

SECTION 01005 – ADMINISTRATIVE PROVISIONS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Description of Work, and Contract Method.
- B. Basic Bid.
- C. CONTRACTOR Use of Premises.
- D. Using Agency Occupancy.
- E. Overtime work.
- F. Surveying existing conditions.
- G. Concealed conditions unacceptable to Contractor, if any.
- H. Use of Owner's property and equipment.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. The State of Alaska, Department of Corrections (DEPARTMENT) is soliciting bids from Contractors for the upgrade of the fire alarm and detection systems in multiple buildings at the Palmer Correctional Center (PCC) near Palmer, Alaska. The work consists of furnishing all labor, materials, programming and supervision to provide new water main extension as shown on the drawings and as specified. The tasks required to do this work include but are not limited to the following:
 - 1. Secure and pay for all permits and fees required to begin and complete the project.
 - 2. Perform and schedule all work noted in the Contract Documents in the Base Bid.
 - 3. Perform all demolition as shown on the Drawings.
 - 4. Provide all new water main parts as shown on the Drawings.
 - 5. Connect with all existing water mains as shown on the Drawings.

1.3 CONTRACT METHOD

- A. Construct the Work under a single fixed-price Contract.
- B. Provide per unit cost for replacement smoke and heat detectors for all detector types.

1.4 BID SCHEDULE

- A. Base Bid: That portion of Work described within these documents (taken as a whole) as the Base Bid scope.
- B. All labor, materials and supervision to install a new 8-inch water main from existing pump house, which is adjacent to a 350,000 gallon storage tank, to an existing 3-inch line (see construction drawings). The water main extension is approximately 475

linear feet including two fire hydrants. This water main extension will help provide fire hydrant coverage for the site. As part of this project, an existing portion of the water system will be valved off and isolated. Access to the isolated section will be provided as part of the design so that water can be pumped out of the isolated water line. All work shall be as shown on the drawings and as specified.

1.5 CONTRACTOR USE OF PREMISES

- A. CONTRACTOR is responsible for all safety considerations and precautions required during the construction period and to insure that all laws pertaining to workplace safety are followed.
- B. The CONTRACTOR shall have use of the PCC specified areas and adjacent areas for the proposed new construction. Coordinate with the Using Agency Representative during construction operations to minimize conflicts and to facilitate the Using Agency use of facilities.
- C. Provide clear and easy access to and egress from spaces at all times during the construction, unless specifically arranged through the Using Agency Representative.
- D. Arrange with the Using Agency's Representative a satisfactory path of travel from parking areas to occupied areas of the building that will serve the Using Agency needs.
- E. CONTRACTOR may not use areas specifically designated for use by the Using Agency without prior approval from the DEPARTMENT.
- F. Limit working hours to within the periods from 7:00 A.M. to 5:00 P.M. Monday through Friday, except for Holidays. CONTRACTOR may request variances in work hours for approval by the Using Agency and the DEPARTMENT.

1.7 USING AGENCY OCCUPANCY

- A. The Using Agency will occupy the premises during the entire period of construction, for the conduct of its normal operations. Cooperate with the DEPARTMENT to minimize conflict, and to facilitate Using Agency operations. Maintain the security of the perimeter fencing associated with the detention facility during construction operations.

1.8 OVERTIME WORK

- A. To permit arrangements for inspections; the Contractor shall notify the Project Manager at least 48 hours in advance of any overtime work, including nights, weekends, and holidays. No overtime work without Project Manager prior approval.

1.9 SURVEYING EXISTING CONDITIONS

- A. Prior to commencement of work, Contractor and Using Agency Representative shall jointly survey existing conditions, noting and recording any existing damage. Before work begins, Using Agency Representative and Contractor shall both sign a Survey Record.
- B. The Survey Record will serve as a basis for determining any subsequent damage to existing facilities caused by contract work.

1.10 CONCEALED CONDITIONS UNACCEPTABLE TO CONTRACTOR, IF ANY

- A. Should Contractor discover, in the course of work defined in this contract, conditions that are inconsistent with the Contract Documents or work of a substandard nature that will affect the

satisfactory completion of the work, the Using Agency Representative shall be notified immediately.

- B. Upon notification for the Contractor and if the Using Agency Representative concurs; the Contract Administrator may issue a Change Order authorizing Contractor to perform the work necessary for compliance, and will adjust the contract sum accordingly.

1.11 USE OF PCC PROPERTY AND EQUIPMENT

- A. Use of Using Agency property or equipment such as tools, ladders, furniture, janitorial equipment and supplies, etc. is strictly prohibited.

PART 2 - PRODUCTS - Not Used.

PART 3 - EXECUTION - Not Used.

END OF SECTION

SECTION 01010

SUMMARY OF WORK

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

- A. Section 00100 – Information Available to Bidders.
- B. Section 00700 - General Conditions: Provisions for use of site, and Using Agency occupancy. Relations of Contractor - Subcontractors.
- C. Section 00800 - Supplementary Conditions: Modifications to General Conditions.
- D. Section 01400 – Quality Control

1.02 WORK COVERED BY CONTRACT DOCUMENTS

- A. Work covered by the contract documents is located at the Palmer Correctional Center, Sutton, Alaska. The work of this project includes, but is not limited to:

Base Bid:

All labor, materials and supervision to install a new 8-inch water main from existing pump house, which is adjacent to a 350,000 gallon storage tank, to an existing 3-inch line (see construction drawings). The water main extension is approximately 475 linear feet including two fire hydrants. This water main extension will help provide fire hydrant coverage for the site. As part of this project, an existing portion of the water system will be valved off and isolated. Access to the isolated section will be provided as part of the design so that water can be pumped out of the isolated water line. All work shall be as shown on the drawings and as specified.

The tasks required to do this work include but are not limited to the following:

- 1. Secure and pay for all permits and fees required to begin and complete the project.
 - a. User is obtaining DEC "Approval to Construct" and will obtain "DEC "Approval to Operate"
 - b. State of Alaska Fire Marshall Plans Review not required
 - 2. Provide and install new 8" HDPE water main and two fire hydrants, as indicated on the Drawings.
- B. The Department is acting for the State of Alaska and the Department of Corrections.
 - C. Contractor shall coordinate outages per Article 1.08 of this Section.
 - D. Contractor shall maintain existing potable water flow during construction other than pre-approved water system cutover.

1.03 CONTRACT METHOD

- A. Construct the Work under a single lump sum Contract.

1.04 WORK BY OTHERS

- A. Other State projects may be under construction in the vicinity of the Project.
- B. Cooperate with other Contractors and the Department to minimize conflict with construction operations.

1.05 WORK INSIDE FACILITY

- A. Work within the facility shall be conducted only between the hours of 7:00 AM and 5:00 PM five days per week, unless specifically approved by the Department. Requests for work outside of these hours must be submitted in writing 24 hours in advance.
- B. Contractor shall not under any circumstances leave tools or equipment unattended within the limits of the project site unless secured in a locked toolbox or equipment storage container. Contractor will be liable for any damages to persons and/or property resulting from unattended tools or equipment.
- C. Any tools or equipment left unattended within the limits of the project site by the Contractor shall be subject to confiscation by the Department. Confiscated equipment may be obtained from the Department after 24 hours. A fee of \$25 per item confiscated may be deducted from the Contractor's subsequent pay request. No claims for delay will be considered for impacts to the work due to items left unattended by the Contractor and confiscated by the Department.
- C. Contractor and all subcontractors shall at all times wear an identifying badge in a visible location. Badge to be provided by the Using Agency – see Section 01540, Security.
- D. Contractor shall at all times maintain a clean and clear floor space and provide a physical barricade and detour route for foot traffic within the areas of construction. Provide clear and easy access to and egress from spaces at all times during construction, unless specifically arranged through the Using Agency. Provide and maintain full safe access at existing exits at all times.
- E. Contractor shall notify the Department 24 hours in advance of performing Work that produces loud noise for an extended duration of time (greater than 15 minutes).
- G. All items marked for demolition shall remain the property of the Using Agency.

1.06 WORK PLANS AND ACCESS TO FACILITY, INDIVIDUAL WORK AREAS

- A. In close coordination with the work schedule, provide detailed written (narrative) work plan with a sketch of each area impacted by the Contractor's work. The work plan shall be broken out into phases to localize impact of construction activities. Show limits of work enclosures, barricades, temporary partitions, or other items affecting the operation of the area.
- B. Prior to beginning work in new phase of work identified in the work plan, the Contractor shall notify the Department in writing at least 5 (five) working days, not including weekends or Holidays.
- C. Allow for Using Agency use and occupancy of the facility throughout the duration of the work. The Department may reject a work plan for non-conformance with contract documents or this section. The Contractor may be required to construct work in stages to accommodate Using Agency use of the facility during construction. Coordinate progress schedule with Using Agency occupancy during construction.
- D. No construction operations affecting safety or comfort of the public shall begin until the work area is closed off from the public.
- E. Where work is adjacent to or above existing cabinetwork, equipment, furniture, supplies or other fixtures, include means and method of protection as a part of the work plan. This requirement is for coordination with Using Agency and is not intended to relieve the Contractor of the responsibility for safety and protection of the existing building and facilities in accordance with Article 6.17 of the General Conditions.
- D. It shall be the responsibility of the Contractor to coordinate all construction and haul activities

through the Department and to comply with their instructions concerning the movements of construction equipment, men and materials in the vicinity of the Using Agency operations in the vicinity of the project. All such requests shall be made at least 48 hours (excluding weekends) in advance of any planned closure or change.

- E. All work shall be performed in a manner that will minimize disruption of ongoing activities and operations in the existing facility during the course of the project. Demolition or any other work of a nature that could be hazardous or disruptive to activities shall be as approved by the Using Agency. Work areas must be cleaned, and made safe and suitable for occupancy prior to the next scheduled use of the facility.
- F. Contractor staging area shall minimize interference with the Using Agency's use of the facility. Access shall be maintained for the Using Agency, supply access, trash disposal, and vehicle access around the facility.
- I. Contractor staging area to remain within the location designated on the plans.

