 05 33 – RACEWAY AND BOXES

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of General and Supplementary Conditions, Division One, and Section 26 05 00 Common Work Results for Electrical apply to this section.
- B. Scope of Work: The work under this section includes furnishing all labor, materials, and equipment and performing all operations in connection with Raceway and Boxes, as indicated on the drawings specified herein, or reasonably required to complete the work.

1.02 SUBMITTALS

- A. Submit manufacturer's data on the following:
 - 1. Conduit
 - 2. Fittings
 - 3. Fire Seal Material

1.03 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. ENT: Electrical nonmetallic tubing.
- C. FMC: Flexible metal conduit.
- D. IMC: Intermediate metal conduit.
- E. LFMC: Liquidtight flexible metal conduit.
- F. LFNC: Liquidtight flexible nonmetallic conduit.
- G. RNC: Rigid nonmetallic Conduit.

1.04 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in CEC, Article 100, by a testing agency acceptable to authorities having jurisdiction and marked for the intended use.
- B. Comply with CEC.

PART 2 - PRODUCTS

2.01 METAL CONDUIT AND TUBING

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. AFC Cable Systems, Inc.
 - 2. Alflex Inc.
 - 3. Allied Tube & Conduit; a Tyco International Ltd. Co.

have threaded hubs for rigid Conduit and neoprene gaskets for their covers. Bodies shall be Appleton Unilets, Crouse-Hinds, or the approved equal. Where recessed, boxes shall have square cut corners.

- D. Deep boxes shall be used in wall covered by wainscot or paneling and in walls or glazed tile, brick, or

Provide a 200-pound test nylon or polypropylene pull rope in each empty Conduit, tie off rope at each end, and provide an identification tag on rope at each end.

- H. All branch circuits shall be installed in void spaces and not in concrete floor slabs unless for floor receptacles.
- I. Conduit sizes for various numbers and sizes of wire shall be as required by the CEC, but not smaller than 3/4-inch.
- J. Conduit size shall be such that the required number and sizes of wires can be easily pulled in and the Contractor shall be responsible for the selection of the conduit sizes to facilitate the ease of pulling. Conduit sizes shown on the drawings are minimum sizes in accordance with appropriate tables in the NEC. If because of bends or elbows a larger conduit size is required, the Contractor shall so furnish without further cost to the Owner.
- K. Flexible Conduit shall be used as shown on drawings and only to connect motors, transformers, and other equipment subjected to vibration. Flexible Conduit shall not be used to replace EMT in other locations.
- L. Flexible metal conduit shall be ferrous, in lengths not exceeding 6 feet. Installation shall be such that considerable slack is realized. The Conduit shall contain separate code sized grounding conductor.
- M. Liquid tight flexible Conduit shall be used in conformance with NEC in lengths not to exceed 4 feet. For equipment connections, route the Conduit at 90 degrees to the adjacent path for point of connection. The Conduit shall contain separate code sized grounding conductor. Use liquid tight flexible Conduit for all equipment connections in possible corrosive areas, e.g. kitchens and outside areas.
- N. Plastic conduit joints shall be made up in accordance with the manufacturer's recommendations for the particular Conduit and coupling selected. Conduit joint couplings shall be made watertight. Plastic conduit joints shall be made up by brushing a plastic solvent cement on the inside of a plastic fitting and on the outside of the Conduit ends. The Conduit and fitting shall then be slipped together with a quick one-quarter turn twist to set the joint tightly.
- O. Conduit shall be continuous from outlet to outlet, cabinet or junction box, and shall be so arranged that wire may be pulled in with the minimum practical number of junction boxes.
- P. All conduits shall be concealed wherever possible. All conduit runs may be exposed in mechanical equipment rooms, electrical equipment rooms, and electrical closets. No conduit shall be run exposed in finished areas without the specific approval of the Architect.
- Q. All raceways which are not buried or embedded in concrete shall be supported by straps, clamps, or hangers to provide a rigid installation. Exposed Conduit shall be run in straight lines at right angles to or parallel with walls, beams, or columns. In no case shall Conduit be supported or fastened to other pipes or installed to prevent the ready removal of other trades piping. Baling wire shall not be used to support Conduit.
- R. Where possible, all conduits for wiring within stud or movable partitions shall enter the partition from above.
- S. Conduits above lay-in grid-type ceilings shall be installed in such a manner that they do not interfere with the "lift-out" feature of the ceiling system. Conduit runs shall be installed to maintain the following minimum spacing wherever practical.
 - 1. Water and waste piping not less than 3-inch.

