

PROJECT MANUAL

LIMITED DEMOLITION WORK at

STANLEY G. OSWALT ACADEMY

19501 Shadow Oak Drive
Walnut, California

for

ROWLAND UNIFIED SCHOOL DISTRICT

1830 S. Nogales Street
Rowland Heights, California 91748



January 24, 2020

Prepared By

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SECTION 01010
SUMMARY OF WORK

1.1 GENERAL

- A. Project Description: The Project consists of LIMITED DEMOLITION WORK AT OSWALT ACADEMY, in the Rowland Unified School District. The project is located at 19501 Shadow Oak Drive, Walnut, CA 91789. The project is described in the Contract Documents prepared by Z+P Architects.
- B. Description of Improvements: The Work consists of selective demolition of 12 relocatable Buildings and associated foundations, site utilities, landscape, irrigation, hardscape, & earthwork indicated in the plans & specifications as required to complete the project. The school will be operational during the period of construction.
- C. NOT USED
- D. NOT USED
- E. Base Bid: The Project consists of one Base Bid.
 - 1. Description of Base Bid:
 - a. Base Bid: This includes all work described in the project plans and specifications (complete).
- F. Basis of Award: The method to determine the lowest bid will be the lowest total of the base bid.
- G. Tentative Project Schedule: The project phasing and tentative project schedule is subject to change at the sole discretion of the Owner, and is as follows: Refer to Division 0 general conditions.
- H. Phase 0 (Prior to formal start of construction): This is an advance phase of work that will occur prior to the construction contract calendar. This phase of work includes administrative items only. No physical on-site construction activities or mobilization will be permitted. This phase of work includes field verification and measuring. The time shall be used for field measuring, submittal of shop drawings, samples, requests for information (RFIs), etc., to facilitate smooth operations in subsequent construction phases. The time will be used to help procure construction materials, particularly those with long lead times (21 consecutive calendar days).
- I. Work Beyond the Project Schedule: If the project is not completed within the contract schedule, the District may terminate the Contract. At District's sole discretion as an alternative, they may allow (or require) the Contractor to continue working toward completion of the project while assessing liquidated damages. It is possible that the District could take beneficial occupancy of all, or part of the facility prior to Substantial Completion.

1. Hours of Work: Some work may be required to take place after school hours and on weekends. Work on all days is governed by City ordinances. Work on school days may begin no earlier than 7:00 a.m., and will conclude by 4:00 pm the same day.
 2. No utility outages at any site (such as water, power or fire alarm system), may take place during school days. On weekends where utility interruptions are planned, the school and Construction Manager must be given three days prior written notification describing the work taking place, which utilities will be interrupted and the duration of the interruption.
- J. Owner's Use of Site and Premises: Owner reserves the right to occupy and to place and install equipment in completed areas of buildings and site, prior to Substantial Completion, provided that such occupancy does not interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.
- K. Contractor's Use of Site and Premises: Limit the use of the premises to construction activities, allow for Owner access.
1. Keep driveways and entrances clear at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize requirements for storage of materials.
 2. Keep all tools and building materials in places where they will not be accessible to unauthorized individuals or to vandals so as to not present a safety or security problem at the campus.
 3. Remove all debris, excess materials and demolished items from the site promptly so as not to cause safety or security problems.
- L. NOT USED
- M. Work Under Separate Contracts: The Work includes coordination of work being performed by others under separate contracts with Owner. Owner will award separate design and construction contracts concurrent with and after this Contract as determined by the Owner for work listed below and for other work as Owner may determine. Such work under separate contracts may be indicated on the Drawings and in the Specifications as "Not in Contract", "NIC", "Future" or "Under Separate Contract."
- N. NOT USED
- O. Contractors Staging and Storage Area: The District will designate construction staging. This area is intended to accommodate material storage, staging and preparation activities. It should also accommodate the contractor's construction trailer and other temporary facilities. Finally, it should contain parking areas for construction and employee vehicles as designated by the District.

The area must be completely fenced and secured with lockage access gates. Ingress and egress to the staging area shall be regulated for the safety of the students and site occupants. Contractors will not drive above the speed of five miles per hour on school grounds. If the site is occupied by students and staff (site is scheduled to have occupants moved to another location) in and out access may be limited to before and after school, and/or to periods when students are inside classroom spaces at the District's sole

discretion. If the staging area provided is not adequate for site based activities, the contractor will make arrangements for additional off-site storage, staging and parking areas as part of the bid pricing.

The temporary fencing shall remain on site until 06/05/2020.

At the completion of construction, the Contractor will demobilize and remove all fencing, temporary access drives and other temporary facilities.

The bid scope shall include full restoration of this area to its pre-construction condition, including turf repair with sod, plant replacement if needed and irrigation system repairs or replacement. Damaged A.C. paving shall be repaired to match existing paving thickness and base. Re-stripe and slurry contractor's storage and work area.

P. NOT USED

Q. NOT USED

R. Security: The Contractor will be completely responsible for safety and security at the project site. The Contractor will provide complete temporary perimeter security fencing (the existing fencing is acceptable) around the project work area throughout the entire project. Refer to Section 01500, Construction Facilities and Temporary Controls, for more information.

S. NOT USED

T. NOT USED

END OF SECTION

SECTION 01048

CONTRACTOR'S REQUESTS FOR INFORMATION

PART 1 - GENERAL

1.01 DESCRIPTION:

All other sections of Division 1 apply to this Section. This Section covers the general requirements for Contractor's Requests for Information and pertains to all portions of the contract documents.

- A. NOT USED

1.02 DEFINITION:

- A. Request for Information: A document submitted by the Contractor requesting clarification of a portion of the contract documents, hereinafter referred to as RFI.

