



STANDARD SPECIFICATIONS FOR WATER LINE CONSTRUCTION

DIVISION 1

**LA PLATA ARCHULETA WATER DISTRICT
REVISED JANUARY 19, 2019**

**LA PLATA ARCHULETA WATER DISTRICT
STANDARD SPECIFICATIONS FOR WATER LINE CONSTRUCTION**

TECHNICAL SPECIFICATIONS

TABLE OF CONTENTS

<u>TITLE</u>	<u>PAGE</u>	DIVISION 1 -
GENERAL REQUIREMENTS		
01040 Mobilization, Bonds, Permits & Insurance.....	1 - 2	
01043 Coordination & Control of the Work.....	1 - 11	
01090 Reference Standards.....	1 - 2	
01300 Construction Submittals.....	1 - 6	
01350 Common Product Requirements.....	1 - 3	
01370 Schedule of Values.....	1 - 3	
01410 Laboratory Services.....	1 - 4	
01505 Temporary Traffic Control.....	1 - 4	
01568 Erosion and Pollution Control.....	1 - 2	
DIVISION 2 - UNDERGROUND & SITE WORK		
02100 Clearing and Grubbing.....	1 - 4	
02200 Earthwork.....	1 - 3	
02213 Rock and Boulder Excavation.....	1 - 3	
02226 Trench Excavation & Backfill.....	1 - 17	
02270 Sedimentation and Erosion Control.....	1 - 4	
02277 River Crossings.....	1 - 2	
02501 Trench Surface Restoration.....	1 - 7	
02634 Carrier Pipe and Bored Casing.....	1 - 6	
02635 Directional Drilling.....	1 - 4	
02667 Water Distribution System.....	1 - 29	
02700 Steel Pipe.....	1 - 16	
DIVISION 3 – CONCRETE & CONCRETE ACCESSORIES - NA		
03100 Concrete Formwork.....	NA	
03200 Reinforcement Steel.....	NA	
03290 Joints in Concrete.....	NA	
03300 Cast-in-Place Concrete.....	NA	

January 19, 2019

DIVISION 1
GENERAL REQUIREMENTS

SECTION 01040
MOBILIZATION, BONDS, PERMITS AND INSURANCE

PART 1: GENERAL

1.01 SCOPE

- a. This section includes but is not limited to work necessary to move in personnel and equipment, set up all offices and facilities and prepare for construction and provide necessary permits, licenses, construction bonds and required insurance.

PART 2: PRODUCTS

None

PART 3: EXECUTION

3.01 GENERAL

- a. Set up construction facilities in a neat and orderly manner within designated or approved work area. Supply all labor and equipment necessary to accomplish the work as specified. Conform to applicable requirements of these Contract Documents, including but not limited to:
 - 1) Required notifications
 - 2) Protection of surveying monuments and other markers
 - 3) Temporary traffic control
 - 4) Temporary utility connections
 - 5) Protection of property
 - 6) Dust control
- b. Move personnel, equipment, supplies, and incidentals to the project site. Establish offices, buildings, and other facilities necessary for the work required.
- c. Provide required bonds and insurance prior to issuance of the Notice to Proceed.
- d. The Contractor shall coordinate the procurement of all permits and procure performance bonds and licenses required by all approving agencies and pay all associated fees.
- e. Contractor to conform to all permit requirements, including providing forty-eight (48) hours' notice to approving agencies, and all utilities prior to the start of construction.
- f. When the agencies with an interest in the project require the posting of signs for public notification, the Contractor shall post such signs in conformance with the requirements of the respective agencies. The Owner will provide the sign placards, and the Contractor shall be responsible for supplying the materials necessary to post the signs and notifications.

- g. With regards to Specification topics below (e.g. property protection, traffic control), reference other documents in the Contract for related information; it is the Contractor's responsibility to be aware of contractual requirements in their entirety.

January 17, 2019

Section 01040 -1

MOBILIZATION, BONDS, PERMITS AND INSURANCE

END OF SECTION

SECTION 01043
COORDINATION AND CONTROL OF THE WORK

PART 1: GENERAL

1.01 SCOPE

- a. This section includes coordination and control of the work.

PART 2: PRODUCTS

None

PART 3: EXECUTION

3.01 FIELD RECORD PLANS

- a. Contractor shall photograph, video, or otherwise record and catalog pre-in-, and post-construction conditions prior to commencing construction in any section. Such condition records will be provided to the La Plata Archuleta Water District at the completion of the contract.
- b. Contractor shall maintain one complete set of plans at the construction site whereon he will record any approved deviations in construction from the approved plans. Prior to final payment, the Contractor shall provide the following record information on a clean set of blue-line drawings which shall be submitted to each of the Engineer and La Plata Archuleta Water District:
1. Water Mainline - Station and depth of all fittings, valves, and service taps.
 2. Water Services - Length from mainline and side tie to property pin.
 3. Existing Utilities - Station locations and depth at crossings.

3.02 CONFORMITY WITH DRAWINGS AND ALLOWABLE DEVIATIONS

- a. Finished surfaces in all cases shall conform with lines, grades, cross-sections and dimensions shown on the approved drawings. Deviations from the approved drawings and working drawings will in all cases require authorization by the Engineer in writing.

3.03 PROTECTION OF EXISTING FACILITIES

- a. The Contractor shall protect from damage due to his operations, all existing facilities including but not limited to survey monuments, fence lines, trees, underground utilities, drainage facilities, landscaping, roadway surfaces etc., which are not specifically designated for removal or alteration. The locations of these facilities as shown on the plans were derived from the best information available. However, the completeness and accuracy of these locations as shown is

not guaranteed. It shall be the responsibility of the Contractor to verify the existence and locations of underground facilities in advance of construction. Any existing facilities not designated for removal or alteration, which are damaged by the Contractor's operations shall be restored or replaced to an "in kind" or better condition at the expense of the Contractor. The Contractor shall notify all public and private utility companies serving in the area in advance of construction, so underground utility locations can be confirmed, and existing facilities relocated if necessary to facilitate construction. Make excavations and borings ahead of work, as necessary, to determine the exact location of interfering utilities or underground utilities.