2. Steam and condensate lines not less than 12-inch.
 3. Radiation and reheat lines not less than 6-inch.
- T. Provide all necessary sleeves and chases required where conduits pass through floors or walls as part of the work of this section. Core drilling will only be permitted where approved by the Architect.
- U. All empty conduits shall be provided a 1/2-inch polypropylene plastic pull cord and plastic plugs over the ends.
- V. The ends of all conduits shall be securely plugged, and all boxes temporarily covered to prevent foreign material from entering the conduits during construction. All C

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SECTION 26 05 43 - UNDERGROUND PULL BOXES

PART 1 – GENERAL

1.01 SUMMARY

- A. Section 26 05 00 provisions, entitled Common Work Results for Electrical, General Conditions, Supplementary Conditions, and Division One, apply to this section.
- B. Scope of Work: The work under this section includes furnishing all labor, materials, and equipment and performing all operations in connection with furnishing and installing underground pull boxes and manholes, as indicated on the drawings specified herein or reasonably required to complete the work.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Communication Pull Box: JENSON PRECAST Variable Depth Pull Box, 3672 DPB, 3'-8" x 6'-8" dimension.
- B. Communication Pull Box Cover: JENSON PRECAST, Parkway, Hinged Cover, Style E, (2) Piece, with hold open assembly. Marked as "Communication".
- C. Electrical Pull Box: JENSON PRECAST Variable Depth Pull Box, 3048 DPB, 3'-2" x 4'-8" dimension.
- D. Electrical Pull Box Cover: JENSON PRECAST, Parkway, Bolt Down Cover, (1) Piece, Style F, with hold open assembly. Marked as "Electrical"

PART 3 - PRODUCTS

3.01 INSTALLATION

- A. Communication and electrical pull boxes shall be installed so the cover elevation is 6" above the adjacent soil.
- B. Installation of Wire and Cable:
 - 1. When installed in underground pull boxes, wires and cables shall not be spliced. All wire and cable in underground pull boxes shall be continuous.
 - 2. When installed in underground pull boxes, wire and cable shall be neatly strapped/looped together and anchored to the side walls of the junction box. The wire and cable shall be neatly strapped to the side walls of junction boxes to keep the floor of the junction box open.
- C. Install as per manufacturer's instructions.

END OF SECTION 26 05 43

- c. Listing: UL or none.
- d. Quantity.

F. Shop Drawings:

1.05 REGULATORY REQUIREMENTS

- A. Codes and regulations: Perform all work strictly with all applicable Federal, State, County, and City codes, laws, and ordinances.

1.06 APPLICABLE STANDARDS & AGENCIES

- A. Conform to the following:
 - 1. CEC California Electrical Code.
 - 2. NFPA National Fire Protection Association.
 - 3. CBC California Building Code.
 - 4. UL Underwriters Laboratories.
 - 5. ANSI American National Standards Institute.
 - 6. ASTM American Society for Testing Materials.
 - 7. TIA Telecommunications Industry Association
 - 8. ICEA Insulated Cable Engineers Association.

1.07

In addition to provisions of Division 01, provide the following:

- A. Warranty: Warrant all of the work of this section to be free from defects in materials and workmanship for a period of twelve (12) months from the date of District acceptance.
- B. Response time: Provide a qualified technician familiar with the work at the project site within twenty-four (24) hours after receipt of a notice of malfunction. Provide the District with the telephone number attended eight (8) hours a day, five (5) days a week, to be called in the event of a malfunction.
- C. Off

2.03 COPPER COMMUNICATIONS CABLING – SHIELDED: CAT6A F/UTP

A. Horizontal Cabling

1. Model: Belden #10GX63F CAT6A Enhanced (625MHz), four shielded bonded-pair.
2. Rating: CMP rated.

B. Termination

1. MDF/IDF Rooms: CAT6A patch panels with rear cable manager.
2. Wall/Ceiling Plate: RJ45 Category 6A 10GX modular jack.
3. Floor Mount: RJ45 Category 6A 10GX modular jack.