1.07 WORK SEQUENCE

- A. Construct work in phases to accommodate the Using Agency's access and utility requirements during the construction period. Coordinate construction schedule and operations with the Department.

1.08 SHUTOFFS/DISRUPTIONS TO SERVICE

- A. Provide written notification of work in area at least three working days (not including weekends) in advance.
- B. Plan work to minimize down time. Work with Department to schedule disruption for a time that minimizes impact on the Using Agency's operations.
- C. Provide written work plan and schedule for disruptions to service that exceed one hour.
- D. Schedule of Utilities Interruptions. As soon as practical, and at least one week prior to the first outage, the Contractor shall prepare a proposed schedule of utilities outages. The schedule shall include proposed water, sewer, and electrical outages. The Contractor will not be bound by the entire schedule as originally submitted, but he will be expected to modify the schedule as required, and to the best of his ability, adhere to an accurate schedule as adjusted on a week-to-week basis. In addition to the above requirements, the Contractor must give the Department a minimum of 16-working hours notice prior to any utilities interruptions.

1.09 CONTRACTOR'S USE OF PREMISES

- A. Limit use of premises to that necessary for performance of the Work and for construction operations, to allow for continuous occupancy of the facility and grounds. Coordinate use of the premises under direction of Department.
- B. Contractor is responsible for all safety considerations and precautions required during the construction period and to ensure all laws pertaining to workplace safety are followed.
- C. Assume full responsibility for protection and safekeeping of products under this Contract.
- D. Assume full responsibility for the protection of existing buildings and contents, and equipment from damage due to construction operations. Take all necessary precautions to protect building occupants from any hazards during the progress of the Work.
- E. Obtain and pay for use of additional storage or Work areas needed for operations under this Contract.
- F. Do not stop or otherwise impede traffic without prior written approval from the Department. Provide traffic control layout plan and traffic control schedule upon request, unless Traffic Control is specifically required by another Section within this Contract, then provide as required in that Section.

1.10 USING AGENCY OCCUPANCY

- A. The Using Agency will occupy facilities for the conduct of its normal operations during the entire construction period. Limit use of premises for Work and for construction operations to allow for Using Agency occupancy. Coordinate use of premises under direction of the Using Agency.
- B. Cooperate with the Department in scheduling operations to minimize conflict and to facilitate Using Agency operations.
- C. Contractor shall provide Material Safety Data Sheets for all products that may produce unpleasant odors.

1.11 COORDINATION

- A. Coordinate Work of the various sections of Specifications to ensure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items installed later.
- B. Verify if characteristics of elements of interrelated operating equipment are compatible; coordinate Work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Coordinate space requirements and sequence of installation of mechanical and electrical work, which is indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduits, as closely as practicable; make runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs. Coordinate work with existing elements in the building. Do not locate piping, conduit or other products where they will block access to equipment or junction boxes.
- D. In finished areas except as otherwise shown, conceal pipes, ducts, and wiring in the construction. When removing existing ceiling materials the contractor shall ensure that the removed ceiling materials are reinstalled in a similar condition as when removed. All damaged ceiling materials shall be replaced by the Contractor at no cost to the Department.
- E. Execute cutting and patching to integrate elements of Work, provide openings for penetrations of existing surfaces, and provide samples for testing. Seal penetrations through floors, walls, partitions, and ceilings.

1.12 OVERTIME WORK

- A. The Contractor shall notify the Department at least 48 hours in advance of any overtime work, including nights, weekends, and holidays. No overtime work will be authorized without prior Department approval.

1.13 SURVEYING EXISTING CONDITIONS

- A. Prior to commencing work, the Contractor and the Department shall jointly survey existing conditions, noting and recording any existing damage. Before work begins, the Contractor and the Department shall both sign a Survey Record.
- B. The Survey Record shall serve as a basis for determining any subsequent damage to existing facilities caused by the Contractor's work.

1.14 CONCEALED CONDITIONS UNACCEPTABLE TO CONTRACTOR

- A. Should the Contractor discover conditions that are inconsistent with the Contract or existing construction of a substandard nature that will affect the satisfactory completion of the Work, the Department shall be notified immediately.
- B. Upon notification from the Contractor, the Department may issue a Change Order authorizing the Contractor to perform the work necessary for compliance with the Contract.

1.15 PROJECT COORDINATION PROCEDURE

- A. The Department shall issue all orders to the Contractor. The Engineer shall be responsible to the Department for certain aspects for observation of the project. The

Architect/Engineer may issue field memorandum to the Contractor for deficiencies in the work and for providing additional instruction and interpretation of the technical specifications and drawings. The Engineer is not authorized to make any changes in the contract amount nor time for completion of the project. Any reference to Engineer, Project Manager, or any other related title shall be construed to be the Department.

1.16 SUPERINTENDENCE AND EMPLOYEES

- A. Before starting work, the Contractor shall designate a competent authorized representative to represent and act for the Contractor, and shall inform the Department in writing of the name and address of such representative, together with a clear definition of the scope of his authority to represent and act for the Contractor, and shall specify any and all limitations of such authority. Such representative shall be present or duly represented at the site of work at all times when work is actually in progress and, during periods when work is suspended, arrangements acceptable to the Department shall be made for emergency work that may be required. The Contractor's authorized representative shall be supported by competent assistants, as necessary; and the authorized representative and his assistants shall be satisfactory to the Department. All requirements, instructions and other communications given to the authorized representative by the Department shall be as binding if given to the Contractor.
- B. None of the Contractor's superintendents, supervisors, or engineers shall be withdrawn from the work without due notice being given to the Department; and no such withdrawal shall be made if it will jeopardize successful completion of the work.
- C. The Contractor shall employ only competent and skilled personnel to perform any work. The Contractor shall be responsible for maintaining the orderly and faithful conduct of its employees.
- D. The Department may, in writing, require the Contractor to remove from the work any employee whom the Department deems incompetent, careless, insubordinate, or otherwise objectionable or whose continued employment on the work is deemed by the Department to be contrary to the Department's interest.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not used

END OF SECTION

SECTION 01020

INTENT OF DOCUMENTS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Explanation of intent and terminology of the Construction Documents.

1.02 RELATED REQUIREMENTS

- A. Section 00700 - General Conditions: Article 1 Definitions relating to 'Drawings' and 'Specifications'.
- B. Section 00700 - General Conditions: Article 3 Contract Documents relating to Intent, Amending, and Reuse.

1.03 SPECIFICATION FORMAT AND COMPOSITION

- A. Specifications are divided into Divisions and Sections for the convenience of writing and using. Titles are not intended to imply a particular trade jurisdiction. DEPARTMENT is not bound to define the limits of any subcontract, and will not enter into disputes between the Contractor and his employees, including Subcontractors.
- B. Pages are numbered independently for each Section, and recorded in the Table of Contents. Section number is shown with the page number at the bottom of each page. The end of each Section of the specifications is ended by "End of Section". It is Contractor's responsibility to verify that Contract Documents received for bidding and/or construction are complete in accordance with Table of Contents.
- C. The language employed in the Contract Documents is addressed directly to the Contractor. Imperative or indicative language is generally employed throughout and requirements expressed are the mandatory responsibility of the Contractor, even though the work specified may be accomplished by specialty subcontractors engaged by the Contractor. References to third parties in this regard shall not be interpreted in any way as to relieve the Contractor of his or her responsibility under this Contract.
- D. These Specifications are of the abbreviated, or "streamlined" type, and may include incomplete sentences.
- E. Omissions of words or phrases such as "the Contractor shall", "in conformity therewith", "shall be", "as noted on the Drawings", "according to the Drawings", "a", "an", "the" and "all" are intentional.
- F. Omitted words or phrases shall be supplied by inference in the same manner as they are when a "note" occurs on the Drawings.

1.04 DRAWINGS: CONTENT EXPLANATION

- A. Drawings, Dimensions and Measurements.
 - 1. Contract Documents do not purport to describe in detail, absolute and complete construction information. In some instances drawings are diagrammatic. Contractor shall provide verification of actual site conditions

and shall provide complete and operational systems as specified when drawings do not provide full detail.

2. Where on any of the Drawings a portion of the work is drawn out and the remainder is indicated in outline, the parts drawn out shall apply also to all other portions of the Work.
3. Wherever a detail is referenced and developed for a specific condition, same or similar detail shall apply to identical or similar conditions elsewhere on Project even though not specifically referenced.
4. Where the word "similar" occurs on the Drawings, it shall be interpreted in its general sense and not as meaning identical, all details shall be worked out in relation to their location and their connection with other parts of the work.
5. The figured dimensions on the Drawings or notes indicating dimensions shall be used instead of measurements of the Drawings by scale.
6. No scale measurements shall be used as a dimension to work with unless specific permission to do so is granted in advance in writing by the Department.

1.05 COMMON TERMINOLOGY

A. Certain items used generally throughout the Specifications and Drawings are used as follows:

1. Indicated: The term "indicated" is a cross reference to details, notes or schedules on the Drawings, other paragraphs or schedules in the Specifications, and similar means of recording requirements in the Contract Documents. Where terms such as "shown", "noted", "schedules", and "specified" are used in lieu of "indicate", it is for the purpose of helping the reader accomplish the cross reference, and no limitation of location is intended except as specifically noted.
2. Installer: The person or entity engaged by Contractor, his Subcontractor or sub-subcontractor for the performance of a particular unit of Work at the Project site, including installation, erection, application and similar required operations. It is a general requirement that installers be recognized experts in the work they are engaged to perform.
3. Furnish: Except as otherwise defined in greater detail, the term "furnish" is used to mean "...supply and deliver to the Project site, ready for unpacking, assembly and installation..."
4. Provide: Except to the extent further defined, the term "provide" means to furnish and install, complete and ready for the intended use.
5. Guarantee and Warranty: "Warranty" is generally used in conjunction with products manufactured or fabricated away from the Project site, and "guarantee" is generally used in conjunction with units of work which require both products and substantial amounts of labor at the Project site. The resulting difference is that warranties are frequently issued by manufacturers, and guarantees are generally issued by Contractor and frequently supported (partially) by product warranties from manufacturers.