3.04 PROTECTION OF PROPERTY

- a. Protect all public and private property, insofar as it may be endangered by operations and take every reasonable precaution to avoid damage to such property.
- b. Restore and bear the cost of any public or private improvement, facility, or structure within the right-of-way or easement which is damaged or injured directly or indirectly by or on account of any act, omission, or neglect in the execution of the work and which is not designated for removal but visibly evident or correctly shown on the plans. Restore to a condition substantially equivalent or better to that existing before such damage or injury occurred, by repairing, rebuilding, or otherwise affecting restoration thereof, or if this is not feasible, make a suitable settlement with the Owner of the damaged property, all at no expense to the Owner.
- c. Give reasonable notice to occupants of buildings on property adjacent to the work to permit the occupants to remove vehicles, trailers, and other possessions as well as salvage or relocate plants, trees, fences, sprinkler systems, or other improvements in the right-of-way which are designated for removal or which might be destroyed or damaged by work operations.
- d. Review with Engineer the location, limits, and methods to be used prior to clearing work. Clearing and grubbing shall be performed in strict compliance with all local, State and Federal laws.
- e. The Contractor shall be responsible for the protection of public and private property adjacent to the work and shall exercise due caution to avoid damage to such property.
- f. Trees, lawns, and shrubbery that are not to be removed shall be protected from damage or injury. If damaged or removed because of the Contractor's operations, they shall be restored or replaced in as nearly the original condition and location

as is reasonably possible. Lawns shall be reseeded after replacement of topsoil and covered with suitable mulch except as noted otherwise.

- g. The costs to the Contractor for protecting, repairing, removing, replacing, or restoring existing improvements not required as a part of this work shall be incidental to other Bid items.

3.05 REMOVAL OF DEFECTIVE OR UNAUTHORIZED WORK

- a. All work which, in the opinion of the Owner or its agents, does not conform to the requirements of these Contract Documents shall be considered as unacceptable. Immediately remove unacceptable and defective work found to exist prior to acceptance of or final payment for the work. Replace with work and materials which conform to the Contract Documents, or remedy otherwise in an approved manner. This provision shall have full effect regardless of the fact that the unacceptable work may have been done or the defective materials used with the full knowledge of the Inspector.

3.06 HOURS OF WORK

- a. Construction working hours shall be from 7:00 A.M. to 6:00 P.M. local time, Monday through Saturday, excluding Federal, State and local holidays, unless otherwise approved by the Owner and Engineer.

3.07 RESTORATION AND CLEANUP

- a. Periodically, or as directed by the Owner or Engineer, as the work progresses, and immediately after completion of the work, clean up and remove all refuse, debris, equipment, and unused materials of any kind resulting from the work. Upon failure to do so within 72 hours after directed, the work may be done by the Owner or third party and the cost thereof be deducted from any payment due the Contractor.
- b. As a condition precedent to final acceptance of the project, remove all equipment and temporary structures, and all rubbish, waste and generally clean up the right-of way and premises to conform substantially to conditions as they existed before the commencement of work, as approved.

3.08 FINAL INSPECTION

- a. When all construction work on the project is complete and all extra work bills, forms and documents required under the Contract are submitted, notify the Owner and Engineer in writing. The Owner, or Engineer upon assignment, will inspect the project and project records within 15 days of receiving said notice. If, at such inspection, all construction provided for and ordered under the Contract is found completed and satisfactory and all certificates, bills, forms, and documents have been properly submitted, such inspection shall constitute final inspection.

- b. If work is found unsatisfactory, or if all certificates, bills, forms, and documents have not been properly submitted, the Engineer will so notify the Contractor. After corrections are made, or all certificates, bills, forms, and documents are properly submitted, notify the Engineer in writing. Engineer will make another inspection within five (5) days after such notice, and if all work is satisfactory, then this inspection shall constitute the final inspection for that element of the work.

3.10 NO VERBAL AGREEMENTS

- a. No verbal agreement or conversation with any officer, agent, or employee of the Owner, either before or after execution of the Agreement, shall affect or modify any of the terms or obligations contained in any of the documents comprising the Agreement. Any such verbal agreement or conversation shall be considered as unofficial information and in no way binding upon the Owner.

3.11 COOPERATION OF CONTRACTOR

- a. The Contractor shall conduct his operations so as to interfere as little as possible with those of the Owner, other Contractors, utilities, or any public authority on or near the work. The Owner reserves the right to perform other work by Contract or otherwise; to permit other public bodies, public utility companies and others to do work on or near the project during progress of the work. If a conflict arises, the Owner or its agents shall determine when and how the work shall proceed.
- b. Claims for delay or inconvenience due to operations of such other parties on work indicated or shown on the drawings will not be allowed.

3.12 MANDATORY PROJECT SUPERINTENDENT

- a. The Contractor shall designate one qualified person as primary project superintendent to oversee and coordinate construction. The superintendent shall be capable of reading and thoroughly understanding the plans and specifications, thoroughly experienced in the type of work being performed. If the Contractor is a joint venture, designate one person from the joint venture organization, with these qualifications, to act as project superintendent. This person's work time shall be devoted exclusively to this project to ensure that work delivery, coordination, quality, and time-lines are met.
- b. For short periods of time (less than two calendar weeks) during the performance of minor or incidental portions of the work, the Contractor may designate another qualified person to act for the superintendent. This designation shall be in writing, stating the person's name, duration of appointment and scope of authority. The acting superintendent shall be available to the Engineer at all times for contact by telephone or radio.

- c. Failure to provide the superintendence required by these provisions is sufficient cause for termination of the Contract, or other action the Engineer may deem to be appropriate.

3.13 EMERGENCY MAINTENANCE SUPERVISOR

- a. The Contractor shall submit to the Owner/Engineer the names, addresses and telephone numbers of two employees responsible for performing emergency maintenance and repairs when the Contractor is not working. These employees shall be designated, in writing by the Contractor, to act as his representatives and shall have full authority to act on his behalf.

3.14 CONDUCT

- a. The Contractor and his men shall at all times be civil and courteous around private citizens and property owners. If ever directed to leave private property by the property owner or his representative, the Contractor and his personnel shall do so immediately. If any property owner or his representative makes demands, the Contractor is to remain courteous and report the matter to the Engineer. No foul language, obscene gestures, or rudeness directed to private citizens will be tolerated. Radios (other than two-way communications) and personal music devices will not be permitted. If, in the Engineer's opinion, the Contractor or any of his men fail to conduct themselves as stipulated or follow the direction of the Engineer, the Engineer shall bar the offending individual from the project. His order shall be final.

3.15 TRESPASS

- a. The Contractor will be solely responsible for any trespass upon private property or injury thereto resulting from or in connection with his operations. He will be liable for any claims made because of his trespass or his deposit of debris of any kind on private property.