C. Patch Cords – As Required

1. Model: Belden or Uniprise.
2. Category: As required for equipment being connected.
3. Length: As required.
4. Quantity: As required.
5. Color: Per Owner'

PART 3 - EXECUTION

3.01 GENERAL

- A. All system cabling and terminations are to be installed in accordance with the manufacturer's instructions and as shown.
- B. All necessary interconnections, services, and adjustments required for a complete and operable system shall be provided. All installation work must be done in accordance with the safety requirements set forth in the general requirements of ANSI C2 and NFPA 70.

3.02 TEST EQUIPMENT

- A. Provide at least one (1) each of the following items or approved functional equivalents for the duration of each test:
 - 1. Level 11, Cat 6 Cable Pair Tester.
 - 2. Time Domain Reflectometer.
 - 3. True RMS Audio Digital Volt-Phm-Millimeter.
 - 4. Tone Test Sets.
 - 5. Optical Power Meter.
 - 6. Site Portable Communication Systems.
 - 7. Any other items of equipment or materials required to demonstrate conformance with the contract documents.
 - 8. Voice Cabling Plant Tester – Capable of detecting shorts, opens, reversals, miswiring, and cross twists.
 - 9. All testing equipment models are to be approved by the District Information Services Department.

3.03 WIRE AND CABLE INSTALLATION

- A. All wire and cable shall be continuous and splice-free for the entire run length between designated connections or terminations.
- B. Identify data and voice cables distinctly using different colors of the overall jacket or insulation.
- C. Verify that all raceways have been de-burred and properly joined, coupled, and terminated before installation of cables. Verify that all raceways are clear of foreign matter and substances before installing wire or cable.
- D. Inspect all conduit bends to verify the proper radius. Comply with the Code for minimum permissible radius and maximum permissible deformation.
- E. Apply a chemically inert lubricant to all wires and cables before pulling in the conduit. Do not subject wire and cable to tension greater than that recommended by the manufacturer. Use multi-spool rollers where the line is pulled in place around bends. Do not pull reverse bends.
- F. Provide a box 1 0 g0 G{ar)-5(e)l(wh)-6(er)-2(a)-4(co)4(m)-4.62 Tm0 g0 G nBT/F1 9.96 Tf1 0 0 1 354.43 171.62 Tm0 g

- ii. If more than one rack is located in the MDF or IDF room, a rack number shall also be included in the label.

3.09 TESTING

A. Category 6 System:

1. Test and report on each segment separately, including station cabling, horizontal distribution (each segment, if multiple), and telecommunications closet wiring.
2. Test each collective segment as a whole.
3. Note exceptions to Category 6 standards, as applies. Remedy and retest.
4. Submit a copy of the final results on CD-ROM or DVD-ROM organized by circuit number, consistent with the circuit numbering scheme used in preparing submittal drawings and labeling receptacles and terminations.

3.10 ACCEPTANCE REVIEW AND TESTING PROCEDURES

Complete all work of this section. Submit test report. Submit review copies of Operating and Maintenance Manuals, less reduced Record Drawings. Notify the Architect in writing that the work of this section is complete and fully complies with the contract documents. Request acceptance and review testing. The Architect's representative will verify the submitted test data and otherwise direct testing and adjustment of this work. These procedures may be performed at any hour of the day or night as required by the representative of the Architect to comply with the project schedule and avoid conflict with these procedures from possible ongoing work of other sections. Provide all specified personnel and equipment at any time without claim for additional cost or time.

- A. Personnel: Provide services of the designated supervisor and additional technicians familiar with the work of this section. Provide a quantity of technicians as required to comply with the project schedule.
- B. In addition, provide the following:
 1. All testing equipment.
 2. Complete set of the latest stamped, actioned submittals of record for reference.
 3. Complete set of shop and project site test reports.
 4. Complete set of manufacturer's original operation, instruction, and service manual for each equipment item for reference.
- C. Demonstrate complete operation of all systems.
- D. Make adjustments as directed by the Architect's representative.
- E. Correct all items that fail to comply with contract documents, as reasonably determined by the representative of the Architect, in a timely manner.