1.06 CONFLICTS

A. Report any conflicts to the Department for clarification.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION - 01027

APPLICATIONS FOR PAYMENT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Procedures for preparation and submittal of Applications for Payment.

1.02 RELATED REQUIREMENTS

- A. Section 00510 - Construction Contract - Contract Form 25D-10a and Bid Schedule: Method of Payment and Contract Price and Amounts of Liquidated Damages.
- B. Section 00700 - General Conditions: Progress Payments, and Final Payment.
- C. Section 01300 - Submittals: Procedures.
- D. Section 01700 - Contract Closeout: Closeout Procedures.

1.03 FORMAT

- A. Application for Payment form in format approved by the Department.

1.04 PREPARATION OF APPLICATIONS

- A. Type required information on Application for Payment form approved by the Department.
- B. Execute certification by original signature of authorized officer upon the Application for Payment.
- C. Submit names of individuals authorized to be responsible for information submitted on application for payment.
- D. Indicate breakdown of costs for each item of the Work on accepted Schedule of Values. Provide dollar value in each column for each line item for portion of Work performed and for stored products.
- E. List each authorized Change Order as an extension on continuation sheet, listing Change Order number and dollar amount as for an original item of Work.
- F. Prepare Application for Final Payment as specified in Section 01700.

1.05 SUBMITTAL PROCEDURES

- A. Submit one copy of each Application for Payment at times stipulated in Contract.
- B. Submit under transmittal letter specified in Section 01300.

1.06 SUBSTANTIATING DATA

- A. When Department requires substantiating information, submit data justifying line item amounts in question.

- B. Substantiating data required under General Conditions Articles 7.12.3 and 7.12.4 shall be submitted (or updated) when the Application for Payment includes a current request for payment on an item of Work required to include Alaska "agricultural/wood" products.
- C. Provide one copy of data with cover letter for each copy of Application. Show Application number and date, and line item by number and description.

1.07 SUBMITTALS WITH APPLICATION FOR PAYMENT

- A. Submit the following with each Application for Payment.
 - 1. Updated construction schedule as required by Section 01300 - Submittals.
 - 2. Updated Schedule of Values as required by Section 01300 – Submittals: Schedule of Values.
 - 3. The Contractor's as-builts will be reviewed prior to approving each application for payment.

PART 2 PRODUCTS
Not Used

PART 3 EXECUTION
Not Used

END OF SECTION

SECTION 01028

CHANGE ORDER PROCEDURES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Procedures for processing Change Orders.

1.02 RELATED REQUIREMENTS

- A. Section 00312 - Bid Schedule: Total amount bid for lump sum items.
- B. Section 00510 - Contract Form: Total amount of Contract Price, as awarded.
- C. Section 00700 - General Conditions: Governing requirements for changes in the Work, in Contract Price, and Contract Time.
- D. Section 00800 - Supplementary Conditions: Modifications to Document 00700 - General Conditions.
- E. Section 01027 - Applications for Payment.
- F. Section 01300 - Submittals: Construction Progress Schedules, Schedule of Values.
- G. Section 01600 - Material and Equipment: Product Options, Substitutions.
- H. Section 01700 - Contract Closeout: Project Record Documents.

1.03 SUBMITTALS

- A. Submit name of the individual authorized to accept changes, and to be responsible for informing others in Contractor's employ of changes in the Work.
- B. Change Order Forms will be prepared by the Department.

1.04 DOCUMENTATION OF CHANGE IN CONTRACT PRICE AND CONTRACT TIME

- A. Maintain detailed records of work done on a Cost of the Work plus a Fee basis. Provide full information required for evaluation of proposed changes, and to substantiate costs of changes in the Work. Incomplete or unsubstantiated costs will be disallowed.
- B. Contractor shall submit a complete, detailed, itemized cost breakdown addressing impact on Contract Time and Contract Price with each proposal.
- C. On request, provide additional data to support computations:
 - 1. Quantities of products, labor, and equipment.
 - 2. Taxes, insurance and bonds.
 - 3. Overhead and profit.
 - 4. Justification for any change in Contract Time.

5. Credit for deletions from Contract, similarly documented.
- D. Support each claim for additional costs, and for work done on a cost of the Work plus a Fee basis, with additional information:
1. Origin and date of claim.
 2. Dates and times work was performed, and by whom.
 3. Time records and wage rates paid.
 4. Invoices and receipts for products, equipment, and subcontracts, similarly documented.

1.05 PRELIMINARY PROCEDURES

- A. Department may submit a Proposal Request which includes: Detailed description of change with supplementary or revised Drawings and Specifications, the projected time for executing the change, with a stipulation of any overtime work required, and the period of time during which the requested price will be considered valid.
- B. Contractor may initiate a change by submittal of a request to Department describing the proposed change with a statement of the reason for the change, and the effect on Contract Price and Contract Time, with full documentation. Document any requested substitutions in accordance with Section 01600.

1.06 CONSTRUCTION CHANGE AUTHORIZATION

- A. Shall be in accordance with Article 9 – Changes, in Section 00700 - General Conditions, as modified by the Supplementary Conditions.

1.07 FIXED PRICE CHANGE ORDER

- A. Contractor shall submit an itemized price proposal in sufficient detail to fully explain the basis for the proposal. Attach invoices and receipts for products, equipment, and subcontracts, as requested by the Department. Contractor and the Department shall then negotiate an equitable price (and time adjustment if appropriate) in good faith. The Change Order will reflect the results of those negotiations. If negotiations break down Contractor may be directed to perform the work under COST OF THE WORK CHANGE ORDER.
- B. The following maximum rates of cost markup (to cover both overhead and profit of the Contractor) shall be used in the negotiation of a "Fixed-Price" Change Order:
- See Supplementary Conditions, Article SC-10.3.2.
- C. These terms shall also apply to the proposals of subcontractors and allowances.
- D. Will be based on proposal request and Contractor's lump sum quotation or Contractor's request for Change Order as approved by the Department.

1.08 UNIT PRICE CHANGE ORDER

- A. For pre-determined Unit Prices and quantities, Change Order will be executed on a lump sum basis.

- B. For pre-determined Unit Prices and undetermined quantities, Change Order will be executed on an estimated quantity basis; payment will be based on actual quantities measured as specified.
- C. For unit costs or quantities of units of Work which are not predetermined, execute Work under a Directive. Changes in Contract Price or Contract Time will be computed as specified for Cost of the Work Change Order.

1.09 COST OF THE WORK CHANGE ORDER

- A. Contractor shall submit documentation required in Article 1.04 on a daily basis for certification by the Department. Project Manager will indicate by signature that the submitted documentation is acceptable.
- B. After completion of the change and within 14 calendar days, unless extended by the Project Manager, the Contractor shall submit in final form an itemized account, with supporting data, of all costs. Supporting data shall have been certified by the Project Manager, as required above in paragraph A.

1.10 EXECUTION OF CHANGE ORDERS

- A. Department will issue Change Orders for signatures of parties as provided in Conditions of the Contract.

1.11 CORRELATION OF CONTRACTOR SUBMITTALS

- A. Promptly revise Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Price as shown on Change Order.
- B. Promptly revise Progress Schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of Work affected by the change, and resubmit.
- C. Promptly enter changes in Project Record Documents.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01040 - COORDINATION

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Coordination of Work of Contract.

1.2 RELATED REQUIREMENTS

- A. Section 01005 - Administrative Provisions: Using Agency Occupancy.
- B. Section 01045 - Cutting and Patching.
- C. Section 01600 - Material and Equipment: Product options and substitutions.
- D. Section 01700 - Contract Closeout Procedures: Closeout submittals.

1.3 DESCRIPTION

- A. Coordinate scheduling, submittals, and work of the various sections of Specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items to be installed later.
- B. Coordinate sequence of Work to accommodate Owner occupancy as specified in Section 01005.

1.4 MEETINGS

- A. Hold weekly coordination meetings and preinstallation conferences with personnel and Subcontractors to assure coordination of Work.

1.5 COORDINATION OF SUBMITTALS

- A. Schedule and coordinate submittals specified in Section 01300.
- B. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Coordinate requests for substitutions to assure compatibility of space, of operating elements, and affect on work of other sections.

1.6 COORDINATION OF SPACE

- A. Coordinate use of Project space and sequence of installation of electrical work which is indicated diagrammatically on Drawings. Follow routings shown for conduits as closely as practicable, with due allowance for available physical space; make runs parallel with lines of building. Utilize space efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

1.7 COORDINATION OF CONTRACT CLOSEOUT

- A. Coordinate completion and cleanup of work of separate sections in preparation for Substantial Completion.

- B. After Using Agency occupancy of premises, coordinate access to site by various sections for correction of Defective Work and Work not in accordance with Contract Documents, to minimize disruption of Using Agency activities.
- C. Assemble and coordinate closeout submittals specified in Section 01700.

PART 2 - PRODUCTS - Not Used.

PART 3 - EXECUTION - Not Used.

END OF SECTION

SECTION 01045

CUTTING AND PATCHING

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Requirements and limitations for cutting and patching of Work.

1.02 RELATED REQUIREMENTS

- A. Section 01010 - Summary of Work.
- B. Section 01120 – Alteration Project Procedures.
- C. Section 01600 - Materials and Equipment: Substitutions.
- D. Individual Specifications Sections:
 - 1. Cutting and patching incidental to Work of the section.
 - 2. Advance notification to other Sections of openings required in Work of those Sections.
 - 3. Limitations on cutting structural members.

