

## NOTICE TO CONTRACTORS

Notice is hereby given that the Hamilton Unified School District, hereinafter referred to as the Owner, will receive sealed proposals for the construction of the Paving & Drainage Project at Hamilton Elementary School, at the Hamilton USD District Offices, 620 Canal Street, Hamilton City, CA.95951 until 4:00 p.m., on Wednesday, April 8, 2015, at which time they shall be opened and publicly read.

**DETERMINATION OF LOW BIDDER:** In order to conform with Public Contract Code Section 1103 and Public Contract Code Section 20103.8, the following procedure will be used to determine the low bidder:

- Lowest base bid submitted by a responsible, responsive bidder

Attention is directed to the provisions of Section 1771.5 et. seq. of the Labor Code of the State of California concerning Labor Compliance Programs. The prime contractor and all subcontractors are responsible for compliance with the requirements of Section 1771.5 et seq.

In accordance with the provisions of Section 1773 of the Labor Code, the Director of Industrial Relations has determined the general prevailing rate of wages applicable to the work to be done. These rates are set forth in a schedule located at the State Department of Industrial Relations, Director of Industrial Relations Website: [www.dir.ca.gov](http://www.dir.ca.gov) . The Contractor shall post a copy thereof at each job site.

Attention is directed to the provisions of Section 1777.5 and 1777.6 of the Labor Code of the State of California concerning employment of apprentices by the contractor or any subcontractor under him. The prime contractor is responsible for compliance with the requirements of Section 1777.5 and the prime contractor and any subcontractor under him shall comply with the requirements of Section 1777.6.

Each bid must conform to the requirements of the Drawings and Project Manual and other documents comprising the Contract Documents, all of which may be examined on the District's website at <http://www.husdschools.org> Complete plans and specifications are also available for reviewing at the following Plan Rooms: Valley Contractors Exchange, and Shasta Builders Exchange.

No bid will be considered unless it is made up on the form provided in the Bid Documents and accompanied by Cashier's Check or Bidder's Bond from a surety company registered with the State of California Insurance Commissioner, for 10% of the amount of the bid, made payable to the Owner. The above mentioned checks or bid bond shall be given as a guarantee that the bidder shall execute the Contract, if it be awarded to him, in conformity with the Contract Documents.

There will be a **non-mandatory** Bid Walk on the project site at Hamilton Elementary School, 277 Capay Ave., Hamilton City, CA 95951 on Tuesday, March 24, 2015 at 3:30 PM. Prospective bidders are encouraged to attend

After the scheduled closing time set for receipt of bids, bids may not then be withdrawn for a period of time as stated on 00 41 04 – BID FORM days from and after said closing time, except as otherwise provided for in the California Public Contract Code.

Within 10 days after notification of the award of the Contract, the successful bidder/or bidders will be required to furnish a labor and Material Bond in an amount equal to one hundred percent (100%) of the Contract price and a Faithful Performance Bond in an amount equal to one hundred percent (100%) of the Contract price. Said bonds shall be secured from a Surety Company satisfactory to the Owner, and authorized to do business in the State of California.

Pursuant to California Public Contract Code Section 22300 of the State of California, the contract will contain provisions permitting the successful bidder to substitute securities for any moneys withheld by the Owner to ensure performance under the contract.

The Owner reserves the right to reject any and all bids and/or waive any irregularities or informalities in the bidding.

**Advertising dates:** Wednesday, March 18, 2015 and Wednesday, March 25, 2015

## PART 1 - GENERAL

## 1.01 PROPOSALS

- A. Proposals to receive consideration should be made in accordance with the following instructions:
1. Proposals shall be made on a form provided by the Architect. All items on the form should be filled out; numbers should be stated both in writing and in figures and the signature of individuals must be in longhand. The completed form should be without inter-lineations, alterations, or erasures.
  2. Proposals should not contain recapitulation of the work to be done, and alternative proposals will not be considered, unless called for.
  3. Should a bidder find discrepancies in or omissions from the Drawings or Documents, or should he be in doubt as to their meaning, he should at once notify the Architect, who will send written instructions to all bidders. Neither Owner nor Architect will be responsible for any oral instructions. No interpretations will be issued later than three (3) days prior to the date set for the opening of bids so that all inquiries can be answered in writing and distributed to all bidders in the form of addenda to the contract documents in ample time before the bid opening date.
  4. All addenda or bulletins issued during the bidding period are to be included in the proposal, and they will become a part of the contract for the project.
  5. Pursuant to the provisions of Sections 4100 to 4114, inclusive, of the California Public Contracts Code, every bidder shall in his bid set forth:
    - a. The name and location of the place of business of each subcontractor who will perform work or labor or render service to the bidder in or about the work in an amount in excess of one half (1/2) of one percent (1%) of the bidder's total bid.
    - b. The portion of the work that will be done by each subcontractor. If the bidder fails to specify a subcontractor for any portion of the work to be performed under the Contract in excess of one half (1/2) of one percent (1%) of the bidder's total bid, he agrees to perform that portion himself. The successful bidder shall not, without the consent of the Owner, either:
      - 1) Substitute any person as subcontractor in place of the subcontractor designated in the original bid.
      - 2) Permit any subcontract to be assigned or transferred or allow it to be performed by anyone other than the original subcontractor listed in the bid.
      - 3) Sublet or subcontract any portion of the work in excess of one half (1/2) of one percent (1%) of the total bid as to which his original bid did not designate a subcontractor.

6. A bid guarantee in the amount of 10% of the bid must accompany the bid. Failure to furnish a required bid guarantee in the proper form and amount, by the time set for opening the bids, may be cause for rejection of the bids. A bid guarantee shall be in the form of a firm commitment, such as a bid bond from a surety company admitted and registered with the State of California Insurance Commissioner, personal money order, or cashier's check. Bid guarantees, other than bid bonds, will be returned (a) to unsuccessful bidders as soon as practicable after the opening of the bids, (b) to the successful bidder upon the execution of such further contractual document and bonds as may be required by the bid as accepted. If the successful bidder withdraws his bid within the period specified therein for acceptance, or upon acceptance thereof by the Owner, fails to enter into the Contract and give bond within the time specified after the forms are presented to him, he shall be liable for any difference by which the cost of securing the supplies or services exceeds the amount of bid, and the bid guarantee shall be available toward offsetting such difference.
7. Every bidder shall include, as part of his bid documents, an executed statement of noncollusion, as indicated in Section 00 45 19 - NON COLLUSION AFFIDAVIT.
8. Proposal shall be addressed to the Owner in care of the Architect, and shall be delivered to the Owner enclosed in an opaque sealed envelope addressed to him marked "Proposal" and bearing the title of the work and the **name of the bidder**. No telephone or telegraphic bids or amendments to bids shall be effective.

#### 1.02 WITHDRAWAL OF PROPOSALS

- A. Proposals may be withdrawn by the bidder prior to but not after the time fixed for opening of proposals.

#### 1.03 OPENING OF PROPOSALS

- A. Proposals will be opened and read at or about the time set in Section 00 11 17 - NOTICE TO CONTRACTORS, and as advertised. Bidders, or their representatives, and other interested persons may be present at the opening of proposals.

#### 1.04 EXAMINATION OF CONTRACT DOCUMENTS AND SITE OF WORK

- A. Before submitting a proposal, bidders should examine the Drawings and read the Project Manual. They should visit the site of the proposed work, fully inform themselves of all conditions on, in, at, and about the site; examine the building or buildings, if any, and any work that may have been done thereon. Bidders are held fully responsible for understanding both the scope and intent of the project.

#### 1.05 COSTS FOR SPECIAL INSPECTIONS

- A. Certain sections of the technical specifications contain requirements for special inspections. The Owner and Contractor share responsibility for the cost of these inspections. Refer to Section 01 11 00 - SUMMARY OF THE WORK, for the basis of responsibility and to the technical specifications for the details of the inspections.

#### 1.06 REQUESTS FOR INFORMATION

- A. Contractors are required to use the form found at the end of Section 01 26 14 to submit Requests for Information.

- B. Requests for Information will not be considered if submitted without Contractor's Cost Effective Proposed Solution.
- C. Contractor may be back charged for costs incurred by Architect as defined in Section 01 26 14.

**1.07 PRODUCT OPTIONS**

- A. Substitutions will only be considered where Owner will receive benefit or because specified materials are no longer available due to no fault of Contractor. Refer to Section 01 62 00.

**1.08 FORM OF CONTRACT**

- A. The form of Contract that the successful bidder will be required to execute: see Section 00 52 01.

**1.09 CONTRACTORS INSURANCE**

- A. The Contractor shall maintain such insurance as will protect him from claims under Worker's Compensation Acts. Contractor shall maintain policies of public liability bodily injury insurance in an amount not less than One Million Dollars (\$1,000,000) for injury or death to any one person and not less than One Million Dollars (\$1,000,000) for injury or death to more than one person arising out of any one occurrence and property damage liability insurance in an amount not less than One Million Dollars (\$1,000,000) against any liability arising directly or indirectly out of any activity, performance, or operation under the Contract. The hereinabove mentioned policies shall include Owner, its Architect, officers and employees as additional insured and the coverage of said policies shall be expressly made primary insurance with respect to any other similar coverage carried by Owner. Copies of such policies or certificates evidencing such policies shall be first approved by the Owner and filed with the Board of Trustees of the Owner. Said policies of public liability and property liability insurance shall contain a contractual liability endorsement recognizing the contractual obligation of Contractor to Owner contained in this paragraph. Contractor shall maintain automobile liability insurance covering owned, hired, and non-owned automobiles with minimum limits of liability, per occurrence, of One Million Dollars (\$1,000,000) for bodily injury and property damage. All policies shall contain a provision requiring thirty (30) days written notice to be given to Owner prior to cancellation, modification, or reduction of limits.

**1.10 WAGES**

- A. The attention of the bidder is directed to the fact that the schedule of prevailing rates of pay for each craft or type of worker needed to execute the work, as indicated in the attached Section 00 11 17 - NOTICE TO CONTRACTORS, contains the minimum rate of pay as established by the State Director of Industrial Relations in pursuance of the provisions of the Labor Code of the State of California, which Code requires the establishing of such rates for the locality in which the work is to be performed. Section 1770 of the Labor Code reads: "Nothing ...shall prohibit the payment of more than the general prevailing rate of wages to any worker employed on public work."
- B. All bidders shall check the available source of labor supply and obtain information with reference to the length of the working day of various crafts and actual rates of wages being paid in the immediate vicinity of the place where work contemplated by these Specifications is to be performed, particularly with reference to rates of pay that may be in

excess of those general prevailing rates established by the Owner indicated in the above-mentioned Section 00 11 17 - NOTICE TO CONTRACTORS.

1.11 CONTRACTORS LICENSE

- A. Bidder must be a contractor properly licensed to perform the work of this project with an active license in good standing as of the date of receipt of bids. License must be issued by the Contractors State License Board of California and must be maintained in good standing throughout the term of the contract.

\* End Document 00 21 13 \*

PART 1 - GENERAL

1.01 BID FORM

Bids will be received until 4:00 pm on Wednesday, April 8, 2015, in the Hamilton Unified School District-District Office, 620 Canal Street, Hamilton City, CA 95951.

TO THE HONORABLE:

Governing Board of Hamilton Unified School District (Sometimes hereinafter called "Owner".)

Ladies/Gentlemen:

The undersigned hereby proposes and agrees to furnish any and all required labor, material, equipment, transportation and services for construction of the Paving & Drainage Project at Hamilton Elementary School, 277 Capay Street, Hamilton, CA, for the Hamilton Unified School District in strict conformity with the Drawings and Project Manual, all of which may be reviewed on the District's website at <http://www.husdschools.org> .

BASE BID:

\_\_\_\_\_ DOLLARS

( \$ \_\_\_\_\_ )

SCHEDULE FOR COMPLETION:

Construction: June 8, 2015 – July 31 – 54 calendar days

The undersigned, upon notice of the acceptance of the bid within ten (10) days after the date of opening of the bids, hereby agrees to sign said Contract and furnish the necessary bonds within ten (10) days after Notice of Award of said Contract.

The undersigned has examined the location of the proposed work and is familiar with the Drawings, Project Manual and the local conditions at the place where the work is to be done.

The undersigned has checked carefully all of the above figures and understands that the Governing Board of the Hamilton Unified School District will not be responsible for any errors or omissions on the part of the undersigned in making up this bid.

The undersigned acknowledges that the Governing Board of the Hamilton Unified School District reserves the right to reject any and all bids and/or waive any irregularities or informalities in the bidding.

Enclosed find Bidder's Bond, from a surety company registered with the State of California Insurance Commissioner, or Cashier's Check in the amount of 10% of the bid; Cashier's Check No. \_\_\_\_\_ of the \_\_\_\_\_ Bank for \_\_\_\_\_.

Receipt of Addenda is acknowledged as follows:

No. 1 \_\_\_\_\_ No. 2 \_\_\_\_\_ No. 3 \_\_\_\_\_ No. 4 \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

By \_\_\_\_\_

ADDRESS (Street) \_\_\_\_\_

\_\_\_\_\_

(P.O.) \_\_\_\_\_

\_\_\_\_\_

PHONE (\_\_\_\_) \_\_\_\_\_

FAX (\_\_\_\_) \_\_\_\_\_

CONTRACTORS STATE  
LICENSE BOARD NO. \_\_\_\_\_

CLASSIFICATION \_\_\_\_\_

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 2015

LIST OF SUBCONTRACTORS FOR \_\_\_\_\_ , GENERAL CONTRACTOR

PROJECT: PAVING & DRAINAGE PROJECT AT HAMILTON ELEMENTARY SCHOOL

Pursuant to the provisions of Sections 4100 to 4114 inclusive, of the California Public Contracts Code, and as set forth in Instructions to Bidders, and the General Conditions, the above named Contractor hereby designates below the names and locations of the place of business of each subcontractor.

<u>Work to be Done</u>	<u>Name of Subcontractor</u>	<u>Location of Place of Business</u>
_____	_____	_____
_____	_____	_____
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\* End Document 00 41 01 \*



PART 1 - GENERAL

1.01 DESCRIPTION

A. GENERAL: This Noncollusion Affidavit shall be executed by the Bidder and shall be submitted with his Bid Form.

1.02 NONCOLLUSION AFFIDAVIT FORM

STATE OF CALIFORNIA )
) ss.
County of \_\_\_\_\_ )

\_\_\_\_\_, being first duly sworn, deposes and says that he or she is \_\_\_\_\_ of \_\_\_\_\_ the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

\_\_\_\_\_
Date Signature of Bidder

\* End Document 00 45 19\*

State of California
County of \_\_\_\_\_

Subscribed and sworn to (or affirmed) before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.
by \_\_\_\_\_, proved to me on the basis of satisfactory evidence, to be the
person(s) who appeared before me.

(Seal) Signature \_\_\_\_\_

**Certification Pursuant to Education Code Section 45125.1**

Send To (School Dist./Office of Education): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contract Description: \_\_\_\_\_

Certification Pursuant to Education Code Section 45125.1

I, \_\_\_\_\_ am an officer and agent for  
(please print or type)

\_\_\_\_\_, ("contractor"), an entity as defined in Education Code section 41302.5, with the above School District/Department of Education, and have express authority to make the following statements and representations.

Pursuant to this contract, the following persons, employees of contractor ("employees"), may have contact with pupils.

LAST NAME	FIRST NAME	MIDDLE INITIAL

(Attach additional sheets as necessary.)

I certify as follows:

1. The employees have been fingerprinted and have submitted their fingerprints to the Department of Justice for review.
2. The Department of Justice has ascertained that none of the employees have either a pending criminal proceeding for a felony as defined in Education Code section 45122.1 or have been convicted of a felony as defined in Education Code section 45122.1. I understand that Education Code section 45122.1 incorporates portions of Penal Code sections 667.5 and 1192.7.
3. Attached to this Certification are true and correct copies of the fingerprint analyses prepared and provided by the Department of Justice with respect to each of the employees listed above.
4. None of the employees listed above has been convicted of a felony as defined in Education Code section 45122.1.
5. Upon receipt of notification from the Department of Justice that a previously cleared employee has committed a felony as defined in Education Code section 45122.1, said employee will immediately be removed from the job site and School District/Department of Education will be notified of same.

I declare under penalty of perjury that the foregoing is true and correct.

Executed at California on \_\_\_\_\_.

\_\_\_\_\_  
(Signature of Contracting Agency Representative)

Education Code Section 44237 (g) which references Penal Code Section 667.5 (c): A

"violent felony" for these purposes includes:

1. Murder or voluntary manslaughter;
2. Mayhem;
3. Rape or spousal rape by force, violence, duress, or fear of bodily injury or by threat to retaliate;
4. Sodomy by force violence, duress, menace or fear of bodily injury;
5. Oral copulation by force, violence, duress, menace or fear of bodily injury;
6. Lewd acts on a child under age fourteen;
7. Any felony punished by death or by life imprisonment;
8. Any felony in which great bodily injury is inflicted or in which the defendant personally uses a firearm;
9. Robbery in an inhabited dwelling where the defendant personally uses a dangerous weapon;
10. Arson when willful and malicious;
11. Rape with a foreign object by force, violence, duress, menace or fear of bodily injury;
12. Attempted murder;
13. Exploding or attempting to explode a destructive device with intent to murder;
14. Kidnap of a child under age fourteen for the purpose of child molestation;
15. Forcible rape of a child under age fourteen;
16. Continuous sexual abuse of a child;
17. Carjacking when the defendant personally uses a dangerous deadly weapon.

Education Code Section 44237 (g) which references Penal Code Section 1192.7 (c): A

"serious felony" for these purposes includes:

1. Non-forcible rape;
2. Assault with intent to commit rape or robbery;
3. Assault with a deadly weapon on a peace officer;
4. Assault by a life prisoner on a non-inmate;
5. Assault with a deadly weapon by an inmate;
6. Arson, when not willful or malicious;
7. Exploding a destructive device or explosive with intent to injury;
8. Explosion causing great bodily injury or mayhem;
9. Burglary of inhabited dwelling;
10. Robbery, except of an inhabited dwelling and except with personal use of a dangerous or deadly weapon;
11. Kidnapping a person fourteen years or older;
12. Prison inmate taking a hostage;
13. Attempt to commit any felony punishable by death or life imprisonment;
14. Any felony in which the defendant personally uses a dangerous or deadly weapon, except robbery or carjacking;
15. Sale or furnishing heroin, cocaine, PCP, or methamphetamine to a minor;
16. Grand theft involving a firearm;
17. Carjacking, except with personal use of a dangerous or deadly weapon;
18. Conspiracy to sell specified quantities of heroin, cocaine, PCP, or methamphetamine to a minor;
19. An attempt to commit any violent or serious offenses, except assault.

PART 1 - GENERAL

1.01 AGREEMENT

This Agreement made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2015, by and between Hamilton Unified School District of Glenn County, California, First Party, sometimes hereinafter called the Owner, and \_\_\_\_\_ Second Party, sometimes hereinafter called the Contractor:

WITNESSETH: That the parties hereto mutually covenanted and agreed, and by these present do covenant and agree with each other, as follows:

- 1. The NOTICE TO CONTRACTORS, ACCEPTED PROPOSAL LIST OF SUBCONTRACTORS, INSTRUCTIONS TO BIDDERS, WORKER'S COMPENSATION INSURANCE CERTIFICATE, GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, LABOR AND MATERIAL PAYMENT BOND and PERFORMANCE BOND are attached to and are a part of this Agreement. The complete Contract also includes the Drawings, Specifications, all items listed in the Project Manual and all modifications and amendments thereto. All Contract Documents are intended to cooperate so that any work called for in one and not mentioned in the other, or vice versa, is to be executed the same as if mentioned in all Contract Documents.
- 2. The said Contractor agrees to furnish all tools, equipment, apparatus, facilities, transportation, labor, and material, other than material, if any, agreed to be furnished by the District hereunder, necessary to perform and complete, and to perform and complete in a good and workmanlike manner, the work of **Paving & Drainage Project at Hamilton Elementary School, 277 Capay Street, Hamilton City California**, as called for, and in the manner designated in, and in strict conformity with this Agreement, and with the Drawings and Project Manual adopted by the Board of Trustees, which said Drawings and Project Manual are entitled respectively **Hamilton Elementary School Paving & Drainage Project**, and are hereby specifically referred to and made a part of this Agreement with like effect as if fully set forth herein.
- 3. It is understood and agreed that said tools, equipment, apparatus, facilities, transportation, labor, and material shall be furnished and said work performed and completed as required in said Drawings and Project Manual under the direction, and subject to the approval of, the Architect and Owner. The Architect shall have the right to accept or reject materials or workmanship, and to determine when the Contractor has complied with the conditions of the Contract. The Project Inspector employed by the District shall represent the Architect and the Owner on the project.
- 4. The District agrees to pay and the Contractor agrees to accept, in full payment for the work above agreed to be done, the sum of

\_\_\_\_\_ (\$ \_\_\_\_\_ )

which sum is to be paid according to the provisions of the General and Special Conditions.

- 5. It is understood and agreed by the Parties that the Scheduled Time for Completion of the project will begin on June 8, 2015 and will be fully completed by July 31, 2015, in compliance with the provisions of the General and Special Conditions.
- 6. Copies of the prevailing rate of per diem wages as determined by the Director of the Department of Industrial Relations in accordance with Labor Code Section 1773 are available as stated in the Notice to Contractors.
- 7. The Contractor agrees to comply with Labor Code Section 1771.5 (Labor Compliance Program); Labor Code Section 1775 (Payment of Prevailing Wage Rates); Labor Code Section 1776

(Keeping Accurate Payroll Records) and Labor Code Section 1777.5, placing the responsibility for compliance with the statutory requirements for all apprenticeable occupations on the prime contractor. The Contractor shall comply with the requirements imposed by California Labor Code Sections 1720 through 1815 regarding public works projects and prevailing wage law.

IN WITNESS WHEREOF, the said Board of Trustees has caused this Agreement to be subscribed by its duly authorized officer in its behalf, and the said Party of the Second Part has signed this Agreement the day and year first above written.

Hamilton Unified School District  
of Glenn County, a Political  
Subdivision of the State of California

By \_\_\_\_\_  
Authorized Official

\_\_\_\_\_  
CONTRACTOR

By \_\_\_\_\_  
\_\_\_\_\_  
Superintendent

\* End Document 00 52 01\*

## **GENERAL CONDITIONS:**

1. **PROJECT SCOPE:** Except as otherwise stated in these Contract Documents, the scope of this contract consists of all labor, materials, tools, equipment, transportation, utilities, superintendence, temporary construction and any other service and facility required to execute and deliver the entire Work complete as shown on the drawings and as specified, all according to the Conditions stated therein, within the time stated in the Agreement.
  
2. **DEFINITIONS:** The following words, or variations thereof, as used in these documents, shall have meanings as defined below:
  - A. **Owner:** Hamilton Unified School District
  
  - B. **Architect/Engineer:** Warren Consulting Engineers, Inc. (WCE), furnishing Architect/Engineering services by or under supervision of licensed Architect/Engineers. Use of the term "Architect/Engineer/Engineer" when referring to WCE is for convenience of reference, and shall not be construed as meaning that the Corporation is itself a licensed Architect/Engineer.
  
  - C. **Licensed Architect/Engineer:** A person duly authorized and licensed to practice Architecture or Engineering in the State in which this project is located.
  