3.16 USE OR POSSESSION PRIOR TO FINAL COMPLETION

- a. The Owner or their agents shall have the right to take possession of or use for his own benefit any completed or partially completed part of the work. Such possession or use shall not be deemed an acceptance of the occupied portion of the project. While the Owner is in such possession, the Contractor shall be relieved of the responsibility for injury or damage to the said completed portion of the work other than that resulting from the Contractor's fault or negligence. Continued operation or use of facilities being rehabilitated shall not be construed as use or possession prior to final completion.
- b. Prior to the Owner or his agents taking possession of or using any completed or partially completed part of the work, written notice shall be given by the Engineer to the Contractor at least 24 hours in advance of the Owner assuming possession.

3.17 UNAUTHORIZED WORK

- a. Work done beyond the boundaries shown on the drawings or ordered, work done without required inspection, except as herein provided, or any extra work done without authority will be considered as unauthorized and will not be paid for under the provisions of these Contract Documents. Work so done may be ordered removed at the Contractor's expense. Work done without lines and grades being given may also be considered as unauthorized and will be subject to rejection.

3.18 SUBSURFACE DATA

- a. All information obtained by Engineer regarding subsurface conditions and groundwater elevations will be available for inspection at the office of the Engineer upon request.
- b. Logs of test holes, test pits, soils reports, groundwater levels, and other supplementary subsurface information are offered as the best available information of underlying materials and conditions at the locations actually tested. The Owner will not be liable for any loss sustained by the Contractor as a result of any variance between conditions contained in or interpretations of test reports and the actual conditions encountered during progress of the work.
- c. Contractor shall examine the site and available records. The submission of a Bid shall be conclusive evidence that the Bidder has investigated and is satisfied as to the subsurface conditions to be encountered as to the character, quality, and quantities of work to be performed and materials to be furnished, and as to the requirements of the Contract Documents.

3.20 TEMPORARY WATER,

- a. The Contractor shall provide all water, required to construct and protect the work until the work is placed in service by the Owner for beneficial use of the Owner. The source for temporary water shall be from sources approved by the Owner/Engineer.

3.21 BARRICADES

- a. The Contractor must provide and maintain proper barricades, fences, signal lights, flares or watchmen to properly protect the work, equipment, persons, animals and property against injury.
- b. In areas of public travel and/or on all approaches leading to this work, all barricades and obstructions shall be illuminated at night. All lights for this purpose shall be kept burning from sunset to sunrise.
- c. Temporary traffic control devices and facilities shall be furnished, erected, and maintained in accordance with all Local and State requirements.

3.22 MAINTAINING TRAFFIC

- a. Where Contract work is within streets or other public thoroughfares, the Contractor shall so plan and schedule his work as to cause as little interference with general public traffic. Street surfaces shall be maintained and kept clean where construction work under this Contract has been performed until inspection and acceptance of all such work.
- b. Access of fire, police and ambulance vehicles to property abutting and adjacent to such thoroughfares shall be maintained whether or not permission has been granted to restrict other traffic. The Contractor shall obtain all permits from Municipal, County, State or other authority having jurisdiction over traffic in thoroughfares and shall comply with all regulations and directions of such authority concerning erecting barricades and detouring movement of traffic.
- c. The Contractor shall maintain the roads for operating personnel, deliveries of operating supplies, normal maintenance vehicles and other equipment incidental to the operation and maintenance of the Owner's facility.

3.23 DISPOSAL OF DEBRIS

- a. All debris resulting from construction operations, i.e., packaging, waste materials, damaged equipment, etc., shall be trucked from the site by the Contractor and disposed of at an approved off-site location.
- b. The Contractor shall police the hauling of debris to ensure that all spillage from haul trucks is promptly and completely removed.
- c. All debris shall be disposed of in accordance with Federal, State and Local rules and regulations.
- d. Excavated materials not suitable or not required for backfill or embankment shall be deposited on one or both of the following waste sites:
 1. Waste sites designated in the Contract Documents.
 2. Waste sites provided by the Contractor.
- e. All costs for disposing of this excess material shall be incidental to other items of work contained in the Bid unless otherwise specified.
- f. Either type of waste site shall be operated in such a manner as to meet all safety and health requirements of State and local agencies. Sites, operations, or the result of such operations, which create a nuisance problem, or which result in damage to public or private properties will not be permitted.
- g. Permits for dumping on sites designated in the Contract Documents will be provided by the Owner. Contractor shall obtain permits for other sites at no

expense to Owner. Furnish copies of issued permits to Engineer prior to commencing filling operations.

3.24 SANITARY REGULATIONS

- a. Toilet accommodations shall also be maintained for the use of the employees on the work. The accommodations shall be in approved locations, properly screened from public observance and shall be maintained in a strictly sanitary manner. The Contractor shall obey and enforce all other sanitary regulations and orders and shall take precautions against infectious diseases. The Contractor shall maintain at all times, satisfactory sanitary conditions around all parts of the work all in accordance with all Federal, State and Local ordinances, regulations and requirements.

3.25 DUST CONTROL

- a. The Contractor shall apply water or dust palliative, or both, for the alleviation or prevention of dust nuisance caused by his operations. Dust control operations shall be performed by the Contractor at the time(s) as required or as ordered by the District or its agents. Failure of the Owner to issue such order will not relieve the Contractor of this responsibility. Unless otherwise specified, no direct payment will be made for any such work performed or material used to control dust under these Contract Documents. The Contractor shall comply with all Federal, State and Local ordinances, regulations, and requirements.

3.26 SMOKE PREVENTION

- a. Strict compliance with all ordinances regulating the production and emission of smoke will be required and the Contractor shall accept full responsibility for all damage that may occur to property as a result of negligence in providing required control. The Contractor shall comply with all Federal, State, and local regulations.

3.27 CONTROL OF NOISE

- a. The Contractor shall eliminate noise to as great an extent as possible at all times. Air compressors shall be equipped with silencers and the exhaust of all gasoline motors and other power equipment shall be provided with mufflers. In the vicinity of hospitals, libraries, and schools, precautions shall be taken to avoid noise and other nuisances. The Contractor shall require strict observances of all pertinent ordinances and regulations.

3.28 USE OF EXPLOSIVES

- a. The use of explosives shall not be permitted without express written approval from the Owner and Engineer and in conformance with Section 02213.