1.03 CONTRACTOR'S REQUESTS FOR INFORMATION:

- A. When the Contractor is unable to determine from the contract documents, the exact material, process or system to be installed, the Architect shall be requested to make a clarification of the indeterminate item. Wherever possible, such clarification shall be requested at the next appropriate project meeting, with the response entered into the meeting minutes. When clarification at the meeting is not possible, either because of the urgency of the need or the complexity of the item, Contractor shall prepare and submit an RFI to the Architect.
- B. Contractor shall endeavor to keep the number of RFI's to a minimum. In the event that the process becomes unwieldy in the opinion of the Architect because of the number and frequency of RFI's submitted, the Architect may require the Contractor to abandon the process and submit all requests as either submittals, substitutions or requests for change.
- C. RFI's shall be submitted on a form provided by or approved by the Architect. Forms shall be completely filled in and if prepared by hand, shall be fully legible after copying by xerographic process. Each page of attachments to RFI's shall bear the RFI number in the lower right corner.
- D. RFI's from subcontractors or material suppliers shall be submitted through, reviewed by, and signed by the Contractor prior to submittal to the Architect.
- E. Contractor shall carefully study the contract documents to assure that the requested information is not available therein. RFI's which request information available in the contract documents will not be answered by the Architect.
- F. In all cases where RFI's are issued to request clarification of coordination issues for example, pipe and duct routing, clearances, specific locations of work shown

diagrammatically and similar items, the Contractor shall fully lay out a suggested solution using drawings or sketches drawn to scale, and submit same with the RFI. RFIs which fail to include a suggested solution will not be answered.

- G. RFIs shall not be used for the following purposes:
1. To request approval of submittals.
 2. To request approval of substitutions.
 3. To request changes which entail additional cost or credit.
 4. To request different methods of performing work than those drawn and specified.
- H. In the event the Contractor believes that a clarification by the Architect result in additional cost, Contractor shall not proceed with the work indicated by the RFI until a change order is prepared and approved. Answered RFIs shall not be construed as approval to perform extra work.
- I. Unanswered RFIs will be returned with a stamp or notification: Not Reviewed.
- J. Contractor shall prepare and maintain a log of RFIs and at any time requested by the Architect, Contractor shall furnish copies of the log showing all outstanding RFIs. Contractor shall note all unanswered RFIs in the log.
- K. Contractor shall allow for 3 days review and response time for RFIs.

PART 2 – PRODUCTS – Not applicable to this Section.

PART 3 – EXECUTION – Not applicable to this Section.

END OF SECTION

SECTION 01092

SPECIFICATION ABBREVIATIONS

PART 1 - GENERAL

1.01 DESCRIPTION:

This Section covers abbreviations for documents mentioned or referenced elsewhere in the contract documents, and language abbreviations used in the text of the Specifications. Abbreviations in drawings and specifications shall be interpreted according to recognized and well-known technical, industry or trade meanings.

1.02 ORGANIZATION NAME ABBREVIATIONS:

These abbreviations include but are not limited to the following:

AA	The Aluminum Association, Inc.
AABC	Associated Air Balance Council
AAIEE	American Institute of Electrical and Electronics Engineers
AAMA	American Architectural Manufacturers Association
AASHTO	American Association of State Highway and Traffic Officials
ACI	American Concrete Institute
ADA	Americans with Disabilities Act
ADAAG	Americans with Disabilities Act Accessibility Guidelines
AGA	American Gas Association
AGC	Associated General Contractors
AHA	American Hardwood Association
AI	Asphalt Institute
AIA	American Institute of Architects
AIMA	Acoustical and Insulating Materials Association
AISC	American Institute of Steel Construction, Inc.
AISI	American Iron and Steel Institute
AMCA	Air Moving and Conditioning Association, Inc.
ANSI	American National Standards Institute
APA	APA – The Engineered Wood Association
ARI	Air Conditioning and Refrigeration Institute
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASSE	American Society of Sanitary Engineers
ASTM	ASTM International (formerly American Society for Testing and Materials)
ATBCB	Architectural & Transportation Barriers Compliance Board
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
CBM	Certified Ballast Manufacturers
CCR	California Code of Regulations
CFPA	Certified Forest Products Council
CFR	Code of Federal Regulations
CLFMI	Chain Link Fence Manufacturers Institute

CISPI	Cast-Iron Soil Pipe Institute
CRA	California Redwood Association
CRI	Carpet and Rug Institute
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standard, US Department of Commerce
CSFM	California State Fire Marshal
CSI	Construction Specifications Institute
CTI	Cooling Tower Institute
CTIOA	Ceramic Tile Institute of America
DHI	Door and Hardware Institute
DOD	Department of Defense
DSA	Division of the State Architect, Office of Regulation Services
EIA	Electronic Industries Association
EPA	United States Environmental Protection Agency
ETL	Electrical Testing Laboratories
Fed Spec	Federal Specification or Standard
FIA	Factory Insurance Association
FM	Factory Mutual
FS	Federal Specifications
FSC	Forest Stewardship Council
GA	Gypsum Association
GANA	Glass Association of North America
HMMA	Hollow Metal Manufacturers Association
HPVA	Hardwood Plywood & Veneer Association
IAMPO	International Association of Plumbing and Mechanical Officials
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society
IGMA	Insulating Glass Manufacturers Association
IPCEA	Insulated Power Cable Engineers Association
ISAT	International Seismic Application Technology
ISO	International Organization for Standardization
MFMA	Maple Flooring Manufacturers Association
MIA	Masonry Institute of America
MLMA	Metal Lath Manufacturers Association
MLSFA	Metal Lath/Steel Framing Association
NAAMM	National Association of Architectural Metal Manufacturers
NBFU	National Board of Fire Underwriters
NBS	National Bureau of Standards
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFC	National Fire Code
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health

NIST	National Institute of Standards and Technology
NLMA	National Lumber Manufacturers Association
NPDES	National Pollutant Discharge Elimination System
NRCA	National Roofing Contractors Association
NSF	National Sanitation Foundation
NSWMA	National Solid Wastes Management Association
NUSIG	National Uniform Seismic Installation Guidelines
PCA	Portland Cement Association
PDI	Plumbing and Drainage Institute
PEI	Porcelain Enamel Institute
PS	Product Standard, US Department of Commerce
RIS	Redwood Inspection Service
SAE	Society of Automotive Engineers
SCAQMD	South Coast Air Quality Management District
SDEI	Steel Deck Institute
SDI	Steel Door Institute
SFM	State Fire Marshal
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SPR	Simplified Practice Recommendations, U.S. Dept. of Commerce
SSPC	Steel Structures Painting Council
SWI	Steel Window Institute
TCA	Tile Council of America
UBC	Uniform Building Code
UBPPA	Uni-Bell PVC Pipe Association
UFAS	Uniform Federal Accessibility Standards
UL	Underwriters' Laboratories, Inc.
WCLIB	West Coast Lumber Inspection Bureau
WDMA	Window and Door Manufacturers Association (formerly National Wood Window and Door Association)
WI	Woodwork Institute (formerly Woodwork Institute of California)
WWPA	Western Wood Products Association