3.11 FIBER TESTING

- A. Fiber – in accordance with the current TIA standard ANSI/TIA-568-B.3 specifications for fiber optic cable.
 1. District Information Systems Department shall provide all test results and fiber lengths.

SECTION 27 11 00 COMMUNICATIONS EQUIPMENT

PART 1 – GENERAL

1.01 SUMMARY

- A. Provisions of General Conditions, Supplementary Conditions, and Division 01 apply to this section.
- B. The provisions of Section 16011, "General Requirements, Electrical," and Section 16050, "Basic Electrical Materials and Methods," apply to this section as if fully repeated herein.
- C. Scope of work: The work under this section includes furnishing all labor, materials, and equipment and performing all operations in connection with Communications Equipment, as indicated on the drawings specified herein or reasonably required to complete the work. The work includes, but is not limited to, the following:
 - 1. Equipment enclosure systems, including racks and accessories.
 - 2. Uninterruptable power systems and surge suppressors.
 - 3. Routers.
 - 4. Switches.
 - 5.

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- a. Manufacturer.
- b. Model number.
- c.

perform raceway installation. All other work shall be performed by parties licensed to perform such work.

- B. Personnel: Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for the proper performance of the work of this section. Supervisors shall have at least five (5) years of direct experience in similar work. Installation and maintenance personnel shall have at least three (3) years of direct experience in similar work.
- C. Designated supervisor: Provide a designated supervisor who is present and in responsible charge of the fabrication shop and on the project site during all phases of installation and testing of the work of this section. This supervisor shall be the same individual through the execution of the work unless illness, loss of personnel, or other circumstances reasonably beyond the control of the contractor intervene.
- D. Coordination: Coordinate the work of this section with the work of all other sections. Comply with Division 01.
- E. Verification: Verify dimensions and conditions at the project site. Submit any conflicts in a time 666.1 T4 433()JTJ176f

in lieu of the work of this section which is incomplete or found not in conformance with the Contract Documents as of seven (7) days prior to the completion date. Provide such temporary equipment until acceptance of the work of this section. Thereafter, remove such temporary equipment.

1.04 DELIVERY, STORAGE, AND HANDLING

Comply with the requirements of Division 01 and the following:

- A. Deliver materials in manufacturer's original undamaged packages or in bulk packing which provides equivalent protection.
- B. Store packaged materials off ground or slab in manner to protect them from elements, especially moisture damage.
- C. Deliver equipment to associated equipment rooms at the project site when major work of all other

1. Quantity: Three (3) sets.
2. Format: CAD and PDF files on CD-ROM or DVD-ROM.
3. Content: All drawings required under "Shop Drawings". Show "as installed" condition. Where room designations according to project permanent signage differ from construction designations in the contract documents, show both designations.

D. Warranty certificates: Comply with Division 01.

1.08 WARRANTY SERVICE

In addition to provisions of Division 01, provide the following:

- A. Warranty: Warrant all of the work of this section to be free from defects in materials and workmanship for a period of twelve (12) months from the date of District acceptance.
- B. Response time: Provide a qualified technician familiar with the work at the project site within twenty-four (24) hours after receipt of a notice of malfunction. Provide the District with the telephone number attended eight (8) hours a day, five (5) days a week, to be called in the event of a malfunction.
- C. Off-site service: Conduct all warranty repairs and services at the project site, unless in violation of manufacturer's standard product warranty. Provide substitute systems, equipment, and/or devices acceptable to the District for the duration of off-site repairs. Provide transportation for substitute and/or test systems, equipment, devices, materials, parts and personnel to and from project site.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