  - D. **Contract Documents:** The Notice to Contractors, Proposal Form, List of Subcontractors, Instructions to Bidders, General Conditions, Supplementary General Conditions, and Special Conditions, Labor and Material and Faithful Performance Bonds, attached hereto, and the Drawings and Specifications and all modifications and amendments thereof, Addenda and the Agreement.
  
  - E. **Contractor:** A person, persons, entity, joint venture, co-partner-ship, or corporation, as named in the Agreement.
  
  - F. **Subcontractor:** Person, persons, entity, joint venture, co-partner-ship, or corporation having direct contract with the Contractor.
  
  - G. **Work:** Labor or materials, or both, including equipment, tools, services, and incidentals.
  
  - H. Furnish, provide, include, install, place, apply, locate or similar words used individually shall each include the meaning of the others.
  
  - I. Called for, noted, shown, indicated, detailed, or similar words refer to applicable portions of the Contract Documents.
  
  - J. Approved, proper, equal, required, satisfactory, suitable, necessary, reviewed, permitted, directed, accepted, etc. refer to matters solely within the province of the Architect/Engineer's decision.
  
  - K. **Notice:** Written demands, instructions, warnings, claims, approvals and disapprovals required to obtain compliance with Contract requirements. Any written notice by either party to the Contract shall be sufficiently given if delivered to or at the last known business address of the person, firm, or corporation constituting the other party to the Contract, or to his, their or its duly authorized agent, representative, or officer, who is authorized to receive such notice, or when enclosed in a registered postage

prepaid envelope addressed to such last known business address and deposited with the United States mail.

- L. Notice to Proceed: Written notice to commence the Work, issued by the Owner, or, on his instructions, by the Architect/Engineer.

### **3. FUNCTION OF CONTRACT DOCUMENTS:**

- A. Correlation: The Contract Documents are complementary and anything called for by one part shall have the same impact as if called for by all. In case of a discrepancy, an item of higher quality or quantity shall take precedent.
- B. Conditions: The GENERAL CONDITIONS and the SUPPLEMENTARY GENERAL CONDITIONS apply with equal force to all Work including work of subcontractors and approved extra Work.
- C. The Contractor admits and agrees that the Contract Documents exhibit the intent and purpose of the Owner in regard to the Work, and that they are not complete in every detail and are to be considered as showing the purpose and intent only; and the Contractor further agrees to furnish all labor or material for any detail that is necessary to carry out said intent and purpose of the Contract Documents without extra charge to the Owner.
- D. Function of Drawings: To determine general character of the work and its details. Parts not detailed shall be subject to the Architect/Engineer's approval. When reasonably inferable that a drawing illustrates only part of a given work or of a number of items, the remainder shall be deemed repetitious and so construed. In general, drawings illustrate locations, arrangements, dimensions and details. Any part of the work or any detail pertaining thereto which is not specifically shown on the Drawing, but which is necessary for the proper completion of the Work, shall be furnished and installed without extra cost to the Owner.
- E. Function of Specifications: For convenience, specifications are separated into topical divisions of Work, each of which is further broken down into sections describing portions of Work related to the topical division under which it occurs. Such separation shall not be construed as an attempt by the Architect/Engineer to establish limits of any agreements between Contractor and subcontractors. In general, specifications describe minimum qualities and performances required for materials and execution. Any part of the Work or any article pertaining thereto which is not specifications, but which is necessary for the completion of the Work, shall be furnished and installed without extra cost to the Owner.
- F. The misplacement, addition or omission of any word, letter, numbers, or punctuation marks shall in no way change the intent, purpose or meaning of the Plans and Specifications.

### **4. SIGNING OF CONTRACT:**

- A. The Contract Documents, including specifications and drawings, will be completely identified and shall be signed in four (4) counterparts by the Contractor and by the Owner before the work is started. Two sets of documents will be retained by the Owner, one set by the Architect/Engineer, and one set by the Contractor.

- B. Addenda: All additions, deductions and special interpretations pertaining to the Contract, whether arranged by specific addenda prior to bid, by letters of instructions, or by other written explanations, shall be properly listed and described in the Contract Documents. Changes or alterations of the approved plans or specifications prior to letting a construction contract shall be made by addenda signed by the Architect/Engineer and Owner.
- C. Identification: If any Contract Document other than the Agreement be found to lack any or all signatures of the Owner or the Contractor, identification by the Architect/Engineer is deemed sufficient and conclusive.

**5. TIME FOR PERFORMANCE:**

- A. Notice of Award: Contractor shall submit executable Contract, including Bonds and Insurance documents, within ten (10) working days after Notice of Award. The Owner may deem Bidder non-responsive for failure to execute within ten (10) working days.
- B. Notice to Proceed: The Owner will issue, or will authorize the Architect/Engineer to issue to the Contractor, a Notice to Proceed with the work.
- C. Schedule for Completion: The time scheduled for completion of this project begins on June 8, 2015 and ends on July 31, 2015, a total of fifty-four (54) calendar days
- D. Time: Time is of the essence of the contract. All work shall be completed and this contract shall be fully performed within the time set forth in this Agreement. Time for performance shall be calculated to commence on the date of the Notice to Proceed.
- E. Liquidated Damages: The Owner reserves the right to claim liquidated damages for delays in completion of the work attributable to the Contractor.
- F. Substantial Completion: The work will be deemed complete for purposes of this Paragraph hereof at such time as the entire project is sufficiently complete, in accordance with the Contract Documents, so that the Owner can occupy and utilize the entire project for its intended purpose.

**6. TIME EXTENSIONS:**

- A. Delays in Completion: The time for completion of the work shall be extended by the number of whole days which the contractor is unable to perform any work on the project for reasons which are beyond his control and are not his responsibility nor that of his subcontractors, provided that a claim for extension be made and granted as set forth herein. These reasons may include the following:
  - 1) Unusual or unexpected Acts of God.
  - 2) Acts of foreign, domestic, Federal or State Governments.
  - 3) Federal Government orders or contracts required by law to have priority over this contract.
  - 4) Strikes.
  - 5) Unusual failure of interstate transportation.
  - 6) War and the inability to obtain materials due to war.
  - 7) Perils of the sea.
  - 8) Insurrection or riot.



- B. The number of days allowed for completion as referred to in the Agreement takes into consideration a time loss up to and including five (5) working days within the contract time period for time lost due to adverse weather and weather caused conditions such as rain, mud and wind, which in the Architect/Engineer's opinion actually delays the work or a portion of the work. Up to and including five (5) working days shall not be regarded as unavoidable delays in this sense, as the Contractor should understand that such conditions are to be expected within the average climatic range, and shall so be considered for purposes of this contract.
- C. Delay in Furnishing Drawings: No claim for extension of time for performance will be considered for Architect/Engineer's failure to act or furnish drawings unless the Architect/Engineer fails to act or furnish drawings within a reasonable time from the date of written notice requesting such act or drawings.
- D. Any and all claims for Extensions must be submitted in writing to the Owner within three (3) days of the beginning of the delay.
- E. The Owner will, in his sole discretion, decide whether the cause for claim for extension does in fact exist, and will grant only such claims as are supported by good cause.
- F. Approved extension of contract time will be issued by written change order signed by the Owner and by the Architect/Engineer. No order will authorize a time extension unless it is specifically stated therein. No extension of time granted by the Owner shall be deemed to allow the contractor any basis for additional compensation for overhead or any other expenses.

**7. CONTRACTOR'S RESPONSIBILITIES:**

- A. Existing Conditions: Detailed knowledge of existing conditions is required of the Contractor. Lack of such knowledge and understanding shall not be the basis of any claim for change in the contract amount or operate to release the Contractor from any requirement for the complete performance of the contract. If conditions arise which are not predictable or inferable from the Contract Documents or site inspection, and which are the cause for additional work, the amount of additional cost will be considered as a basis for claims for adjustment to the contract price.
- B. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters.
- C. Checking Contract Documents: Contractor shall compare and check all Contract Documents prior to commencing work. He shall immediately report any discrepancy to the Architect/Engineer for clarification and he shall not proceed with any work affected by the discrepancy until such clarification has been received in writing.
  - 1) General Contractor must thoroughly review all Contract Documents prior to start of construction to minimize the quantity of RFI's during construction.

All Requests for Information (RFI's) must come from the General Contractor and must be typed or legibly hand printed with clear, concise information. They must be first submitted to the Inspector and must bear the Inspector's signature and comments prior to being submitted to the Architect/Engineer. Any RFI's not

meeting these requirements may be rejected and returned to the General Contractor for revisions. All RFI's must be submitted in a time frame that allows a minimum of ten (10) working days for review and response. However, RFI's regarding unforeseeable conditions (as determined by the Architect/Engineer) will receive priority attention and an expedient response.

General Contractor will not be entitled to additional compensation for his expenses incurred in the processing of RFI's. No extensions in time or overhead cost increases will be permitted for any work as a direct result of any RFI's responded to in the time frame outlined above.

General Contractor may be responsible for Architect/Engineer's expenses incurred in responding to frivolous RFI's at the current rate for Architect/Engineering services.

- 2) If the Contractor proceeds in error or omits required work, and if corrective documents are provided by the Architect/Engineer in order that the Project can proceed without the Contractor having to remove all of the incorrect work, the Contractor shall pay the Architect/Engineer and his engineers for their professional services analyzing the defect(s) at their current hourly rate schedule.
- D. Drawings and Specifications: At all times until completion of the contract, Contractor shall make available to the Architect/Engineer at the job site one complete and up-to-date set of drawings and specifications, and upon request, all standards referred to therein.
  - E. Coordination of Work: Contractor shall coordinate efficiently all work of his subcontractors and of all trades involved and shall make available to each subcontractor copies of Contract Documents and shall relay all information affecting each trade in ample time so that progress of the Work is not delayed. Any extra work or material, caused by failure or delay of Contractor to so comply, shall be furnished without expense to the Owner.
  - F. Superintendence: Contractor shall efficiently oversee and direct the work at all times and watch progress of the work to determine when and where materials and labor will next be needed. He shall continuously employ on the project an efficient and competent general superintendent and his necessary assistants, all satisfactory to the Architect/Engineer. Contractor's general superintendent shall have full authority as the Contractor's agent to answer questions and to receive and carry out Architect/Engineer instructions. Such instructions shall be as binding as if given directly to the Contractor. The approved superintendent, once on site, shall only provide supervision related directly and/or indirectly to the Project. He/she shall not be assigned other job responsibilities that involve non-supervision and non-leadership duties. Other tradesmen shall execute these services as needed to ensure that the contractor's superintendent devotes his/her full time to only superintendency.
  - G. Incompetent Superintendents If, in the District's or Architect/Engineer's opinion, any general superintendent is deemed incompetent or unfaithful in execution of the work, the Contractor shall, on written notice, dismiss such person forthwith and shall not employ him thereafter on work of any part of this contract.
  - H. Engineering Services: Contractor shall provide efficient surveying and engineering services to lay out the work in accordance with lines and elevations shown.
  - I. Bench Marks & References: Established bench marks, monuments or reference points shall be protected and preserved, and no changes in location shall be made without Owner's written

approval. Should any mark, monument or point be lost or destroyed or require relocating because of changes in grades, etc., Contractor shall, subject to Owner's approval, replace and accurately locate it without additional contract cost.

- J. Access to all parts of the work shall be afforded at all times to all governing agencies and representatives of the Owner having jurisdiction over the work. The Contractor shall provide all facilities for such access and inspection.

**8. REGULATIONS, PERMITS AND LICENSES:**

- A. The Owner will, as necessary, pay all building permit fees required by the local building department having jurisdiction.
- B. The Contractor shall obtain all other permits and all licenses that are required for the performing of his work by all laws, ordinances, rules, regulations, or orders of any officer and/or body lawfully empowered to make or issue the same and having jurisdiction, and shall give all notices and all costs and expenses incurred on account thereof, and deliver certificates of same to the Owner, except when otherwise provided herein. Contractor shall obtain permits and pay costs for all connection fees to Public Utilities. Owner shall reimburse Contractor for actual connection fee cost charged by Utility Company (gas, water, sewer, electricity, telephone and cable TV).
- C. Contractor shall, as needed, complete the Storm Water Pollution Prevention Plan (SWPPP) and necessary permits prior to commencement of work on the project. Contractor shall be responsible for implementing and complying with the provisions of the Permit and the SWPPP pursuant to the General Conditions hereof, including requirements specified in other parts of the contract documents. It shall be Contractor's responsibility to evaluate and include in the bid the cost of development and compliance with the SWPPP and the cost of monitoring as required by the Permit.
- D. The Contractor shall conform to all Federal and State laws, ordinances and regulations covering this work.
- E. All fees associated with actual fees at project site and as listed above shall not be part of the contractors bid. Contractor shall pay for and be reimbursed as an additional expense and shall bill the owner directly as an independent billing and shall not be part of the payment requests.

**9. LAWS & REGULATIONS:**

- A. The entire Contract Documents and the performance of Work described therein are subject to applicable governmental statutes, codes, regulations, ordinances, among which are the UBC, UPC, UMC, and NEC, now in effect or which shall be in effect during the term of the contract in the locale of the project. Nothing in these Contract Documents shall be construed to permit violation.
- B. Contractor shall utilize only materials and methods on the work which conform with these provisions. Contractor shall promptly inform the Architect/Engineer of any violations of governmental provisions which he may find in the Contract Documents.
- C. Contractor shall waive "common practice" and "common usage" as construction criteria wherever details and specifications or codes, ordinances, etc. require greater quantity or better quality than common practice or common usage would allow.

- D. Labor Compliance Program: District, on its own or through its agents will operate a Labor Compliance Program (LCP) for the Project which complies with Labor Code section 1771.5. Contractor and all subcontractors shall comply with the requirements of the District's LCP.
- E. Prevailing Wages: In accordance with the provisions of sections 1720 et seq. of the Labor Code, the Division of Labor Standards and Research has determined the general prevailing rates or wages and employer payments for health and welfare, pension, vacation, travel time, and subsistence pay as provided for in section 1773.8. It shall be mandatory upon Contractor and all subcontractors to pay not less than the said specified rates to all laborers, workers and mechanics employed by them in the execution of the Agreement.
- F. Penalties: Contractor shall forfeit a penalty for each calendar day, or portion thereof, during which each worker was paid less than the stipulated prevailing rate for such work or craft in which such worker is employed for any work done under the Agreement by it or by any subcontractor under it, the amount of which is to be determined in accordance with Labor Code section 1775. In addition to said, the difference between such stipulated prevailing wage rates and the amount paid to each workman for each calendar day or portion thereof for which each workman was paid less than the stipulated prevailing wage rate shall be paid to each workman by Contractor. Contractor may be responsible for paying subcontractor's employees prevailing wages if it does not comply with the provisions of Labor Code sections 1770 et seq.
- G. Records: Contractor and each subcontractor shall keep or cause to be kept an accurate record showing the names and occupants of all laborers, workers and mechanics employed by it in connection with the execution of this Agreement or any subcontract thereunder, and showing also the actual per diem wage paid to each of such workers, which records shall be open at all reasonable hours to inspection by the School District, its officers and agents and to the representatives of the Division of Labor Standards and Research.
- H. Apprentices. Contractor and all subcontractors shall comply with all provisions of Labor Code sections 1777.5 et seq. and sections 3077 et seq. regarding the employment of apprentices. The responsibility for compliance with these provisions for all apprenticeship occupations rests with Contractor and subcontractors.

**10. MATERIALS & WORKMANSHIP:**

- A. Specific Standards: Materials and workmanship specified by reference to number, symbol, or title of a specific standard such as Commercial Standard, a Federal Specification, a trade association standard, or other similar standard, shall comply with requirements in latest revision thereof and with any amendment or supplement thereto in effect on the date heading these specifications. Such standard, except as modified herein, shall have full force and effect as though printed in the specifications.
- B. Clear Title: No materials or supplies for the work shall be purchased by the Contractor or by any subcontractor subject to any chattel mortgage or under conditional sale or under any other agreement by which an interest is retained by the seller. Contractor warrants that he has clear title to materials and supplies for which he accepts any payment.

**11. ARCHITECT/ENGINEER'S FUNCTION:**

- A. Architect/Engineer will periodically observe and review the work for conformance with Contract Documents and will interpret and clarify points of question. All decisions concerning color, texture, design, and aesthetic appearances shall be made by the Architect/Engineer, whose decision shall be final and are not subject to arbitration; but this does not include direction of persons selection or direction of methods and construction equipment or placing in operation any mechanical or electrical facilities.
- B. Architect/Engineer will review all shop drawings, samples, and materials.
- C. Architect/Engineer will recommend approval or rejection of changes in contract amount and/or time and issue change orders accordingly for Owner's written approval.
- D. Architect/Engineer will review amounts of all applications for partial payments from the Contractor as they become due and recommend certificates of payments for the Owner's written approval.
- E. Architect/Engineer may order the Project work stopped if the Contract Documents are not being followed.
- F. Architect/Engineer's orders will be in writing only, properly signed. Oral orders from Architect/Engineer or from anyone acting for him shall not be considered binding in case of dispute.
- G. Architect/Engineer will make written decisions regarding all claims of the Contractor and will interpret the Contract Documents on all questions arising in connection with execution and progress of the work, except as otherwise specified.
- H. Architect/Engineer will appoint representatives to assist him in conduct of the Work; these persons shall be entitled to same free access to all parts of Work. All written instructions issued by Architect/Engineer's representatives are final and binding as if issued by the Architect/Engineer himself. Contractor shall act upon verbal instructions entirely at his own risk.
- I. All communications relating to the Work shall be submitted through the Architect/Engineer, except the required Notice of Arbitration.

**12. NON-PERFORMANCE OF CONTRACT:**

- A. Owner's Right to Terminate Contract: The Owner, without prejudice to any other rights or remedy he may have, may terminate Agreement with the Contractor and Contractor's right to proceed, either with the entire Work or any portion thereof to which delay or default shall have occurred in any of the following circumstances:
  - 1) If Contractor be adjudged bankrupt or make an assignment for the benefit of creditors.
  - 2) If receiver or liquidator be appointed for the Contractor or for any of his property and not be dismissed within 20 days after such appointment, or if proceedings in connection therewith are not stayed on appeal within said 20 days.

- 3) If Contractor shall refuse or fail to supply enough properly skilled workmen or proper materials after notice or warning from Architect/Engineer.
  - 4) If Contractor shall refuse or fail to execute the Work or any part thereof with such diligence as will insure its completion within the time specified or shall fail to complete the Work within said time. Architect/Engineer shall be the sole judge of contractor's progress hereunder.
  - 5) If Contractor fails to make payments as specified herein to persons supplying labor or materials for the work.
  - 6) If Contractor fails or refuses to regard laws, ordinances or instructions of the Architect/Engineer or otherwise be guilty of substantial violation of any provision of this contract.
- B. Procedure for Owner's Termination of Contract: Owner will give written notice of termination to Contractor and to Contractor's sureties. If contractor's sureties do not commence performance of the project within five (5) days of such notice of intention, Owner may take over the work and prosecute it to completion by contract or by any other method deemed expedient. In such event, work shall be at the expense of the Contractor and of his sureties who shall be liable to the Owner for any excess cost or damage occasioned thereby, Owner may also, without any further liability, take possession of and utilize in completing the work, such materials, equipment, plant and other property of the Contractor as may be on the site of the Work.
- C. Termination Payment to Contractor: Contractor shall not be entitled to receive any further payment on the work until the work is finished. If the unpaid balance of compensation to be paid the Contractor for complete performance of the contract exceeds the expense of so completing the work, including compensation for additional managerial, administrative and inspection services and any liquidated damages for delay, such excess will be paid to the Contractor. If such expense exceeds such unpaid balance, the Contractor and his sureties shall be liable to Owner for such excess.
- D. Right to Stop Work: Authority to stop the work in whole or part is vested in the Architect/Engineer and may be invoked whenever he deems such action necessary to insure proper execution of the contract; work may not be resumed until the Architect/Engineer has given written consent.
- E. Rejection of Materials and Workmanship: The Owner and the Architect/Engineer have the right to reject defective material and workmanship and to require its replacement or correction without additional cost to Owner. Contractor shall promptly segregate and remove rejected work from the premises. All adjacent work disturbed by removal of such work shall be replaced in accordance with this contract and without expense to the Owner including Work of any other contractors disturbed by such removals and replacements.
- 1) If Contractor fails to proceed at once with replacement of rejected Work, Owner may, by contract or otherwise, replace such material and correct such workmanship and charge the cost to the Contractor, or Owner may terminate right of the Contract to proceed. Contractor and his surety shall be liable for any damage to same extent as provided for by terminations hereunder.
  - 2) If rejected materials are not removed from premises within reasonable time, Owner may cause them to be removed and stored at Contractor's expense within four (4)

days after issuing written notice to so remove them. If Contractor does not pay for such removal and storage within six (6) days after such notice, Owner may, six (6) days after further written notice, sell the materials and credit Contractor with net proceeds after all costs of removal and sale are deducted. If materials so removed are valueless or sale does not meet cost of removal, Contractor shall bear all resultant loss.

- F. Neglected Work: Owner may perform or employ others to undertake portions of the work persistently neglected by the Contractor if work is still proceeding unsatisfactorily three (3) days after written notice to the Contractor. In such case work will be done according to the Contract Documents and shall in no way affect the status of either party under this contract, nor be held as the basis of any claim by the Contractor for damages or for extension of time.
  
- G. Right to Withhold Payment: Part or whole of any payment or any certificate may be withheld by Owner if such course be deemed necessary to protect Owner from loss on account of Contractor's failure to meet his obligations or if balances unpaid to Contractor are insufficient to complete the Work. This right may also be exercised if in Owner's opinion the work will not be completed within the time specified for performance of the contract.

**13. CONTRACTOR'S RIGHT TO STOP WORK:**

- A. If any of the following circumstances exist and are not the fault of the Contractor, the Contractor may stop work or terminate the contract thirty (30) days after written notice to Owner and to Architect/Engineer. In such event the Owner will be liable to the Contractor for all expenses incurred in the work to date of termination, including obligations to subcontractors and for supplies and for Contractor's prescribed profit on the work performed and such other actual and reasonable damages as may be shown.
  - 1) If work is stopped by order of any court or governmental authority for more than thirty (30) days.
  - 2) If Architect/Engineer without just cause fails to issue any certificate for payment to the Owner within fifteen (15) days after it is received.
  - 3) If Owner fails to pay Contractor any sum certified by Architect/Engineer within thirty (30) days after its presentation; or any sum awarded by arbitrators, if arbitrated.

**14. CHANGES TO CONTRACT:**

- A. Owner may, through the Architect/Engineer, issue revision orders at any time without notice to the sureties, changing the specifications and drawings of this contract but the Contractor shall not make any change which increases the aggregate total contract price without written authorization. All Addenda and Change Orders shall be signed by the Owner, Architect/Engineer and Contractor.
  
- B. Change Orders: Contractor shall submit for the Architect/Engineer's review in itemized form his estimate of cost of all changes to the work prior to commencing any such work. Architect/Engineer will either reject the estimate for further study or recommend approval of all or portions of the estimate and will prepare a written revision order stating description of work and its cost change for the Owner's approval.

Contractor shall commence for the work upon receipt of written authorization by the Owner and Architect/Engineer.