1.03 TEXT ABBEVIATIONS:

Text abbreviations include but are not limited to the following:

ac	Alternating current
amp	ampere
BTU	British thermal unit
cfh	Cubic feet per hour
cfm	Cubic feet per minute
cm	Centimeter
Co.	Company
COP	Coefficient of performance
Corp.	Corporation
d	Penny

db.	Decibel
DB	Dry bulb
dc	Direct current
EER	Energy efficiency ratio
F	Degrees Fahrenheit
fpm	Feet per minute
ft	Foot or feet
gph	Gallons per hour
gpm	Gallons per minute
HP	Horsepower
HVAC	Heating, ventilating and air conditioning
Hz	Hertz
Inc.	Incorporated
KHz	Kilohertz
Kip	thousand pounds
Ksf	Thousand pounds per square foot
Ksi	Thousand pounds per square inch
Kv	Kilovolt
KVA	Kilovolt amperes
KW	Kilowatt
KWH	Kilowatt hour
LF	Linear foot
MPH	Miles per hour
lb	Pound
LED	Light emitting diode
MBH	1000 BTUs per hour
MHz	Mega hertz
mil	Thousandth of an inch
mm	Millimeter
mph	Miles per hour
oz.	Ounce
PCF	Pounds per cubic foot
pH	Acidity-alkalinity balance
psf	Pounds per square foot
psi	Pounds per square inch
psig	Pounds per square inch, gage
RF	Radio frequency
rpm	Revolutions per minute
SF	Square foot
SY	Square yard
V	Volt
WB	Wet bulb

PART 2 – PRODUCTS – Not applicable to this Section.

PART 3 – EXECUTION – Not applicable to this Section.

END OF SECTION

SECTION 01094

DEFINITIONS

PART 1 - GENERAL

1.01 DESCRIPTION:

This Section covers definitions supplementary to those given in the Conditions of the contract.

1.02 DEFINITIONS:

- A. District or Owner: The term "District" or "Owner" refers to ROWLAND UNIFIED SCHOOL DISTRICT, 1830 South Nogales Street, California 91748, or their authorized representative. The terms are used interchangeably.
- B. Architect: The term "Architect" refers to ZIEMBA + PRIETO ARCHITECTS, 601 South Glenoaks Boulevard, Suite 400, Burbank, CA 91502, or their authorized representative.
- C. References to Drawings: Words such as "shown", "indicated", "detailed", "scheduled", "noted", and words of similar meaning shall mean that reference is made to the information on the drawings unless stated otherwise.
- D. Actions of Architect: Such words as "directed", "designated", "selected", and words of similar meaning shall mean the direction, designation, selection, or similar action of the Architect is intended unless stated otherwise.
- E. Required: The word "required" and words of similar meaning shall mean "as required to complete the Work" and "required by the Architect", as is applicable to the context of the place where used, unless stated otherwise.
- F. Perform: The word "perform" shall mean that Contractor, at Contractor's expense, shall perform all the operations necessary to complete the Work or the mentioned portions of the Work, including furnishing and installing materials as are indicated, specified or required to complete such performance.
- G. Provide: The word "provide" shall mean that Contractor, at Contractor's expense, shall furnish and install the Work and mentioned portion of the Work, complete in place and ready for the intended use. These definitions apply the same to future, present and past tenses except "provided" may mean "contingent upon" where such is the context.
- H. Equal: Words such as "equal", "approved equal", "equivalent", and terms of similar meaning shall be understood to be followed by the phrase "in opinion of the Architect" unless stated otherwise.
- I. Approval: The words "approved", "approval", "acceptable", "acceptance" and other words of similar meaning shall mean that approval or acceptance of Architect, or similar meaning, is intended unless stated otherwise.

- J. Review: The word “review” and words of similar meaning shall mean the review and observation of the Architect is intended unless stated otherwise.
- K. Submit: The words “submit”, “submittal”, “submission”, and other terms of similar meaning shall include the meaning of the phrase “submit to the Architect for approval” unless otherwise stated.
- L. Expense: Such phrases as “at Contractor’s expense”, “at no extra cost to Owner”, “at no additional contract cost”, “with no extra compensation to Contractor”, or phrases of similar meaning shall mean that Contractor shall perform or provide the operation of work without increase in the contract price.
- M. Fees and Charges: District reimburses contractor for utility fees charged by jurisdictional agencies. DSA fees are paid by District. Contractor is required to pay for all licenses and similar requirements that he must have in effect in order for him to accomplish his work.
- N. Language: Specifications are written in a modified brief style consistent with clarity. Words and phrases requiring an action or performance, such as “perform”, “provide”, “erect”, “install”, “furnish”, “connect”, “test”, “coordinate”, and words and phrases of similar meaning, shall be understood to be preceded by the phrase “The Contractor shall” unless otherwise stated. Requirements indicated and specified apply to all work of the same kind, class and type, even if the word “all” is not stated. The use of the singular number implies the plural, if more than one of an item or unit is required; likewise the use of the plural number implies the singular, if only one of an item or unit is required.
- O. Titling and Arrangement: Article, paragraph and subparagraph titles and other identifications of subject matter in the specifications are intended as an aid in locating and recognizing the various requirements in the specifications. Except where the titling forms a part of the text, such as beginning words of a sentence or where the title establishes the subject, the titles are subordinate to and do not define, limit or restrict the specification text. Underlining or capitalizing of any words in the text does not signify or mean that such words convey special or unique meanings having precedence over any other part of the contract documents. Specification text shall govern over titling and shall be understood to be and interpreted as a whole. The listings of various parts of work to be included or not included under various sections of the specifications are for convenience only and do not control the Contractor in dividing the work among the subcontractors or establish the extent of the work to be performed or provided by any subcontractor or trade. Contractor is solely responsible for providing the complete work without respect to where or how the various parts of the work may be indicated or specified. The sequence of articles, paragraphs, subparagraphs and subsubparagraphs in the specifications text is defined by the sequence 1.01A.1.a.(1)(a).

PART 2 – PRODUCTS – Not applicable to this Section.

PART 3 – EXECUTION – Not applicable to this Section.