3.29 WEATHER CONDITIONS

- a. In the event of temporary suspension of the work or during inclement weather, or whenever the Engineer shall direct, the Contractor shall carefully protect (and cause his Subcontractors to similarly protect) all work and materials against damage or injury from the weather. If, in the opinion of the Engineer, any work or materials have been damaged by reason of failure on the part of the Contractor or any of his Subcontractors to so protect his work, such materials shall be removed and replaced at the expense of the Contractor.

3.31 FAIR EMPLOYMENT PRACTICES ACT

- a. The Contractor agrees that neither he nor his sub-Contractors will discriminate against any employee or applicant for employment, to be employed in the performance of this Contract, with respect to his hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of his race, color, religion, national origin, or ancestry. Breach of this covenant shall be regarded as a material breach of this Contract.

3.32 CONSTRUCTION ACCESS

- a. The Contractor shall be responsible for design, construction, and maintenance of any and all structures required for access to the site for construction or delivery of materials, including but not limited to construction access roads. The Owner's responsibility to provide access easements or right-of-ways to the construction site shall not be interpreted as relieving the Contractor of his responsibilities under this section.

PART 4: SPECIAL PROVISIONS

4.01 MEASUREMENT AND PAYMENT

- a. When not listed in the Bid, all "COORDINATION AND CONTROL OF THE WORK" costs will be considered incidental work for which no separate payment will be made.

4.02 COORDINATION OF WORK

- a. The Contractor shall cooperate with the Owner's field representative or agent for coordination and expeditious execution of his work in relation to total project work required.

4.03 TECHNICAL REQUIREMENTS

- a. All materials and workmanship shall conform to all Federal, State, and Local codes and the technical specifications contained herein.

- b. All materials and workmanship for facilities in street right-of-way or easements shall conform to approving agencies' construction specifications. The Contractor must review the construction specifications and take these requirements into consideration in the preparation of his Bid.

END OF SECTION

SECTION 01090
REFERENCE STANDARDS

PART 1: GENERAL

1.01 SCOPE

- a. This Section includes reference standards.

1.02 DESIGNATION OF ASSOCIATIONS, INSTITUTIONS, SOCIETIES AND STANDARDS

- a. Whenever in these Specifications reference is made to Associations, Institutions, Societies or Standards, they will be designated as follows:

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ADA	American Disability Act
AGA	American Gas Association
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
API	American Petroleum Institute
APWA	American Public Works Association
AREA	American Railway Engineering Association
ASA	American Standards Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Association
AWS	American Welding Society
AWWA	American Water Works Association
BLIS	Bureau of Labor and Industries Standards
BLM	Bureau of Land Management
CDOT	Colorado Department of Transportation
CISPI	Cast Iron Soil Pipe Institute
COE	Corps of Engineers
CRSI	Concrete Reinforcing Steel Institute
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FS	Federal Standards
IRI	Industrial Risk Insurance

ISA	Instrument Society of America
ISO	Insurance Service Office
ITE	Institute of Traffic Engineers
MUTCD	Manual of Uniform Traffic Control Devices
NBS	National Bureau of Standards
NEC	National Electrical Code
NESC	National Electric Safety Code
NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
NLMA	National Lumber Manufacturer's Association
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
SSPC	Steel Structures Painting Council
UBC	Uniform Building Code
UFC	Uniform Fire Code
UL	Underwriter's Laboratories, Inc.
UPC	Uniform Plumbing Code
USBM	United States Bureau of Mines
WWPA	Western Wood Products Association

- b. Wherever specific standard numbers are indicated, i.e., ASTM C-150, it shall be understood to mean the latest revision thereof.

PART 2: PRODUCTS

None

PART 3: EXECUTION

None

PART 4: SPECIAL PROVISIONS

4.01 MEASUREMENT AND PAYMENT

- a. When not listed in the Bid, all "REFERENCE STANDARDS" costs will be considered incidental work for which no separate payment will be made.

END OF SECTION

SECTION 01300
CONSTRUCTION SUBMITTALS

PART 1: GENERAL

1.01 SCOPE

- a. This section includes requirements for construction submittals.

1.02 COORDINATION OF SUBMITTALS

- a. All submittals to the Owner and its agents, with the exception of the laboratory test certificates, shall be made only by the Contractor. Direct submittals from subcontractor or suppliers will not be accepted.
- b. The Contractor shall utilize a standard Submittal Form, including the following:
- 1) Contractor's name
 - 2) Contract title and location
 - 3) Specification item covered
 - 4) Revision number of submittal
 - 5) Date of submission
 - 6) Whether the information is for the District's Representative's:
 - 1 Review and approval
 - 2 Record purposes
 - 3 Fulfillment of the operation and maintenance requirements
 - 7) Review checkboxes for:
 - 1 Approved
 - 2 Approved as Revised
 - 3 Rejected with Notes
 - 8) Special notes
- c. Prior to Submitting Information to the Engineer:
- 9) The Contractor shall carefully review the correctness and thoroughness of the material, verify all field measurements, and coordinate all aspects of each item being submitted.
 - 10) The Contractor shall verify his review by affixing his stamp or signature of approval and signature to each page of each required copy of the submittal.

PART 2: PRODUCTS

2.01 GENERAL

- a. Three Categories of Information Are Normally Required:
 - 1) Information for record
 - 2) Information for the Engineer's review and approval
 - 3) Operation and maintenance information
- b. All submittals shall be tailored to the project by highlighting appropriate information and/or deleting or crossing out non-applicable information. All options furnished shall be so indicated.

2.02 INFORMATION FOR RECORD

- a. Laboratory Certificates: Certificates shall include the results of tests by an independent laboratory for comparison to Specification requirements, mix design data and approval, plan inspection reports and certification, and other required information from the laboratory. All information submitted shall be signed by an authorized agent of the laboratory.
- b. Licenses and Permits: The Contractor shall obtain all licenses and permits required by Local, State and Federal laws and submit copies of them to the Engineer.
- c. Installation and Calibration Certificates: Certificates shall be submitted for equipment as indicated in the individual sections. These certificates shall indicate manufacturer's satisfaction with the installation, the accuracy of calibration and alignment, and the operation of the equipment. Such certificates must be signed by an authorized agent of the manufacturer.