1.03 SUBMITTALS

- A. Submit written request in advance of cutting or alteration which affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather-exposed or moisture-resistant elements such as siding or roof systems.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight-exposed elements.
 - 5. Work of Department or separate Contractor.
- B. Include in request:
 - 1. Identification of Project and Department's project number.
 - 2. Location and description, with photos of affected Work.
 - 3. Necessity for cutting or alteration.
 - 4. Description of proposed Work, and products proposed to be used.
 - 5. Alternatives to cutting and patching.
 - 6. Effect on Work of Department or separate Contractor.
 - 7. Written permission of affected separate Contractor.
 - 8. Date and time Work will be executed.
- C. Submit product data for replacement materials to be used in the work, including product description, specifications, recommended installation methods, and samples. Submittals shall cover all sight-exposed elements applicable, such as roofing, exterior siding, floor tile, ceiling tile, and wall covering.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Materials used for replacement shall match existing materials removed. Interior or exterior finish materials shall visually match surrounding surface finishes. Replacement interior finish materials, such floor tile, wall tile, ceiling tile, or wall covering shall be of the same manufacturer and pattern as materials removed to assure compatibility. New doors and frames to be finished to match existing. Submittals to be approved prior to installation.
- B. Replacement gypsum wallboard surfaces are to be finished smooth or in a texture to match the existing wall or ceiling finish or Finish Schedule in drawings as required. Paint new exposed surfaces with two coats semi-gloss acrylic latex enamel in a color to match existing. New paint shall cover the entire plane of the area impacted and shall extend to the nearest joint or corner.
- C. Cut and patch work at roof assemblies shall provide a complete weather tight installation and shall be compatible with existing roofing materials. Contractor to verify manufacturer, materials, and warrantee of the existing roofing system and ensure work does not have a negative impact on the performance of the existing roof membrane or existing drainage pattern. Cut and patch work shall not have a negative impact on any active warrantee of the existing roofing system.
- D. For replacement of work removed, comply with specifications for type of work to be done, manufacturers' recommendations, and good construction practice.
- E. Provide materials for cutting and patching which will result in equal to or better than the work being cut and patched in terms of performance characteristics and visual effect where applicable.

PART 3 EXECUTION

3.01 GENERAL

- A. Contractor shall be responsible for all cutting, fitting, and patching required to complete the work or to:
 - 1. Accommodate the installation or coordination of work.
 - 2. Remove and replace defective work.
 - 3. Remove and replace work not conforming to requirements of the Contract Documents.
 - 4. Uncover other work for access or inspection.
 - 5. Obtain samples for testing or similar purposes.
 - 6. Provide routine penetrations of nonstructural surfaces for installation of piping, ductwork, chimneys, vents, louvers, electrical conduit or other equipment included in the work.
- B. Contractor shall not cut or alter any existing structural members without the approval of the Department. If structural members must be cut or altered, the Contractor shall provide engineered details with structural engineer's stamp for review in the submittal process.
- C. Execute cutting, fitting, and patching to complete Work, and to to:
 - 1. Fit the several parts together, to integrate with other work.
 - 2. Uncover work to install ill-timed work.
 - 3. Remove and replace non-conforming and Defective Work.
 - 4. Remove samples of installed Work for testing.
 - 5. Provide openings in elements of Work for penetrations of mechanical and electrical work.

- D. Installation of replacement materials shall be in accordance with specifications for type of work to be done, manufacturers' recommendations, and good construction practice.

3.02 INSPECTION

- A. Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
 - 1. Notify the Department immediately of any suspected hazardous materials.
- B. Do not cut and patch work which is exposed to view in a manner resulting in a reduction of visual qualities or resulting in substantial evidence of the cut and patch work. Remove and replace work judged by the Department to be visually unsatisfactory.
- C. After uncovering, inspect conditions affecting performance of Work.
- D. Beginning of cutting or patching means acceptance of existing conditions.

3.03 PREPARATION

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by cutting and patching operations, as directed. Return adjacent areas to condition existing prior to start of work.
- B. Provide supports to ensure structural integrity of surroundings; devices and methods to protect other portions of Project from damage.
- C. Provide protection from elements for areas which may be exposed by uncovering work; maintain excavations free of water.

3.04 PERFORMANCE

- A. Execute work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- B. For all new work, employ qualified installer to perform cutting and patching for weather-exposed and moisture resistant elements, and sight-exposed surfaces.
- C. Cut rigid materials using masonry saw or core drill. Use wet-type core drill for all holes over 1/2" in diameter. Pneumatic/hammer tools or dry-type core drills not allowed without prior approval. Cutting structural reinforcement with heat is strictly forbidden without prior written approval.
- D. Restore Work with new products in accordance with requirements of Contract Documents.
- E. Fit Work tightly to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- F. Maintain all fire-rated wall or area separation construction per applicable codes. At penetrations of fire-rated wall, ceiling, or floor construction, completely seal voids with fire-rated material, full thickness of the construction element or in accordance with U.L. listed assembly requirements.
- G. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit.

END OF SECTION

SECTION 01073 – EXPLANATIONS: DRAWINGS AND SPECIFICATIONS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Explanation of terminology used within the Drawings and Specifications.

1.2 SPECIFICATION FORMAT AND COMPOSITION

- A. Specifications are divided into Divisions and Sections for the convenience of writing and using. Titles are not intended to imply a particular meaning or to fully describe the Work of each Division or Section, and are not an integral part of the text which specifies the requirements. DEPARTMENT is not bound to define the limits of any subcontract, and will not enter into disputes between the CONTRACTOR and his employees, including Subcontractors.
- B. Pages are numbered independently for each Section, and recorded in the Table of Contents. Section number is shown with the page number at the bottom of each page. It is CONTRACTOR's responsibility to verify the Contract Documents received for bidding and/or construction are complete in accordance with Table of Contents.
- C. These Specifications are of the abbreviated, or "streamlined" type, and include incomplete sentences.
- D. Omissions of words or phrases such as "the CONTRACTOR shall," "in conformity therewith," "shall be," "as noted on the Drawings," "according to the Drawings," "a," "an," "the" and "all" are intentional.
- E. Omitted words or phrases shall be supplied by inference in the same manner as they are when a "note" occurs on the Drawings.

1.3 DRAWINGS: CONTENT EXPLANATION

- A. Drawings, Dimensions and Measurements.
 - 1. Where on any of the Drawings a portion of the work is drawn out and the remainder is indicated in outline, the parts drawn out shall apply also to all other portions of the Work.
 - 2. Wherever a detail is referenced and developed for a specific condition, same or similar detail shall apply to identical or similar conditions elsewhere on Project even though not specifically referenced.
 - 3. Where the word "similar" occurs on the Drawings, it shall be interpreted in its general sense and not as meaning identical, all details shall be worked out in relation to their location and their connection with other parts of the work.
 - 4. The figured dimensions on the Drawings or notes indicating dimensions shall be used instead of measurements of the Drawings by scale.
 - 5. No scale measurements shall be used as a dimension to work with except on "full size" Drawings not dimensioned.

1.4 COMMON TERMINOLOGY

- A. Certain items used generally throughout the Specifications (and Drawings) are used as follows:
1. Indicated: The term "indicated" is a cross reference to details, notes or schedules on the Drawings, other paragraphs or schedules in the Specifications, and similar means of recording requirements in the Contract Documents. Where terms such as "shown", "noted", "schedules", and "specified" are used in lieu of "indicate", it is for the purpose of helping the reader accomplish the cross reference, and no limitation of location is intended except as specifically noted.
 2. Installer: The person or entity engaged by CONTRACTOR, his Subcontractor or sub-subcontractor for the performance of a particular unit of Work at the Project site, including installation, erection, application and similar required operations. It is a general requirement that installers be recognized experts in the work they are engaged to perform.
 3. Furnish: Except as otherwise defined in greater detail, the term "furnish" is used to mean "...supply and deliver to the Project site, ready for unpacking, assembly and installation..."
 4. Provide: Except to the extent further defined, the term "provide" means to furnish and install, complete and ready for the intended use.
 5. Guarantee and Warranty: "Warranty" is generally used in conjunction with products manufactured or fabricated away from the Project site, and "guarantee" is generally used in conjunction with units of work which require both products and substantial amounts of labor at the Project site. The resulting difference is that warranties are frequently issued by manufacturers, and guarantees are generally issued by CONTRACTOR and frequently supported (partially) by product warranties from manufacturers.

1.5 CONFLICTS

- A. Report any conflicts to DEPARTMENT's Project Manager for clarification.

PART 2 - PRODUCTS - Not Used.

PART 3 - EXECUTION - Not Used.

END OF SECTION

SECTION 01090

REFERENCE STANDARDS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Quality Assurance
- B. Applicability of Reference Standards
- C. Provision of Reference Standards at site
- D. Acronyms used in Contract Documents for Reference Standards. Source of Reference Standards

1.02 RELATED REQUIREMENTS

- A. Section 00700 - General Conditions: Paragraph 3.4.2.

1.03 QUALITY ASSURANCE

- A. For products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. The date of the standard is that in effect as of the Project Advertisement date, or Effective Date of the Contract when there was no Advertisement, except when a specific date is specified.
- C. When required by an individual Specification section, obtain copy of standard. Maintain copy at site during submittals, planning, and progress of the specific Work, until Final Completion.
- D. Should specified reference standards conflict with Contract Documents, request clarification from the Architect/Engineer before proceeding. Local code requirements, where more stringent than referenced standards, shall govern.
- E. Neither the contractual relationship, duties, nor responsibilities of the parties in Contract nor those of the Architect/Engineer shall be altered by the Contract Documents by mention or inference otherwise in any reference document.