C. Cost of Change Orders

1) **DETERMINATION OF COST**

The amount of the impact on the Guaranteed Maximum Price and Construction Contingency resulting from a Change Order (CO), if any, shall be determined in one or more of the following ways as applicable to a specific situation:

- a. Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- b. Unit prices stated on the Contractor's Bid Form, the Contract Documents, or subsequently agreed upon between the Owner and the Contractor;
- c. Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- d. By cost of material and labor and percentage of overhead and profit. If the value is determined by this method the following requirements shall apply:

1. **Daily Reports by Contractor.**

- a) General: At the close of each working day, the Contractor shall submit a daily report to the Inspector, on forms approved by the Owner, together with applicable delivery tickets, listing all labor, materials, and equipment involved for that day, the location of the Work, and other services and expenditures when authorized concerning extra work items. An attempt shall be made to reconcile the report daily, and it shall be signed by the Inspector and the Contractor. In the event of disagreement, pertinent notes shall be entered by each party to explain points which cannot be resolved immediately. Each party shall retain a signed copy of the report. Reports by Subcontractors or others shall be submitted through the Contractor.
- b) Labor: List names of workers, classifications, and hours worked.
- c) Materials: Describe and list quantities of materials used.
- d) Equipment: List type of equipment, size, identification number, and hours of operation, including, if applicable, loading and transportation.
- e) Other Services and Expenditures: Describe in such detail as the Owner may require.

2. **Basis for Establishing Costs.**

- a) Labor will be the actual cost for wages prevailing locally for each craft or type of workers at the time the extra work is done, plus employer payments of payroll taxes and insurance, health and welfare, pension, vacation,



apprenticeship funds, and other direct costs resulting from Federal, State, or local laws, as well as assessments or benefits required by lawful collective bargaining agreements. The use of a labor classification, which would increase the extra work cost, will not be permitted unless the Contractor establishes the necessity for such additional costs. Labor costs for equipment operators and helpers shall be reported only when such costs are not included in the invoice for equipment rental.

- b) Materials shall be at invoice or lowest current price at which such materials are locally available and delivered to the Site in the quantities involved, plus sales tax, freight, and delivery.

The Owner reserves the right to approve materials and sources of supply or to supply materials to the Contractor if necessary for the progress of the Work. No markup shall be applied to any material provided by the Owner.

- c) Tool and Equipment Rental. No payment will be made for the use of tools which have a replacement value of \$100 or less.

Regardless of ownership, the rates to be used in determining equipment rental costs shall not exceed listed rates prevailing locally at equipment rental agencies or distributors at the time the work is performed.

The rental rates paid shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals.

Necessary loading and transportation costs for equipment used on the extra work shall be included. If equipment is used intermittently and, when not in use, could be returned to its rental source at less expense to the Owner than holding it at the work Site, it shall be returned unless the Contractor elects to keep it at the work Site at no expense to the Owner.

All equipment shall be acceptable to the Inspector, in good working condition, and suitable for the purpose for which it is to be used. Manufacturer's ratings and modifications shall be used to classify equipment, and equipment shall be powered by a unit of at least the minimum rating recommended by the manufacturer.

- d) Other Items. The Owner may authorize other items which may be required for the extra work. Such items include labor, services, material, and equipment which are different in their nature from those required by the Work, and which are of a type not ordinarily available from the Contractor or any of the Subcontractors. Invoices covering all such items in detail shall be submitted with the request for payment.

- e) Invoices. Vendors' invoices for material, equipment rental, and other expenditures shall be submitted with the Change Order Request (COR). If the request for payment is not substantiated by invoices or other

documentation, the Owner may establish the cost of the item involved at the lowest price which was current at the time of the Daily Report.

- f) Overhead. Overhead, including direct and indirect costs, shall be submitted with the COR and include: home office overhead, CO preparation/negotiation/research, time delays, project interference and disruption, additional guaranty and warranty durations, on-Site supervision, additional temporary protection, additional temporary utilities, additional material handling costs, and additional safety equipment costs.

2) **FORMAT FOR PROPOSED COST CHANGE**

The following format shall be used as applicable by the Owner and the Contractor to communicate proposed additions and deductions to the Contract. Any additions or deductions that affect the Guaranteed Maximum Price and the Construction Contingency shall be subject to the provisions of the Agreement and these General Conditions.

	<u>EXTRA</u>	<u>CREDIT</u>
A. Material (attach itemized quantity and unit cost plus sales tax)	_____	_____
B. Labor (attach itemized hours and rates)	_____	_____
C. Equipment (attach invoices)	_____	_____
D. Subtotal	_____	_____
E. If Subcontractor performed Work, add Subcontractor's overhead and profit to portions performed by Subcontractor, not to exceed ten percent (10%) of item D.	_____	_____
F. Liability and Property Damage Insurance, Worker's, Compensation Insurance, Social Security, and Unemployment Taxes, not to exceed twenty-five percent (25%) of Item B.	_____	_____
G. Subtotal	_____	_____
H. General Contractor's Overhead and Profit, not to exceed ten percent (10%) of Item G.	_____	_____
I. Subtotal	_____	_____

	<u>EXTRA</u>	<u>CREDIT</u>
J. Bond not to exceed two percent (2%) of Item I.	_____	_____
K. TOTAL	_____	_____

It is expressly understood that the value of such extra work or changes, as determined by any of the aforementioned methods, expressly includes any and all of the Contractor's costs and expenses, both direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project. Any costs or expenses not included are deemed waived.

**3) DISCOUNTS, REBATES, AND REFUNDS**

For purposes of determining the cost, if any, of any change, addition, or omission to the Work hereunder, all trade discounts, rebates, refunds, and all returns from the sale of surplus materials and equipment shall accrue and be credited to the Owner, and the Contractor shall make provisions so that such discounts, rebates, refunds, and returns may be secured, and the amount thereof shall be allowed as a credit to the Guaranteed Maximum Price in determining the actual cost of construction for purposes of any change, addition, or omissions in the Work as provided herein.

**4) ACCOUNTING RECORDS**

With respect to portions of the Work performed by COs and CCDs on a time-and-materials, unit-cost, or similar basis, the Contractor shall keep and maintain cost-accounting records satisfactory to the Owner, which shall be available to the Owner on the same terms as any other books and records the Contractor is required to maintain under the Contract Documents.

**5) NOTICE REQUIRED**

If the Contractor desires to make a claim for an impact on the Guaranteed Maximum Price and Construction Contingency, or any extension in the Contract Time for completion, it shall give the Owner and the Architect/Engineer written notice thereof within ten (10) days after the occurrence of the event giving rise to the claim, together with detailed estimates of the impact on the Guaranteed Maximum Price and the Construction Contingency and/or the Contract Time. This notice shall be given by the Contractor before proceeding to execute the Work, except in an emergency endangering life or property, in which case the Contractor shall proceed in accordance with paragraph 10.4 hereof. No claim shall be considered unless made in accordance with this Subparagraph; however, the mere presentation of such claim shall not establish the validity of the cause giving rise to such claim, or of the extension of the Contract Time, and/or the effect on the Guaranteed Maximum Price and the Construction Contingency. Contractor shall proceed to execute the Work even though the adjustment has not been agreed upon. Any effect on the Guaranteed Maximum Price and the Construction Contingency or extension of the Contract Time resulting from such claim shall be authorized by a CO, and paid subject to the Agreement and these General Conditions.

**6) APPLICABILITY TO SUBCONTRACTORS**

Any requirements under this Article shall be equally applicable to COs or CCDs issued to Subcontractors by the Contractor to the same extent required of the Contractor.

## 15. NOTICE OF COMPLETION:

### A. Final Observation and Re-observation:

- 1) Request for Final Observation: When the work is completed, Contractor shall notify Architect/Engineer and Owner in writing that the work will be ready for final observation on a definite date which shall be stated in such notice. The notice shall be given at least ten (10) days in advance of such date. Contractor shall arrange for the presence at this observation of all subcontractors dealing with paving, concrete work, striping, drainage, and such other subcontractors as Architect/Engineer may designate.
- 2) Except for minor touch-up work, ALL work of the contract shall be completed and systems operating and checked by Contractor and manufacturer's representatives BEFORE a final observation is requested by Contractor.

B. Architect/Engineer and Contractor will make joint final observation to determine if work is (1) entirely complete, or (2) substantially complete, or (3) neither entirely or substantially complete. Substantial completion implies completion except for minor adjustments, correction of finishes, etc. which minor items will not limit Owner's use or occupancy of the entire work. Architect/Engineer will be sole judge in determining specifically what constitutes any minor item in this instance.

- 1) If the Architect/Engineer arrives at the site for the Final Observation at the request of the Contractor and the Project is not deemed to be substantially complete by the Architect/Engineer, the Final Observation shall be rescheduled. The Contractor shall be financially responsible to the Owner for paying the owner's Architect/Engineer based on the amounts in B.4 below.
- 2) Within ten (10) days after the final observation, a written list of any deficiencies consisting of items to be completed or corrected before acceptance of the building, shall be furnished to Contractor. Such completion or correction shall be done within fourteen (14) days after the final observation or such other time limit as may be established by Architect/Engineer or Owner.
- 3) A Follow-Up Observation will be made by Architect/Engineer's and Owner within thirty (30) days after the final observation or such other time limit as may be established by Architect/Engineer or Owner. Contractor shall arrange for the presence of subcontractors whose work was on the list of deficiencies.
- 4) Should it be determined during the follow-up observation that all items on the list of deficiencies have not been completed or corrected and that additional observations would be required to observe those items not completed or corrected, Contractor shall be charged in accordance with the following schedule. Determination of necessity for such re-observations shall be made by Architect/Engineer.
  - i) Each additional observation by Architect/Engineer will be at current hourly rate (4 hours minimum), including travel time and reimbursement for mileage.
  - ii) Each additional observation by the Consultant(s) will be at current hourly rate (4 hours minimum), including travel time and reimbursement

for mileage.

- 5) When Work is accepted, Architect/Engineer shall give Contractor written notice of the date on which a legal Notice of Completion is recorded. These charges shall be withheld from the Contractor's remaining partial payments by the Owner and paid by the Owner to the Architect/Engineer for these additional site visits.
- C. Notice of Completion: If the Architect/Engineer determines project to be either entirely complete or substantially complete as a result of final observation, he may advise the Owner to record a Notice of Completion with the Clerk of the County in which the project is located.
- 1) Date of filing such notice shall determine start of lien period and guarantee period on items that have been approved as substantially completed.
  - 2) Recording notice of completion, issuing any certificate for payment, making any payment other than final payment, and partial or entire use or occupancy of the work by the Owner shall not be construed as an acceptance of any work or material not in accord with the Contract Documents.
- D. Pre-Final Certificate of Payment: Architect/Engineer, upon advising the Owner to file the Notice of Completion, will file a written certificate with the Owner and Contractor for the entire amount of work performed and compensation earned by the Contractor, including approved extra work and compensation. The Contractor shall be entitled to full payment of this amount, less retention.

## 16. ACCEPTANCE OF WORK:

- A. Final Payment: Thirty five (35) days after recording the notice of completion, the Contractor shall be entitled to payment of all remaining monies on following conditions:
- 1) Receipt of all Guarantee/Warranties, Release of Liens, and O&M Manuals.
  - 2) No stop notices or claims have been filed.
  - 3) Any such notices or claims which have been filed have been satisfied.
  - 4) All Work is completed satisfactorily according to the terms of the Contract.
  - 5) Acceptance of As-Built Drawings.
- B. Release of Claims: Final payment shall not become due until Contractor delivers to the Owner through the Architect/Engineer a complete release of all claims against the Owner arising under and by virtue of this contract, including claims of all subcontractors and suppliers of other materials or labor. Should said release not be delivered before final payment is made by the Owner, acceptance of final payment shall operate to release Owner from all claims the same as if said release had in fact been delivered.
- C. Performance Bond: No payment, final or otherwise, shall operate to release the Contractor or his sureties from any obligations under any performance bond.
- D. Final Acceptance of Work: Receipt of final payment by the Contractor shall operate as

the act of delivery to and final acceptance by the Owner of the completed project; but receipt shall not relieve the Contractor of his responsibilities for any deviation, defect or omission of work, nor limit or waive any obligation due the Owner under guarantees and warranties required by the Contract.

**17. OCCUPANCY:**

- A. Owner may occupy certain portions of the work prior to Contractor's completion of the total project. The Owner's right to such occupancy is understood to be part of the Contract and Contractor shall proceed with completion of the total project in such manner as to cause least possible interference with the Owner, his employees, or others having business on the premises.
- B. Partial occupancy shall not be deemed acceptance or completion of work in whole or in part, and shall in no manner diminish any provision for liquidated damages for delay in completion of Contract, nor extend the time for completion of Contract.

**18. GUARANTEES:**

- A. General Guarantee: All Work shall be guaranteed by the Contractor and the surety of his performance bond against defects of materials or workmanship for one year from the date of recording notice of completion.
- B. Special Guarantees: Certain parts of the work, where specifically noted, may require guarantee periods of greater duration than the General Guarantee period of one year, or may require other starting dates for guarantee period than date of filing notice of completion, or may require both of these exceptions to the general guarantees.
- C. Guarantee Requirements: If corrections are required within any guarantee period, without expense to the Owner, the Contractor shall promptly comply with the following:
  - 1) Place in condition satisfactory to Owner all such guaranteed work.
  - 2) Make good all damage to buildings, to Owner's furnishings and personal property, or to site which is the result of said defects.
  - 3) Make good any work, materials, equipment and contents of buildings or site disturbed by repairs and changes in fulfilling any such guarantee.
- D. Failure to Comply: Owner may have defects corrected if Contractor, after notice, fails to proceed promptly to comply with terms of the guarantee and Contractor and his surety shall be liable for all expenses incurred.
- E. Special Equipment: Owner may, at his sole discretion, exercise his option to repair or replace damaged special equipment if such repair or replacement is included in provisions of any guarantee. Cost of such remedy shall be recoverable from the Contractor in the amount of exact cost to the Owner.
- F. Certain items of work or equipment shall be excluded from the provision for commencement of guarantee if, at time of final acceptance of the work, these items are incomplete or unacceptable. The guarantee period for these items shall commence only upon written acceptance by the Owner.

**19. ASSIGNMENT:**

The Contractor shall not assign the contract nor sublet it as a whole without written consent of the Owner, nor shall the Contractor assign any monies due or to become due to him hereunder without written consent of the Owner. Such assignment or sub-letting by the Contractor will not be binding upon the Owner without such consent.

**20. SUBCONTRACTS:**

- A. Agreements between Contractor and subcontractors shall be made available upon Architect/Engineer's request.
- B. Contractor shall bind each subcontractor to the terms of the Contract Documents; but no act of the Architect/Engineer nor anything contained in any Contract Documents shall be construed as creating any contractual relation between the Owner and any subcontractor.
- C. Disputes: Neither Architect/Engineer nor Owner will undertake to settle any disputes between the contractor and his subcontractors or between subcontractors.

**21. SEPARATE CONTRACTS:**

- A. Owner, at his discretion, may let separate contracts related to the project which may be carried on simultaneously with this contract. Scope and technical details of separate contracts will be made available to Contractor for his examination. Contractor shall cooperate with separate contractors to ensure uninterrupted progress of all work including delivery and storage of materials necessary for work of separate contractors.
- B. Contractor shall notify Architect/Engineer of potential interference with this Work by any separate Contractor's work before Work of either contract is disturbed, and shall secure Architect/Engineer's decision as to procedure or change in design or construction before proceeding.
- C. Where results or proper execution of this work depend upon work by separate contractor, Contractors shall inspect separate contractor's work and promptly report to Architect/Engineer any defects that render it unsuitable for such results or execution. Failure to so report shall constitute acceptance of separate contractor's work as proper for reception of Contractor's work.
- D. If Contractor damages any separate contractor's work, or vice versa, or if any dispute arises, Contractor agrees to settle by mutual consent, or upon due notice, to settle by arbitration in the manner provided in these GENERAL CONDITIONS or by agreement with the Owner.

**22. SAFETY:**

- A. Contractor shall be solely and completely responsible for conditions of the premises on which the work is performed and for safety of all persons and property on the site during performance of the contract. This requirement shall not be limited to normal working hours, but shall apply continuously.
- B. Contractor shall conform with all governing local, State and Federal safety regulations. The Architect/Engineer is not responsible for monitoring the Contractor's

compliance with safety regulations.

- C. Contractor shall hold the Owner, Architect/Engineer and their representative free and harmless from any claim or judgment including litigation costs and counsel fees deriving from or related to performance of the work as regards safety to property or persons, including injury or death, irrespective of whose conduct including conduct of the Owner, the Architect/Engineer, or of their representatives, may have given rise to the claim or loss.

23. LIABILITY & INSURANCE (For extent of coverage, see SUPPLEMENTARY GENERAL CONDITIONS.):

- A. For the duration of this contract, Contractor shall maintain Statutory Workmen's compensation and shall maintain Employer's Liability Insurance. Contractor shall require subcontractors to provide Workmen's Compensation and Employer's Liability Insurance with the same minimum limits.
- B. For the duration of this Contract, Contractor shall maintain Comprehensive General Liability Insurance. The policy shall include Protective Liability Insurance with the same minimum limits. Contractor shall require subcontractors to provide Comprehensive General Liability Insurance with the same minimum limits.
- C. For the duration of this Contract, Contractor shall maintain Comprehensive Automobile Liability Insurance for all owned, non-owned, and hired vehicles. Contractor shall require subcontractors to provide Comprehensive Automobile Liability Insurance with same minimum limits.
- D. Hold Harmless Agreement & Contractor's Insurance: Contractor's Comprehensive General Liability Insurance and his Comprehensive Automobile Liability Insurance shall hold Owner, Architect/Engineer, and their elective and appointive boards, officers, agents and employees, harmless from any liability for personal injury or claims for property damage including Owner's property which may arise from Contractor's or any subcontractor's operations under this agreement, whether such operation be by Contractor or by any subcontractor or subcontractors, or by any one or more persons directly or indirectly employed by, or acting as agent for, Contractor or any subcontractor. Policies shall include Owner's and Architect/Engineer's full legal names in the endorsements.

The obligations of the Contractor shall not extend to the liability of the Architect/Engineer, his agents or employees, arising out of the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs or specifications.

- E. Contractor shall defend Owner and Architect/Engineer and their elective and appointive boards, officers, agents and employees from any suits or actions at law or in equity for damages caused, or alleged to have been caused, by reason of any of the aforesaid operations, provided as follows:
  - 1) That neither the Owner nor the Architect/Engineer waives any right against Contractor which they may have by reason of the aforesaid hold harmless agreement, because of the acceptance by the Owner or the Architect/Engineer, or the depositing with either of them by the Contractor of any insurance policies described herein.



- 2) That the aforesaid Hold Harmless Agreement by Contractor shall apply to all damages and claims for damages of every kind suffered or alleged to have been suffered by reason of any of the aforesaid operations, regardless of whether or not such insurance policies shall have been determined to be applicable to any of such damages or claims for damages.
- F. The insurance required by sub-paragraphs 24.C, 24.D, 24.E (1) & (2) of the General Conditions shall include Contractual Liability Insurance applicable to the contractor's obligations under these same sub-paragraphs.
- G. Contractor shall not commence work at the site until he has obtained all required insurance and until such insurance has been approved by the Owner. The Contractor shall not allow any subcontractor to commence work until all insurance required has been obtained and approved. Approval of the insurance by the Owner shall not relieve or decrease the liability of the Contractor hereunder. Certificates of insurance shall be filed with the Owner and copies with the Architect/Engineer prior to commencing work.
- H. The required insurance must be written by a Company licensed to do business in the state in which the work is located at the time the policy is issued. In addition, the Company must be acceptable to the Owner.
- I. The Contractor shall not cause any insurance to be canceled nor permit any insurance to lapse. All insurance policies shall include a clause to the effect that the policy shall not be canceled or reduced, restricted or limited until ten (10) days after the Owner has received written notice as evidenced by return receipt of registered or certified letter. Certificates of Insurance shall contain transcripts from the proper office of the insurer, evidencing in particular those insured, the extent of the insurance, the location and the operations to which the insurance applies, the expiration date, and the above-mentioned notice of cancellation clause.
- J. Approval or review by the Architect/Engineer or by his representative of any equipment or material or work of installation shall in no manner act to release the Contractor, his sureties or insurers from any liability or indemnity as provided in these GENERAL CONDITIONS related to such equipment, material or installation work, or to its performance.
- K. Builder's Risk Insurance: The contractor shall carry coverage on a Builders Risk and/or installation floater for covering the interest of the contractor and Owner against loss or damage to machinery, equipment, building materials or supplies, being used with and during the course of installation, testing, building, renovating or repairing. Such policies shall cover at points or places where work is being performed, while in transit and during temporary storage or deposit of property designated for and awaiting specific installation, building, renovating or repairing.

**24. TIME OF WORK:**

- A. The Architect/Engineer shall designate the starting date of the work, on which date the Contractor shall begin work forthwith.
- B. The Contractor shall, within ten (10) days from the execution of the Contract, furnish to the Architect/Engineer a detailed estimate of the contract price (contract breakdown) and present a contemplated time schedule showing the time necessary to complete each portion of the building and to complete the entire project.
- D. The Contractor "breakdown" showing percentage of work completed shall be verified by

the Inspector and presented each pay period to accompany the Architect/Engineer's certificate of payment.

- E. The Contractor obligates himself to make the whole work complete and satisfactory on, or before, such date as shall be determined by the elapsed number of calendar days set forth in the Proposal, plus any extension approved by the Owner.

## 25. PAYMENTS:

- A. Payments to the Contractor on account of the Contract shall be made according to the following schedule, and subject to additions and deductions, if any, as hereinafter provided. No payment will be made without the completion and verification of the certificate referred to in General Conditions 25-C. **Pay Request format shall be approved by Architect/Engineer. A sample may be obtained from Architect/Engineer's office.**
- B. On or about the first day of the month following the commencement of the Work there shall be paid to the Contractor after certification by the Architect/Engineer, a sum equal to Ninety-five Percent (95%) of the value of the work completed since the commencement of the work. Thereafter, on or about the twentieth day of each successive month as the work progresses, similar payments may be requested by the Contractor equal to Ninety-five Percent (95%) of the value of the work completed since the commencement of the work less all previous payments. Payment for additional Work or extras, if any, under this Contract shall be made in like manner. Said payment shall be made by demands drawn in the manner required by law, accompanied by a certificate signed by the Architect/Engineer, stating that the Work for which payment is to the best of Architect/Engineer's knowledge has been performed in accordance with the terms of the Contract, and that the amount stated in the certificate is due under the terms of the Contract. Partial payment on the contract price shall not be considered as an acceptance of any part of the work.
- C. After the completion of the Work required by this Contract, the Contractor shall file with the Owner, his affidavit, sworn to before a Notary Public, stating that all workmen and persons employed, all firms supplying the materials, and all subcontractors upon the project have been paid in full, and that there are no disputed claims or stop notices. The filing of such affidavit by the Contractor shall be a prerequisite to the making, by the Owner, of the final payment of the Contract. Final payment shall be made forty-five (45) days after completion of the work and its acceptance by Owner.
- D. Payment hereunder may, at any time, be reduced or withheld by the Owner, if, in the opinion of the Architect/Engineer or the Owner, the Contractor is not diligently and efficiently endeavoring to comply with the intent of this Contract, or if the Contractor shall fail to pay for labor and material used on the project when such payments become due.
- E. The acceptance by the Contractor of the payment of the final certificate shall constitute a waiver of all claims against the Owner under or arising out of this Contract.
- F. The Owner, at any time during the progress of the Work, shall have the right to order alterations in, additions to, or deviations or omissions from the work contemplated by this Contract, and the same shall in no way make void the Contract. Changes involving an increase or decrease in the contract amount shall be processed as per Paragraph 14.