2.03 INFORMATION FOR THE ENGINEER'S REVIEW AND APPROVAL

- a. Construction Schedule and Project Management Reports: Unless otherwise specified, construction schedules shall include:
 - 1) Prior to starting construction of this Contract, the Contractor shall submit through the Engineer for the Owner's review four (4) copies of a baseline critical path driven schedule, in the form of a bar or Gantt chart, of the proposed operations. The schedule shall be complete and show in detail the manner in which he proposes to complete the work within the specified time. The schedule shall include purchase lead time and delivery schedule for major equipment. The Engineer will distribute copies of the approved schedule to the Owner, the Contractor and the Owner's Representative.
 - 2) The schedule shall show milestone deliverables and completion points, developed and maintained in correlation with the Schedule of Values.

- 3) The Contractor shall update the construction schedule monthly or upon approved Change Order to show the work completed and any changes in the schedule. The Project Schedule and Schedule of Values shall be kept in sync.
- 4) The Contractor shall prepare a packaged monthly Project Management Progress report to be delivered at monthly progress meetings. The report shall include the following:
 - i Minutes and action item status from prior meeting
 - ii Updated schedule showing:
 - 1 all approved previously deviations from baseline
 - 2 Actual percent complete vs. actual percent of timeline consumed
 - iii Tabular Summary of approved changes in schedule
 - iv Updated Schedule of Values showing:
 - 1 All previously approved deviations from original
 - 2 Percent and amount billed
 - 3 Percent and amount paid
 - 4 Percent and amount in retention
 - v Summary list of approved change orders to date
 - vi All requested new change orders for the current period
 - vii List of Risks, Issues, and Concerns for discussion and resolution.
Items to be considered include, but are not limited to:
 - 1 Materials, equipment, construction, governing or coordinated agencies, suppliers and sub-contractors, public relations, open liabilities, claims, resources, budget, and schedule.
 - viii Any open RFI's or RFC's
 - ix Draft minutes shall be taken by the Contractor and distributed to all parties for review and correction, as soon as is reasonably possible, but no later than 5 working days from the conclusion of the meeting.
 - 1 Minutes shall include a list of actions items, each with action to be taken, responsible party, and due date.

b. Shop Drawings: Shop drawings shall include the following along with any special requirements listed in the individual Specification Sections:

- 1) Scaled details
- 2) Scaled dimensional drawings
- 3) Sectional assembly drawings
- 4) Fabrication information
- 5) Installation instructions and drawings

- 6) Wiring schematics with termination point identification
- 7) Motor information, Electric Motors
- 8) Piping schematics
- 9) Materials of construction
- 10) Manufacturer's name and model
- 11) Manufacturer's catalog data
- 12) Process and Instrumentation Diagrams
- 13) Control logic schematics and narratives, including control setpoints and alarm point settings

* The Contractor shall indicate on the submittals all variances from the Specifications.

- c. Manufacturers' Literature: Literature indicating the compliance of the product with the Specifications shall be included with all submittals. This shall include catalogs and other descriptive bulletins. Relevant portions of the literature shall be clearly identified by highlighting or under lining.
- d. Manufacturers submitting proposals for equipment which will require changes to the design shown on the drawings, or specified herein, shall also include detailed information on structural, electrical, mechanical, and other miscellaneous changes or modifications required to adapt their equipment to the design shown.
- e. Manufacturers' or Suppliers' Certificates: Certificates shall state that the products have been sampled and tested in accordance with the proper industrial and governmental standards and meet the requirements of the Contract Documents. Certificates shall be signed by an authorized agent of the manufacturer.
- f. Design Data: Design data shall include the calculations, supporting theories, safety factors and assumptions used in designing the product.
- g. Samples: Samples shall be provided as required in the individual sections. Samples shall be of the precise material proposed to be furnished. The number of samples and sample size shall be of the industry standard unless otherwise stated in the individual sections.
- h. Substitutions: Submittals for substitute materials or equipment shall include but not be limited to manufacturer's literature, design criteria, performance factors, dimensions, and installation instruction. The submittal shall also include any certifications or test results required to demonstrate that the proposed materials or equipment meets the requirements of the specifications and is equivalent or better than the specified materials or equipment.

2.04 OPERATION AND MAINTENANCE INFORMATION

- a. The Contractor shall furnish four (4) copies of Operations and Maintenance information for all equipment requiring physical operation or any maintenance.

- b. This information will be accepted only if properly identified with Contract Section Numbers and only after revised, where necessary, to conform to the Owner's Representative notes on previous submittals that have been "Approved as Revised" Manuals shall be tailored to suit the specified equipment provided.
- c. Submittals shall include but not be limited to the following:
 - 1) Descriptive literature, bulletins or other data covering the equipment or system
 - 2) Complete list of equipment and appurtenances included with the system, complete with manufacturer and model number
 - 3) Utility requirements
 - 4) General arrangement drawing
 - 5) Sectional assembly
 - 6) Dimension print
 - 7) Materials of construction
 - 8) Certified performance curves
 - 9) Performance guarantee
 - 10) Parts list with assembly drawings
 - 11) Recommended spare parts list with part and catalog number
 - 12) Lubrication recommendations and instructions
 - 13) Schematic wiring diagrams
 - 14) Schematic piping diagrams
 - 15) Description of associated instrumentation
 - 16) Drive dimensions and data
 - 17) Operating instructions
 - 18) Maintenance instructions including trouble shooting guidelines, lubrication, and preventive maintenance instructions with task schedule
 - 19) Special tools and equipment required for operation and maintenance.
 - 20) Description of equipment controls
 - 21) Pump seal data
 - 22) Assembly, installation, alignment, adjustment and checking instructions
 - 23) Confirmation of all corrections noted on shop drawings "Approved as Revised"
 - 24) Suppliers name, address, and telephone number along with manufacturers job number and/or Purchase order number.
- d. All manuals shall be tailored to the project by high-lighting appropriate information and/or deleting or crossing out non-applicable information. All options furnished shall be indicated.
- e. Manuals shall be printed on heavy, first quality paper, 8-1/2" x 11" size with standard three-hole punching. Large manuals shall be submitted in three ring

binders. Binders shall include a cover sheet and spine label with the project name and submittal topic. A Table of Contents and index tabs shall be furnished for all manuals containing data for three or more items of equipment. Drawings shall be reduced to 11" x 17" and tri-folded to fit 8-1/2" x 11" binders. Where reduction is not possible, larger drawings shall be folded separately and placed in envelopes which are bound into the manual.

- f. Equipment shall not be considered substantially complete until all associated O&M submittals are accepted by the District or Engineer.
- g. Drawings, tables and text of field modifications to equipment during installation shall be included in the manual so that the manual reflects as-built conditions. Revisions to the manual may be submitted for incorporation into the manual where appropriate. However, the Engineer reserves the right to return all four manuals for revision to reflect as-built conditions.