1.04 SCHEDULE OF REFERENCES

AA	Aluminum Association 818 Connecticut Avenue, N.W. Washington, DC 20006
AABC	Associated Air Balance Council 1000 Vermont Avenue, N.W. Washington, DC 20005
AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street, N.W. Washington, DC 20001
ACI	American Concrete Institute Box 19150 Reford Station Detroit, MI 48219

ADC	Air Diffusion Council 230 North Michigan Avenue Chicago, IL 60601
AGC	Associated General Contractors of America 1957 E Street, N.W. Washington, DC 20006
AI	Asphalt Institute Asphalt Institute Building College Park, MD 20740
AISC	American Institute of Steel Construction 400 North Michigan Avenue Eighth Floor Chicago, IL 60611
AISI	American iron and Steel Institute 1000 16th Street, N.W. Washington, DC 20036
AITC	American Institute of Timber Construction 333 W. Hampden Avenue Englewood, CO 80110
AMCA	Air Movement and Control Association 30 West University Drive Arlington Heights, IL 60004
ANSI	American National Standards Institute 1430 Broadway New York, NY 10018
APA	American Plywood Association Box 11700 Tacoma, WA 98411
ARI	Air-Conditioning and Refrigeration Institute 1815 North Fort Myer Drive Arlington, VA 22209
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers 1791 Tullie Circle, N.E. Atlanta, GA 30329
ASME	American Society of Mechanical Engineers 345 East 47th Street New York, NY 10017
ASPA	American Sod Producers Association Association Building Ninth and Minnesota Hastings, NE 68901
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103

AWI	Architectural Woodwork Institute 2310 South Walter Reed Drive Arlington, VA 22206
AWPA	American Wood-Preservers' Association 7735 Old Georgetown Road Bethesda, MD 20014
AWS	American Welding Society 550 LeJeune Road Miami, FL 33135
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235
CDA	Copper Development Association 57th Floor, Chrysler Building 405 Lexington Avenue New York, NY 10174
CLFMI	Chain Link Fence Manufacturers Institute 1101 Connecticut Avenue, N.W. Washington, DC 20036
CRSI	Concrete Reinforcing Steel Institute 933 Plum Grove Road Schaumburg, IL 60195
EJMA	Expansion Joint Manufacturers Association 707 Westchester Avenue White Plains, NY 10604
FGMA	Flat Glass Marketing Association 3310 Harrison White Lakes Professional Building Topeka, KS 66611
FM	Factory Mutual System 1151 Boston-Providence Turnpike Norwood, MA 02062
FS	Federal Specification General Services Administration Specifications and Consumer Information Distribution Section (WFSIS) Washington Navy Yard, Building 197 Washington, DC 20407
GA	Gypsum Association 1603 Orrington Avenue Evanston, IL 60201
IEEE	Institute of Electrical and Electronics Engineers 345 East 47th Street New York, NY 10017

IMIAC	International Masonry Industry All-Weather Council International Masonry Institute 815 15th Street, N.W. Washington, DC 20005
MFMA	Maple Flooring Manufacturers Association 2400 East Devon Suite 205 Des Plaines, IL 60018
MIL	Military Specification Naval Publications and Forms Center 5801 Tabor Avenue Philadelphia, PA 19120
ML/SFA	Metal Lath/Steel Framing Association Metal Manufacturers 221 North LaSalle Street Chicago, IL 60601
NAAMM	National Association of Architectural Metal Manufacturers 221 North LaSalle Street Chicago, IL 60601
NEBB	National Environmental Balancing Bureau 8224 Old Courthouse Road Vienna, VA 22180
NEMA	National Electrical Manufacturers' Association 2101 L Street, N.W. Washington, DC 20037
NFPA	National Fire Protection Association Battery March Park Quincy, MA 02269
NFPA	National Forest Products Association 1619 Massachusetts Avenue, N.W. Washington, DC 20036
NSWMA	National Solid Wastes Management Association 1120 Connecticut Avenue, N.W. Washington, DC 20036
NTMA	National Terrazzo and Mosaic Association 3166 Des Plaines Avenue Des Plaines, IL 60018
PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 60077
PCI	Prestressed Concrete Institute 201 North Wacker Drive Chicago, IL 60606

PS	Product Standard U.S. Department of Commerce Washington, DC 20203
RCSHSB	Red Cedar Shingle and Handsplit Shake Bureau 515 116th Avenue Bellevue, WA 98004
RIS	Redwood Inspection Service One Lombard Street San Francisco, CA 94111
SDI	Steel Deck Institute Box 3812 St. Louis, MO 63122
SDI	Steel Door Institute 712 Lakewood Center North Cleveland, OH 44107
SIGMA	Sealed Insulating Glass Manufacturers Association 111 East Wacker Drive Chicago, IL 60601
SJI	Steel Joist Institute 1703 Parham Road Suite 204 Richmond, VA 23229
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association 8224 Old Court House Road Vienna, VA 22180
SSPC	Steel Structures Painting Council 4400 Fifth Avenue Pittsburgh, PA 15213
TAS	Technical Aids Series Construction Specifications Institute 601 North Madison Street Alexandria, VA 22314
TCA	Tile Council of America, Inc. Box 326 Princeton, NJ 08540
UL	Underwriters' Laboratories, Inc. 333 Pfingston Road Northbrook, IL 60062
WCLIB	West Cost Lumber Inspection Bureau Box 23145 Portland, OR 97223

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01120 – ALTERATION PROJECT PROCEDURES

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Procedural requirements.
- B. Rehabilitation and renovations of existing spaces and materials.
- C. Installation of removed products.

1.2 RELATED REQUIREMENTS

- A. Section 01005 - Administrative Provisions: Using Agency occupancy.
- B. Section 01045: Cutting and Patching.

PART 2 - PRODUCTS

2.1 PRODUCTS FOR PATCHING AND EXTENDING WORK

- A. New Materials: As specified in individual Specification Sections.
- B. Match existing products and Work for patching and extending Work.
- C. Determine type and quality of existing products by inspection and any necessary testing, and workmanship by use of existing as a standard. Presence of a product, finish, or type of work, requires that patching, extending, or matching shall be performed as necessary to make Work complete and consistent with existing quality, Specifications, and Contract Documents.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify that demolition is complete, and areas are ready for installation of new Work.
- B. Beginning of Work means acceptance of existing conditions.

3.2 PREPARATION

- A. Cut, move, or remove items as necessary for access to alterations and renovations Work; replace and restore at completion.
- B. Remove site debris and abandoned items from area and from concealed spaces.
- C. Prepare surfaces and remove surface finishes to provide for proper installation of new work and new finishes.
- D. Close openings in exterior surfaces to protect existing work and salvage items from weather and extremes of temperature and humidity.

3.3 INSTALLATION

- A. Coordinate work of alterations and renovations to expedite completion and to accommodate DEPARTMENT access and Using Agency occupancy.
- B. Project designated areas, rooms and spaces, and finishes shall be complete in all respects, including operational, electrical and security systems.
- C. Remove, cut, and patch Work in a manner to minimize damage and to provide means of restoring products and finishes to original condition.
- D. Refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent new finishes.
- E. In addition to specified replacement of equipment, restore existing, electrical, and security systems to full operational condition.
- F. Install products as specified in individual Sections.

3.4 TRANSITIONS

- A. Where new Work abuts or aligns with existing, make a smooth and even transition. Patched Work shall match existing adjacent work in texture and appearance.
- B. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to DEPARTMENT.

3.5 ADJUSTMENTS

- A. Fit work at penetrations of surfaces as specified in Section 01045.

3.6 REPAIR OF DAMAGED SURFACES

- A. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.
- B. Repair substrate prior to patching finish.

3.7 FINISHES

- A. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.8 CLEANING

- A. In addition to cleaning specified in Section 01560, clean Using Agency occupied areas of Work daily.

END OF SECTION

SECTION 01126
CONTRACTOR'S CERTIFICATION OF SUBCONTRACTS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Procedures for preparing, submitting and accepting subcontracts.

1.02 RELATED REQUIREMENTS

- A. Section 00100 - Instructions to Bidders, Requirements of Apparent Low Bidder.
- B. Section 00430 - Subcontractor List.
- C. Section 00700 - General Conditions: Article 6.13.1, Subcontractor Certification and Approval.
- D. Section 01300 - Submittals: Procedures.

1.03 PREPARATION OF CERTIFICATION

- A. Certification Forms: Use only forms provided by Department.
- B. Contractor to prepare certification form in accordance with the instructions on the reverse side of form. Multiple subcontracts may be included under a single submittal. Where required, attach additional information -- cross referenced to the appropriate Subcontract -- to the certification form.
- C. Substitute certification forms will not be considered.

1.04 SUBMITTAL OF CERTIFICATION

- A. Contractor shall submit the initial and all subsequent certification form(s) in accordance with the submittal requirements identified under paragraph 1.02.D, previous.

1.05 CONSIDERATION OF CERTIFICATION

- A. Following receipt of submittal and within a reasonable period of time Department shall review for each of the following:
 - 1. Completeness of forms and attachments
 - 2. Proper execution (signatures) of forms and attachments
- B. Submittals which are not complete or not properly executed will be returned to the Contractor under a transmittal letter denoting the deficiencies found. Contractor shall correct and resubmit per paragraph 1.04, previous.
- C. SUBCONTRACTORS WHICH HAVE NOT BEEN APPROVED BY THE DEPARTMENT SHALL NOT BE ALLOWED ON SITE.
- D. Payment will not be made for work performed by a non-certified subcontractor.

1.06 ACKNOWLEDGEMENT OF CERTIFICATION

- A. Submittals which have been examined by the Department and are determined to be complete and properly executed shall be acknowledged as such by the Department's project Manager on the approval line of the certification form.

1.07 CHANGES TO APPROVED SUBCONTRACTORS LIST

- A. Deletion or Replacement of Subcontractors listed on approved form 25D-5, or the addition of Subcontractors not listed on approved form 25D-5 shall be in accordance with article 6.13.7 of the Supplementary Conditions.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Procedures
- B. Construction Progress Schedules
- C. Schedule of Values
- D. Shop Drawings, Product Data, and Samples
- E. Manufacturer's Instructions and Certificates
- F. Field Samples

1.02 RELATED REQUIREMENTS

- A. Section 00700 - General Conditions
- B. Section 00800 - Supplementary Conditions
- C. Section 01010 - Summary of Work.
- D. Section 01027 - Applications for Payment.
- E. Section 01400 - Quality Control: Manufacturers' Field Services, Testing Laboratory Services.
- F. Section 01600 - Material and Equipment: Products List.
- G. Section 01700 - Contract Closeout: Closeout Procedures.