- G. CLAIMS FOR EXTRA COSTS. It is hereby mutually agreed that the Contractor shall not be entitled to payment of additional compensation for any occurrence, unless he shall have given the Architect/Engineer and Owner due written notice of potential extra cost.

The written notice of potential extra cost shall set forth the reasons the Contractor believes additional compensation will or may be due, the nature of the costs involved, and, insofar as possible an estimate of the total cost. The required notice must have been given to the Architect/Engineer and Owner prior to the time the contractor performed the work, or in all other cases within seven (7) days after the start of work, giving rise to the potential extra cost.

It is the intention of this Article that differences between the parties arising under and by virtue of the Contract be brought to the attention of the Architect/Engineer at the earliest possible time so that such matters may be settled, if possible, or other appropriate action promptly taken. The Contractor hereby agrees that he shall have no right to additional compensation for any claim that may be based on any act, failure to act, event, thing or occurrence for which no written notice of potential claim was filed within the time constraints stated above. In the event of an emergency endangering life or property, the Contractor shall act as stated below, and after execution of the emergency work, shall present an accounting of labor, materials, and equipment in connection therewith. The procedure for any payment that may be due for emergency work will be as specified in Paragraph 14. The Architect/Engineer shall, within a reasonable time after their presentation to him, state his decisions in writing on all claims for extra compensation. All such decisions of the Architect/Engineer shall be final.

- H. In an emergency affecting the safety of life or of the work or of adjoining property, the Contractor, without special instruction or authorization from the Architect/Engineer or Owner, is hereby permitted to act at his discretion to prevent such threatened loss or injury, and he shall so act without appeal if so instructed or authorized. Any compensation claimed by the Contractor for emergency work shall be determined as specified under Paragraph 14.
- I. Payment for additional work or extras, if any, under this Contract shall be made in accordance with the provisions of Paragraph 14. The value of omissions, if any, from the Contract, shall be deducted from the amount of the contract price, and the deductions shall be made by the Owner from the payment first following the authorization for said deductions.

## **26. TESTS AND INSPECTIONS:**

- A. The cost of all tests, sampling, tagging and shipping inspection called for in the specifications shall be paid for by the Owner. Should the result of any tests show that the materials and/or workmanship fails to meet the requirements of the specifications, then the contractor shall provide new materials and/or workmanship, and additional tests shall be made until the requirements of the specifications are satisfied. The Owner shall deduct from the final payment sufficient money to pay for all the testing costs from and after the first tests required by specifications. If the results of any tests on imported material show that it is not suitable, the contractor shall provide new material and additional tests shall be made. The Owner shall deduct from the final payment the cost of testing from and after the first tests should the material fail to meet the tests. The testing laboratory shall be employed by the owner.

**27. RESOLUTION OF CONSTRUCTION CLAIMS:**

- A. The parties hereto shall adhere to and be bound by each and all of the provisions of Public Contract code Section 20104 through 20104.8, a copy of which is attached as "EXHIBIT A" and is incorporated herein by this reference.

**28. ARBITRATION OF PUBLIC WORKS CONTRACT CLAIMS:**

- A. The parties hereto shall adhere to and be bound by each and all of the provisions of Public Works Contract, Sections 22200 through 22201, and Sections 20104 through 20104.4, which are included below and incorporated herein by this reference.

**PUBLIC CONTRACT CODE  
SECTION 22200-22201**

22200. As used in this part:

- (a) "Public works contract" means, except for a contract awarded pursuant to the State Contract Act (Part 2 (commencing with Section 10100)), a contract awarded through competitive bids or otherwise by the state, any of its political subdivisions or public agencies for the erection, construction, alteration, repair, or improvement of any kind upon real property.
- (b) "Claim" means a demand for monetary compensation or damages, arising under or relating to the performance of any public works contract.

22201. Unless otherwise prohibited by law, the terms of any public works contract may include at the time of bidding and of award a provision for arbitration of any claim pursuant to Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2.

**PUBLIC CONTRACT  
CODE SECTION  
20104-20104.4**

20104. (a) (1) This article applies to all public works claims of three hundred seventy-five thousand dollars (\$375,000) or less which arise between a contractor and a local agency.
- (2) This article shall not apply to any claims resulting from a contract between a contractor and a public agency when the public agency has elected to resolve any disputes pursuant to Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2.
- (b) (1) "Public work" has the same meaning as in Sections 3100 and 3106 of the Civil Code, except that "public work" does not include any work or improvement contracted for by the state or the Regents of the University of California.
- (2) "Claim" means a separate demand by the contractor for (A) a time extension, (B) payment of money or damages arising from work done by, or on behalf of, the contractor pursuant to the contract for a public work and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or (C) an amount the payment of which is disputed by the local agency.
- (c) The provisions of this article or a summary thereof shall be set forth in the plans or specifications for any work which may give rise to a claim under this article.
- (d) This article applies only to contracts entered into on or after January 1, 1991.

20104.2. For any claim subject to this article, the following requirements apply:

(a) The claim shall be in writing and include the documents necessary to substantiate the claim. Claims must be filed on or before the date of final payment. Nothing in this subdivision is intended to extend the time limit or supersede notice requirements otherwise provided by contract for the filing of claims.

(b) (1) For claims of less than fifty thousand dollars (\$50,000), the local agency shall respond in writing to any written claim within 45 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the local agency may have against the claimant.

(2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant.

(3) The local agency's written response to the claim, as further documented, shall be submitted to the claimant within 15 days after receipt of the further documentation or within a period of time no greater than that taken by the claimant in producing the additional information, whichever is greater.

(c) (1) For claims of over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the local agency shall respond in writing to all written claims within sixty (60) days of receipt of the claim, or may request, in writing, within thirty (30) days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the local agency may have against the claimant.

(2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant.

(3) The local agency's written response to the claim, as further documented, shall be submitted to the claimant within thirty (30) days after receipt of the further documentation, or within a period of time no greater than that taken by the claimant in producing the additional information or requested documentation, whichever is greater.

(d) If the claimant disputes the local agency's written response, or the local agency fails to respond within the time prescribed, the claimant may so notify the local agency, in writing, either within fifteen (15) days of receipt of the local agency's response or within fifteen (15) days of the local agency's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the local agency shall schedule a meet and confer conference within thirty (30) days for settlement of the dispute.

(e) Following the meet and confer conference, if the claim or any portion remains in dispute, the claimant may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the claimant submits his or her written claim pursuant to subdivision (a) until the time that claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

(f) This article does not apply to tort claims and nothing in this article is intended nor shall be construed to change the time periods for filing tort claims or actions specified by Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code.

20104.4. The following procedures are established for all civil actions filed to resolve claims subject to this article:

(a) Within sixty (60) days, but no earlier than thirty (30) days, following the filing or responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within fifteen

(15) days by both parties of a disinterested third person as mediator, shall be commenced within thirty (30) days of the submittal, and shall be concluded within fifteen (15) days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.

(b) (1) If the matter remains in dispute, the case shall be submitted to judicial arbitration procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act of 1986 (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of Part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.

(2) Notwithstanding any other provision of law, upon stipulation of the parties, arbitrators appointed for purposes of this article shall be experienced in construction law, and, upon stipulation of the parties, mediators and arbitrators shall be paid necessary and reasonable hourly rates of pay not to exceed their customary rate, and such fees and expenses shall be paid equally by the parties, except in the case of arbitration where the arbitrator, for good cause, determines a different division. In no event shall these fees or expenses be paid by state or county funds.

(3) In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, any party who after receiving an arbitration award requests a trial de novo but does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, pay the attorney's fees of the other party arising out of the trial de novo.

(c) The court may, upon request by any party, order any witnesses to participate in the mediation or arbitration process.

**END OF  
SECTION**

## **SUPPLEMENTARY GENERAL CONDITIONS:**

### **1. DOCUMENTS CONSTITUTING CONTRACT:**

- A. ADVERTISEMENTS FOR BIDS
- B. INSTRUCTIONS TO BIDDERS
- C. PROPOSAL FORM
- D. AGREEMENT
- E. PERFORMANCE BOND
- F. LABOR AND MATERIAL BOND
- G. GENERAL CONDITIONS
- H. SUPPLEMENTARY GENERAL CONDITIONS
- I. All addenda instructions, modifications and clarifications to these documents issued prior to signing an agreement.
- J. SPECIFICATIONS: As listed in the table of contents.
- K. DRAWINGS

### **2. ISSUE OF DRAWINGS AND SPECIFICATIONS:**

- A. Contractor will be issued without any cost to him five (5) sets of drawings and specifications including copies already issued for bidding purposes. Cost of reproduction of any additional sets of drawings and specifications will be charged to the Contractor.
- B. Architect/Engineer retains ownership of all copies of drawings and specifications. These documents shall not be used for work other than for the specific project identified by the Architect/Engineer's project number.

### **3. INSPECTION:**

Project Inspector: Owner will employ an Inspector, to observe progress of the work and report to the Architect/Engineer any non-conformance with drawings and specifications.

### **4. PLAN CHECK & BUILDING PERMIT FEE: (Reference GENERAL CONDITIONS, Para. 8): No Charge - Paid by Owner.**

### **5. PARTIAL PAYMENTS:**

- A. Prior to Contractor's submitting his first request for payment, he shall submit for Architect/Engineer's approval a breakdown of costs of all labor and material according to trade classification. Breakdown, when approved, shall form basis for all payments.
- B. Requests for payment shall be written, submitted monthly not later than date established at pre-construction conference.
- C. Amount of payment will be certified by Architect/Engineer according to the value of the work and materials installed during period covered by request. Materials delivered to site and preparatory work may be included in request for payment subject to paragraph re: Stockpiled Material.

- D. Partial payment shall be withheld by 35% of the total amount required if the project inspector and Architect/Engineer determine adequate and timely record documents are not being kept.
- E. Stockpiled Material is material either delivered to site or stored at Contractor's expense in a bonded public warehouse within reasonable proximity of site. Owner at its sole discretion may honor requests for payment for stockpiled material, allowing for percentage retentions, upon following conditions:
  - (1) Prior written approval by Architect/Engineer and Owner shall be obtained for each delivery to site or to bonded off-site warehouse.
  - (2) Title to stockpiled material shall remain vested in Contractor at time of delivery to site or bonded warehouse. Stockpiled material shall be available for inspection by Owner's authorized agents.
  - (3) Contractor shall obtain a negotiable warehouse receipt, endorsed over to Owner, for all material stored in warehouse. No payment will be made until endorsed receipt is delivered to Owner.
  - (4) If, after delivery of material, any inherent or acquired defects are discovered therein, material shall be removed and replaced with suitable material at Contractor's expense.
  - (5) Contractor shall keep and maintain the material safe and secure from damage or loss by the elements, theft, or other cause, and shall, at his expense, insure material against theft and fire and deliver policy or certificate of such insurance to Owner, naming Owner as assured. Insurance shall not be cancelable for at least 10 days and shall not be effective until certificate thereof is given to Owner.
- F. Owner will make partial payments to Contractor not later than the day established at pre-construction conferences on basis of amount duly certified and approved by Architect/Engineer.
- G. Percentage retention on determined amount of partial payments:
  - (1) For all work up to substantial completion of the project: 5%
  - (2) All monies retained by Owner after substantial completion of project will be released to Contractor according to Para. 16 of GENERAL CONDITIONS.

**6. MINIMUM LIMITS OF LIABILITY INSURANCE (Reference GENERAL CONDITIONS 23):**

- A. Statutory Worker's Compensation and Employer's Liability Insurance: As prescribed by the State of California.
- B. Comprehensive General Liability Insurance with Owner and its officers, agents, and employees, and Architect/Engineer protected with Contractor as



additional insured. Personal injury \$1,000,000 each occurrence and property damage \$200,000 each occurrence.

- C. Comprehensive Automobile Liability Insurance for all owned and non-owned and hired vehicles, with Owner and Architect/Engineer protected with Contractor as additional insured: Personal injury \$1,000,000 each occurrence and property damage \$200,000 each occurrence.

**7. WORKMANSHIP AND LABOR:**

- A. All employees shall be especially skilled for the kind of work for which they are employed, and shall work under the direction of a competent foreman.
- B. Should the Architect/Engineer, and/or the Owner deem anyone employed on the work incompetent or unfit for his duties, the Contractor shall dismiss him, and he shall not again, without the permission of the Architect/Engineer and/or Owner, be employed on the work.

**8. WAGES:**

- A. Pursuant to the provisions of Articles I and 2 of Chapter I, Part 7, Division II of the Labor Code of the State of California, Contractor and all sub-contractors shall pay their workmen on all work included in this contract not less than the general prevailing rate of per diem wages, and not less than the general prevailing rate of per diem wages for legal holidays and overtime work, for each craft or type of workman needed to execute the work contemplated under this Agreement, as ascertained by the Owners, and as set forth in the schedule of such wages located at the Office of the County Administrator on said work by the Contractor, or by any subcontractor doing or contracting to do any part of said work. Current prevailing wage rates may also be found online at <http://www.dir.ca.gov/>.

(1) The Contractor shall forfeit as a penalty to the Owner, the sum of Fifty Dollars (\$ 50.00) for each calendar day or portion thereof, for each workmen paid less than said stipulated rates for any work done under this Agreement by him or by any subcontractor under him and shall pay each such workmen the difference between said prevailing wage rate, and the amount paid to each workman, and shall otherwise comply with Section 1775 of the Labor Code. The Contractor and each Subcontractor shall keep an accurate record showing the name, occupation, and actual per diem wages paid to each workmen employed on the work contemplated by this Agreement, which record shall be kept open at all reasonable hours to the inspection of the Owner and the Division of Labor Law Enforcement.

(2) Contractor shall be responsible for complying with Labor Code Section 1777.5 pertaining to the employment of the registered apprentices and Section 1771 of the Labor Code requires that for all public works projects, not less than the general prevailing rate of per diem wages must be paid to all workmen employed on public work.

(3) APPLICATION OF LABOR CODE

Pursuant to § 1776 of the Labor Code, as reproduced in part below:

“(a) Each contractor and subcontractor shall keep accurate payroll records, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the public work. Each payroll record shall contain or be verified by a written declaration that it is made under penalty of perjury, stating both of the following:

“(b) The payroll records enumerated under subdivision (a) shall be certified and shall be available for inspection at all reasonable hours at the principal office of the contractor on the following basis:

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

“(2) A certified copy of all payroll records enumerated in subdivision (a) shall be made available for inspection or furnished upon request to a representative of the body awarding the contract, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations.

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

“(c) The certified payroll records shall be on forms provided by the Division of Labor Standards Enforcement or shall contain the same information as the forms provided by the division...

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

“(e) Except as provided in subdivision (f), any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the awarding body, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement shall be marked or obliterated to prevent disclosure of an individual's name, address, and social security number. The name and address of the contractor awarded the contract or the subcontractor

performing the contract shall not be marked or obliterated...

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

“(h) The contractor or subcontractor has 10 days in which to comply subsequent to receipt of a written notice requesting the records enumerated in subdivision (a). In the event that the contractor or subcontractor fails to comply within the 10-day period, he or she shall, as a penalty to the state or political subdivision on whose behalf the contract is made or awarded, forfeit One Hundred Dollars (\$100.00) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due...”

Notwithstanding monitoring by the Owner and the CMU, the responsibility for compliance with this Article shall rest upon the Contractor.

(4) **ELECTRONIC SUBMISSION OF PAYROLL RECORDS**

Payroll records, as described above at paragraph 13.9.1, must be submitted by the Contractor and each subcontractor to the CMU by way of the CMU's eCPR system, known as "My LCM," at <https://app.mylcm.com>. The Contractor and each subcontractor shall register with the eCPR system. Once registered, the Owner or the CMU shall assign the Contractor and each subcontractor to the Project, or the Contractor may assign the subcontractors to the Project.

(5) **INSPECTION OF PAYROLL RECORDS AND INVESTIGATION BY CMU**

Certified payroll records are also available on the CMU's eCPR system for review and inspection by the Owner, the CMU, and the Division of Labor Standards Enforcement. The Owner and the Contractor and any subcontractors performing any portion of the Work under the Contract shall cooperate with the CMU and the Division of Labor Standards Enforcement in any investigation of suspected violations of prevailing wage requirements, including permitting interviews of tradesworkers during working hours on the project site and withholding of payments upon determination of a violation of prevailing wage requirements.

**9. LEGAL DAY'S WORK:**

- A. In accordance with the provisions of Article 1 and 3 of Chapter 1, Part 7, Division II, of the Labor Code of the State of California, eight (8) hours labor shall constitute a regular day's work, and no workman in the employ of the Contractor or any Subcontractor doing or contracting to do any part of the work contemplated by this Agreement, shall be required or permitted to work more than eight (8) hours in any one calendar day or forty (40) hours during any calendar week, except as provided in Section 1810 to Section 1815 thereof, inclusive, of the Labor Code: and the Contractor and each Subcontractor shall keep an accurate record showing the name of and actual hours worked by each workman employed on the work contemplated by this Agreement, which record shall be kept open at all reasonable hours to the inspection of the Owner and to the Division of Labor Law Enforcement; and that said Contractor shall forfeit as a penalty to the Owner the sum of Fifty Dollars (\$ 50.00) for each workman

employed in the execution of this contract, by him or by any Sub-contractor, for each calendar day during which said workman is required or permitted to labor more than eight (8) hours in violation of the provisions of said Article 3, as modified by Section 1815 of the Labor Code.

**10. MATERIALS:**

- A. The Contractor shall furnish and use new materials of quality required by the provisions of the Contract for every part of his work, unless otherwise specified. CONTRACTOR SHALL SUBMIT SAFETY DATA SHEETS FOR ALL CONSTRUCTION MATERIALS USED ON THE PROJECT. CONTRACTOR SHALL COLLECT AND KEEP ALL SAFETY DATA SHEETS (MSDS) ON THE JOB SITE IN A READILY ACCESSIBLE THREE RING BINDER. THIS BINDER SHALL BE SUBMITTED AT THE END OF THE PROJECT WITH THE OTHER CLOSE-OUT DOCUMENTATION.
- B. Whenever, in the specifications, any material or process is indicated or specified by patent or proprietary name and/or by name of manufacturer, such specifications shall be deemed to be used for the purpose of facilitating description of the material and/or process desired, and shall be deemed to be followed by the words, "or approved equal", and the Contractor may offer any material or process which shall be equal in every respect to that so indicated or specified, provided however, that if the material, process, or article offered by the Contractor is not, in the opinion of the Architect/Engineer, equal in every respect to that specified, then the Contractor must furnish the material, process, or article specified or one that in the opinion of the Architect/Engineer is the equal thereof in every respect. Request for substitution shall be made in writing to the Architect/Engineer within thirty-five (35) days after signing of Contract. Time used by Architect/Engineer in making decisions on substitute materials will not be allowed as a claim for extension of working time.
- C. If after the Architect/Engineer has made a review of materials or equipment it is found that the materials or equipment presented and approved for use are not justifiably equal in quality and performance to the product originally specified, the Architect/Engineer retains the right to revoke said approval, and to reject the materials or equipment prior to the installation without any additional cost.
- D. All materials, samples, tests, and inspection shall be in accordance with the requirements of the specifications.
- E. Any material may be submitted to the Architect/Engineer prior to the bid opening for consideration as an approved equal to the proprietary material. Requests for such shall be in writing and be made not less than seven (7) working days prior to the bid opening. The request will be accompanied by manufacturer literature, details, test data and samples in a format which shows direct item by item comparison between the proprietary and proposed materials. Approval lies solely within the province of the Architect/Engineer.

**11. LIQUIDATED DAMAGES (Reference GENERAL CONDITIONS, Para. 5 D):**

As of the date of this contract, it is impossible to determine precisely the damages which Owner would sustain, should Contractor fail to complete the work by the date of completion set forth in the Agreement. Under the circumstances existing at the current time, the parties hereto have exercised a good faith attempt to estimate the amount of such damages, and agree that said amount is \$250.00 per day. If Contractor fails to complete the work by the date of completion set forth in the Agreement, Contractor shall pay to Owner or Owner shall withhold from funds otherwise due and payable to Contractor (at Owner's option) the sum of \$250.00 per day for each day after the date of completion set forth in the Agreement until the project is completed. These damages are in addition to any other rights and remedies of Owner as set forth herein. Contractor acknowledges that the aforesaid sum is not intended to compensate Owner for and shall not affect its rights to collect from Contractor costs and expenses incurred by Owner to complete the work after the date of completion.

**12. SUBCONTRACTS:**

- A. The Owner will deal only through the Contractor, who shall be responsible for the proper execution of the whole work. Subletting the whole or any part of the Contract shall be made only in accordance with the provisions of Section 4100 to 4108 inclusive, of the Public Contracts Code of the State of California.
- B. Pursuant to the provisions of Section 4100 to 4108, inclusive, of the Public Contracts Code of the State of California, the Contractor shall not without the consent of the Owner, either:
  - 1. Substitute any persons as subcontractor in place of the subcontractor designated in his original bid.
  - 2. Permit any subcontract to be assigned or transferred or allow it to be performed by anyone other than the original subcontractor listed in the bid.
  - 3. Sublet or subcontract any portion of the work in excess of one-half (1/2) of one percent (1%) of his bid as to which his original bid did not designate a subcontractor.
- C. Should the Contractor violate any of the provisions of said Section 4100 to 4108, inclusive, of the Public Contracts Code, his so doing shall be deemed a violation of this Contract, and the Owner may cancel the Contract. In the event of such violation, the Contractor shall be penalized to the extent of ten percent (10%) of the amount of the subcontract involved.

**13. THE ARCHITECT/ENGINEER:**

- A. Nothing contained in the Contract Documents shall create any contractual relationship between the Architect/Engineer and the Contractor.
- B. The Architect/Engineer will make periodic visits to the site to familiarize himself generally with the progress and quality of the work and to determine in general if the Work is proceeding in accordance with the Contract Documents. On the basis of his on-site observations as an Architect/Engineer, he will keep the Owner informed

of the deficiencies in the Work. The Architect/Engineer will not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, and he will not be responsible for the Contractor's failure to carry out the work in accordance with the Contract Documents.

- C. The Architect/Engineer will not be responsible for the acts or omissions of the Contractor, any subcontractors or any of their agents or employees, or any other persons performing any of the work.

**14. PROTECTION OF PUBLIC:**

- A. This work may be executed at the time when the public is using the facility; therefore, the Contractor shall arrange with the Owner, who shall designate the areas, which the Contractor shall use in the storage of materials and the construction activities. Every precaution shall be exercised to protect the public from injury by building accident.

**END OF SECTION**

# **APPENDIX A**

## **SOILS INFORMATION**

### **WALLACE KUHL & ASSOCIATES GEOTECHNICAL ENGINEERING REPORT**

**Hamilton Elementary School Drainage Repairs**

**February 20, 2015**

February 20, 2015

Mr. Mike Cannon  
Hamilton USD c/o EFPM  
129 Rideout Way  
Marysville, California 95901  
via email to: [mscannon\\_efpm@msn.com](mailto:mscannon_efpm@msn.com)

*Geotechnical Engineering Report*  
**HAMILTON ELEMENTARY SCHOOL DRAINAGE REPAIRS**  
277 Capay Avenue  
Hamilton City, California  
WKA No. 10439.01P

As requested, we have completed geotechnical engineering services for drainage repairs to the existing Hamilton Elementary School campus. The purpose of our geotechnical services is to provide information regarding subsurface soil conditions and conclusions and recommendations to support the planned on-site drainage system design.