END OF SECTION

SECTION 01150
ENVIRONMENTAL PROTECTION

PART 1 - GENERAL

1.01 DESCRIPTION:

All other sections of Division 1 apply to this Section, and the requirements of this Section apply to all sections where the work involves the protection of the environment. During the progress of the work, the Contractor shall protect the environment, both on-site and off-site, throughout and upon completion of the construction project.

A. Related work specified in other sections:

1. Cleaning.
2. Field engineering.

1.02 MITIGATION OF CONSTRUCTION IMPACTS:

A. Requirements: The Contractor's operations shall comply with all federal, state and local regulations pertaining to water, air, solid waste and noise pollution.

B. Definitions of Contaminants:

1. Sediment: Soil and other debris that has been eroded and transported by storm or well production runoff water.
2. Solid Waste: Rubbish, debris, garbage, vegetation and other discarded solid materials resulting from construction activities.
3. Chemical Waste: Includes petroleum products, bituminous materials, salts, acids, alkalies, herbicides, pesticides, organic chemicals and inorganic wastes.
4. Sanitary Wastes:
 - a. Sewage: That which is considered as domestic sanitary sewage.
 - b. Garbage: Refuse and scraps resulting from preparation, cooking, dispensing and consumption of food.

C. Contractor is to protect existing water system during construction from contamination. Water is to be tested as required for purity during construction. It is the Contractor's responsibility to provide a testing policy for the full duration of the project.

1.03 PROTECTION OF NATURAL RESOURCES:

A. General: It is intended that the natural resources within the project boundaries and outside the limits of permanent work performed under this Contract be preserved in their

existing condition or be restored to an equivalent or improved condition upon completion of the work. The Contractor shall confine the construction activities to areas defined by the public roads, easements and work area limits shown on the drawings.

B. NOT USED

C. Land Resources: Do not remove, cut, deface, injure or destroy trees or shrubs outside the work area limits. Do not remove deface, injure or destroy trees within the work area without permission from the Architect. Such improvements shall be removed and replaced, if required, by the Contractor at his own expense.

1. Protection: Protect trees that are located near the limits of the Contractor's work areas which may possibly be defaced, bruised or injured or otherwise damaged by the Contractor's operations. No ropes, cables or guys shall be fastened to or be attached to any existing nearby trees or shrubs for anchorages. No vehicles or equipment shall be parked within the extents of the canopy of any tree.

2. Repair or Restoration: Repair or replace any trees or other landscape feature scarred or damaged by equipment or construction operations as specified below. The repair and/or restoration plan shall be reviewed and approved by the Architect prior to its initiation.

D. Water Resources: Contractor shall investigate and comply with all applicable Federal, state and local regulations concerning the discharge (direct or indirect) of pollutants to the underground and natural waters. All work under this contract shall be performed in such a manner that any adverse environmental impacts are reduced to a level that is acceptable to the Owner and regulatory agencies.

1. Oily substances: At all times, special measures shall be taken to prevent oily or other hazardous substances from entering the ground, drainage areas or local bodies of water in such quantities as to affect normal use, aesthetics or produce a measurable ecological impact on the area.

2. Mosquito Abatement: Construction activities shall be conducted such that ponding of stagnant water conducive to mosquito breeding habitat will not occur at any time.

E. Dust Control, Air Pollution and Odor Control: Take measures to avoid the creation of dust, air pollution and odors.

1. Unpaved areas where vehicles are operated shall be periodically wetted down or given an equivalent form of treatment to eliminate dust formation.

2. All volatile liquids, including fuels or solvents, shall be stored in closed containers.

3. No open burning of debris, lumber or other scrap will be permitted.

4. Equipment shall be properly maintained or reduce gaseous pollutant emissions.

1.04 NOISE CONTROL:

Perform demolition and construction operations to minimize noise. Perform noise producing work in less sensitive hours of the day or week as directed by the Architect.

- A. Repetitive, high level impact noise will be permitted only between the hours of 8:00 AM and 6:00 PM, Monday through Friday. Repetitive impact noise on the property shall not exceed the following limitations:

Sound level (dB)	Duration of impact noise
70	12 minutes per hour
80	3 minutes per hour

- B. Provide equipment, sound-deadening devices and take noise abatement measures that are necessary to comply with these requirements.

- C. Maximum permissible construction equipment noise levels at 50 feet:

80 dB:	Scrapers, stationary pavers, rock drills, pneumatic tools.
75 dB:	All other construction equipment.

- D. Whenever work is being performed which exceeds 55 dB noise level, measure the sound level every 5 days to determine noise exposure to the construction. Use the A weighing network of a general purpose sound level meter at slow response. Take measurements not less than six feet in front of building faces. Submit records to Architect.

1.05 CONSTRUCTION STORAGE AREAS:

Storage of construction equipment and materials shall be limited to designated work areas. Store and service equipment at the designated areas where oil wastes shall be collected. Oily wastes shall not be allowed to flow on to the ground or to enter surface waters.

1.06 DISPOSAL OPERATIONS:

- A. Solid Waste Management: Supply storage containers. Remove daily all debris, such as spent air filters, oil cartridges, cans, bottles, combustibles and litter. Convey contents only to a favorably reviewed sanitary landfill. Care shall be taken to prevent papers from blowing onto adjacent property. Personnel shall be encouraged to use refuse containers.
- B. Chemical Waste Management: Supply containers to store spent chemicals used during construction operations. Chemicals shall be disposed of in a favorably reviewed sanitary landfill.
- C. Garbage: Garbage shall be stored in covered containers, picked up daily and disposed of a favorably reviewed sanitary landfill.

1.07 PRESERVATION OF MONUMENTS AND EXISTING FEATURES:

All monuments, bench marks or property line stakes disturbed by construction operations shall be promptly re-established by a registered land surveyor or civil engineer.

1.08 SAFETY:

Comply with all rules and regulations of NIOSH, CAL/OSHA and local authorities concerning jobsite safety.

1.09 EXISTING UTILITIES:

The Contractor shall coordinate construction activities with the government agencies, land owners and utility companies, and operations shall be planned to allow access to all property and utility owners.

1.10 PROTECTION OF WORK:

The Contractor shall be responsible for the care of all work until its completion and final acceptance. Replace damaged or lost material and repair damaged parts of the work at no additional contract cost.

PART 2 – PRODUCTS – Not applicable to this Section.

PART 3 – EXECUTION – Not applicable to this Section.

END OF SECTION

SECTION 01380

CONSTRUCTION ELECTRONIC DIGITAL MEDIA

PART 1 - GENERAL

1.01 DESCRIPTION:

All other sections of Division 1 apply to this Section. Provide construction videos, complete.