~~A. Equipment Enclosures and Accessories~~

- ~~4. APC <http://www.apc.com>~~

~~B. Uninterruptable Power Systems and Surge Suppressors~~

- ~~1. Tripp Lite <http://www.tripplite.com>~~

C. Routers and Switches

1. Ruckus® www.ruckusnetworks.com

~~D. Security~~

- ~~1. Palo Alto Networks <https://www.paloaltonetworks.com>~~

2.02 ROUTERS

A. MDF Aggregation Router

1. None of this project.

B. Internet Edge Router

3.06 ACCEPTANCE REVIEW AND TESTING PROCEDURES

- A. Complete all work of this section. Submit test report. Submit review copies of Operating and Maintenance Manuals, less reduced set of Record Drawings. Notify the Architect in writing that the work of this section is complete and fully complies with the contract documents. Request acceptance review testing. The representative of the Architect will conduct verification of submitted test data, and otherwise direct testing and adjustment of this work. These procedures may be performed at any hour of the day or night as required by the representative of the Architect to comply with the project schedule and avoid conflict with these procedures from possible ongoing work of other sections. Provide all specified personnel and equipment at any time without claim for additional cost or time.
- B. Personnel: Provide services of the designated supervisor and additional technicians familiar with work of this section. Provide quantity of technicians as required to comply with the project schedule.
- C. In addition, provide:
 - 1. Set of hand and power tools appropriate for performance of adjustment of and corrections to this work. Include spare wire and connectors and specified tooling for application.
 - 2. Ladders, scaffolding and/or lifts as required to access high devices.
 - 3. All test equipment.
 - 4.

or completed systems until all punch list work is complete and all systems comply with the contract documents, or accept any claim for additional cost or time.

END OF SECTION 27 11 00

SECTION 31 23 33 – TRENCHING AND BACKFILLING

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of General Conditions, Supplementary Conditions, and Division One apply to this section.
- B. Scope of Work: The work under this section includes furnishing all labor, materials, and equipment and performing all operations in connection with Trenching and Backfilling, as indicated on the drawings, specified herein, or reasonably required to complete the work. The work includes but is not limited to the following:
 - 1. Excavation, backfill and compaction for utilities.
- C. Related Section:
 - 1. Section 33 11 16: Site Water Distribution Piping.
 - 2. Section 33 31 00: Sanitary Sewerage Piping.

1.02 GENERAL PROVISIONS

- A. Contractor is responsible for the accuracy of all layout work and grades. Erect sheeting, shoring and bracing as necessary for protection of persons, improvements, and excavations. Keep excavation free from water and other fluids until backfilling is completed.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Backfill material shall be non-expansive granular soils that meet the USCS classifications of SM, SP-SM, or SW-SM, with a maximum rock size of 3 inches, and 5 to 20% passing the No. 200 sieve and a minimum sand equivalent of 20.
- B. Select bedding sand shall be Class A screened fill sand with a maximum particle size of 1-1/2 inches, not to exceed 18 percent, free of expansive materials, debris, and organic matter.

PART 3 - EXECUTION

3.01 TRENCHING

- A. Layout: L(o)6(9ETQq0.00000912 0 612 92 reW*nBT/F1 9.96 Tf1 0 0 1 129.62 194.66 Tm0 g0 G[0 012 0 612 92 reW*n

- C. Excavate trenches for utilities to required lines, grades and elevations indicated on drawings and as specified. Hand trim changes in direction and bottoms of trenches. Provide shoring in trenches over 5 feet in depth and also in trenches where unstable soil conditions are encountered.

- D.

compaction greater than 90 percent is required shall be compacted in accordance with those requirements to specified depth.

- C. Do not backfill until installation has been approved. Promptly install pipe after trenching has been done to keep excavation open as short a time as possible.
- D. Underground utility materials requiring special bedding and backfilling methods shall be installed as recommended in conjunction with these materials or as indicated on drawings.

3.03 PROTECTION OF WORK FROM FLOODING

- A. Construct all temporary ditches and berms and supply and maintain adequate pumps, piping, and other equipment necessary to protect work, existing structures, and equipment, and to other property located on premises or adjacent thereto, from damage by flooding due to rain or subsurface water. Utility lines shall not be laid in trenches which contain water or that are muddy.

3.04 SITE CLEANUP

- A. All excess and unsuitable excavated material shall be removed from site.