Our scope of work was performed in general accordance with our *Design Phase Geotechnical Services Proposal* dated January 30, 2015 and has included review of our previous work at the site and published soil and groundwater data, subsurface and existing pavement exploration, percolation testing, and preparation of this report.

#### Project Background and Description

Previously, Wallace-Kuhl & Associates (WKA) prepared a *Geotechnical Engineering Report* (WKA No. 5256.01; dated October 16, 2002) for improvements to the Hamilton Elementary School campus. We understand an on-site drainage system is being considered within an existing grass field area near the center of campus east of Building D, as shown on the site plan we received from Warren Consulting Engineers (WCE).

#### Site Investigation

On February 9, 2015, our representative hand-augered three test borings, two in the proposed drainage field location and one in a hardcourt pavement between Buildings A and F at the approximate locations selected by WCE. We obtained and tested samples of the subsurface soils and pre-soaked two borings for percolation testing. The boring within the paved hardcourt extended to approximately ten feet below the pavement surface and the percolation test borings



extended approximately 4½ feet below the existing ground surface. The borings were backfilled with gravel and excavated soils after completion of sampling and testing and the hardcourt surface was patched with cold-patch asphalt concrete.

Subsurface Soil and Groundwater Conditions

The soil conditions encountered below the ground surface at our 2015 boring locations consist of silty fine sandy clays in the upper two to three feet and clayey fine sandy silts with interbedded layers with varying silt and fine sand content to ten feet below the ground surface, the maximum depth our borings extended. The soils were visually classified as silty clays (CL) and silts (ML) by ASTM D2488. Laboratory test results from relatively undisturbed soil samples obtained in driven 2"x6" tube samples are presented below.

The pavement section at our boring in the hardcourt consisted of 2 inches of asphalt concrete (AC) over ten inches of aggregate base (AB) underlain by the soils described above.

Location	Depth Below Surface (in.)	Soil Moisture Content (%)	Soil In-Place Unit Weight (pcf)
Hardcourt Boring	24 – 30	17.0	112
	48 – 54	15.4	114
Percolation Test No. 1	30 – 36	21.3	108
Percolation Test No. 2	36 – 42	19.3	100

- Combined sample from Perc. No. 1 and Perc. No. 2 – 78.6% passing No. 200 sieve
- Test Methods - Moisture Content ASTM D2216, Unit Weight ASTM D2937, Amount of Fines Passing No. 200 Sieve, ASTM D1140.

The soils we encountered in our borings at the east side of campus in 2002 were similar, but gravel was encountered. The gravel was relatively sparse near the surface, but increased with depth to approximately six feet below the ground surface where our borings were terminated.

US Soil Conservation Service maps of the area indicate the predominant near-surface soils are silty loam with natural drainage class considered to be well drained (Hydrologic Soil Group B). Table R405.1 of the 2012 International Residential Code indicates CL and ML soils have medium percolation characteristics, with a percolation rate of 2 to 4 inches per hour.



Groundwater was not encountered within the explored 10 foot depth at the test locations during our subsurface exploration conducted February 9, 2015 or the previous borings performed at the site in 2002. Review of our previous reports for the site and published data indicates groundwater is generally located about 20 feet below the existing ground surface, but the depth varies with the effects of seasonal precipitation and irrigation.

Percolation Test Results

The percolation tests were performed by drilling four-inch diameter holes with hand-augering equipment to a depth of approximately 4½ feet. The percolation test holes were pre-soaked by filling the holes with water up to the existing ground surface and the test holes were allowed to soak overnight. Percolation test readings were obtained by taking water level readings the next day at various time intervals as noted in the table below. The results of the percolation tests at each location are provided in the following table.

Test Location P1 2 to 4 feet below the ground surface			Test Location P2 2 to 3 feet below the ground surface		
Elapsed Time (minutes)	Water Drop (inches)	Percolation Rate (inches/minute)	Time Interval (minutes)	Water Drop (inches)	Percolation Rate (inches/minute)
0 - 20	1.5	4.5	0 - 20	0.8	2.4
20 - 40	1.5	4.5	20 - 40	0.7	2.1
40 - 60	1.3	3.9	40 - 60	0.6	1.8
60 - 80	1.3	3.9	60 - 80	0.6	1.8
80 - 100	1.2	3.6	80 - 100	0.6	1.8
100 - 120	1.2	3.6	100 - 120	0.5	1.5
<b>AVERAGE</b>		<b>4.0</b>	<b>AVERAGE</b>		<b>1.9</b>

Based on published data, percolation test results, our experience, and the soil conditions encountered at our boring locations, we recommend using 3 inches per hour as the allowable percolation rate for design of on-site drainage systems in the subject grass field between two and four feet below the current ground surface.

The drainage system should be designed by an experienced and qualified engineer familiar with the applicable regulatory agencies requirements. An appropriate factor of safety should be included in the overall design.



Below-Grade Drainage Construction and Design Considerations

Based on the subsurface information obtained at the percolation test locations and our local experience, we anticipate the soils at the site will be readily excavatable with conventional trenching equipment. Excavations deeper than five feet should be sloped or braced in accordance with current Occupational Safety and Health Administration (OSHA) regulations.

To reduce the potential for reduced percolation rates due to the filling of void spaces within the on-site soils, appropriate filtration measures should be incorporated into the drainage design.

Limitations

Our recommendations are based upon the information provided regarding the proposed project, combined with our analysis of site conditions revealed by the field exploration and percolation testing programs. We have used our best engineering judgment based upon the information provided and the data generated from our investigation and previous investigations at the site. This report has been prepared in substantial compliance with generally accepted geotechnical engineering practices that exist in the area of the project at the time the report update was prepared. No warranty, either express or implied, is provided.

If the proposed construction is modified or re-sited; or, if it is found during construction that subsurface conditions differ from those we encountered at the boring locations, we should be afforded the opportunity to review the new information or changed conditions to determine if our conclusions and recommendations must be modified.

Please contact us if you have any questions or need additional information.

Wallace - Kuhl & Associates



David A. Redford, PE  
Senior Engineer

cc: Warren Consulting Engineers



**PART 1 - GENERAL**

**1.01 INCLUSION OF OTHER CONTRACT DOCUMENTS**

- A. The General Conditions, Supplementary Conditions and Division 1 are fully applicable to this Section, as if repeated herein.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Section 01500, Temporary Facilities and Controls
- B. Section 02210, Trenching and Backfilling.
- C. Section 02513, Asphalt Concrete Paving.
- D. Section 03000, Site Concrete.
- E. Section 02400, Site Drainage.

**1.03 QUALITY ASSURANCE**

- A. Use only new materials and products, unless existing materials or products are specifically shown otherwise on the Drawings to be salvaged and re-used.
- B. All materials, components, assemblies, workmanship and installation are to be observed by the Owner's Inspector of Record. Work not so inspected is subject to uncovering and replacement.
- C. The representatives of the Owner's testing lab will not act as supervisor of construction, nor will they direct construction operations. Neither the presence of the Owner's testing lab representatives nor the testing by the Owner's testing lab shall excuse the contractors or subcontractors for defects discovered in their work during or following completion of the project. Correcting of inadequate compaction or moisture content is the sole responsibility of the contractor.
- D. Tests (See Part 3 for Compaction Testing).
- E. Contractor shall be solely responsible for all subgrades built. Failures resulting from inadequate compaction or moisture content are the responsibility of the contractor. Contractor shall be solely responsible for any and all repairs.

**1.03 SUBMITTALS**

- A. Refer to Section 01330.
- B. Manufacturer's Data: Submit list and complete descriptive data of all products proposed for use.

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Include manufacturer's specifications, published warranty or guarantee, installation instructions, and maintenance instructions.

**1.05 WARRANTY**

- A. Refer to General Conditions and Section 01785.

**1.06 REFERENCES AND STANDARDS**

- A. General: Site survey, included in the drawings, was prepared by Warren Land Surveying and is the basis for data regarding current conditions. While the survey is deemed generally accurate, there exists discrepancies and variations due to elapsed time, weather, etc. Existing dirt grades may vary 0.2 ft. from that shown.
- B. Geotechnical Engineering Report was prepared by Wallace Kuhl & Associates. Report is entitled Hamilton Elementary School Drainage Repairs, and is on file with Engineer. Soils information is taken from this Report. Contractor is responsible for any conclusions drawn from this data; should he prefer not to assume such risk he is under obligation to employ his own experts to analyze available information and/or to make additional explorations, at no cost to Owner, upon which to base his conclusions. Neither Owner, Soils Engineer nor Engineer guarantees information will be continuous over entire site of work.
- C. Site Visitation: All bidders interfacing with existing conditions shall visit the site prior to bid to verify general conditions of improvements. Discrepancies must be reported prior to the bid for clarification.
- D. ANSI/ASTM D698-00 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb (2.49 Kg) Rammer and 12 inch (304.8 mm) Drop.
- E. ANSI/ASTM D1556-00 - Test Method for Density of Soil in Place by the Sand-Cone Method.
- F. ANSI/ASTM D1557-02e2 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb. (4.54 Kg) Rammer and 18 inch (457 mm) Drop.
- G. ANSI/ASTM D 3017-05 Test Methods for Moisture Content of Soils and Soil-Aggregate Mixture by Nuclear Methods (Shallow Depth).
- H. ANSI/ASTM D 422-63 Test Method for Particle Size Analysis of Soil.
- I. ANSI/ASTM D 4318-05 Test Method for Liquid Limit, Plastic Limit, and Plasticity Limit.
- J. CALTRANS Standard Specifications Section 17.
- K. CAL-OSHA, Title 8, Section 1590 (e).
- L. Any work within the street, highway or right-of-way shall be performed in accordance with the requirement of the governmental agencies having jurisdiction, and shall not begin until all of those governing authorities have been notified.

**1.07 DELIVERY, STORAGE AND HANDLING**

- A. Transport, store and handle in strict accord with the local jurisdiction.
- B. Make delivery to job when notified by Contractor verifying that the job is ready to receive the work of this Section and that arrangements have been made to properly store, handle and protect such materials and work.

**1.08 PROJECT CONDITIONS**

- A. Existing civil, mechanical and electrical improvements are shown on respective site plans to the extent known. Should the Contractor encounter any deviation between actual conditions and those shown, he is to immediately notify the engineer before continuing work.

**1.09 EXISTING SITE CONDITIONS**

- A. Contractor shall acquaint himself with all site conditions. If unknown active utilities are encountered during work, notify Engineer promptly for instructions. Failure to notify will make Contractor liable for damage to these utilities arising from Contractor's operations subsequent to discovery of such unknown active utilities.

**1.10 ON SITE UTILITY VERIFICATION AND REPAIR PROCEDURES**

- A. Ground-breaking requirements:
  - 1. All underground work performed by a Contractor must be authorized by the District's Construction Manager or the Low Voltage Consultant prior to start of construction.
  - 2. The Contractor is to obtain and keep the original School's construction utility site plans on site during all excavation operations. Contractor can contact the District's Construction Manager, Facilities Manager, or the Low Voltage Consultant to procure the drawings.
- B. Underground Utility Locating:
  - 1. The contractor shall hire an Underground Utility Locating Service to locate existing underground utility pathways in areas effected by the scope of work for excavation.
  - 2. Contractor must use an underground utility locator service with a minimum of 3 years experience. The equipment operator must have demonstrated experience. Contact Norcal Underground Locating (800/986-6722) or B&B Locating (916/799-8904).
  - 3. The Underground Utility Locator Service must have the use of equipment with the ability to locate by means of inductive clamping, induction, inductive metal detection, conductive coupling, or TransOnde (Radiodetection) to generate signals, passive locating (free scoping) for "hot" electric, and metal detector.

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4. The Underground Utility Locator Service must be able to locate existing utilities at a depth of at least 72”.
5. The Underground Utility Locator Service must be able to locate but are not limited to locating the following types of utility pathways:
  - a) All conduit pathways containing 110 volt or greater 50-60Hz electrical wire.
  - b) All conduit pathways containing an active cable TV system.
  - c) All conduit pathways containing wire or conductor in which a signal can be attached and generated without damaging or triggering the existing systems.
  - d) All empty conduit pathways or pipe in which a signal probe or sonde (miniature transmitter) can be inserted.
  - e) All conduit pathways containing non-conductive cables or wires in which a signal probe or sonde (miniature transmitter) can be inserted.
  - f) All plastic and other nonconductive water lines in which a TransOnde Radiodetection) or other “transmitter” can be applied to create a low frequency pressure waive (signal) without damaging or triggering the existing systems.
  - g) All copper or steel waterlines and plastic or steel gas lines
6. All markings made by the Underground Utility Locator Service or other shall be clear and visible.
7. The contractor shall maintain all markings made by Underground Utility Locator Service or other throughout the entire length of the project.
8. The Underground Utility Locator Service shall provide the contractor with two sets of maps showing the location of utilities and average depth. They will be referenced to permanent buildings. Contractor will deliver one copy to the district at no additional charge.
9. Contractor is responsible to contact Underground Service Alert (U.S.A. 800/227-2600) and receive clearance prior to any excavation operations.
10. Contractor shall inform the District’s Construction Manger no later than five (5) days prior to the date scheduled for the utility locator service to be on site.

**1.11 PROTECTION**

- A. Adequate protection measures shall be provided to protect workmen and passers-by on and off the site. Adjacent property shall be fully protected throughout the operations. Blasting will not be permitted. Prevent damage to adjoining improvements and properties both above and below grade. Restore such improvements to original condition should damage occur. Replace trees and shrubs outside building area disturbed by operations.
- B. In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for working conditions at the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and shall not be limited to normal working hours.
- C. Any construction review of the Contractor's performance conducted by the Geotechnical Engineer is not intended to include review of the adequacy of the Contractor's safety measures, in, on, or near the construction site.

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- D. Provide shoring, sheeting, sheet piles and or bracing to prevent caving, erosion or gullyng of sides of excavation.
- E. Surface Drainage: Provide for surface drainage during period of construction in manner to avoid creating nuisance to adjacent areas. The contractor shall make a reasonable effort on a daily basis to keep all excavations and the site free from water during entire progress of work, regardless of cause, source, or nature of water.
- F. Adjacent streets and sidewalks shall be kept free of mud, dirt or similar nuisances resulting from earthwork operations.
- G. The site and adjacent influenced areas shall be watered as required to suppress dust nuisance. Dust control measures shall be in accordance with the local jurisdiction.
- H. Trees: Carefully protect existing trees that are to remain. Provide temporary irrigation as necessary to maintain health of trees.

**1.12 SEASONAL LIMITS**

- A. No fill material shall be placed, spread or rolled during unfavorable weather conditions. When work is interrupted by rains, fill operations shall not be resumed until field tests indicate that moisture content and density of fill are satisfactory.
- B. Excessively wet fill material shall be bladed and aerated per section 3.08, B.

**1.13 TESTING**

- A. General: Refer to Section 01400 – Quality Requirements.
- B. Geotechnical Engineer: Owner is retaining a Geotechnical Engineer to determine compliance of fill with Specifications, and to direct adjustments in fill operations. Costs of Geotechnical Engineer will be borne by Owner; except those costs incurred for re-tests or re-inspection will be paid by Owner and backcharged to Contractor.
  - 1. If Contractor elects to process or mine onsite materials for use as Suitable Fill, Aggregate Sub Base, Aggregate Base, Rock, Crushed Rock or sand the cost of all testing of this material shall be paid for by the Contractor.
  - 2. Testing of import fill for compliance with Department of Toxic Substance Control (DTSC) shall be paid for by the Contractor.

**PART 2 - PRODUCTS**

**2.01 MATERIALS**

- A. Engineered Fill Materials: All fill shall be of approved local materials supplemented by imported fill if necessary. "Approved" local materials are defined as local soils tested and approved by Geotechnical Engineer free from debris, and concentrations of clay and



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organics; and contain rocks no larger than 3-inches in greatest dimension. The soil and rock should be thoroughly blended so that all rock is surrounded by soil. This may require mixing of the soil and rock with a dozer prior to placement and compaction. Clods, rocks, hard lumps or cobbles exceeding 3-inches in final size shall not be allowed in the upper 12 inches of any fill.

- B. Landscape Backfill Material:
  - 1. The top 4" of native topsoil stripped from the site may be used for landscape backfill material.
- C. Water: Furnish all required water for construction purposes, including compaction and dust control. Water shall be potable.
- D. Aggregate Base: Provide Class 2 3/4" Aggregate Base conforming to standard gradation as specified in Cal Trans Standard Specifications, Section 26,-1.02A.

**PART 3 – EXECUTION**

**3.01 INSPECTION LAYOUT AND PREPARATION**

- A. Prior to installation of the work of this Section, carefully inspect and verify by field measurements that installed work of all other trades is complete to the point where this installation may properly commence
- B. Layout all work, establish grades, locate existing underground utilities, set markers and stakes, setup and maintain barricades and protection facilities; all prior to beginning actual earthwork operations. Layout and staking shall be done by a licensed Land Surveyor or Professional Civil Engineer.
- C. Verify that specified items may be installed in accordance with the approved design.
- D. In event of discrepancy, immediately notify Owner and the engineer. Do not proceed in discrepant areas until discrepancies have been fully resolved.

**3.02 PERFORMANCE**

- A. GENERAL:
  - 1. General: Do all grading, excavating and cutting necessary to conform finish grade and contours as shown. All cuts shall be made to true surface of subgrade.
  - 2. Archaeological Artifacts: Should any artifacts of possible historic interest be encountered during earthwork operations, halt all work in area of discovery and immediately contact the Architect for notification of appropriate authorities.
  - 3. Degree of Compaction: Percentage of maximum density, hereinafter specified as degree of compaction required, means density equivalent to that percentage of maximum dry density determined by ASTM D1557 Compaction Test method, and

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such expressed percentage thereof will be minimum acceptable compaction for specified work.

4. Optimum Moisture Content: Optimum moisture content will be determined by Soils Engineer and this information supplied to Contractor. Optimum moisture content shall be maintained until subgrade is covered by surfacing materials.

**3.03 DEMOLITION, DISPOSAL AND DISPOSITION OF UNDESIRABLE MAN-MADE FEATURES**

- A. All other obstructions, such as abandoned utility lines, septic tanks, concrete foundations, and the like shall be removed from site. Excavations resulting from these removal activities shall be cleaned of all loose materials, dish shaped, and widened as necessary to permit access for compaction equipment. Areas exposed by any required over-excavation should be scarified to a depth of 6", moisture-conditioned to 2% over optimum moisture content, and recompacted to at least 95% of the maximum dry density.

**3.04 TESTING AND OBSERVATION**

- A. All grading and earthwork operations shall be observed by the Geotechnical Engineer or his representative, serving as the representative of the Owner.
- B. Field compaction tests shall be made by the Geotechnical Engineer or his representative. If moisture content and/or compaction are not satisfactory, Contractor will be required to change equipment or procedure or both, as required to obtain specified moisture or compaction. Notify Geotechnical Engineer at least 48 hours in advance of any filling operation.
- C. Earthwork shall not be performed without the notification or approval of the Geotechnical Engineer or his representative. The Contractor shall notify the Geotechnical Engineer at least two (2) working days prior to commencement of any aspect of the site earthwork.
- D. If the Contractor should fail to meet the compaction or design requirements embodied in this document and on the applicable plans, he shall make the necessary readjustments until all work is deemed satisfactory, as determined by the Geotechnical Engineer or Engineer.
- E. After each rain event Geotechnical Engineer shall test fill material for optimum moisture. Do not place any fill material until desired moisture is achieved.

**3.05 CLEARING AND GRUBBING**

- A. Prior to grading, remove all debris off-site. Remove trees and brush including the root systems. Holes resulting from tree and brush removal should be prepared and backfilled in accordance with paragraphs 3.07, 3.08, 3.09, and 3.10. This may require deepening and/or widening the holes to adequately remove disturbed soil and provide room for compaction equipment. Strip the surface of all organics. Strippings meeting the requirements of Section 02900 may be used in landscape areas only.

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**3.06 CUTTING**

- A. Do all cutting necessary to bring finish grade to elevations shown on Drawings.
- B. When excavation through roots is necessary, cut roots by hand.
- C. Carefully excavate around existing utilities to avoid unnecessary damage. The contractor shall anticipate and perform hand work near existing utilities as shown on the survey, without additional claims or cost.

**3.07 SUBGRADE PREPARATION**

- A. Grade compact and finish all subgrades within a tolerance of 0.10' of grades as indicated on Drawings and so as not to pool water. Subgrade within concrete walks shall be within 0.05' of grades indicated.
- B. After clearing, grubbing and cutting, subsurface shall be plowed or scarified to a depth of at least 6", until surface is free from ruts, hummocks or other uneven features. Moisture condition to 2% above optimum moisture content and recompact to at least 95% of the maximum dry density as determined by ASTM Test Method D1557. If the existing soils are at a water content higher than specified, the contractor shall provide multiple daily aerations by ripping, blading, and/or discing to dry the soils to a moisture content where the specified degree of compaction can be achieved. After seven consecutive working days of daily aerations, and the moisture content of the soil remains higher than specified, the contractor shall notify the architect. If the existing soils have a moisture content lower than specified, the contractor shall scarify, rip, water and blade existing soil to achieve specified moisture content. The contractor shall make proper allowance in schedule and methods to complete this work.
- C. Subgrade in areas to receive landscaping shall be compacted to 90%.
- D. Where Contractor over-excavates building pads through error, resulting excavation shall be recompact as engineered fill at Contractor's expense.

**3.08 PLACING, SPREADING AND COMPACTING FILL MATERIAL IN PAVEMENT AREAS**

- A. Selected fill material shall be placed in layers which, when compacted, shall not exceed 6 inches in compacted thickness. Each layer shall be spread evenly and thoroughly mixed to insure uniformity in moisture content.
- B. Selected fill material shall be moisture-conditioned to specified moisture content. Selected fill material shall be unfrozen. When moisture content of fill material is below that specified, add water until proper moisture content is achieved. When moisture content is above that specified, aerate by blading or other methods mentioned in 3.08 B until moisture content is satisfactory.

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- C. After each layer has been placed, mixed and spread evenly, it shall be thoroughly compacted to a minimum of 95% as determined by the ASTM D1557 Compaction Test. Compact each layer over its entire area until desired density has been obtained.
- D. Recomposition of Fill in Trenches and Compaction of Fill Adjacent to Walls: Where trenches must be excavated, backfill with material excavated. Place in lifts that when compacted do not exceed 6", moisture conditioned to 2% above optimum moisture content, and compact to a minimum of 95% relative compaction in paved areas.
- E. Jetting of fill materials will not be allowed.

**3.09 FINAL SUBGRADE COMPACTION**

- A. Paved Areas: The upper 6 inches of final subgrade in asphalt and concrete paved areas shall be compacted to 95% relative compaction.
- B. Other Fill and Backfill: Upper 12" of all other final subgrades or finish grades shall be compacted to 90% of maximum dry density.

**3.10 PLACING, SPREADING, AND COMPACTION OF LANDSCAPE BACKFILL MATERIALS**

- A. All landscaped areas shall receive topsoil. After subgrade under landscape area has been scarified and brought to 90% maximum dry density, top soil shall be placed evenly to depth of 12" at 85% of maximum dry density.
- B. Project Inspector must verify that materials are uniformly spread to minimum depth specified.