1.02 SUBMITTALS:

- A. DVD: Submit upon completion of recording as specified hereafter.

1.03 QUALITY ASSURANCE:

- A. Video Camera Operator: Shall be a member of the Contractor's staff, such as the superintendent or one of his assistants. Video camera operator shall be able to demonstrate familiarity with the equipment and an understanding of the ongoing construction process, so that videos can be made of all significant operations.
- B. Associated Services: Cooperate with the video camera operator's work. Provide reasonable auxiliary services as requested, including access and use of temporary facilities including temporary lighting.

PART 2 – PRODUCTS

2.01 ELECTRONIC DIGITAL MEDIA FILES (DVD and or any other acceptable media):

- A. Maintain a video camera / smart phone, etc., on the project at all times.
- B. Identification: Label each DVD and the case with the following information:
 1. Name of the Project, Architect and Contractor,
 2. Date or dates the recording was taken,
 3. Name of the person taking the recording,
 4. Description: Vantage points, in terms of location, direction (by compass point) and elevation or phase of construction.

PART 3 – EXECUTION

3.01 PRE-CONSTRUCTION VIDEO DIGITAL MEDIA:

Before starting construction, take recording of the site and surrounding properties from different points of view as selected by the Architect. DVD shall contain views in sufficient number to show existing conditions adjacent to the property before starting Work. Take images of existing buildings either on or adjoining the property in sufficient detail to record accurately the physical conditions at the start of construction.

3.02 VIDEO DIGITAL MEDIA:

- A. One recording shall be taken each week in sufficient detail to show all major construction operations, and additional recording exposure shall be taken whenever significant construction operations occur. Length of DVD will vary, depending on the complexity and diversity of construction operations, but approximately 30 minutes per week will be required for ongoing construction operations.
- B. In addition, DVD records shall be made of all concealed underground utilities, prior to covering. Recording shall be taken of pipes roughed-in walls and above solid ceilings prior to covering. Recording shall be taken of typical concealed construction details in sufficient number to enable the Owner to determine approximate locations and configurations of concealed conditions.
- C. During construction, DVD's shall be recorded on a weekly basis and given to the Owner's inspector for verification following completion of the recording session.

END OF SECTION

SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 DESCRIPTION:

Provide temporary facilities and controls, complete.

PART 2 – PRODUCTS – Not applicable to this Section.

PART 3 – EXECUTION

3.01 TEMPORARY UTILITIES:

Except as otherwise specified below, District will furnish electrical power, water and gas from existing outlets designated by the District without charge to Contractor for quantities used for the work. Provide all temporary piping, fittings, wiring and lighting necessary to supply utilities in sufficient quantities at locations required by the work. Contractor shall carefully conserve utilities, and if, in the opinion of the District, the usage is excessive, Contractor may be required to provide separate services from serving utility companies.

- A. Electrical Power for in the Building: Characteristics of current furnished by the District is limited to that existing and available; if current of other characteristics or quantity is required by Contractor, the Contractor shall supply the power as necessary at no extra cost to the District. Power for small tools and lighting may be taken from the existing 120-volt 60 Hz 1-phase convenience receptacles provided there is no disturbance to occupants and functions, cables and conductors do not prevent or interfere with closing of fire-labeled doors, and load connected to any single or duplex outlet does not exceed 12 amperes. Total load connected to any circuit shall not exceed 25% of circuit capacity as labeled in panelboard. Contractor shall repair and make good damage to existing electrical facilities caused by his use, as directed and approved, at no extra cost of the District.
 - a. Power to obtained from a source from within the construction area.

- B. Water:
 - 1. Construction Water: District will furnish water from such existing outlets as do not interfere with the normal operation of the facilities. In general, obtain water from outlets in janitor, mechanical and similar utility rooms. If used, do not run water hoses down corridors or across doorways in use by occupants. Provide temporary backflow prevention devices as required by Code or directed by the District.
 - 2. Drinking Water: Maintain on the site at all times, adequate supply of drinking water. Provide bottled water, dispenser and disposable cups. Keep the equipment and the area around the equipment clean and dry at all times.

3. Water for grading procedures to be provided by a water truck provided and operated by the General Contractor.

3.02 NOT USED

3.03 NOT USED

3.04 TEMPORARY SANITARY FACILITIES:

Provide and maintain temporary portable chemical toilet facilities and wash sink for duration and operation. Properly proportion number of units for number of workers employed. Provide weather-tight and floored structures, maintained in clean and sanitary condition acceptable to Owner and Architect.

3.05 NOT USED

3.06 NOT USED

3.07 NOT USED

3.08 NOT USED

3.09 TEMPORARY GUARDS, BARRICADES AND LIGHTS:

- A. Provide construction canopies, barricades, fences, guards, railings, lights and warning signs necessary and required by law, and take necessary precautions required to avoid injury or damage to any and all persons and property.
- B. Construction Site Fencing: Construct fence around construction site at exact location as indicated or directed, of chain link fence fabric not less than 6 feet high. Use 1-3/4" mesh not lighter than 9 gauge galvanized fabric with knuckled selvages. Use round posts, top tension wire and bottom tension wire, and bracing as required for rigidity. Provide steel gates and frames of not less than 1.90" OD, 0.120" minimum wall thickness galvanized tubing. Provide gates as required for access of vehicles and pedestrians. Equip swinging gates with galvanized hinges and latch. Provide change and double padlocks, arranged so that unlocking of either padlock will open the gate. Contractor provide one padlock for his use. District will provide the other padlock. Set posts for support of fences into sleeves or buried direct in ground. Hold posts aligned and plumb.

3.10 PROTECTION OF WORK AND FACILITIES:

- A. Protect all adjacent property, roads, streets, curbs, shrubbery, lawns, erosion control materials and planting during construction operations. All damaged material shall be replaced and/or repaired at the expense of the Contractor.
- B. Upon completion deliver the entire work to the Owner in proper, whole and unblemished condition.

1. Parts of work in place that are subject to injury, because of operations being carried on adjacent thereto, shall be covered, boarded up, or substantially enclosed with adequate protection.
- C. The Contractor shall be responsible for preventing the overloading of any part of the facilities beyond their safe calculated carrying capacity by the placing of materials and/or equipment, tools, machinery, or any other items thereon.
- D. The Owner may provide such watchman services deemed necessary to protect the Owner's interest, but any protection so provided by the Owner shall not relieve the Contractor of the responsibility for the safety and condition of the work and material until the completion and acceptance thereof. The Contractor shall employ such watchman services as he may deem necessary to properly protect and safeguard the work and material.