1.03 PROCEDURES

- A. Deliver submittals to Department as directed.
- B. Prior to the purchase or ordering of any materials or equipment, submit for approval complete data describing all items intended for use in the Work. Include the item's manufacturer, identifying number or nomenclature, and other information as necessary to describe the item. Also include the manufacturer's published data describing each item's size, capacity, performance, and power requirements. Provide certification stating that the Contractor has reviewed the material and that all items conform with the Contract requirements. Submittals made without such certification will be returned unreviewed. This certification shall be in the form of a stamp on each material item submitted and signed or initialed. The name of the certifier shall be typed or legibly printed in or near the stamp.
- C. Transmit each item under Department accepted form. Identify Project, Contractor, subcontractor, major Supplier, identify pertinent Drawing sheet and detail number, and Specification section number, as appropriate. Identify deviations from Contract Documents by submitting a Department supplied Substitution Request Form. Provide a minimum of 8-1/2" x 5-1/2" blank space on the front page for Contractor and Consultant review stamps. Provide submittals bound in loose leaf, hard cover, three ring binders complete with tabs and indexes by Specification Section. At the Department's option, partial submittals, which encompass less than a single section will be returned unreviewed or held unreviewed until the submittal is complete.
- D. When substitute equipment is proposed, clearly and unambiguously mark submitted material describing the substitute to identify the differences between the qualities and characteristics of the offered substitute and the specified material. Failure to provide this identification of

differences when substitutes are submitted for consideration will result in rejection of the proposed material.

- E. When equipment substitutions are approved and that equipment alters the design or space requirements indicated on the plans, the Contractor shall pay for all items of cost for the revised design and construction including costs of other trades involved and any engineering required to incorporate the approved substituted equipment into the Project. Owner shall not pay for the required additional costs.
- F. Material and equipment installed, purchased, furnished, or provided for the Project which has not been submitted and reviewed by the Department may be ordered removed and acceptable material and equipment installed in its place at no additional cost to the Owner.
- G. Submit initial Progress Schedules and Schedule of Values in accordance with Article SC-6.6 of Section 00800 - Supplementary Conditions prior to submitting first Application for Payment. Form and content shall be reviewed by the Department. After review by Department, revise and resubmit as required. Submit subsequent updated schedules (10) days prior to each Application for Payment.
- H. Comply with progress schedule for submittals related to Work progress. Coordinate submittal of related items.
- I. After Department review of submittal, revise and resubmit as required, identifying changes made since previous submittal. Provide total number of submittals as required for the first submission. If six are required and four were returned for revisions, submit six again. The Department and Consultants will not return the first or revised copies of rejected submittals for re-use. DO NOT submit partial copies of submittals for incorporation into rejected submittal packages, which have been kept by the Department and/or Consultants. Provide COMPLETE copies for each review.
- J. If drawings, product submittals, samples, mock-ups, or other required submittals are incomplete or not properly submitted, the Department will not review the submittal and will immediately return submittal to Contractor. Department will review a submittal no more than two times (incomplete or improper submittals count as one). Contractor shall pay all review costs associated with more than two reviews, unless a resubmittal is required due to new comments addressing previously submitted information.

1.04 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit horizontal bar Gantt chart (see below for electronic version requirements). Schedule shall show:
 - 1. Separate bar for each major trade or operation, identifying the duration of each activity and precedent activities.
 - 2. Complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Show each work plan and separate work area as a separate activity or group of activities.
 - 3. Submittal dates for required Shop Drawings, product data, and samples, and product delivery dates, including those furnished by Department and those under allowances.
 - 4. All required submittals and indicating the date for each required submittal.
 - 5. Show projected percentages of completion for each item of Work and submittal as of time of each Application for Progress Payment. See below for electronic version requirements.
 - 6. Submit Progress Schedule plotted on paper no larger than 24" x 36" and no smaller than 8-1/2" x 11" from the electronic program. Provide in electronic form using Microsoft Project 2000 version 9.0 or newer.
 - 7. Submit Progress Schedule percentages in Tracking Gantt form plotted from and in electronic form as stated above.

1.05 SCHEDULE OF VALUES

A. FORMAT

1. Form and content must be acceptable to Department.
2. Contractor's standard form or media-driven printout will be considered on request.
3. Follow Table of Contents of Project Manual and Divisions Indicated on the drawings for listing component parts. Identify each line item by number and title of listed Specification Sections.

B. CONTENT

1. List installed value of each major item of Work and each subcontracted item of Work as a separate line item to serve as a basis for computing values for progress payments. Round off values to nearest dollar.
2. For each major subcontract, list products and operations of that subcontract as separate line items.
3. Coordinate listings with progress schedule.
4. Component listings shall each include a directly proportional amount of Contractor's overhead and profit.
5. For items on which payments will be requested for stored products, list sub-values for cost of stored products with taxes paid.
6. Specific line item Values as indicated below shall be minimum acceptable amounts and must be included on all approved Schedules of Values and Applications for Payment.
 - a. Section 01700 - Contract Closeout. Value of all required Substantial Completion Submittals and Closeout Submittals.
 - b. No progress payments will be made for Substantial Completion Submittals and Closeout Submittals until all submittals have been submitted to and accepted by the Department.
7. The sum of values listed shall equal total Contract Price.

C. SUBMITTAL

1. Submit Schedule of Values within 21 days after the Notice to Proceed. Subsequent updated Schedule of Values shall be presented for review ten days prior to each Application for Payment.
2. Transmit under Department accepted form transmittal letter. Identify Project by Department title and Project number; identify Contract by Department Contract number.

D. SUBSTANTIATING DATA

1. When Department requires substantiating information, submit data justifying line item amounts in question.
2. Provide one copy of data with cover letter for each copy of the Application for Payment. Show application number and date, and line item by number and description.

1.06 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

A. SHOP DRAWINGS:

1. Present in a clear and thorough manner. Label each Shop Drawing with Department's Project name and Project number; identify each element of the Shop Drawings by reference to sheet number and detail, schedule, or room number of Contract Documents.

2. Identify field dimensions; show relation to adjacent or critical features or Work or products.
3. Minimum Sheet Size: 8-1/2"x11". Larger sheets may be submitted in multiples of 8-1/2"x11".

B. PRODUCT DATA

1. Submit only pages which are pertinent; mark each copy of standard printed data to identify pertinent products, models, options, and other data, referenced to Specification section and Article number. Show reference standards, performance characteristics, and capacities; wiring and piping diagrams and controls; component parts; finishes; dimensions; and required clearances.
2. Modify manufacturer's standard schematic drawings and diagrams to supplement standard information to provide information specifically applicable to the Work. Delete information not applicable.

C. SAMPLES

1. Submit full range of manufacturer's standard finishes except when more restrictive requirements are specified, indicating colors, textures, and patterns, for Department selection.
2. Submit samples to illustrate functional characteristics of products, including parts and attachments.
3. Approved samples, which may be used in the Work, are indicated in the Specification section.
4. Label each sample with identification required for transmittal letter.
5. Provide field samples of finishes at Project, at location acceptable to Department, as required by individual Specification section. Install each sample complete and finished. Acceptable finishes in place may be retained in completed Work.

D. MANUFACTURER'S INSTRUCTIONS

1. When required in individual Specification Section, submit manufacturer's printed instructions for delivery, storage, assembly, installation, start-up, adjusting, balancing, and finishing, in quantities specified for product data.
2. Manufacturer's instructions for storage, preparation, assembly, installation, start-up, adjusting, balancing, and finishing under provisions of Section 01400.

E. CONTRACTOR REVIEW

1. Review submittals prior to transmittal; determine and verify field measurements, field construction criteria, manufacturer's catalog numbers, and conformance of submittal with requirements of Contract Documents.
2. Coordinate submittals with requirements of Work and of Contract Documents.
3. Sign or initial each sheet of Shop Drawings and product data, and each sample label to certify compliance with requirements of Contract Documents. Notify Department in writing at time of submittal, of any deviations from requirements of Contract Documents.
4. Do not fabricate products or begin Work that requires submittals until return of submittal with Department acceptance.

F. SUBMITTAL REQUIREMENTS

1. Each submittal to be numbered by Specification Section and Paragraph. Revisions shall be identified by a hyphen after the paragraph, with a letter designator. Example: 1st submittal "01010 1.08A", 2nd submittal 01010 1.08A - A".
2. Transmit submittals in accordance with the required submittal schedule and in such sequence to avoid delay in the Work.

3. Provide 8-1/2" x 5-1/2" blank space on each submittal for Contractor and Consultant stamps.
4. Apply Contractor's stamp, signed or initialed, certifying to review, verification of products, field dimensions and field construction criteria, and coordination of information with requirements of Work and Contract Documents.
5. Coordinate submittals into logical groupings to facilitate interrelation of the several items:
 - a. Finishes which involve Department selection of colors, textures, or patterns.
 - b. Associated items that require correlation for efficient function or for installation.
6. Submit number of opaque reproductions of shop drawings Contractor requires, plus two copies which will be retained by Department.
7. Submit number of copies of product data and manufacturer's instructions Contractor requires, plus two copies, which will be retained by Department.
8. Submit number of samples specified in individual Specifications sections.
9. Submit under Department accepted transmittal form letter. Identify Project by title and Department Project number; identify Contract by Department contract number. Identify Work and product by Specification section and Article number.
10. Each submittal shall have as its face document a completed Department furnished Submittal Summary form.
11. Each submittal shall include the manufacturer's name and address, and supplier's name, address and telephone number.

G. RESUBMITTALS

1. After Department review of submittal, revise and resubmit as required, identifying changes made since previous submittal. Provide total number of submittals as required for the first submission. If six are required and four were returned for revisions, submit six again. The Department and Consultants will not return the first or revised copies of rejected submittals for re-use. DO NOT submit partial copies of submittals for incorporation into rejected submittal packages which have been kept by the Department and/or Consultants. Provide COMPLETE copies for each review.