2.05 OTHER SUBMITTALS

- a. Other submittals are required under various sections of these Specifications.

PART 3: EXECUTION

3.01 GENERAL

- a. Delivery prior to approval of any material or equipment for which approved submittals are required will be at the Contractor's risk. Material or equipment for which submittals are required shall not be incorporated into the work until after the submittals have been reviewed and approved.
- b. Any material or equipment on-site which is rejected by the Owner's Representative after review of submittals shall be removed from the job site by the Contractor within two (2) working days of notification of rejection.

3.02 DISTRIBUTION

- a. Distribution of submittals shall be as follows unless otherwise directed in the individual Sections:
 - 1) Information for Record - The Contractor or the laboratory shall submit one (1) copy of all test certificates, licenses, permits and installation and calibration certificates directly to the Owner's Representative.
 - 2) Information for Engineer's Review and Approval
 - a) The Contractor shall submit to the Owner's Representative four (4) copies of all documents requiring review.

- b) The Owner's Representative will review the submittals with reasonable promptness for their compliance with the design concept and the Contract Documents.
- c) If the submittals are found insufficient three copies will be returned to the Contractor for correction. The Contractor shall then resubmit four (4) copies of the corrected information.
- d) Upon acceptance, the Owner's Representative will distribute marked copies as follows:
 - (1) One (1) copy - Owner's Representative
 - (2) Two (2) copies - Contractor
 - (3) One (1) copy – Engineer

PART 4: SPECIAL PROVISIONS

4.01 MEASUREMENT AND PAYMENT

- a. When not listed in the Bid, all "CONSTRUCTION SUBMITTAL" costs will be considered incidental work for which no separate payment will be made.

END OF SECTION

**SECTION 01350
COMMON PRODUCT REQUIREMENTS**

PART 1: GENERAL

1.01 SCOPE

- a. This section includes several product requirements common to most products.
- b. This section defines the minimum requirements of these common traits. The requirements specified herein apply to all products furnished under the Contract except where modified in other sections or otherwise recommended by the manufacturer.

1.02 SUBMITTALS

- a. Submittals shall be in accordance with the requirements of these Contract Documents and shall include:
 - 1) Manufacturer's certification that all materials and products which will come in contact with potable water meet the requirements of the specifications contained herein.

PART 2: PRODUCTS

2.01 GENERAL

- a. Whenever any material, article, device, product, or fixture is indicated or specified by patent or proprietary name, by name of manufacturer, or by catalog number, such specifications shall be deemed to be used for the purpose of establishing a standard of quality and facilitating the description of the material or process desired. This procedure is not to be construed as eliminating from competition other products of equal or better quality by other manufacturers where fully suitable in design and shall be deemed to be followed by the words "or approved equal". The decision relative to equality shall be by the Engineer and Owner or its agents and shall be final.
- b. All material incorporated into the project shall be new and previously unused unless the express approval for used items is received from the Owner.

2.02 MATERIALS IN CONTACT WITH POTABLE WATER

- a. All materials or products specified in these Contract Documents or required to complete the work which will come in contact with or which will be used on material or products which will come in contact with potable water shall conform to all State and Federal Requirements.

- b. All materials or products as specified above shall meet the requirements of the National Sanitation Foundation Standard 61, Drinking Water System Components - Health Effects, or approved equal.
- c. Whenever any material or product is indicated or specified by patent or proprietary name, name of manufacturer or model number, such specification is used for the purpose of establishing a standard of quality and facilitating the description of the material or process desired. Such specification of a particular product shall not be construed as acceptability under the above listed criteria. It shall be the Contractor's responsibility to provide certification as required above or provide an equal quality product for which certification can be provided.
- d. Any material or product installed without certification that it conforms to requirements as specified above shall be removed and replaced by the Contractor at no additional cost to the Owner.

PART 3: EXECUTION

3.01 DELIVERY, HANDLING & STORAGE OF PRODUCTS, MATERIALS, EQUIPMENT

- a. Unless otherwise specified in the individual sections, the Contractor shall deliver, handle and store materials and equipment in accordance with the requirements of the manufacturer and the following:
 - 1) Delivered materials and equipment shall be in the manufacturer's original, unopened packaging with labels intact and legible.
 - 2) Delivered materials should be in sufficient quantity to allow continuity of work.
 - 3) The Contractor shall confirm all materials are delivered as ordered and reflected in the shipping bill of lading. Any back-ordered, damaged, or missing items are to be addressed by the Contractor with the supplier at the time of delivery.
 - 4) The delivered materials and equipment shall be stored on clean raised platforms in conformance with the manufacturer's requirements.
 - 5) The materials and equipment shall be protected from the weather, dust, mud, oil, moisture, and other elements that are detrimental to the material or equipment.
 - 6) Materials and equipment shall be protected against damage by construction traffic.
 - 7) Materials and equipment that are damaged or do not conform to the

Specifications shall be removed immediately from the project site and replaced as promptly as possible.

- 8) Storage of materials, equipment and incidentals shall comply with all Local, State and Federal ordinances, regulations, and requirements.
 - 9) Emulsions and paints shall be stored in temperatures above 40°C. No previously frozen emulsions or paints shall be allowed to be used.
- b. Materials, equipment and articles to be incorporated into the work shall be stored so as to facilitate inspection and in such manner as to ensure the preservation of their quality and fitness for the work. Stocked materials, even though approved before storage, shall be subject to test and shall meet requirements of the Specifications at the time they are to be used in the work.
 - c. Where construction is in roads, streets, etc., that portion of the right-of-way not required for public travel may be used for storage purposes, unless otherwise prohibited, and for placing of the Contractor's plant and equipment. Any other additional space required for construction facilities or storage of materials and equipment shall be provided by the Contractor at his expense.
 - d. The Contractor will confine his equipment, the storage of materials and equipment and the operations of his workmen to areas permitted by law, ordinances, permits or the requirements of the Contract Documents, and shall not unreasonably encumber the premises with materials or equipment.

PART 4: SPECIAL PROVISIONS

4.01 MEASUREMENT AND PAYMENT

- a. When not listed in the Bid, all "COMMON PRODUCT REQUIREMENTS" costs will be considered incidental work for which no separate payment will be made.

END OF SECTION

SECTION 01370
SCHEDULE OF VALUES

PART 1: GENERAL

1.01 SCOPE

- a. The work under this section includes preparation and submittal of a schedule of values.