3.11 DUST CONTROL:

Throughout the entire Contract period, effectively dust-palliate the working area, roads and storage areas constructed under this Contract and involved portions of the site, except during such periods that other contractors may be performing work of separate contracts in these areas. Such application shall consist of intermittent watering and sprinkling of such frequency as will satisfactorily allay the dust during all hours that work is being performed. At no time shall water be allowed to pond or puddle. Ponds and puddles shall be removed immediately and steps taken to remove or dry the mud resulting from the ponds or puddles.

3.12 WATER CONTROL:

Surface or subsurface water or other fluid shall not be permitted to accumulate in excavations or under the structures. Should such conditions develop or be encountered, the water or other fluid shall be controlled and suitably disposed of by means of temporary pumps, piping, drainage lines and ditches, dams or other methods approved by the Architect.

3.13 NOT USED

3.14 CONTRACTOR VEHICLES ON CAMPUS:

Contractor's vehicles shall be restricted to access routes established by the Owner. Parking of Contractor's employees vehicles will be limited to offsite parking areas as arranged by Contractor, not necessarily adjacent to the site.

3.15 REMOVAL OF TEMPORARY CONSTRUCTION:

Remove temporary office facilities, toilets, storage sheds, fences and other construction of temporary nature from site as soon as progress of work permits. Recondition and restore portions of site occupied by same to a condition acceptable to Architect.

END OF SECTION

SECTION 01710

CLEANING

PART 1 - GENERAL

1.01 DESCRIPTION:

Division 1 applies to this Section. Provide cleaning, complete.

- A. Maintain premises and public properties from accumulations of waste, debris and rubbish caused by operations.
- B. At completion of work, remove waste materials rubbish, tools, equipment, machinery and surplus materials, and clean all exposed surfaces; leave project clean and ready for occupancy.

PART 2 – PRODUCTS

2.01 MATERIALS:

- A. Use cleaning materials recommended by manufacturer of surface to be cleaned.
- B. Use each type of cleaning material on surfaces recommended by manufacturer.

PART 3 – EXECUTION

3.01 DURING CONSTRUCTION:

- A. Execute cleaning to ensure that building, grounds and public properties are maintained free from accumulations of waste materials and rubbish.
- B. Wet down dry materials and rubbish to prevent blowing dust.
- C. Daily during progress of work, clean construction site and utilized public properties, and dispose of waste materials, debris and rubbish.
- D. Provide on-site containers for collection of waste materials, debris and rubbish. Provide for frequent emptying or pickup.
- E. Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.
- F. NOT USED
- G. Handle materials in a controlled manner with as few handlings as possible. Do not drop or throw materials from heights; rather a closed chute shall be used.
- H. NOT USED

3.02 NOT USED

END OF SECTION

SECTION 02050

DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY:

- A. Work In This Section: Division 1 applies to this Section. Perform demolition and removals as indicated in contract documents as specified and required:
1. Demolish and remove 12 existing portable classroom buildings complete as in on demolition, and associated work site plan.
 2. NOT USED
 3. Demolish and remove existing site improvements including walks, paving, fences, walls and foundations to extent indicated, associated with 12 portable Buildings.
 4. NOT USED
 5. Make all necessary arrangements to remove abandoned on-site utilities including capping and sealing underground services at points of connection indicated or directed.
 6. Clean up and disposal of demolition and removal debris.
 7. Salvage as indicated on drawings and as directed by the District, including delivery to District's storage.
 8. NOT USED
 9. NOT USED
 10. Removal of abandoned utility piping, ducts and conduits.
- B. Related Work Specified Elsewhere:
1. Temporary facilities.
 2. Clean-up.
 3. Earthwork.
 4. Utility location, disconnect, removal and /or re-connection.

1.02 SUBMITTALS:

Prepare and submit a detailed Phased demolition plan of the work, & procedures proposed for use in the identification, demolition, handling, removal, transportation and salvage or disposal of removed materials. For each item to be salvaged and delivered to the District for future use, indicate proposed sizes, weights, handling, packaging and labeling methods. This requirement does not apply to items to be reinstalled under the contract.

1.03 RECORD DRAWINGS:

Provide record drawings as specified in Division 1. Identify and accurately locate capped utilities and other subsurface structural, electrical or mechanical conditions.

1.04 QUALITY ASSURANCE:

- A. Requirements of Regulatory Agencies: Secure and pay for demolition and removal permits required by public agencies having jurisdiction. Give notices and comply with requirements of SCAQMD rule 1403.
- B. Demolition Firm Qualifications: Engage an experienced firm that has successfully completed demolition work similar to that indicated for this project.
- C. Public Utilities: Give all required notices, pay fees and charges, and arrange for disconnection and removal of abandoned public utilities and meters.
- D. Video Documentation: Before starting work of this section, provide one video of existing conditions to be affected by the demolition work. Provide progress videos as the work of demolition progresses, at intervals as approved, illustrating substrates, connections, concealed conditions, and other conditions which will benefit subsequent work.

1.05 DEFINITIONS:

The following terms have the meanings indicated when used in this Section and on related drawings.

- A. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged or to remain the District's property.
- B. Remove and Salvage: Items indicated to be removed and salvaged remain the District's property. Remove, clean and pack or crate items to protect against damage. Identify contents of containers and deliver to District's designated storage area.
- C. Remove and Reinstall: Remove items indicated; clean, service and otherwise prepare them for reuse; store and protect against damage. Reinstall items in locations indicated.
- D. Existing to Remain: Protect construction indicated to remain against damage and soiling during demolition. When permitted by the Architect, items may be removed to a suitable, protected storage location during demolition and then cleaned and reinstalled in their original locations.

1.06 MATERIALS OWNERSHIP:

District has first right of ownership. Except for items or materials indicated to be reused, salvaged or otherwise indicated to remain the District's property, demolished materials shall become the Contractor's property and shall be removed from the site with further disposition at the Contractor's option.