H. DEPARTMENT REVIEW

1. Department or authorized agent will review Shop Drawings, product data, and samples and return submittals within (14) working days.
2. Department or authorized agent will examine shop drawings for general arrangement, overall dimensions and suitability, and will return to the Contractor marked as follows:
 - "No Exceptions Taken" - denotes that the submittal generally meets the requirements of the Contract Documents. "No Exceptions Taken" does not indicate a review of the Contractor's design except for general compliance with the requirements of the Contract Documents.
 - "Make Corrections Noted" - denotes review is conditional on compliance with notes made on the submittal.
 - "Revise and Resubmit" - denotes that revisions are required in the submittal in order for the submittal to be generally consistent with the requirements of the Contract Documents. Required revisions will be identified to the Contractor.

- "Rejected" - denotes that the submittal does not meet the requirements of the Contract Documents and shall not be used in the Work. Reasons for rejection will be identified to the Contractor.

3. Review by the Department of shop and erection drawings shall not be construed as a complete check, but will indicate only that the general method of construction and detailing is consistent with the requirements of the Contract Documents. Review of such drawings shall not relieve the Contractor of the responsibility for errors, dimensions, and detail design.
4. Department will require submittal of all required color and finish samples in order to approve any color or finish.

I. DISTRIBUTION

1. Duplicate and distribute reproductions of Shop Drawings, copies of product data, and samples, which bear Consultant's stamp, to job site file, record documents file, Subcontractors, Suppliers, and other entities requiring information.

J. SCHEDULE OF SUBMITTALS

1. Submittal Register Form to be completed by Contractor and approved by Department prior to submittal of any items.
2. Submit shop drawings, product data and samples as required for each specification section.
3. Format.
 - a. Submittal schedule form as provided by Department.

1.07 MANUFACTURER'S INSTRUCTIONS

- A. When required in individual Specification Section, submit manufacturer's printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for product data.

1.07 FIELD SAMPLES

- A. Provide field samples of finishes as required by individual Specifications section. Install sample complete and finished. Acceptable samples in place may be retained in completed Work.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01400

QUALITY CONTROL

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. General Quality Control
- B. Workmanship
- C. Manufacturer's Instructions
- D. Manufacturer's Certificates
- E. Mockups
- F. Manufacturers' Field Services
- G. Testing Laboratory Services
- H. Departmental Inspection Services

1.02 RELATED REQUIREMENTS

- A. Section 00700 - General Conditions: Inspection and testing required by governing authorities.
- B. Section 01010 - Summary of Work: Work Plans and Access to Facility, Individual Work Areas.
- C. Section 01300 - Submittals: Shop Drawings, Product Data, and Samples

1.03 QUALITY CONTROL, GENERAL

- A. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

1.04 WORKMANSHIP

- A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
- B. Perform Work by persons qualified to produce workmanship of specified quality.
- C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1.05 MANUFACTURERS' INSTRUCTIONS

- A. Comply with instructions in full detail, including each step in sequence. Should instructions conflict with Contract Documents, request clarification from Department before proceeding.

1.06 MANUFACTURERS' CERTIFICATES

- A. When required by individual Specifications section, submit manufacturer's certificate, in duplicate, that products meet or exceed specified requirements.

1.07 MOCKUPS

- A. When required by individual Specifications section, erect complete, full-scale mockup of assembly at site, perform required tests, and remove mockup at completion, when approved by Department.

1.08 MANUFACTURERS' FIELD SERVICES

- A. When required by manufacturer or when specified in respective Specification sections,
- Palmer Correctional Center Water Main Extension 01400-1 Project Number 2018047

require manufacturer to provide qualified personnel to observe field conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to make appropriate recommendations.

- B. Require manufacturer's representative to submit written report to Department listing observations and recommendations.

1.09 TESTING LABORATORY SERVICES

- A. Contractor shall employ and pay for services of an independent testing laboratory to perform inspections, tests, and other services required by individual Specification sections.
- B. Services will be performed in accordance with requirements of governing authorities and with specified standards.
- C. Reports will be submitted to Department in triplicate giving observations and results of tests, indicating compliance or non-compliance with specified standards and with Contract Documents.
- D. Contractor shall cooperate with testing laboratory personnel; furnish tools, samples of materials, design mix, equipment, storage and assistance as requested.
 - 1. Notify Department and testing laboratory 72 hours prior to expected time for operations requiring testing services.
 - 2. Make arrangements with testing laboratory and pay for additional samples and tests for Contractor's convenience.

1.10 DEPARTMENTAL INSPECTION SERVICES

A. REQUEST AND PAYMENT

- 1. Contractor shall request and when applicable pay for services provided by the Department to perform specified inspection and testing.
- 2. Inspection by the Department or its agents shall in no way relieve Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

B. QUALITY ASSURANCE

- 1. Comply with requirements of all referenced standards.
- 2. Department shall retain a registered Engineer or Architect on staff to provide review services in those areas of their immediate expertise.
- 3. Engineers or Architects will be registered in State in which Project is located.
- 4. Testing equipment shall be calibrated at reasonable intervals with devices of an accuracy traceable to either NBS Standards or accepted values of natural physical constants.

C. DEPARTMENT RESPONSIBILITIES

- 1. Review schedules and request for inspections as submitted by Contractor for timeliness and conformance.
- 2. Provide qualified personnel at site after due notice; cooperate with Contractor in performance of services.
- 3. Perform specified inspection, inventorying, and testing of products in accordance with specified standards.
- 4. Ascertain compliance of materials and equipment with requirements of Contract Documents.
- 5. Promptly notify Contractor of observed irregularities or non-conformance of Work or products.
- 6. Perform additional inspections and re-tests required by the Contract Documents.

7. When applicable provide to the Contractor a written description of Department's costs attributed to the inspection.

D. DEPARTMENT REPORTS

1. After each inspection and/or test, promptly submit one copy of inspection report to Contractor. Include: Date issued, Project title and Department Project number, name of inspector(s), date and time of inspection, identification of product and Specifications section, location in the Project, type of inspection or test, results of inspection or tests, and conformance with Contract Documents. When requested in writing by Contractor, provide interpretation of results.

E. LIMITS ON AUTHORITY RESULTING FROM INSPECTIONS

1. Department may not release, revoke, alter, or enlarge on requirements of Contract Documents through the issuance of an inspection report.
2. Department may not approve or accept any portion of the Work through the issuance of an inspection report.
3. Department may not assume any duties of Contractor through the issuance of an inspection report.
4. Department has no authority to stop Work through the issuance of an inspection report.

F. CONTRACTOR RESPONSIBILITIES

1. Cooperate with Department personnel, and provide access to Work and when appropriate, to manufacturer's facilities.
2. Provide incidental labor and facilities to provide access to Work to be inspected, to obtain and furnish incidental supplies at the site or at source of products to be inspected, to facilitate tests and inspections, and for storage and curing of test samples when appropriate.
3. Notify Department as stated above in Contractor Submittals for operations requiring inspection, special inspection and testing services.
4. Pay costs of Department furnished services for all re-inspections as required by Contract Documents.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01500
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Electricity, Lighting
- B. Heat, Ventilation
- C. Telephone Service
- D. Water
- E. Sanitary Facilities
- F. Dust Control (Exterior)
- G. Dust Control
- H. Noise Control
- I. Construction Enclosures
- J. Barriers
- K. Barricades, Warnings, and Markings
- L. Protection of Installed Work
- M. Security
- N. Water Control
- O. Fencing and Security
- P. Materials Storage and Protection
- Q. Site and Off-Site Storage
- R. Owner Access
- S. Utility Locates
- T. Marking of Contractor Vehicles
- U. Parking
- V. Protection of Existing Facilities
- W. Protection of Existing Vegetation, Structures, Utilities, and Improvements
- X. Salvage
- Y. Temporary Enclosure and Space Heating
- Z. Environmental Requirements
- AA. Construction Cleaning
- AB. Removal
- AC. Waste Storage Equipment
- AD. Cleaning of the Project Area
- AE. Disposal

1.02 RELATED REQUIREMENTS

- A. Section 01010 - Summary of Work: Use of Premises.
- B. Section 01010 - Summary of Work: Shutoffs and Disruptions to Service.
- C. Section 01700 - Contract Closeout: Final cleaning.

1.03 ELECTRICITY, LIGHTING

- A. The Contractor may utilize power from the Using Agency's existing facility. All tie-ins are the Contractor's responsibility and must be coordinated with the Using Agency.
- B. Connect to existing service, provide branch wiring and distribution boxes located to allow service and lighting by means of construction-type power cords. Department will pay costs of energy used.
- C. Provide lighting for construction operations. The Contractor shall include in its bid the cost of providing, and shall provide, general construction area lighting wherever work is in progress and wherever lighting is required for the safety of any person employed on the site.
- D. Take precautions to conserve energy. Wasteful use of power will be back-charged to the Contractor.

1.04 HEAT, VENTILATION

- A. Coordinate use of existing facilities with the Owner. Extend and supplement with temporary units as required to maintain specified conditions for construction operations, and to protect materials and finishes from damage due to temperature or humidity. Using Agency will absorb costs of energy used.
- B. Provide as required to maintain specified conditions for construction operations, to protect materials and finishes from damage due to temperature or humidity.
- C. Do not use permanent facilities for temporary purposes, except as installation is approved by the Department for operation.
- D. Fully exhaust to the outside welding fumes generated from operations related to performance of the Work.
- E. Provide ventilation of enclosed areas to cure materials, to disperse humidity, and to prevent accumulations of dust, fumes, vapors, or gases.

1.05 TELEPHONE SERVICE

- A. Provide telephone service if required for construction operations. Use of telephones in existing facilities can be arranged with the Using Agency for making local calls only.

1.06 WATER

- A. The Contractor may utilize water from the Using Agency's existing facility. All tie-ins are the Contractor's responsibility and must be coordinated with the Using Agency.
- B. Provide service required for construction operations. Extend branch piping with outlets located so that water is available by use of hoses.
- C. The Using Agency will pay for water used.
- D. Hoses or temporary piping will not be permitted in public areas where a hazard to the public may be created.

1.07 SANITARY FACILITIES

- A. Contractor must provide own porta-a-potty to be located near construction area.