**3.11 FINISH GRADING**

- A. At completion of project, site shall be finished graded, as indicated on Drawings. Finish grades shall be "flat graded" to grades shown on the drawing. Mounding of finish grades will not be allowed unless otherwise directed on the landscape drawings. Tolerances for finish grades in drainage swales shall be  $\pm 0.05'$ . Tie in new and existing finish grades. Leave all landscaped areas in finish condition for lawn seeding. Landscaped planters shall be graded uniformly from edge of planter to inlets. If sod is used for turf areas the finish grade on which it is placed shall be lowered to allow for sod thickness.

**3.12 SURPLUS MATERIAL**

- A. Excavated material not required for grading or backfill shall be removed from site at contractor's expense.

**3.13 CLEANING**

- A. Refer to Section 01700.
- B. Remove from fill all vegetation, wood, form lumber, casual lumber, and shavings, in

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contact with ground; buried wood will not be permitted in any fill.

END OF SECTION

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**PART 1 – GENERAL**

**1.01 INCLUSION OF OTHER CONTRACT DOCUMENTS**

- A. The general conditions, supplementary conditions and Division 1 are fully applicable to this section as if repeated herein.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Section 01500, Temporary Facilities and Controls
- B. Section 02200, Earthwork.
- C. Section 02400, Site Drainage.

**1.03 QUALITY ASSURANCE**

- A. Use only new materials and products, unless existing materials or products are specifically shown otherwise on the Drawings to be salvaged and re-used.
- B. All materials, components, assemblies, workmanship and installation are to be observed by the Owner's Inspector of Record. Work not so inspected is subject to uncovering and replacement.
- C. Contractor / Installer shall have been in business for five (5) years providing/finishing similar size projects and complexity.

**1.04 SUBMITTALS**

- A. Refer to Section 01330.
- B. Submit Manufacturers data and shop drawings.

**1.05 WARRANTY**

- A. Submit fully executed warranty for work and materials in this section per 017836.

**1.06 REFERENCES AND STANDARDS**

- A. California Building Code current edition.
- B. California Plumbing Code current edition.

**1.07 DELIVERY, STORAGE AND HANDLING**

- A. Transport, store and handle in strict accord with the local jurisdiction.

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- B. Make delivery to job when notified by Contractor verifying that the job is ready to receive the work of this Section and that arrangements have been made to properly store, handle and protect such materials and work.

### **1.08 PROJECT CONDITIONS**

- A. Contractor shall acquaint himself with all existing site conditions. If unknown active utilities are encountered during work, notify engineer promptly for instructions. Failure to notify will make Contractor liable for damage to these utilities arising from Contractor's operations subsequent to discovery of such unknown active utilities.
- B. Field verify that all components, backing, etc. by others are installed correctly to proceed with installation of products as herein specified.
- C. Trench dewatering may be necessary. Contractor shall provide any and all tools, equipment and labor necessary for trench dewatering no matter what the source. Dewatering shall be continuous until all site utilities are installed and backfilled.

### **1.09 PROTECTION**

- A. Adequate protection measures shall be provided to protect workers and passers-by on and off the site. Adjacent property shall be fully protected throughout the operations. Blasting will not be permitted. Prevent damage to adjoining improvements and properties both above and below grade. Restore such improvements to original condition should damage occur. Replace trees and shrubs outside building area disturbed by operations. Repair all trenches in grass areas with new sod (seeding not permitted) and "stake-off" for protection.
- B. Contractor shall be solely and completely responsible for working conditions at the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and shall not be limited to normal working hours.
- C. Any construction review of the Contractor's performance conducted by the engineer or Owner is not intended to include review of the adequacy of the Contractor's safety measures, in, on or near the construction site.
- D. Provide shoring, sheeting, sheet piles and or bracing to prevent caving, erosion or gulying of sides of excavation.
- E. Surface Drainage: Provide for surface drainage during period of construction in manner to avoid creating nuisance to adjacent areas. Keep all excavations free from water during entire progress of work, regardless of cause, source or nature of water.
- F. Adjacent streets and sidewalks shall be kept free of mud, dirt or similar nuisances resulting from earthwork operations.
- G. The site and adjacent influenced areas shall be watered as required to suppress dust nuisance.
- H. Trees: Carefully protect existing trees which are to remain.

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**1.10 TRENCH SAFETY PROVISIONS**

- A. General Contractor shall be solely responsible for safety design, construction and coordination with agencies having jurisdiction. If such plan varies from shoring system standards established by Construction Safety Orders, plan shall be prepared by registered civil or structural engineer.
- B. Nothing herein shall be deemed to allow use of shoring, sloping or protective system less effective than that required by Construction Safety Orders of California State Division of Industrial Safety.
- C. When trenching through paved surface, provide steel trench plates to cover open trenches daily until trenches are backfilled.

**1.11 SEASONAL LIMITS**

- A. No backfill material shall be placed, spread or rolled during unfavorable weather conditions. When work is interrupted by heavy rains, full operations shall not be resumed until field tests indicate that moisture content and density of fill are satisfactory.
- B. Material above optimum moisture shall be processed per section 310000, 3.08, B.

**1.12 TESTING**

- A. General: Refer to Section 01400 – Quality Requirements.

**PART 2 – PRODUCTS**

**2.01 MATERIALS**

- A. Backfill materials: Pipeline and conduit trench backfill as shown on the plans and as specified below.
  - 1. Native Materials: Soil native to Project Site, free of wood, organics, and other deleterious substances. Rocks shall not be greater than 3-inches.
  - 2. Class 2 aggregate base, ¾" rock, per Caltrans section 26-1.02B.
  - 3. Drain Rock: Clean, washed gravel 1" to 3" gradation.
- B. Water: Furnish all required water for construction purposes, including compaction and dust control. Water shall be potable.
- C. Provide other bedding and backfill materials as described and specified in Section 02400.
- D. Filter Fabric: Mirafi 140N or an approved equal.



## **TRENCHING AND BACKFILLING**

### **Section 02210**

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### **PART 3 – EXECUTION**

#### **3.01 INSPECTION**

- A. Verification of Conditions:
  - 1. Examine areas and conditions under which work is to be performed.
  - 2. Identify conditions detrimental to proper or timely completion of work and coordinate with General Contractor to rectify.

#### **3.02 COORDINATION**

- A. General Contractor shall coordinate work as herein specified, in accordance with drawings and as required to complete scope of work with all related trades.

#### **3.03 INSTALLATION**

- A. Perform work in accordance with pipe manufacturer's recommendations, as herein specified and in accordance with drawings.

#### **3.04 TRENCHING**

- A. Make all trenches open vertical construction with sufficient width to provide free working space at both sides of trench around installed item as required for caulking, joining, backfilling and compacting; not less than 12 inches wider than pipe or conduit diameter, unless otherwise noted.
- B. Carefully excavate around existing utilities to avoid unnecessary damage. The contractor shall anticipate and perform hand work near existing utilities as shown on the survey, without additional claims or cost.
- C. Trench straight and true to line and grade with bottom smooth and free of edges or rock points.
- D. Where depths are not shown on the plans, trench to sufficient depth to give minimum fill above top of installed item measured from finish grade above the utility as follows:
  - 1. Storm drain pipe: depth to vary

#### **3.05 BACKFILL**

- A. Pipe Trench Backfill is divided into three zones:
  - 1. Bedding: Layer of material directly under the pipe upon which the pipe is laid.
  - 2. Pipe Zone: Backfill from the top of the bedding to 6 inches (compacted) over the top of the pipe.
  - 3. Upper Zone: Backfill between top of Pipe Zone and to surface of subgrade.

## **TRENCHING AND BACKFILLING**

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- B. Bedding: Type of material and degree of compaction for bedding backfill shall be as defined in the Details and Specifications.
- C. Pipe Zone and Upper Zone Backfill:
1. Type of material and degree of compaction Pipe Zone and Upper Zone Backfill shall be as required by Drawings, Details, & Specifications.
  2. Upper Zone Backfill shall not be placed until conformance of Bedding and Pipe Zone Backfill with specified compaction test requirements has been confirmed.
  3. Backfill shall be brought up at substantially the same rate on both sides of the pipe and care shall be taken so that the pipe is not floated or displaced. Material shall not be dropped directly on pipe.
- D. Backfill Compaction:
1. Backfill shall be placed in layers which, when compacted shall not exceed 6 inches in thickness. Each layer shall be spread evenly and thoroughly mixed to insure uniformity. Do not backfill over, wet, frozen or soft subgrade surfaces. Employ a placement method that does not disturb or damage foundation walls, perimeter drainage, foundation damp-proofing, waterproofing or protective cover.
  2. When moisture content of fill material is below that required to achieve specified density, add water until proper moisture content is achieved. When moisture content is above that required, aerate by blading or other methods until specified moisture content is met, see section 02200, 3.08, B.
  3. After each layer has been placed, mixed and spread evenly, it shall be thoroughly compacted to 95% of maximum dry density while at specified moisture content. Compact each layer over its entire area until desired density has been obtained. The upper 12" of aggregate base backfill in trenches shall be compacted to 95%.
  4. Compaction: All backfill operations shall be observed by the Inspector of Record and/or Geotechnical Engineer. Field density tests shall be made to check compaction of fill material. If densities are not satisfactory, Contractor will be required to change equipment or procedure or both, as required to obtain specified densities. Notify Inspector and Architect at least 24 hours in advance of any operation.

### **3.06 TRENCH AND SITE RESTORATION**

- A. Finished surface of trenches shall be restored to a condition equal to, or better than the condition as existed prior to excavation work.

### **3.07 PROTECTION**

## **TRENCHING AND BACKFILLING**

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- A. Protect existing surfaces, structures, and utilities from damage. Protect work by others from damage. In the event of damage, immediately repair or replace to satisfaction of Owner.
- B. Repair existing landscaped areas to as new condition. Replant trees, shrubs or groundcover with existing materials if not damaged or with new materials if required. Replace damaged lawn areas with sod, no seeding will be permitted.
- C. Replace damaged pavement with new compatible matching materials. Concrete walks to be removed to nearest expansion joint and entire panel replaced. Asphalt to be cut neatly and replaced with new materials.
- D. Any existing materials removed or damaged due to trenching to be returned to new condition.

### **3.08 SURPLUS MATERIAL**

- A. Remove excess excavated material, unused materials, damaged or unsuitable materials from site.

### **3.09 CLEANING**

- A. Refer to Section 01710.
- B. Contractor will keep the work areas in a clean and safe condition so his rubbish, waste, and debris do not interfere with the work of others throughout the project and at the completion of work..
- C. After completion of work in this section, remove all equipment, materials, and debris. Leave entire area in a neat, clean, acceptable condition.

END OF SECTION

**EROSION CONTROL**  
**Section 02270**  
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**PART 1 - GENERAL**

**1.01 SCOPE OF WORK**

- A. General: Provide all materials, equipment and labor necessary to furnish and install straw wattles or silt fence barriers at locations shown on the Drawings.
- B. Storm Water Pollution Prevention Plan: A Storm Water Pollution Prevention Plan (SWPPP) will not be required.

**1.02 QUALITY ASSURANCE**

- A. General: Comply with governing codes and regulations.

**PART 2 - PRODUCTS**

**2.01 MATERIALS**

- A. Straw Wattles: Shall be new manufactured straw roles in compliance with state requirements for sediment control.
- B. Silt Fences: Shall be new manufactured silt fence in compliance with state requirements for sediment control.
- C. Filter Bag: Shall be as required.

**PART 3 - EXECUTION**

**3.01 INSTALLATION**

- A. Straw Wattles: Shall be installed per the drawings.
- B. Silt Fences: Shall be installed per the Drawings. Silt Fences shall not be used around inlets.
- C. Filter Bags: Shall be installed as required by manufactures requirements.

**3.02 MAINTENANCE AND REMOVAL:**

- A. General: Maintain and repair existing and new erosion control facilities throughout the construction period. Remove silt build up at straw wattles and/or silt fences as needed. Repair damage to earth slopes and banks. Erosion control measures shall be left in place until final paving and landscaping are complete.
- B. Monitoring: Provide monitoring of erosion control measures before and after storm events. Provide a daily log of construction activities and impact on erosion control measures.

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- C.     Cleaning: Keep area clean of debris.
- D.     Remove erosion control measures prior to placing finish landscaping.

END OF SECTION

**SITE DRAINAGE**  
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**PART 1 - GENERAL**

**1.01 INCLUSION OF OTHER CONTRACT DOCUMENTS**

- A. The General Conditions, Supplementary Conditions and Division 1 are fully applicable to this Section, as if repeated herein.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Section 01500, Temporary Facilities and Controls
- B. Section 02210, Trenching and Backfilling.
- C. Section 02513, Asphalt Concrete Paving..
- D. Section 03000, Site Concrete

**1.03 QUALITY ASSURANCE**

- A. Use only new materials and products, unless existing materials or products are specifically shown otherwise on the Drawings to be salvaged and re-used.
- B. All materials, components, assemblies, workmanship and installation are to be observed by the Owner's Inspector of Record. Work not so inspected is subject to uncovering and replacement.
- C. The representatives of the Owner's testing lab will not act as supervisor of construction, nor will they direct construction operations. Neither the presence of the Owner's testing lab representatives nor the testing by the Owner's testing lab shall excuse the contractors or subcontractors for defects discovered in their work during or following completion of the project. Correcting inadequate compaction is the sole responsibility of the contractor.
- D. Contractor shall be solely responsible for all subgrades built. Any repairs resulting from inadequate compaction is the responsibility of the contractor.

**1.04 SUBMITTALS**

- A. Refer to Section 01330.
- B. Manufacturer's Data: Submit list and complete descriptive data of all products proposed for use. Include manufacturer's specifications, published warranty or guarantee, installation instructions, and maintenance instructions.

**1.05 WARRANTY**

- A. Refer to General Conditions and Section 01785.

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**1.06 REFERENCES AND STANDARDS**

- A. ANSI/ASTM D698-00 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb (2.49 Kg) Rammer and 12 inch (304.8 mm) Drop.
- B. ANSI/ASTM D1556-00 - Test Method for Density of Soil in Place by the Sand-Cone Method.
- C. ANSI/ASTM D1557-02 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb. (4.54 Kg) Rammer and 18 inch (457 mm) Drop.
- D. ANSI/ASTM D 3017-05 Test Methods for Moisture Content of Soils and Soil-Aggregate Mixture by Nuclear Methods (Shallow Depth).
- E. ANSI/ASTM D 422-63 Test Method for Particle Size Analysis of Soil.
- F. ANSI/ASTM D 4318-05 Test Method for Liquid Limit, Plastic Limit, and Plasticity Limit.
- G. CALTRANS Standard Specifications.
- H. CAL-OSHA, Title 8, Section 1590 (e).
- I. Any work within the street, highway or right-of-way shall be performed in accordance with the requirement of the governmental agencies having jurisdiction, and shall not begin until all of those governing authorities have been notified.
- J. California Plumbing Code current edition.

**1.07 DELIVERY, STORAGE AND HANDLING**

- A. Transport, store and handle in strict accord with the local jurisdiction.
- B. Make delivery to job when notified by Contractor verifying that the job is ready to receive the work of this Section and that arrangements have been made to properly store, handle and protect such materials and work.

**1.08 PROJECT CONDITIONS**

- A. Existing civil, mechanical and electrical improvements are shown on respective site plans to the extent known. Should the Contractor encounter any deviation between actual conditions and those shown, he is to immediately notify the Architect before continuing work.

**1.09 EXISTING SITE CONDITIONS**

- A. Contractor shall acquaint himself with all site conditions. If unknown active utilities are encountered during work, notify Engineer promptly for instructions. Failure to notify will make Contractor liable for damage to these utilities arising from Contractor's operations

**SITE DRAINAGE**  
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subsequent to discovery of such unknown active utilities.

**1.10 PROTECTION**

- A. Adequate protection measures shall be provided to protect workmen and passers-by on and off the site. Adjacent property shall be fully protected throughout the operations. Blasting will not be permitted. Prevent damage to adjoining improvements and properties both above and below grade. Restore such improvements to original condition should damage occur. Replace trees and shrubs outside building area disturbed by operations.
- B. In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for working conditions at the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and shall not be limited to normal working hours.
- C. Any construction review of the Contractor's performance conducted by the Geotechnical Engineer is not intended to include review of the adequacy of the Contractor's safety measures, in, on, or near the construction site.
- D. Provide shoring, sheeting, sheet piles and/or bracing to prevent caving, erosion or gullyng of sides of excavation.
- E. Surface Drainage: Provide for surface drainage during period of construction in manner to avoid creating nuisance to adjacent areas. The contractor shall make a reasonable effort on a daily basis to provide pumps and all equipment necessary to keep all excavations and the site free from water during entire progress of work, regardless of cause, source, or nature of water.
- F. Adjacent streets and sidewalks shall be kept free of mud, dirt or similar nuisances resulting from earthwork operations.
- G. The site and adjacent influenced areas shall be watered as required to suppress dust nuisance. Dust control measures shall be in accordance with the local jurisdiction.
- H. Trees: Carefully protect existing trees that are to remain.

**1.11 SEASONAL LIMITS**

- A. No fill material shall be placed, spread or rolled during unfavorable weather conditions. When work is interrupted by rains, fill operations shall not be resumed until field tests indicate that moisture content and density of fill are satisfactory.

**1.12 TESTING**

- A. General: Refer to Section 01400 – Quality Control



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- B. Geotechnical Engineer: Owner is retaining a Geotechnical Engineer to determine compliance of fill with Specifications, and to direct adjustments in fill operations. Costs of Geotechnical Engineer will be borne by Owner; except those costs incurred for re-tests or re-inspection will be paid by Owner and backcharged to Contractor.

**1.13 RECORD DRAWINGS**

- A. Keep a daily record of all pipe placed in ground, verified by Project Inspector.
- B. Upon completion of this Contract, furnish one tracing showing all outside utility lines, piping, etc., installed under this Contract. Locate and dimension all work with reference to permanent landmarks.
- C. All symbols and designations used in preparing "RECORD" drawings shall match those used in Contract drawings.
- D. Properly identify all stubs for future connections, as to location and use, by setting of concrete marker at finished grade in the manner suitable to Architect.

**PART 2 - PRODUCTS**

**2.01 MATERIALS**

- A. Pipe: Use one of the following, unless noted on the Drawings otherwise.
  - 1. Polyvinyl Chloride Pipe (PVC): SDR35 conforming to ASTM D3034 with elastomeric joints conforming to ASTM D3212 for pipe to 12". Sun damaged pipe will be rejected.
  - 2. High density polyethylene pipe (HDPE): The pipe shall be corrugated exterior/smooth interior pipe. 12" to 60" maximum diameter shall conform to AASHTO M294, water tight per ASTM D3212 with water tight gasket fittings.
- B. Perforated Pipe: PVC ASTM D3034, two rows of perforations, 7/8" diameter, 6" O.C., 12" apart, lower half of pipe (perforations per ASTM D2729, standard).
- C. Drop Inlet: Shall be as shown on the drawing details.
- D. Mortar: For pipe connections to concrete drainage structures, conform to ASTM C270 type N mortar. Place within one half hour after adding water.
- E. Crushed Rock: For storm drain bedding and pipe zone material. Imported washed crushed rock. Minimum 100% passing 3/4 inch sieve.
- F. Clean-outs: Shall be as shown on the drawing details.
- G. Filter Fabric: Mirafi 140N.
- H. Sub Drain Gravel: Clean, washed gravel 1" to 3" gradation.

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**PART 3 - EXECUTION**

**3.01 INSPECTION LAYOUT AND PREPARATION**

- A. Prior to installation of the work of this Section, carefully inspect and verify by field measurements that installed work of all other trades is complete to the point where this installation may properly commence
- B. Layout all work, establish grades, locate existing underground utilities, set markers and stakes, setup and maintain barricades and protection facilities; all prior to beginning actual earthwork operations. Layout and staking shall be done by a licensed Land Surveyor or Professional Civil Engineer.
- C. Verify that specified items may be installed in accordance with the approved design.
- D. In event of discrepancy, immediately notify Owner and the Architect. Do not proceed in discrepant areas until discrepancies have been fully resolved.

**3.02 INSTALLATION**

- A. General: Installation shall be in strict conformance with referenced standards, the manufacturer's written directions, as shown on the drawings and as herein specified.
- B. Verify invert elevations at points of connection to existing systems prior to any excavation. If invert elevations differ from that shown on drawings, notify Architect immediately.
- C. Excavation and Bedding:
  - 1. General: Trench straight and true to line and grade with bottom smooth and free of irregularities or rock points. Trench width in accordance with pipe manufacturer's recommendations and as per the drawings. Follow manufacturer's recommendations for use of each kind and type of pipe.
  - 2. Bedding: Provide bedding as detailed on plans for the full length of the pipe. Bedding shall have a minimum thickness beneath the pipe of 4" or 1/8 the outside diameter of the pipe, whichever is greater. Provide bell holes and depressions for pipe joints only of size required to properly make joint.
- D. Laying of Pipe:
  - 1. General: Inspect pipe prior to placing. Set aside any defective or damaged material. Do not place pipe in water nor place pipe when trenches or weather are unsuitable. Lay pipe upgrade, true to line and grade.

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2. Bell and Spigot Joints: Lubricate inside of bells and outside of spigots with soap solution or as recommended by manufacture. Wedge joints tight. Bell of bell and spigot pipe to be pointed upgrade.
3. Pipe shall be bedded uniformly throughout its length.
4. Pipe elevation shall be within 0.02 feet of design elevation as shown on plans.
5. Off Site Work: All work beyond the property lines shall be done in strict conformance with the requirements of the governing agency.

E. Backfilling:

1. General: Do not start backfill operations until required testing has been accomplished.
2. Trenches and Excavations: Backfill with material as detailed on plans, filling both sides of the pipe at the same time, carefully tamping to hold pipe in place without movement. Refer to Section 02210 – TRENCHING AND BACKFILLING for fill above this layer.

F. Grouting of Pipes: Grout pipes smooth and water tight at drop inlet, manholes, and curb inlets. Grout back side of hood at curb inlets all grouting shall be smooth and consistent.

G. Off Site Work: All work beyond the property lines shall be done in strict conformance with the requirements of the local agency.

E. Cutting and Patching: Remove and replace existing surface features per applicable specification section (i.e. asphaltic concrete or concrete paving) where pipe is installed in areas of existing improvements.

**3.03 TOLERANCES**

A. Storm Drain structure grates

1. In landscape and lawn areas +- 0.05'.
2. In sidewalk and asphalt pavement +-0.025'.

B. Cleanout Boxes and Lids

1. In landscape areas; 0.10 higher than surrounding finish grade, +-0.05'.
2. In sidewalks and asphalt pavement; Flush with surrounding finish grade, +-0.025'.

**3.03 DEWATERING**

A. Contractor to provide trench dewatering as necessary, no matter what the source is, at no additional cost to the owner.

B. If the previously excavated material from trenching is too wet to achieve trench backfill compaction the contractor shall make a reasonable effort to aerate and dry the material per section 02200.

**3.04 FLUSHING**

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- A. The Contractor shall thoroughly ball and flush the storm drain system to remove all dirt and debris. Discharge water to an approved location.

**3.05 CLEANING**

- A. Refer to Section 01710.
- B. Upon completion of work of this Section promptly remove from the working area all scraps, debris and surplus material of this Section.
- C. Clean the dirt, rocks, and debris from the drop inlets and storm drain manholes.