1.07 ENVIRONMENTAL CONDITIONS:

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

1.08 PROJECT SITE AND BUILDING CONDITIONS:

- A. The intent of the drawings is to show existing site and building conditions with information developed from the original construction documents, field surveys and District's records, and to generally show the amount and types of demolition and removals required to prepare existing areas for new work. Contractor shall make a detailed survey of existing conditions pertaining to the work before commencing demolition. Report discrepancies between drawings and actual conditions to the Construction Manager for instructions, and do not perform any demolition or removals where such discrepancies occur prior to receipt of the Architect's instructions.
- B. Extent: Perform removals to extent required plus such additional removals as are necessary for completion even though not indicated or specified. More or less of the existing construction may be removed if such variation will expedite the work and reduce cost to the District, subject to prior approval in each case.
- C. At completion of removal and demolition work, the Contractor shall compare existing conditions with drawings and with new construction to be attached to, aligned with or otherwise influenced by said existing conditions. In all cases where modifications may

be required because of differences between existing conditions and assumed conditions shown or not shown on the drawings, the Contractor shall provide detailed information, dimensions, limitations and other documentation to enable the Architect to design the necessary modifications.

1.09 PROTECTION:

- A. Existing Work: Protect existing work which is to remain in place, that is to be reused, or which is to remain the property of the District by temporary covers, shoring, bracing and supports. Items which are to remain and which are to be salvaged and which are damaged during performance of the work shall be repaired to original condition or replaced with new. Do not overload structural elements. Provide new supports or reinforcement for existing construction weakened by demolition or removal work.
- B. Weather Protection: For portions of the building to remain, protect building interior and all materials and equipment from the weather at all times. Where removal of existing roofing is necessary to accomplish work have materials and workmen ready to provide adequate and approved temporary covering of exposed areas. Damage at areas to be protected shall be replaced to the satisfaction of the District at the Contractor's expense. Temporary coverings shall be attended, as necessary, to insure effectiveness and to prevent displacement. Protect building interiors from damage by weather and vandalism when windows and doors are removed by use of rigidly constructed, weatherproof barriers.
- C. Trees: Protect trees within the project site, which might be damaged during demolition, and which are indicated to be left in place, by a 6-foot high fence. Erect fence a minimum of 5-feet from the trunks at the outer perimeter of branches of individual trees or follow the outer perimeter of branches of clumps of trees. Restore trees scarred or damaged by Contractor equipment or operations to the original condition or replace as determined by the Architect.
- D. Fire Protection: Maintain fully charged fire extinguishers and water hoses readily available during all demolition operations. Test electrical conductors for disconnections prior to removing.
- E. Precaution Against Movement: Provide shoring and bracing or other supports to prevent movement, settlement or collapse of facilities adjacent to areas of alteration and removal that are to remain.
- F. Overloading: Do not overload any part of the structures beyond the safe carrying capacity by placing of materials, equipment, tools, machinery, or any other item thereon.
- G. Building Security: Take appropriate measures, as approved, to protect the work from theft and vandalism.

1.10 EXPLOSIVES:

Use of explosives will not be permitted.

1.11 BURNING:

Burning will not be permitted.

PART 2 – PRODUCTS

2.01 NOT USED

PART 3 – EXECUTION

3.01 EXAMINATION:

Verify that utilities have been Phased disconnected/re-connected, and/or capped.

3.02 PREPARATION:

Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks and other adjacent occupied and used facilities. Do not close or obstruct streets, walks or other adjacent occupied or used facilities without permission from the District and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

3.03 UTILITIES:

- A. Drain, purge, or otherwise remove, collect and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with demolition operations.
- B. Prior to demolition or in the event unrecorded utilities are encountered, notify the Construction Manager or serving utility companies, as applicable, for work necessary and scheduled to be performed. Coordinate responsibility for limits of utility removals and be responsible for the removal of all utility installations both above and below grade except for those installations the utility companies agree to move. Use care to protect utility lines to remain in service, repair all damage which does occur, and remove those not to remain in service.
- C. Interruption of Service: In the event existing utility service requires interruption to accomplish the demolition work, obtain written approval by the District for interruption of service. Request approval not less than 48 hours prior to proposed scheduled interruption. State the exact services involved and the expected duration. Except in an emergency affecting life and limb, do not cause any interruption of utility service without written authorization from the District.
- D. Provide for protection of utility lines to remain in service. Repair damage done to these facilities as a result of the work of this Section, to the satisfaction of the District. Locations of existing utilities to remain shall be identified on record drawings, and their physical location shall be indicated by tags or stakes as applicable.
- E. Provide approved paths of travel over utility trenches, etc. Use trench plates. School circulation shall be maintained at all times. Provide plates, bridges, protective barriers and guardrails as required to accomplish this.

3.04 WORKMANSHIP:

- A. Lowering material: Use hoists and chutes as required to lower removed material. Throwing, dropping or permitting the free fall of material and debris from the roof or from heights which would cause undue noise or nuisance or excessive dust, is prohibited.
- B. Protection of work to remain: Establish cut off points between work to be removed and work to remain.
- C. Partial demolition and removal: When portions of pavement, slabs, sidewalks, curbs, curb and gutters and cross-gutters are to be removed, cut with a concrete saw to the full depth along all joint lines, unless noted otherwise on drawings, before breaking off the portion to be removed.

3.05 DEMOLITION OF SITE IMPROVEMENTS:

- A. Site Improvements: Remove walks and pavement, including herbicide treated base courses and fences, walls, stoops and miscellaneous improvements.
- B. Paving and Slabs: Remove, grind, scarify, sawcut concrete and asphaltic concrete paving and slabs including aggregate base as indicated.
- C. Underground Utilities: Expose pipe and conduit and cap at property line with permanent waterproof plugs or seals of concrete or metal. Except for items indicated to be abandoned in place, remove on-site abandoned pipe and conduit, cap and seal remaining pipe or conduit ends, and backfill the excavations as specified for new construction.

3.06 NOT USED

3.07 NOT USED

3.08 NOT USED

3.09 SALVAGE AND DISPOSAL:

- A. General: Existing items the District intends to retain are indicated on drawings or will be designated by the District prior to start of work. Contractor shall carefully remove, salvage, box or bundle as approved, and deliver such items to storage as directed.
- B. Disposal: All removed material other than items to be salvaged or reused shall become Contractor's property and be removed from the District's property. Clean up and dispose of debris promptly and continuously as the work progresses, and do not allow to accumulate. Sprinkle water on the surface to prevent dust nuisance.
- C. Secure and pay for required hauling permits and pay dumping fees and charges.