1.02 SUBMITTALS

- a. Submittals shall be in accordance with the requirements of these Contract Documents.

1.03 DESCRIPTION

- a. Submit to the Engineer for approval a Schedule of Values, providing costs allocated to the various portions of the work, within 10 days after the effective date of the Agreement.
- b. Upon request from the Engineer, support the values with data which will substantiate their correctness.
- c. The approved Schedule of Values, shall be used only as the basis for the Contractor's Application for Payment. Values shall not be disproportionately front-loaded in the schedule; any early costs shall be addressed and supported under Mobilization.

1.04 FORM AND CONTENT OF SCHEDULE OF VALUES

- a. Form and identification:
 - 1) Type schedule on 8-1/2" x 11" white paper.
 - 2) Contractor's standard forms and automated printout may be used.
 - 3) Identify schedule with:
 - a) Title of project and location
 - b) Engineer
 - c) Project number
 - d) Name and address of Contractor
 - e) Contract designation
 - f) Date of submission
- b. Detail:

- 1) Schedule shall list the installed value of the component parts, unit (where appropriate), and extended costs of the work in sufficient detail to serve as a basis for computing values for progress payments during construction.
 - 2) Values shall be tied to deliverables and completion milestones listed in the Project Schedule: both documents shall be developed in concert and be cross-referenceable.
- c. Format:
- 1) Identify each line item with the Project Schedule event number, and number and title of the respective major section of the Specifications.
- d. Sub-values:
- 1) For each major line item, list sub-values of major products or operations under the item.
- e. For the various portions of the work:
- 1) Each item shall include a directly proportional amount of the Contractor's overhead and profit.
 - 2) For items on which progress payments will be requested for stored materials, break down the value into:
 - a) The cost of the materials; delivered, unloaded, and stored; with taxes, delivery, and commissioning fees paid.
 - b) The total installed and functioning value.
- f. The sum of all values listed in the schedule shall equal the total contract sum.

PART 2: PRODUCTS

None

PART 3: EXECUTION

None

PART 4: SPECIAL PROVISIONS

4.01 MEASUREMENT & PAYMENT

- a. When not listed in the Bid, all "SCHEDULE OF VALUES" costs will be considered incidental work for which no separate payment will be made.

END OF SECTION

Section 01370 -2
SCHEDULE OF VALUES

**SECTION 01410
LABORATORY SERVICES**

PART 1: GENERAL

1.01 SCOPE

- a. The Owner/Engineer will retain an independent testing laboratory for conducting field and laboratory tests of materials to verify the Contractor's compliance with the Specifications.
- b. The testing laboratory shall furnish all labor, materials, equipment and services necessary to perform concrete tests, compaction tests of pavement bases and backfill, sieve analyses of aggregate materials, approve material and review the design of bituminous and concrete plant mixes, and conduct other tests as specified below and in other sections as directed.

1.02 CONTRACTOR'S RESPONSIBILITY

- a. Testing of materials or equipment for compliance with various national or technical society standards and ordinarily performed by manufacturers, and shop and field tests of equipment are not included under this section but shall be performed by the Contractor or his supplier as required or as may specified elsewhere.
- b. Any test required by the Owner shall not relieve the Contractor from the responsibility of supplying certificates from manufacturers or suppliers to demonstrate compliance with the Specifications.

1.03 QUALIFICATIONS

- a. The laboratory shall be a recognized and independent commercial laboratory with experience and certifications in conducting the required tests.

1.04 SUBMITTALS

- a. Submittals shall be in accordance with the requirements of these Contract Documents.
- b. Mix Designs: The laboratory shall review and test mix designs submitted by the Contractor. Approved mix designs shall include sieve analyses and suppliers' certificates for materials incorporated in the mix.
- c. Distribution: One copy each of all certified test reports and mix designs shall be distributed as follows:
 - 1) Owner
 - 2) Owner's Representative where indicated

- 3) Contractor
- b Rejection of testing submittals, including for failure of lab testing or inability to certify products or materials, will require immediate rework or removal of the materials from the project site to prevent use, and prompt replacement with acceptable materials.

1.05 SUPPLEMENTARY AND OTHER TESTING

- a. Nothing shall restrict the Contractor from conducting material or field tests he may require. However, should the Contractor, at any time, desire the Owner to consider the results of such testing, test reports shall be certified by an independent testing laboratory acceptable to the Owner. Any testing of this nature shall be conducted at the Contractor's expense.

PART 2: PRODUCTS

2.01 TESTS

- a. Aggregates, Bedding Material and Granular Backfill: For each type of material, the laboratory shall perform an ASTM C-136 sieve and screen analysis to determine whether the material meets the Specifications noted in the individual sections. Retests shall be performed until the Specifications are met and each time the source of material is changed.
- b. Selected Backfill: At the discretion of the Engineer, but in no case more than one test for each 1,000 c.y. of each material source or portion thereof, the laboratory shall perform an ASTM C-136 sieve and screen analysis to determine whether the material is suitable for backfilling purposes.
- c. Mix Designs: For each type of controlled density fill, concrete and asphalt, the laboratory shall perform and approve the necessary mix design and shall perform and approve redesign if there is a change in source of materials. The asphalt design shall be made in accordance with ASTM D-1559, the Marshall Method of mix design or other engineer approved method.
- d. Compaction Tests: For each type of backfill material, the laboratory shall determine the moisture density curve according to AASHTO T-180. Using ASTM D-2922 test methods, the laboratory shall determine the density of in-place backfill. Retests shall be performed if the compaction requirements stated in the individual sections are not met. The Engineer may at his discretion require the sand cone (ASTM D1556) or the balloon (ASTM D-2167) tests for density and compaction to verify questionable results of the ASTM D-2922 tests.

- e. Asphalt and Concrete Quality Control Testing: The laboratory shall perform tests as indicated in these Contract Documents.
- f. Miscellaneous Tests: The laboratory shall perform all other tests requested in the individual sections of the Specifications.
- g. Retest: Retesting required because of failure to meet specification shall be at Contractor's expense.

2.02 PLANT INSPECTIONS

- a. The laboratory may inspect and certify asphalt and concrete plants as indicated in these Contract Documents.

2.03 EQUIPMENT

- a. The laboratory shall provide all necessary equipment to extract and store samples and perform the required tests.