END OF SECTION

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**PART 1 - GENERAL**

**1.01 INCLUSION OF OTHER CONTRACT DOCUMENTS**

- A. The General Conditions, Supplementary Conditions and Division 1 are fully applicable to this Section, as if repeated herein.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Section 01500: Temporary Facilities and Controls

**1.03 QUALITY ASSURANCE**

- A. Applicator Qualification: Company specializing in the application of seal coat with two (2) years documented experience.
- B. Reference and Standards:
  - 1. American Society for Testing and Materials (ASTM)
  - 2. State of California, Department of Transportation (Caltrans) - "Standard Specifications", (latest Edition.).

**1.04 SUBMITTALS**

- A. Refer to Section 01330.
- B. Manufacturer's Data: Submit list and complete descriptive data of all products proposed for use. Include manufacturer's specifications, rate of application, published warranty or guarantee, installation instructions, and maintenance instructions.

**1.05 WARRANTY**

- A. Refer to General Conditions and Section 01785.

**1.06 DELIVERY, STORAGE AND HANDLING**

- A. Transport, store and handle in strict accord with the local jurisdiction.
- B. Make delivery to job when notified by Contractor verifying that the job is ready to receive the work of this Section and that arrangements have been made to properly store, handle and protect such materials and work.

**1.07 PROJECT CONDITIONS**

- A. Do not apply seal coat during wet weather or when atmospheric temperature is below 50 degrees.

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**1.08 EXISTING SITE CONDITIONS**

- A. Contractor shall acquaint himself with all site conditions. If unknown conditions are encountered during work, notify Engineer promptly for instructions. Failure to notify will make Contractor liable for damage to these utilities arising from Contractor's operations subsequent to discovery of such unknown active utilities.

**PART 2 - PRODUCTS**

**2.01 MATERIALS**

- A. Seal Coat: shall be an asphalt emulsion blended with select fillers and fibers such as:
  - 1. "Park-Top No. "327", A Western Colloid Product.
  - 2. "Overcoat", Reed and Graham.
  - 3. "Park Top No. "302" with sand. (When Specifically called for in the drawings).
- B. Precast Concrete Bumpers: 3000 psi at 28 day minimum strength; 48" length unless otherwise indicated; provide with steel dowel anchors and concrete epoxy.
- C. Crack Fill:
  - 1. Cracks 1/8" – 1": "Docal 1100 Viscolastic, distributed by Conoco, Inc., Elk Grove, CA, (916) 685-9253, or an approved equal.
  - 2. Cracks greater than 1": "Topeka" Hot Mix.

**2.02 PAVEMENT MARKING PAINT**

- A. Approved Manufacturers: FS TTP-1952 B traffic paint.
- B. Colors: As directed by Engineer and California Building Code

**PART 3 - EXECUTION**

**3.01 INSPECTION**

- A. Examine areas to receive asphalt sealcoat and verify following:
  - 1. Absence of wet receiving surfaces or other conditions to adversely affect execution of his work.
  - 2. No foreseeable rain within 72 hrs. after application.
  - 3. Daytime temperatures of 50 degrees and rising.
- B. Do not start work until unsatisfactory conditions have been corrected and/or daytime temperatures are maintained above the minimum.

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**3.02 PAVEMENT SEALER (Seal Coat)**

- A. Surface Preparation: surface shall be clean of all dirt, sand, oil or grease. Broom, blow and hose down entire area with a strong jet of water to remove all debris, dirt and sand.
1. Remove soft, loose, or otherwise damaged areas of asphalt concrete to full depth of damage and replace with compacted hot mix asphalt concrete as specified herein.
    - a. Minor holes and imperfections may be patched using hot mix asphalt or a mastic consisting of sand and SS-1-H.
  2. Use wire brush or pressure washer for removal of oil, grease or diesel damaged asphalt; prime with SS-1-H, and place a Topeka mix filler, or, as recommended by manufacturer of pavement sealer material.
  3. Fill all cracks with a mastic filler up to a level condition. Provide multiple fills on deeper cracks so the cured product is level. Any shrinkage within the cracks will be refilled until it cures level.
- B. Seal Coat Application: Thoroughly mix water with raw materials and apply in accordance with the following,
1. No more than 15% by volume of water can be added to the sealcoat raw mix.
  2. The water shall be added onsite to the raw mix in the presence of the project inspector.
    - a. Any deviation from this procedure will be cause for rejection and re-application at the contractor expense with no additional cost to the owner.
    - b. The contractor shall supply a measuring devise to accurately measure the added water and be verifiable by the project inspector.
  3. The contractor shall place 2 coats of seal coat.
    - a. The first coat shall be applied at a rate of 25 gals per 1000 sq. ft.
    - b. The second coat shall be applied at a rate of 15 gals. per 1000 sq. ft.
    - c. Both applications shall be applied in the presence of the project inspector. Failure to do so will be reason for rejection and reapplication by the contractor at his expense with no extra cost to the owner.
    - d. The second coat of sealcoat shall not be applied until the first coat is thoroughly dried.

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- e. Keep vehicles off the fresh coated surface for a minimum of 24 hrs. or longer in cooler climates.
- C. Clean-Up and Precautions: As recommended by pavement sealer material manufacturer.
  - 1. Remove all utility box lids, including drop inlet grates and clean seal coat from edges of lids so future removal is possible

### **3.03 PAVMENT MARKING**

- A. Painted pavement markings shall be done only after the seal coat has thoroughly dried.
- B. Clean surfaces to be painted with traffic paint of dust, dirt, grime, oil, rust or other contaminants which will impair the quality of work or interfere with proper bond of paint coats. Surfaces shall be cleaned to the extent by whatever means necessary that will satisfactorily accomplish the purpose of cleaning the surface without damage to asphalt concrete.
- C. Provide measured layouts, temporary markings, templates, and other means necessary to provide required marking.
- D. Prepare and apply paint in accordance with manufacturer's instructions; paint shall be applied by spray and shall achieve complete coverage free from voids and thin spots.
  - 1. Each coat of paint shall be sprayed at a rate of 10-12 mils wet, 5-7 mils dry
  - 2. The first coat of paint shall thoroughly dry before the second coat is applied.
  - 3. Paint shall not be applied during any windy conditions or anticipated rain events.
- E. Where indicated on the Drawings, paint parking stall strips, lettering, arrows, accessible symbols, playfield markings, etc. on asphalt concrete paving. Paint stripes shall be 4 inches wide (except otherwise indicated) and applied with two (2) coats of herein specified Traffic Line Paint; white (except as otherwise specified or indicated on the drawings).
  - 1. International Accessible Symbol: Symbol shall be white figures on a blue background. Blue shall be equal to color No. 15080 in Fed. Std. 595a.
- F. Lines and symbols shall be accurately formed and true to line and form; lines shall be straight and uniform in width.
- G. Painted edges shall be clean cut and free from raggedness, and corners shall be cut sharp and square.
- H. Tolerances: Apply striping within a tolerance of 1/2 inch in 50 feet. Apply markings and striping to widths indicated with a tolerance of 1/4 inch on straight sections and 1/2 inch



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on curved sections.

**3.04 PROTECTION**

- A. Provide barricades, warning signs and devices as required to protect sealcoat and Striping during application and drying period.

**3.05 DEFECTIVE SEALCOAT**

- A. The following description of sealcoat is considered defective and shall be corrected per the Engineers instructions.
  - 1. Sealcoat that's peeling, scaling, or blistering
  - 2. Sealcoat diluted greater than 15% the maximum dilution rate.
  - 3. Sealcoat that doesn't fill all of the crevasses within the asphalt up to a level and smooth surface.
  - 4. Sealcoat that lacks the minimum coverage rate as directed in specifications
  - 5. Sealcoat applied over petroleum products such as diesel, oil, grease, etc.

**3.06 CLEANING**

- A. Refer to Section 01710.
- B. Upon completion of work of this Section promptly remove from the working area all scraps, debris and surplus material of this Section.
- C. Clean excess material from surface of all concrete walks and utility structures.
- D. Clean all striping overspray from the asphalt, if necessary use blackout paint for made for asphalt.

END OF SECTION

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**PART 1 - GENERAL**

**1.01 INCLUSION OF OTHER CONTRACT DOCUMENTS**

- A. The General Conditions, Supplementary Conditions and Division 1 are fully applicable to this Section, as if repeated herein.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Section 01500, Temporary Facilities and Controls
- B. Section 02200, Earthwork.
- C. Section 02210, Trenching and Backfilling.
- D. Section 02400, Site Drainage.

**1.03 QUALITY ASSURANCE**

- A. Use only new materials and products, unless existing materials or products are specifically shown otherwise on the Drawings to be salvaged and re-used.
- B. All materials, components, assemblies, workmanship and installation are to be observed by the Owner's Inspector of Record. Work not so inspected is subject to uncovering and replacement.
- C. The representatives of the Owner's testing lab will not act as supervisor of construction, nor will they direct construction operations. Neither the presence of the Owner's testing lab representatives nor the testing by the Owner's testing lab shall excuse the contractors or subcontractors for defects discovered in their work during or following completion of the project. Correcting inadequate compaction is the sole responsibility of the contractor.
- D. Contractor shall provide verification that asphalt mix temperature meets the requirements of this specification at time of application.
- E. Contractor shall be solely responsible for all subgrades built. Any repairs resulting from inadequate compaction is the responsibility of the contractor.
- F. Sieve analysis from testing laboratories identifying rock/sand percentages within the asphalt mix shall have a testing date within 90 days of contract signing.
- G. Sieve analysis from a testing laboratory identifying rock/sand percentages within the class 2 aggregate base rock shall have a testing date within 90 days of contract signing.

**1.04 SUBMITTALS**

- A. Refer to Section 01330.

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- B. Manufacturer's Data: Submit list and complete descriptive data of all products proposed for use. Include manufacturer's specifications, published warranty or guarantee, installation instructions, and maintenance instructions.

### **1.05 WARRANTY**

- A. Refer to General Conditions and Section 01785.

### **1.06 REFERENCES AND STANDARDS**

- A. ANSI/ASTM D698-00 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb (2.49 Kg) Rammer and 12 inch (304.8 mm) Drop.
- B. ANSI/ASTM D1556-00 - Test Method for Density of Soil in Place by the Sand-Cone Method.
- C. ANSI/ASTM D1557-02 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb. (4.54 Kg) Rammer and 18 inch (457 mm) Drop.
- D. ANSI/ASTM D 3017-05 Test Methods for Moisture Content of Soils and Soil-Aggregate Mixture by Nuclear Methods (Shallow Depth).
- E. ANSI/ASTM D 422-63 Test Method for Particle Size Analysis of Soil.
- F. ANSI/ASTM D 4318-05 Test Method for Liquid Limit, Plastic Limit, and Plasticity Limit.
- G. CALTRANS Standard Specifications.
- H. CAL-OSHA, Title 8, Section 1590 (e).
- I. Any work within the street, highway or right-of-way shall be performed in accordance with the requirement of the governmental agencies having jurisdiction, and shall not begin until all of those governing authorities have been notified.

### **1.07 DELIVERY, STORAGE AND HANDLING**

- A. Transport, store and handle in strict accord with the local jurisdiction.
- B. Make delivery to job when notified by Contractor verifying that the job is ready to receive the work of this Section and that arrangements have been made to properly store, handle and protect such materials and work.

### **1.08 PROJECT CONDITIONS**

- A. Environmental Requirements:

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1. Base Course: Do not lay base course on muddy subgrade, during wet weather, or when atmospheric temperature is below 40 degrees F.
2. Asphalt Surfacing: Do not apply asphaltic surfacing on wet base, during wet weather, or when atmospheric temperature is below 50 degrees F.

**1.09 EXISTING SITE CONDITIONS**

- A. Contractor shall acquaint himself with all site conditions. If unknown active utilities are encountered during work, notify Architect promptly for instructions. Failure to notify will make Contractor liable for damage to these utilities arising from Contractor's operations subsequent to discovery of such unknown active utilities.

**1.10 PROTECTION**

- A. Adequate protection measures shall be provided to protect workmen and passers-by on and off the site. Adjacent property shall be fully protected throughout the operations. Blasting will not be permitted. Prevent damage to adjoining improvements and properties both above and below grade. Restore such improvements to original condition should damage occur. Replace trees and shrubs outside building area disturbed by operations.
- B. In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for working conditions at the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and shall not be limited to normal working hours.
- C. Any construction review of the Contractor's performance conducted by the owner's representative is not intended to include review of the adequacy of the Contractor's safety measures, in, on, or near the construction site.
- D. Surface Drainage: Provide for surface drainage during period of construction in manner to avoid creating nuisance to adjacent areas. The contractor shall make a reasonable effort on a daily basis to keep all excavations and the site free from water during entire progress of work, regardless of cause, source, or nature of water.
- E. Adjacent streets and sidewalks shall be kept free of mud, dirt or similar nuisances resulting from earthwork operations.
- F. The site and adjacent influenced areas shall be watered as required to suppress dust nuisance. Dust control measures shall be in accordance with the local jurisdiction.

**1.11 SEASONAL LIMITS**

- A. No fill material shall be placed, spread or rolled during unfavorable weather conditions. When work is interrupted by rains, fill operations shall not be resumed until field tests indicate that moisture content and density of fill are satisfactory.

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### **1.12 TESTING**

- A. General: Refer to Section 01400 – Quality Requirements.
  
- B. Geotechnical Engineer: Owner is retaining a Geotechnical Engineer to determine compliance of fill with Specifications, and to direct adjustments in fill operations. Costs of Geotechnical Engineer will be borne by Owner; except those costs incurred for re-tests or re-inspection will be paid by Owner and backcharged to Contractor.

## **PART 2 - PRODUCTS**

### **2.01 MATERIALS**

- A. Sterilant: Soil sterilizer shall be CIBA GEIGY's Pramitol 25-E, Treflan EC or Thompson-Hayward Casoron.
  - 1. Soil sterilizer shall be applied in strict accordance with manufacturer's instructions.
  
- B. Base Course Aggregate: State Specifications, Section 26, Class 2 aggregate base (3/4" max.).
  
- C. Asphalt Binder: Steam-refined paving asphalt conforming to State Specifications, Section 92, viscosity grade PG 64-10. Asphalt binder additives for WMA per Caltrans approved list of manufacturer's.
  
- D. Liquid Asphalt Tack Coat: Per CALTRANS section 94.
  
- E. Surface Course Aggregate: Mineral aggregates for Type "B" asphalt concrete, conforming to State Specifications 39-2.02, Type B, 1/2" maximum, medium grading. 3/8" maximum grading at Playcourt.
  
- F. Reclaimed Asphalt Paugment (RAP). HMA Type A or Type B may be produced using RAP providing it does not exceed 15% of the aggregate blend.

### **2.02 MIXES**

- A. General: Plant mixed conforming to State Specifications, Section 39, Type B, 1/2" maximum, medium grading. 3/8" maximum grading shall be used at hardcourt.
  
- B. Temperature of Hot Mix Asphalt: Not less than 275 degrees F nor more than 325 degrees F when added to aggregate.
  
- C. Temperature of Hot Mix Aggregate: Not less than 250 degrees F nor more than 325 degrees F when asphalt is added.
  
- D. Temperature of Hot Mix Asphalt Concrete: Asphalt shall be not less than 285 degrees at

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time of application, nor more than 350 degrees. Asphalt not meeting the required temperature shall not be used.

- E. Temperature of Warm Mix Asphalt: Mixing and placement; Per the approved manufactures heat range recommendations for mixing and placement.

**PART 3 - EXECUTION**

**3.01 EXAMINATION OF CONDITIONS**

- A. Conditions of Work in Place: Subsurfaces which are to receive materials specified under this Section shall be carefully examined before beginning work hereunder, and any defects therein shall be reported, in writing, to the Engineer. Work shall not be started until such defects have been corrected. Starting of work shall imply acceptance of conditions as they exist.

**3.02 PREPARATION**

- A. Sub-Grade: Clean, shape and compact to hard surface free from elevations or depressions exceeding 0.05' in 10' from true plan. Compact per Section 310000. Compaction and moisture content shall be verified immediately prior to placement of asphalt. Proof roll subbase in presence of geotechnical engineer prior to placement of aggregate base.

**3.03 INSTALLATION**

- A. Headers:
  - 1. General: Install as edging to asphalt paving, except where adjoining existing pavement, concrete curbs, walks or building.
  - 2. Existing Headers: Remove existing headers where new paving will join existing. Saw cut existing asphalt to provide clean edge.
  - 3. Lines and Levels: Install true to line and grade. Cut off tops of stakes 2-inches below top of header so they will not be visible on completion of job.
- B. Asphalt Paving:
  - 1. Base Course: Install in accord with State Specifications, Section 26. Compact to relative compaction of not less than 95%, ASTM D1557. The material shall be deposited on the subgrade in such a manner as to provide a uniform section of material within five percent tolerance of the predetermined required depth. Deposition will be by spreader box or bottom dump truck to prevent segregation of the material. The material so deposited on the subgrade shall have sufficient moisture which, in the opinion of the engineer is adequate to prevent excessive segregation. It shall then be immediately spread to its planned grade and cross section. Undue segregation of material, excessive drifting or spotting of material will not be permitted. If in the opinion of the site geotechnical engineer, the material is unsuitably segregated, it shall be removed or completely reworked to provide the

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- desired uniformity of the material.
2. Sterilant: Apply specified material at manufacturer's recommended rate. Applicator of sterilant material shall be responsible for determining location of all planter areas. Apply specified material over entire base course area just prior to application of asphalt. Follow manufacturer's printed directions.
  3. Liquid Asphalt Tack Coat: Apply as "tack coat" to all vertical surfaces of existing paving, curbs, walks, and construction joints in surfacing against which paving is to be placed.
  4. Asphalt Concrete Surface Course:
    - a. Comply with State Specifications, 39-6 except as modified below.
      - 1) Final gradation shall be smooth, uniform and free of ruts, humps, depressions or irregularities, with a minimum density of 95% of the test maximum density determined by California Test Methods #304 and 375. Maximum variation 1/8 inch in 10' when measured with steel straightedge in any one direction. Test paved areas for proper drainage by applying water to cover area. Correct portions that do not drain properly by patching with plant mix. In no case shall accessible parking spaces or loading and unloading areas exceed 2% slope in any direction.
      - 2) Asphalt material shall be delivered to the project site in a covered condition to maintain acceptable temperature. Onsite inspector shall verify temperature of asphalt upon truck arrival to the site.
  5. Placement and adjustment of Frames, Covers, Boxes and Grates: The Contractor shall set and adjust to finish grade all proposed and existing frames, covers, boxes, and grates of all manholes, drop inlets, drain boxes, valves, cleanouts, electrical boxes and other appurtenant structures prior to placement of asphaltic concrete.
  6. Water Testing: All paved areas shall be water tested, to check drainage, in the presence of the project inspector prior to placement of seal coat. The surface of asphalt paving shall not vary more than 1/8 inch above or below the grade established on the plans. If variations in grade are present, they will be corrected by overlaying paving and/or pavement removal and replacement as directed by the Architect.
  7. Patching: Cut existing paving square and plumb at all edges to be joined by new paving. In trenches; grind existing asphalt on each side of trench 3" wide x 1/2 the depth of the section. Apply tack coat to vertical surfaces before installing new work. Warp carefully to flush surface, with seal over joints, and feather edge. Sawcut, remove and patch existing paving where cutting is necessary for installation of piping or conduits under Divisions 2, 15 and 16.

### **3.04 DEFECTIVE ASPHALT**

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- A. Defective asphalt is as described below. The method of corrections shall be made by the project engineer following site inspection.
1. Exposed rock pockets on the finished surface that lack the # 8- #200 fines that is required per the sieve analysis.
  2. Asphalt that wasn't placed to the design grades.
  3. Asphalt that ponds water.
  4. Asphalt that was compacted below the minimum required temperature and is cracked.
  5. Asphalt that fails to meet the minimum compaction requirements.
  6. Asphalt that lacks the minimum thickness required per plan.
  7. New asphalt contaminated by a petroleum product, or spilled paint.
  8. Asphalt that has depressions, cracks, scored divots from dumpster wheels, heavy equipment use, heavy construction products,
  9. Asphalt placed on pumping, unstable sub-grades.

**3.05 CLEANING**

- A. Refer to Section 01710.
- B. Upon completion of work of this Section promptly remove from the working area all scraps, debris and surplus material of this Section.
- C. Clean excess material from surface of all concrete walks and utility structures.

END OF SECTION



**PART 1 - GENERAL**

**1.01 INCLUSION OF OTHER CONTRACT DOCUMENTS**

- A. The General Conditions, Supplementary Conditions and Division 1 are fully applicable to this Section, as if repeated herein.

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Section 02200, Earthwork.

**1.03 QUALITY ASSURANCE**

- A. Use only new materials and products.
- B. Use materials and products of one manufacturer whenever possible.
- C. All materials, components, assemblies, workmanship and installation are to be observed by the Owner's Inspector of Record. Work not so inspected is subject to uncovering and replacement.
- D. Sieve analysis from testing laboratories identifying rock/sand percentages within the concrete mix; or class 2 aggregate base shall have the current project name and project location identified on the report. Outdated analytical reports greater than 90 days old will not be accepted

**1.04 SUBMITTALS**

- A. Refer to Section 01330.
- B. Manufacturer's Data: Submit list and complete descriptive data of all products proposed for use. Include manufacturer's specifications, published warranty or guarantee, installation instructions, and maintenance instructions.
- C. Materials list: Submit to the Architect a complete list of all materials proposed to be used in this portion of the work. Submitted items should include but are not limited to sand, gravel, admixtures, surface treatments, coloring agents, sealers, fibers, cast-in-place accessories, forming and curing products and concrete mix designs.
- D. With concrete submittal, provide documented history of mix design performance.

**1.05 WARRANTY**

- A. Refer to General Conditions and Section 01785.

**1.06 REFERENCES AND STANDARDS**

- A. California Building Code, latest edition.

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- B. ACI Standards, ACI 211.1, ACI 318-05, ACI 302, IR-04, ACI 301-05, ACI 305R-99, ACI 306R-02, ACI 308-98.
- C. ASTM C-94, Specification for Ready-Mixed Concrete.
- D. Concrete Reinforcing Steel Institute (CRSI) Manual of Standard Practice (latest edition).
- E. ASTM – American Society for Testing and Materials.

**1.07 DELIVERY, STORAGE AND HANDLING**

- A. Deliver undamaged products to job in manufacturer's sealed containers and/or original bundles with tags and labels intact.
- B. Store materials in protected, dry conditions off of ground and in areas so as to not interfere with the progress of the work.
- C. Transport, store and handle in strict accord with the manufacturer's written recommendations.
- D. Make delivery to job when notified by Contractor verifying that the job is ready to receive the work of this Section and that arrangements have been made to properly store, handle and protect such materials and work.
- E. Store cement in weathertight building, permitting easy inspection and identification. Protect from dampness. Lumpy or stale cement will be rejected.
- F. Aggregates: Prevent excessive segregation, or contamination with other materials or other sizes of aggregate. Use only one supply source for each aggregate stock pile.

**1.08 TESTING**

- A. General: Refer to Section 01400 – Quality Requirements.
- B. Cement and Reinforcing shall be tested in accordance with CBC Section 1916A. Testing of reinforcing may be waived in accordance with Section 1916A.4 when approved by the Engineer and DSA.

**1.09 ADEQUACY AND INSPECTION**

- A. Design, erect, support, brace and maintain formwork and shoring to safely support all vertical and lateral loads that might be applied until such loads can be carried by concrete.
- B. Notify Inspector, Engineer and DSA at least 48 hours prior to placing of concrete.