END OF SECTION

SECTION 02210

EARTHWORK

PART 1 - GENERAL

1.01 DESCRIPTION:

Division 1 applies to this Section. Provide and perform earthwork as required. Normal Site preparation will include building pad graded and certified to support the main portion of building on spread footing foundation. Specific soil preparation shall be per the recommendations of the geotechnical report. All fill imported to project site must be tested for toxic substances, it shall be tested by an independent testing laboratory and certify that it meets all State, Local and National regulations and laws, the contractor shall pay for this testing and provide a written certification to the owner stating that materials meet these standards prior to bringing fill materials to the site.

A. Work In This Section: Principle items include:

1. Site clearing.
2. Excavation, filling, backfilling and compaction.
3. Imported fill material as required.
4. Subgrade preparation for on-grade concrete.
5. Clean up and disposal.

B. Related Work Not In This Section:

1. Vapor barrier under floor slabs.
2. Excavating and backfilling for underground utility systems.
3. Landscaping including planting fill and irrigation systems.

1.02 QUALITY ASSURANCE:

- A. Requirements of Regulatory Agencies: Refer to Construction Safety Orders, Title 8, CCR, Section 1503 and Article 6; secure and pay for required permits. For off-site excavation, backfill, and compaction, conform to all requirements of public agencies having jurisdiction; obtain and pay for required permits and inspections.
- B. Source Quality Control: Obtain approval by the Inspector of imported fill material before material is brought to site, and same approval of excavated material for use in fills or backfills prior to placing. Imported material shall be tested for toxic substances by an independent testing laboratory approved by the District.
- C. Foundation Soils: Excavate for foundations to sizes indicated, clean, and leave in condition ready for concrete placement. Prior to placement of forms, reinforcing or concrete, obtain approval of Inspector, and DSA as required, for proper conditions and suitable bearing materials

1.03 SUBMITTALS:

Provide certification, signed by an authorized representative of an approved testing laboratory, that proposed imported fill material and other earthwork materials to be brought to the site, are free from toxic substances, and are in conformance with applicable state and local regulations.

1.04 JOB CONDITIONS:

- A. Protection: Provide and maintain protection to retain earth banks and to protect adjoining grades and structures from caving, sliding, erosion or other damage. Provide suitable protection against all bodily injury. Construct all bulkheads and shoring to requirements of State and Local codes and regulations. Shore vertical banks or slope banks back as required for stability and safety. Erect temporary barricades located at least 5-feet away from the top of slopes and provide temporary berms as required to prevent slope erosion from water.

PART 2 – PRODUCTS

2.01 MATERIALS:

Provide approved imported material as required if the quantity of approved site and excavated material is insufficient to complete the work.

- A. Earthwork Materials: Approved excavated or imported granular soil such as silty sand of the non-expansive type (that undergoes no undesirable volumetric change with changes in the moisture content) and containing not more than 20% by weight of material passing the No. 200 sieve, free from trash, roots, organic material, clay lumps and rocks over 6" size.
- B. Gravel Fill Material: From approved source, 90% to 100% passing a 3/4" sieve, 0% to 10% passing a No. 4 sieve and 0% to 3% passing a No. 100 sieve.

PART 3 – EXECUTION

3.01 SITE CLEARING AND PREPARATION:

Before starting grading operations, Coordinate with Construction Manager, remove trash and strip all vegetation on the site, including roots.

3.02 EXCAVATION:

Perform excavation to the dimensions and elevations indicated on Drawings, with additional space allowed as required for the installation and stripping of forms, and inspection of the various types of work, except where approval may be given to deposit certain miscellaneous concrete directly against earth banks. Avoid loosening of soils in bottoms or sides of excavations.

- A. Adverse Subsurface Conditions: Notify Construction Manager should unsuitable bearing soil or other adverse subsurface conditions be found which are not indicated by the Drawings or Specifications.

3.03 SUBGRADE PREPARATION FOR CONCRETE:

Prepare subgrade for concrete items placed directly on earth by excavating, filling, and grading as required, and bring to optimum moisture content. Finish the subgrade within 3/8 inch tolerance when tested along a 10-foot straightedge in any direction at any location. Compact to 90 percent of maximum dry density and maintain moisture content until concrete is placed.

3.04 TRENCHING:

Trenching and excavating for underground piping, conduits and related items is performed under other sections. Conform trenching operations to the following requirements:

- A. Trenches: Excavate trenches to widths required for proper laying of pipe, with banks as nearly vertical as practicable. Bring bottoms of trenches to the required depths, all accurately graded to provide uniform bearing on undisturbed soil for entire length of each section of pipe, except where necessary to excavate for pipe bells or for pipe bedding specified in other sections.
- B. Methods: Machine excavation method may be used down to rough elevations. Perform fine grading and trimming by hand method.
- C. Trench Backfilling: Conform to Paragraph "Compaction" except compact all backfill to at least 90% of maximum dry density where the trenches are located in paved areas or under building or structures. Take precautions in placing and compaction of backfill to avoid damaging pipes, ducts, conduits and structures.

3.05 COMPACTION:

Moisten or aerate all material to specified moisture content, then uniformly compact the fills and backfills in maximum 8" thick loose layers to 90% of the maximum dry density determined by ASTM D1557. Flooding or jetting is not allowed.

3.06 SUBGRADE PREPARATION FOR CONCRETE:

Prepare subgrade for concrete items placed directly on earth by excavating, filling, and grading as required and as specified, and bring to optimum moisture content. Finish the subgrade within 3/8" tolerance when tested along a 10-foot straightedge in any direction at any location. Compact to density specified for fills, and maintain moisture content until concrete is placed.

3.07 DISPOSAL:

Clean up and remove all trash, debris, waste and surplus and rejected earthwork materials from the site to a legal disposal area. Conform to pertaining laws, codes and regulations, obtain and pay for required hauling and dumping permits, and pay all dumping charges. Perform trucking and material handling in a careful manner to prevent spillage and dusting or damage to surfaces and structures. Remove planks used to protect surfaces subject to public traffic at finish of each day's operations. Maintain public streets and sidewalks in broom clean condition.

3.08 FIELD QUALITY CONTROL:

- A. Testing: Testing Laboratory will take test samples and perform materials, moisture content, compaction densities, and other tests to the extent and by the methods directed by Inspector.

END OF SECTION