PART 3: EXECUTION

3.01 MATERIAL TESTS

- a. The laboratory shall conduct tests on materials and in locations as directed by the Owner's Representative.
- b. All tests shall be performed in accordance with the proper test methods mentioned above and in the individual sections. Results shall be compared to industry standards and/or the required values when included in the individual sections.

3.02 MIXING PLANT CONTROL

- a. The Plant laboratory shall provide mix designs and control mixing plant production for conformance to product specifications herein, or as directed by the Engineer if necessitated.

PART 4: SPECIAL PROVISIONS

4.01 RETESTING

- a. Cost of retest performed under this specification shall be borne by the Contractor.

END OF SECTION

**SECTION 01505
TEMPORARY TRAFFIC CONTROL**

PART 1: GENERAL

1.01 SCOPE

- a. This section includes all work necessary to provide temporary traffic control to minimize obstruction and inconvenience to the public and to protect pedestrian and vehicular traffic.
- b. Temporary traffic control shall include, but not be limited to:
 - 1) Furnishing, installing, maintaining and removing all required traffic control devices.
 - 2) Providing flaggers, barricades, lights and signs as required by City, County or State agencies and their road and traffic control policies.
- c. Contractor shall provide temporary traffic control measures outside the contract limits when the Contractor's work activities affect traffic outside the contract limits.
- d. All work under this section to conform with all Federal, State and local regulations and requirements.

1.02 DEFINITIONS

- a. MUTCD:
 - 1) Manual on Uniform Traffic Control Devices.
 - i Signing and Flagging Standard for Short-Term Work Zones.

1.03 SUBMITTALS

- a. Traffic Control
 - 1) The Contractor shall submit a traffic control plan at the Preconstruction Conference. The traffic control plan shall include:
 - a) Location and types of traffic control measures proposed.
 - b) Proposed order and duration of traffic control measures.
 - c) Statement of compliance with required traffic control regulations of governing agencies
 - d) Submittal of this plan at the Preconstruction Conference shall not constitute the District's or its Agent's approval of the plan, nor does it relieve the Contractor of regulatory compliance.

PART 2: PRODUCTS

2.01 UNIFORM TRAFFIC CONTROL DEVICES

- a. Use new or like-new equipment for all temporary items under this Section unless otherwise specified.
- b. All barricades, signs, lights, flags and other traffic control devices shall conform to the current edition of the MUTCD unless otherwise specified.
- c. Signs
 - 1) Use standard size and shape conforming to the current edition of the MUTCD unless otherwise specified or ordered. Double-face signs will not be allowed except for flagger "STOP/SLOW" sign paddles.
 - 2) Type
 - a) Unless otherwise specified or shown on the plans, use signs composed of orange reflectorized sheeting background with non-reflectorized black legend on one of the following materials.
 - (1) Sheet aluminum.
 - (2) 3/4-inch medium or high-density overlay plywood.
 - b) Where there is interference from extraneous light sources which limits the effectiveness of the reflectorized surface, or as required by the Engineer, illuminated signs shall be used.
- d. Flaggers
 - 1) Flaggers shall be equipped with a minimum of the following:
 - a) Clothing to cover the complete body except head, neck, and arms below the point of the shoulders.
 - b) An OSHA approved hard hat.
 - c) An orange, fluorescent red-orange, or fluorescent yellow-orange vest. For night-time conditions, the vest shall be reflective.
 - d) Highly visible, reflective "STOP/SLOW" sign paddles conforming to the MUTCD.
 - e) Portable, self-contained two-way radio with a range suitable for the project.
 - f) Illuminated stand area of high visibility at night.

PART 3: EXECUTION

3.01 GENERAL

- a. Contractor shall adequately warn the public at all times of existing conditions on all streets affected by work operations.
- b. Provide approved access to private properties at all times, except during Owner - approved stages of construction.
- c. The Contractor shall notify affected residents, businesses and emergency services in writing during business hours 48 hours in advance of parking removal, and/or street, driveway, and alley detour or closures. Failure to provide proper, timely notification will be grounds to deny the commencement of the work.
- d. Emergency traffic such as police, fire, and disaster units shall be provided access to the work area at all times.
- e. Provide open trenches and excavations with adequate barricades of an approved type. No open trenches shall be left at night or over the weekends or on holidays. Install and maintain all necessary signs, lights, flares, barricades, railings, runways, stairs, bridges, and facilities for the protection of the public.
- f. Contractor shall conform to all applicable local, State and Federal regulations relating to temporary traffic control and protection of the public.

3.02 TRAFFIC CONTROL WITHIN CONTRACT LIMITS

- a. Contractor shall provide temporary traffic control as required by MUTCD, as well as applicable local and Federal regulations.
- b. When vehicular parking is a hazard to human health and safety, through traffic, or to the work, furnish and place NO PARKING signs on any street which is impacted by the work.
- c. Flagging stations shall be staffed continuously during working hours.

3.03 DETOURS

- a. Contractor shall submit detour plans to the Owner and Engineer, local and State authorities a minimum of five (5) days prior to commencement of the work necessitating the detour, and obtain approval from all regulating authorities prior to detour construction.
- b. Contractor shall construct and maintain approved temporary detours to provide adequate passage of public traffic.
- c. Contractor shall assume responsibility for detours within the limits of the project such as side street crossings, temporary bridges over freshly placed concrete, or utilization of one or more lanes of the construction area for maintenance of traffic.

- d. Upon failure to immediately provide, maintain, or remove suitable detours or detour bridges when ordered to do so by regulating agencies or the Engineer, Owner may without notice to Contractor or Surety, provide, maintain, or remove the detour and deduct costs thereof from any payments due or coming due to Contractor.
- e. When detours are not available, confine operations to a width which provides for safe passage of traffic.

3.04 ONE-WAY PILOTED TRAFFIC

- a. If, in the judgement of the local traffic authorities, one-way piloted traffic is necessary, provide at least two flaggers to control traffic, one flagger being stationed at each end of the roadway being limited to restricted use. If the length of one way piloted traffic exceeds 2 miles, furnish a pilot car and driver to lead traffic. Pilot cars shall be identified with appropriate sign information mounted on the rear of the vehicle. At the end of each day leave work in such condition that it can be traveled without damage to the work and without danger to the public.

PART 4: SPECIAL PROVISIONS

4.01 MEASUREMENT AND PAYMENT

- a. When not listed in the Bid, all "TEMPORARY TRAFFIC CONTROL" costs will be considered incidental work for which no separate payment will be made.

END OF SECTION