3.05 FIELD QUALITY CONTROL

- A. Obtain Soils Engineer's approval for excavation, fill materials, method of placing and compaction. Soils Engineer will perform tests to evaluate compliance with specifications.

END OF SECTION 31 23 33

SECTION 32 12 16.13 PLANT - MIX ASPHALT PAVING

1.1 GENERAL

A.

- A. Coarse Aggregate: Caltrans, Type A, ½" maximum, medium grading, sound; angular crushed stone; crushed gravel;
- B. Fine Aggregate: Sharp-edged natural sand or sand prepared from stone; gravel, properly cured blast-furnace slag, or combinations thereof.
- C. Asphalt Cement: PG70-10 Paving Grade
- D.

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HOT-MIX ASPHALT PAVING

2. FIBERMESH 650: ASTM C 1116/C 1116M, Type III Fiber Reinforced Concrete.
Manufactured by PROPOX CONCRETE SYSTEMS. Alloy polymer macro-

- B. Notify Job Inspector minimum 24 hours prior to commencement of operations.
- C. Ensure reinforcement, inserts, embedded parts, formed joint fillers, joint devices and accessories are not disturbed during concrete placement.

1. Screed concrete to required grade, float to a smooth, flat, uniform surface. Edge all headers to ¼ inch radius. Edge expansion joints to ¼ inch radius. Steel trowel to hard surface.
2. Grades less than 6 percent: After final troweling, apply a medium hard broom finish transverse to centerline or direction of traffic.
3. Grades 6 percent or more: Apply slip resistant heavy broom finish and remark as necessary after final finish to assure neat uniform edges, joints and score lines.
4. Walkway grades in excess of five percent shall conform to Section 1133B.7, California Building Code.

H. Curing: Cure surfaces utilizing one of the following methods:

1. Spraying: Spray water over slab areas and maintain wet for 7 days.
2. Spread polyethylene film over slab areas, lapping edges and sides, minimum 6 inches and sealing with pressure sensitive tape; cover with plywood or otherwise protect film from damage; maintain in place for 7 days.
3. Apply liquid curing compound at rate of 200 sf per gallon, using power sprayer equipped with agitator. Do not apply liquid curing compound to surfaces scheduled to receive paving units of any kind.

3.05 RAISED PLANTER, BENCHES AND SIMILAR SITE STRUCTURES

- A. Forms: Suitable material and type, size, shape, quality and strength to insure construction as designed, true to line and sufficiently rigid to resist deflection during placing of concrete. Clean forms of all dirt, mortar and foreign matter before use.
- B. Reinforcement: Refer to drawings for size and spacing. Place accurately and hold in position, using metal chairs, spacers, metal hangers, supporting wires and other devices of sufficient strength to resist crushing under full load. Clean reinforcing steel of mortar, oil, dirt, loose or thick rust and coatings.
- C. Coordinate installation of conduits or other inserts.
- D. Finish: Provide a smooth, straight, plumb and acceptable finish without burrs or form marks. Cement sacking is not acceptable.
- E. Curing: Cure surfaces utilizing one of the following methods:
 1. Spraying: Spray water over slab areas and maintain wet for 7 days.
 2. Spread polyethylene film over slab areas, lapping edges and sides, minimum 6 inches and sealing with pressure sensitive tape; cover with plywood or otherwise protect film from damage; maintain in place for 7 days.
 3. Apply liquid curing compound at rate of 200 sf per gallon, using power sprayer equipped with agitator. Do not apply liquid curing compound to surfaces scheduled to receive paving units or finish of any kind.

3.06 CURB AND GUTTER

- F.

SECTION 32 17 23 PAVEMENT MARKINGS

PART 1 - GENERAL

1.01 SUMMARY

- A. Provisions of General Conditions, Supplementary Conditions, and Division 01 apply to this section.
- B. Scope of work: The work under this section includes furnishing all labor, materials, and equipment and performing all operations in connection with Pavement Marking, as indicated on the drawings specified herein or reasonably required to complete the work. The work includes, but is not limited to the following:
 - 1. Accessible parking spaces. Provide accessible spaces limited to Keynote 9, 20, and 21 as per Sheet AS1.