**1.10 PROTECTION**

- A. Finish surfaces shall be protected at all times from concrete pour. Inspect forming against such work and establish tight leak-proof seal before concrete is poured. Finish work damaged, defaced or vandalized during the course of construction shall be replaced by

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contractor at contractor expense.

**1.11 FIELD MEASUREMENTS**

- A. Make and be responsible for all field dimensions necessary for proper fitting, slopes and completion of work. Report discrepancies to Engineer before proceeding.

**PART 2 - PRODUCTS**

**2.01 MATERIALS**

- A. Cement: Portland cement, ASTM C150, Type II, per ACI 318 Section 3.2.
- B. Concrete Aggregates: Normal weight aggregates shall conform to ASTM C33, except as modified by this section. Combined grading shall meet limits of ASTM C33. Lightweight aggregate shall conform to ASTM C330, suitably processed, washed and screened, and shall consist of durable particles without adherent coatings.
- C. Water: Clean and free from deleterious amounts of acids, alkalis, scale, or organic materials and per ACI 318 Section 3.4.
- D. Fly Ash: Western Fly Ash, conforming to ASTM C618 for Class N or Class F materials (Class C is not permitted). Not more than 15% (by mass) may be substituted for portland cement.
- E. Water Reducing Admixture: Admixture to improve placing, reduce water cement ratio, and ultimate shrinkage may be used. Provide WRDA 64 by Grace Construction Products or approved equal. Admixture shall conform to ASTM C494 and ACI 318 Section 3.6. Such admixture must receive prior approval by the Architect, Structural Engineer, and the Testing Lab, and shall be included in original design mix.
- F. Air-entraining Admixture: Daravair 1000 by Grace Construction Products or approved equal. Admixture must conform to ASTM C260 and CBC Section 1904 A.2.1.
- G. Surface Retarder (for exposed aggregate finishes): Rugasol-S by Sika Corporation or approved equal.
- H. Form Coating: Material which will leave no residue on concrete surface that will interfere with surface coating, as approved by the Engineer.
- I. Expansion Joint Material: Preformed 3/8" fiber material, full depth of concrete section, with bituminous binder manufactured for use as concrete expansion joint material, as accepted by the Architect.
- J. Reinforcement Bars: New billet steel deformed bars conforming to requirements of ASTM A615 or ASTM A706; Grade 60. Dowels for installation through expansion joints or construction joints to existing sidewalks or concrete features shall be smooth or shall be sleeved on one end for slippage.
- K. Reinforcing supports: Galvanized metal chairs or spacers or metal hangers, accurately

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placed 3'-0" O.C.E.W. Staggered and each support securely fastened to steel reinforcement in place. Bottom bars in footings may be supported with 3" concrete blocks with embedded wire ties. Concrete supports without wire ties will not be allowed anywhere.

- L. Truncated Domes: Vitrified Polymer Composite (VPC), Cast-In-Place Detectable/Tactile Warning Surface Tiles, "Armor-Tile" as manufactured by Engineered Plastics Inc., (800)682-2525, or accepted equal. Tiles shall be an epoxy polymer composition with an ultra violet stabilized coating employing aluminum oxide particles in the truncated domes. Color as selected by Architect from standard colors. The tile shall incorporate an in-line pattern measuring nominal 0.2" in height, 0.9" base diameter, and 0.45" top diameter, spaced at 2.35" on-center as measured on a grid and 2.35" as measured side by side. The field area shall consist of a non-slip surface with a minimum of 40 - 90° raised points 0.045" high, per square inch. Tiles shall comply with Americans with Disabilities Act and the California Code of Regulations (CCR) Title 24, Part 2, Chapter 11B. Install tiles as recommended by manufacturer.
- M. Curing Compound (for exterior slabs only): Burke Aqua Resin Cure by Burke By Edoco, 1100 Clear by W.R. Meadows or accepted equal. Water based membrane-forming concrete curing compound meeting ASTM C 309 and C1315.
- N. Concrete Bonding Agent: Weld-Crete by Larson Products Corp., Daraweld C by Grace Construction Products or accepted equal.
- O. Patching Mortar: Meadow-Crete GPS, one-component, trowel applied, polymer enhanced, shrinkage-compensated, fiber reinforced, cementitious repair mortar for horizontal, vertical and overhead applications as manufactured by W.R. Meadows or accepted equal.
- P. Non-shrink Grout: Masterflow 713 Plus by Master Builders or approved equal. Premixed non-metallic, no chlorides, non-staining and non-shrinking per CRD-C621, Corps of Engineers Specification and ASTM C 1107, Grades B and C.
- Q. Aggregate Base: Class 2 AB per Caltrans specification section 26-1.02A.
- R. Manhole Bases; It is permissible to use poured in place concrete for the manhole bases. Place concrete per drawing detail
- S. Drop Inlet Bases; It is permissible to use poured in place concrete for drop inlet bases. Place concrete per drawing detail.
- T. Pre- Formed plastic Expansion Joint; W.R. Meadows 3/8" "Snap Cap", Tex-Trude expansion joint cap, or an approved equal.

**2.02 CONCRETE DESIGN AND CLASS**

- A. Class "B": Concrete shall have 1" max. size aggregate, shall have 3000 psi min. at 28 day strength with a maximum water to cementitious ratio of 0.50. Use for exterior slabs, including walks, vehicular paved surfaces, manhole bases, poured-in-place drop inlets, curbs, valley gutters, curb & gutter and other concrete of like nature.
- B. Slump Limits: Provide concrete, at point of final discharge, of proper consistency determined by Test Method ASTM C143 with a slumps of 4" plus or minus 1".

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- C. Mix Design: All concrete used in this work will be designed for strength in accordance with provisions of CBC, Section 1905A.3. Should the Contractor desire to pump concrete, a modified mix design will need to be submitted for review. Fly ash may be used in concrete to improve workability in amounts up to 15% of the total cementitious weight.
- D. Air Entrainment; 3%.

**2.03 MIXING OF CONCRETE**

- A. Conform to requirements of CBC, Chapter 19A.
- B. All concrete shall be mixed until there is uniform distribution of material and mass is uniform and homogenous; mixer must be discharged completely before the mixer is recharged.
- C. Concrete shall be Ready-mixed Concrete: Mix and deliver in accordance with the requirements set forth in ASTM C94 and ACI 301. Batch Plant inspection may be waived in accordance with CBC Section 1704A.4A, when approved by Structural Engineer and DSA.
  - 1. Approved Testing Laboratory shall check the first batching at the start of the work and furnish mix proportions to the Licensed Weighmaster.
  - 2. Licensed Weighmaster to positively identify materials as to quantity and to certify to each load by ticket.
  - 3. Ticket shall be transmitted to Project Inspector by truck driver with load identified thereon. Project Inspector will not accept load without load ticket identifying mix and will keep daily record of pours, identifying each truck, its load and time of receipt and will transmit two copies of record to DSA.
  - 4. At end of project, Weighmaster shall furnish affidavit to DSA on form satisfactory to DSA, certifying that all concrete furnished conforms in every particular and to proportions established by mix designs.
  - 5. Placement of concrete shall occur as rapidly as possible after batching and in a manner which will assure that the required quality of the concrete is maintained. In no case may concrete be placed more than 90 minutes from batch time.
  - 6. Water may be added to the mix only if neither the maximum permissible water-cement ratio nor the maximum slump is exceeded. In no case shall more than 10 gallons of water shall be added to a full 9 yard load, or 1 gal. per yard on remaining concrete within the drum providing load tag indicates at time of mixing at plant will allow for additional water.

**2.04 MATERIALS TESTING**

- A. Materials testing of concrete and continuous batch plant inspection may be waived in accordance CBC Sections 1704A.4.4 when approved by Engineer and DSA.
- B. Testing of concrete shall be performed per article 3.07 of this specification.

**2.05 EQUIPMENT**

- A. Handling and mixing of concrete: Project Inspector may order removal of any equipment which in his opinion is insufficient or in any way unsuitable.

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**PART 3 - EXECUTION**

**3.01 APPROVAL OF FORMS AND REINFORCEMENTS**

- A. Forms and reinforcements are subject to approval by the Project Inspector, and notice of readiness to place first pour shall be given to DSA, inspector and engineer 48 hours prior to placement of concrete. Before placing concrete, clean tools, equipment and remove all debris from areas to receive concrete. Clean all reinforcing and other embedded items off all coatings oil, and mud that may impair bond with concrete.
- B. All reinforcing steel shall be adequately supported by approved devices on centers close enough to prevent any sagging.
- C. All reinforcing bar lap splices shall be staggered a minimum of 5 ft.
- E. Additional reinforcing steel shall be placed around all utility boxes, valve boxes, manhole frames and covers that are located within the concrete placements.
  - 1. The bars shall be placed so that there will be a minimum of 1 ½" clearance and a maximum of 3" clearance. The reinforcing steel shall be placed mid-depth of concrete slab.
- F. At all right angles or intersections of concrete walks, additional 2'x2' #5, 90 degree bars shall be added at all inside corners for additional crack control. The bars shall be placed 2" from concrete forms and supports at mid-depth of slab.

**3.02 PROTECTION**

- A. Protect work and materials of this Section prior to and during installation, and protect the installed work and materials of other trades.
- B. In the event of damage, make all repairs and replacements necessary to the approval of the Engineer at no additional cost to the Owner.

**3.03 CLEANING**

- A. Reinforcement and all other embedded items at time of placing concrete to be free of rust, dirt oil or any other coatings that would impair bond to concrete.
- B. Remove all wood chips, sawdust, dirt, loose concrete and other debris just before concrete is to be poured. Use compressed air for inaccessible areas. Remove all standing water from excavations.

**3.04 FORMING**

- A. Form material shall be straight, true, sound and able to withstand deformation due to loading and effects of moist curing. Materials which have warped or delaminated, or require more than minor patching of contact surfaces, shall not be reused.
- B. Build forms to shapes, lines, grades and dimensions indicated. Construct form work to maintain tolerances required by ACI 301. Forms shall be substantial, tight to prevent

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leakage of concrete, and properly braced and tied together to maintain position and shape. Butt joints tightly and locate on solid backing. Chamfer corners where indicated. Form bevels, grooves and recesses to neat, straight lines. Construct forms for easy removal without hammering, wedging or prying against concrete.

- C. Space clamps, ties, hangers and other form accessories so that working capacities are not exceeded by loads imposed from concrete or concreting operations.
- D. Build openings into vertical forms at regular intervals if necessary to facilitate concrete placement, and at bottoms of forms to permit cleaning and inspection.
- E. Build in securely braced temporary bulkheads, keyed as required, at planned locations of construction joints.
- F. Slope tie-wires downward to outside of wall.
- G. Brace, anchor and support all cast-in items to prevent displacement or distortion.
- H. During and immediately after concrete placing, tighten forms, posts and shores. Readjust to maintain grades, levels and camber.
- I. Slabs, Walks:
  - 1. Expansion Joints: Install at locations indicated, and so that maximum distance between joints is 20' for exterior concrete unless otherwise shown. Expansion joint material shall be full depth of concrete section. Recess for backer rod and sealant where required.
  - 2. Isolation Joints: Install #30 roofing felt between walls and exterior slabs or walks so that paved areas are isolated from all vertical features, except where expansion joints are specifically indicated.
  - 3. Exterior Slabs and Walks: Install expansion joints at 20' o.c. maximum, both directions, unless shown otherwise on plans.

**3.05 FORM COATING**

- A. Before placement of reinforcing steel, coat faces of all forms to prevent absorption of moisture from concrete and to facilitate removal of forms. Apply specified material in conformance with manufacturer's written directions.
- B. Before re-using form material, inspect, clean thoroughly and recoat.
- C. Seal all cut edges.

**3.06 INSTALLATION**

- A. General: Reinforcement shall be accurately placed at locations indicated on the drawings within required tolerances and providing required clearances. Reinforcement shall be secured prior to placement of concrete such that tolerances and clearances are maintained. Coverage shall be in accordance with Section 1907A.7 of the CBC. Keep a person on the job to maintain position of reinforcing as concrete is placed. Reinforcement must be in place before concreting is begun. Install dowels as shown on drawings. Give notice

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whenever pipes, conduits, sleeves, and other construction interferes with placement; obtain method of procedure to resolve interferences. All expansion and construction joints in concrete shall have dowels of size and spacing as shown, or as approved by Engineer.

B. Placing Tolerances:

1. Per ACI 301 or CRSI/WCRSI Recommended Practice for Placing Reinforcing Bars, unless otherwise shown.
2. Clear distance between parallel bars in a layer shall be no less than 1", the maximum bar diameter not 1 ½ times the maximum size of coarse aggregate.

C. Splices:

1. General: Unless otherwise shown on drawings, splice top reinforcing at midspan between supports, splice bottom reinforcing at supports and stagger splices at adjacent splices 5 foot minimum. Bar laps shall be wired together. Reinforcing steel laps shall be as follows:
  - a. Lap splices in concrete: No. 3 bar shall have a minimum of 24" splice.
  - b. All splices shall be staggered at 5 feet minimum.

**3.07 INSPECTION**

- A. Approval of reinforcing steel, after installation, must be received from Inspector. Engineer and DSA must be notified 48 hrs. in advance of beginning of concrete placement operations.

**3.08 PLACING OF CONCRETE**

- A. Adjacent finish surfaces shall be protected at all times during the concrete pour and finishing. Verify that all formwork is tight and leak-proof before concrete is poured. Finish work defaced during the concrete pour and finishing shall be replaced at no extra cost to the owner.
- B. Transport concrete from mixer to place of final deposit as rapidly as practicable by methods which will prevent separation or loss of ingredients. Deposit as close as practicable in final position to avoid re-handling or flowing. Partially hardened concrete must not be deposited in work. **Concrete shall not be wheeled directly on top of reinforcing steel.**
- C. Placing: Once started, continue concrete pour continuously until section is complete between predetermined construction joints. Prevent splashing of concrete onto adjacent forms or reinforcement and remove such accumulation of hardened or partially hardened concrete from forms or reinforcement before work proceeds in that area. **Free fall of concrete shall not to exceed 4'-0" in height.** If necessary, provide lower openings in forms to inject concrete and to reduce fall height.
- D. Remove form spreaders as placing of concrete progresses.
- E. Place footings as monolithic and in one continuous pour.
- F. Keep excavations free of standing water, but moisture condition sub-grade before concrete placement.



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- G. Compacting: All concrete shall be compacted by mechanical vibrators. Concrete shall be thoroughly worked around reinforcement and embedded fixtures and into corners of forms. Vibrating shall not be applied to concrete which has already begun to initially set nor shall it be continued so long as to cause segregation of materials.
- H. Concrete Flatwork:
  - 1. All flatwork shall be formed and finished to required line and grades. Flatwork shall be true and flat with a maximum tolerance of 1/8" in 10' for flatness. Flatwork which is not flat and are outside of the maximum specified tolerances shall be made level by the Contractor at no additional expense to the Owner.
- I. Placing in hot weather: Comply with ACI 305R-91. Concrete shall not exceed 85 degrees F at time of placement. Concrete shall be delivered, placed and finished in a sufficiently short period of time to avoid surface dry checking. Concrete shall be kept wet continuously after tempering until implementation of curing compound procedure in accordance with this specification.
- J. Placing in cold weather: Comply with ACI 306R-02. Protect from frost or freezing. No antifreeze admixtures are permitted. When deposited concrete during freezing or near-freezing weather, mix shall have temperature of at least 50 degrees F but not more than 90 degrees F. Concrete shall be maintained at temperature of at least 50 degrees F for not less than 72 hours after placing or until it has thoroughly hardened. Provide necessary thermal coverings for any flat work exposed to freezing temperatures.
- K. Horizontal construction joint: Keep exposed concrete face of construction joints continuously moist from time of initial set until placing of concrete; thoroughly clean contact surface by chipping entire surface not earlier than 5 days after initial pour to expose clean hard aggregate solidly embedded, or by approved method that will assure equal bond, such as green cutting. If contact surface becomes contaminated with soil, sawdust or other foreign matter, clean entire surface and re-chip entire surface to assure proper adhesion.

**3.09 CONCRETE FINISHES**

- A. Concrete Slab Finishing: Finish slab as required by ACI 302.1R. Use manual screeds, vibrating screeds to place concrete level and smooth. Use "jitterbugs" or other special tools designed for the purpose of forcing the coarse aggregate below the surface leaving a thick layer of mortar 1 inch in thickness. After tamping the concrete, wood float surface to a true and even plane. After floating with a wood bull float, make 2 passes with a steel Fresno trowel to start sealing the concrete surface. While concrete is still wet but sufficiently hardened to bear a persons weight on knee boards, start troweling with a steel hand trowel or a machine trowel in larger areas. Use sufficient pressure to bring moisture to surface. After surface moisture has disappeared, finish concrete utilizing steel, hand or power trowel. Surface shall be free from trowel marks, depressions, ridges or other blemishes. Tolerance for flatness shall be 1/8" in 10'. Provide final finish as follows:
  - 1. Flatwork, medium broom finish: Typical finish to be used at all exterior walks, stairs and ramps. Brooming direction shall run perpendicular to slope to form non-slip surface.
  - 2. Under no circumstances can water be added to the top surface of freshly placed

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concrete.

- B. Curb Finishing: Steel trowel.
- C. Joints and Edges: Mark-off exposed joints, where indicated, with ¼" radius x 1" deep jointer or edging tool. Joints to be clean, cut straight, parallel or square with respect to concrete walk edge. Tool all edges of exposed expansion and contraction joints, walk edges, and wherever concrete walk adjoins other material or vertical surfaces.
  - 1. The contraction joints shall be full depth as shown in the plan details. Failure to do so will result in non-compliance and shall be immediately machine cut by the contractor at his expense.
  - 2. Any cracking in curbs, curb and gutters, steps, ramps, or any concrete flat work outside of the intended control joints shall be sawcut, removed and replaced at the contractor's expense with no compensation from the owner

**3.10 CURING**

- A. Cured Concrete in Forms: Keep forms and top on concrete between forms continuously wet until removal of forms, 7 days minimum. Maintain exposed concrete in a continuous wet condition for 14 days following removal of forms.
- B. Flatwork/Variable Height Curbs;Curbs and gutters, Valley Gutters: Cure utilizing Curing Compound. If applicable, the Contractor shall verify that the approved Curing Compound is compatible with the approved colorant system. Upon completion of job, wash clean per manufacturer's recommendations.
  - 1. Curing compound shall be applied in a wet puddling application. Spotty applications shall be reason for rejection and possibly concrete removal and replacement at the contractors expense with no compensation from the owner.
- C. No Curing Compound shall be applied to areas scheduled to receive resilient track surface including, curbs, ramps, run ways, etc.

**3.11 DEFECTIVE CONCRETE**

- A. Determination of defective concrete shall be made by the Engineer. His opinion shall be final in identifying areas to be replaced, repaired or patched.
- B. The Owner reserves the right to survey the flatwork, if it is determined to be outside of the maximum tolerance for flatness. If the flatwork is found to be out of tolerance, then the Contractor will be required to replace concrete. The Contractor will be responsible for reimbursing the Owner for any surveying costs incurred. Determination of flatwork flatness, surveying and any remedial work must be completed far enough in advance so that the project schedule is maintained, delays are avoided and the new flatwork or flatwork repairs are properly cured.
- C. As directed by Engineer, cut out and replace defective concrete. All defective concrete shall be removed from the site. No patching is to be done until surfaces have been examined by Architect and permission to begin patching has been provided.

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- D. Permission to patch any area shall not be considered waiver of right, by the Owner, to require removal of defective work, if patching does not, in opinion of Engineer, satisfactorily restore quality and appearance of surface.
- E. Defective concrete is:
1. Concrete that does not match the approved mix design for the given installation type.
  2. Concrete not meeting specified 28-day strength.
  3. Concrete which contains rock pockets, voids, spalls, transverse cracks, exposed reinforcing, or other such defects which adversely affect strength, durability or appearance.
  4. Concrete which is incorrectly formed, out of alignment or not plumb or level.
  5. Concrete containing embedded wood or debris.
  6. Concrete having large or excessive patched voids which were not completed under Architect's direction.
  7. Concrete not containing required embedded items.
  8. Excessive Shrinkage, Traverse cracking, Cracking, Curling; or Defective Finish. Remove and replace if repair to an acceptable condition is not feasible.
  9. Concrete that is unsuitable for placement or has set in truck drum for longer than 90 minutes from the time it was batched.
  10. Expansion joint felt that is not isolating the full depth of the concrete section, and recessed as required for backer rod and sealant where required.
  11. Concrete that is excessively wet or excessively dry and will not meet the minimum or maximum slump required per mix design.
  12. Finished concrete with oil stains from equipment use, and or rust spots that cannot be removed.
  13. Control joints (weakened planed joints) that do not meet the required minimum depth shown on the drawings.
- F. Patching: Install specified Patching Mortar per manufacturer's recommendations. REPAIRS TO DEFECTIVE CONCRETE WHICH AFFECT THE STRENGTH OF ANY STRUCTURAL CONCRETE MEMBER OR COMPONENT ARE SUBJECT TO APPROVAL BY THE ENGINEER AND DSA.

**3.12 CONCRETE TESTING**

- A. Comply with CBC Section 1903A, 1905A.3, 1916A and as specified in B. below. Costs of tests will be borne by the Owner.
- B. Four identical cylinder samples for strength tests of each class of concrete placed each day shall be taken not less than once a day, or not less than once for each 50 cubic yards of concrete, or not less than once for each 2,000 square feet of surface area for slabs or walls. In addition, samples for strength tests for each class of concrete shall be taken for seven-day tests at the beginning of the concrete work or whenever the mix or aggregate is changed.
- C. Strength tests will be conducted by the Testing Lab on one cylinder at seven (7) days and two cylinders at twenty-eight (28) days. The fourth remaining cylinder will be available for testing at fifty-six (56) days if the 28-day cylinder test results do not meet the required design strength.

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- D. On a given project, if the total volume of concrete is such that the frequency of testing required by paragraph B. above would provide less than five strength tests for a given class of concrete, tests shall be made from at least five randomly selected batches or from each batch if fewer than five batches are used.
- E. Cost of retests and coring due to low strength or defective concrete will be paid by Owner and back-charged to the Contractor.
- F. Each truck shall be tested for slump before concrete is placed.

**3.13 REMOVAL OF FORMS**

- A. Remove without damage to concrete surfaces.
- B. Sequence and timing of form removal shall insure complete safety of concrete structure.
- C. Forms shall remain in place for not less than the following periods of time. These periods represent cumulative number of days during which temperature of air in contact with concrete is 60 degrees F and above.
  - 1. Vertical forms of foundations, walls and all other forms not covered below: 5 days.
  - 2. Slab edge screeds or forms: 7 days.
  - 3. Concrete columns and beam soffits: 28 days.
- D. Concrete shall not be subjected to superimposed loads (structure or construction equipment) until it has attained its full design strength and not for a period of at least 21 days after placing. Concrete systems shall not be subjected to construction loads in excess of design loads.

**3.14 CLEANING**

- A. Refer to Section 01710.
- B. Upon completion of work of this Section promptly remove from the working area all scraps, debris and surplus material of this Section.
- C. Clean excess material from surface of all concrete walks and utility structures.
- D. Power wash all concrete surfaces to remove stains, dried mud, tire marks, and rust spots.

END OF SECTION