1.08 DUST CONTROL (EXTERIOR)

- A. The Contractor shall be responsible for dust control on the project site. The Contractor is responsible to prevent dust being generated from his operation to enter into any part of existing facilities. The only allowable exception is the area on the construction site of any temporary dust-proof partitioning. The Contractor shall include in its bid the cost of providing, and shall provide, all plant, labor and equipment necessary to fulfill his responsibilities under this Article.
- B. Execute Work by methods that minimize raising of dust or airborne debris from construction or demolition operations.

- C. Provide positive means to prevent airborne dust from dispersing or entering any portion of the building.

1.09 DUST CONTROL

- A. Execute Work by methods to minimize raising dust from construction operations.
- B. Provide active means to prevent airborne dust from dispersing into occupied areas.
- C. Water mist work surfaces to control dust while cutting.

1.10 NOISE CONTROL

- A. Provide methods, means, and facilities to minimize noise produced by construction operations.

1.11 CONSTRUCTION ENCLOSURES

- A. Provide temporary wall and roof enclosures if required to maintain specified working conditions and/or protect existing facilities.
 - 1. Temporary wall and roof enclosures shall be sealed and insulated R-19 minimum thermal resistance to maintain specified working conditions and to maintain minimum 65° F. interior temperature and to attenuate noise. Plastic insulation is not permitted.
- B. Provide temporary enclosures/partitions around areas inside the structures that are affected by the construction. Enclosures/partitions shall:
 - 1. Isolate construction from Using Agency, occupants, and the public occupying adjacent spaces.
 - 2. Prevent the penetration of dust and/or moisture into occupied areas.
 - 3. Prevent damage to existing materials, finishes, and equipment or other existing building components and contents.
 - 4. Be designed and stamped by an engineer licensed by the State of Alaska if over 12 feet high.
 - 5. Localized polyethylene enclosures: airtight plastic enclosures that extend from floor to ceiling. Seams shall be sealed with duct tape to prevent dust and debris from escaping. Provide overlapping flap minimum of 2 feet wide for personnel access.
 - 6. Rigid enclosures shall be constructed of metal studs, GWB, 10 mil polyethylene, and sound attenuation insulation. Enclosures/partitions shall extend from floor to ceiling with complete closure at intersections with existing surfaces to prevent dust and debris from escaping.
- C. The Contractor shall include his plan for construction enclosures and dust control in the work plan prepared under Section 01010.

1.12 BARRIERS

- A. Provide as required to prevent public entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.
- B. Provide barriers to provide both separation and safety to adjacent building occupants. Maintain clear route to allow access of emergency vehicles to the facility and emergency entrances.

1.13 BARRICADES, WARNINGS, AND MARKINGS

- A. The Contractor shall furnish, erect, and maintain all barricades, warning signs and markings for hazards, as necessary to protect the public, pedestrians, Using Agency and employees from construction operations, and to protect the Work. All safeguards shall be constructed in conformance with local codes.
- B. For vehicular and pedestrian traffic, the Contractor shall furnish, erect, and maintain

barricades, warning signs, lights and other traffic control devices in reasonable conformity with the Manual of Uniform Traffic Control Devices for Streets and Highways (published by the United States Government Printing Office), or as approved by the Engineer.

1.14 PROTECTION OF INSTALLED WORK

- A. Provide temporary protection for installed products. Control traffic in immediate area to minimize damage.
- B. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings. Protect finished floors and stairs from traffic, movement of heavy objects, and storage.
- C. Prohibit traffic and storage on waterproofed and roofed surfaces, and on lawn and landscaped areas.

1.15 SECURITY

- A. Provide security program and facilities to protect Work, existing facilities, and Using Agency's operations from unauthorized entry, vandalism, and theft. Coordinate with Using Agency's security program.
- B. The Contractor shall be responsible for security of any area of the building turned over to the Contractor for his exclusive use. Security responsibility for areas that are particularly or fully occupied by the Using Agency will remain with the Using Agency.
- C. Contractor shall perform work in a manner that will not alter the integrity of the Using Agency's security system. When this is not possible, the Contractor will coordinate with the Department prior to disrupting the security system. Maintain the security of the perimeter fencing associated with the detention facility during construction operations.

1.16 WATER CONTROL

- A. Protect the interior of facilities from water and/or moisture infiltration.

1.17 FENCING AND SECURITY

- A. The Using Agency will not provide security of any kind and shall not be liable to anyone for, or for the lack of, security. Each subcontractor shall include in its bid the cost to provide, and shall provide, such fencing and security as may be necessary in addition to the requirements of this section.

1.18 MATERIALS STORAGE AND PROTECTION

- A. An area will be assigned to the Contractor for materials storage in the closest possible proximity to each project site. Providing protection and security for the area is the responsibility of the Contractor. Any materials stored outside of the buildings being worked on under this contract will be kept in an agreed upon storage area. Materials stored in Using Agency-occupied facilities as directed by the Using Agency.

1.19 SITE AND OFF-SITE STORAGE

- A. The Contractor shall include in its bid the cost to provide, and shall provide, such special security work for which he is contractually responsible, the allocation of job-site storage space for temporary job-site facilities, and the furnishing of off-site storage space, if sufficient job-site storage is not available.

1.20 OWNER ACCESS

- A. Existing roads and parking areas shall be kept open at all times for the flow of traffic from existing facilities.

1.21 UTILITY LOCATES

- A. Contractor shall be responsible for obtaining all utility locates. Contractor shall arrange with utility locate services for locating utilities such as telephone and communications, video cable, water, sewer, electric, fuel lines, etc. Hand dig within two feet of all utilities to avoid damaging existing facilities.

1.22 MARKING OF CONTRACTOR VEHICLES

- A. All Contractor vehicles used on the job site shall be marked with Contractor's Name (as it appears on his business license) and telephone number. This may be a magnetic sign on the door, sign in window or other, providing it is visible and legible.

1.23 PARKING

- A. The Contractor and his employees may park their vehicles in parking areas designated by the Using Agency. There will be no authorized parking in fire lanes and delivery lanes unless authorized by the Using Agency and then only for loading and unloading materials for and debris from the project. Provide and maintain access to fire hydrants and control valves free of obstructions.

1.24 PROTECTION OF EXISTING FACILITIES

- A. The Contractor shall include in its bid the cost to provide, and shall provide, the locating and protecting of the existing facilities of the Using Agency, or any other public facilities whether or not such facilities be on the site of the work or in the public right-of-way.

1.25 PROTECTION OF EXISTING VEGETATION, STRUCTURES, UTILITIES, AND IMPROVEMENTS

- A. The Contractor will preserve and protect all existing vegetation such as trees, shrubs, and grass on or adjacent to the site of work which is not to be removed and which does not unreasonably interfere with the construction work. Care will be taken in removing trees authorized for removal to avoid damage to vegetation to remain in place. Any lines or branches of trees broken during such operations or by the careless operation of equipment, or by workmen, shall be trimmed with a clean cut and painted with an approved tree pruning compound as directed by the Department.
- B. The Contractor will protect from damage all existing improvements or utilities at or near the site of the work, the location of which is made known to him, and will repair or restore any damage to such facilities resulting from failure to comply with the requirements of this contract or the failure to exercise reasonable care in the performance of the work. If the Contractor fails or refuses to repair any such damages promptly, the Department may have the necessary work performed and charge the cost thereof to the Contractor.

1.26 SALVAGE

- A. All materials excavated and any other materials on the site at the time of award are the property of the Using Agency. The Contractor shall provide in its bid the cost to dispose of, and shall dispose of, salvage materials and/or materials which may be surplus to the requirements of the work, provided that the Using Agency, at its sole option, may direct that salvage and/or surplus materials shall be delivered to, unloaded, and stored at place of storage on the Using Agency's property. Such place of storage will be within one mile and a half of the project site.
- B. All items or materials removed from the project shall be made available for the Using Agency's inspection. The Using Agency retains the option to claim any item or material. The Contractor shall deliver any claimed item or material in good condition to the place designated by the Using Agency. All items not claimed become the property of the Contractor and shall be removed from the site by the Contractor.
- C. Salvage materials shall not include trash, lumber or concrete debris, or debris of any nature. Trash and debris shall be disposed of off-site in accordance with federal, state, and local statutes.

1.27 TEMPORARY ENCLOSURE AND SPACE HEATING

- A. The Contractor shall include in its bid the cost to provide, and shall provide, such temporary insulated weather-tight enclosures of the work and such space heating as may be required to protect the work from damage due to freezing temperatures, snow and rain, and to allow orderly coordinated progress of all work.

1.28 ENVIRONMENTAL REQUIREMENTS

- A. General. The Contractor shall include in its bid the cost of complying, and shall comply, and shall require each of its subcontractors to comply, with this section and also each local, state, and federal Environmental Law and Regulation.
- B. Provide methods, means, and facilities to prevent contamination of soil, water, and air from discharge of noxious, toxic substances and pollutants produced by construction operations.
- C. Dust Prevention. Should the site produce visible dust, the Contractor shall, when directed by the Department, forthwith, apply a palliative which prevents the dust from drifting or being wind-driven off the site.

1.29 CONSTRUCTION CLEANING

- A. In accordance with Part 3 of this specification.

1.30 REMOVAL

- A. Remove temporary utilities, materials, equipment, facilities, services, and construction prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary facilities.
- C. Restore existing facilities used during construction to specified, or to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 WASTE STORAGE EQUIPMENT

- A. Provide covered containers for collection of waste materials, debris, and rubbish; and for the transportation of same from point of generation to point of disposal. Containers shall be adequately secured to prevent release of waste materials.

3.02 CLEANING OF THE PROJECT AREA

- A. Control accumulation of waste materials and rubbish. Maintain areas under Contractor's control free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Clean periodically to keep the Work, the site, and adjacent properties free from accumulations of waste materials, rubbish, and wind-blown debris resulting from construction operations.
- C. Remove debris, rubbish, and combustible material from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to closing the space.
- D. Immediately clean interior areas after completion of work to provide suitable conditions for building occupants. All occupied areas and areas used by the general public require cleanup at the end of each shift.
- E. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning on an as needed basis.
- F. Control cleaning operations so that dust and other contaminants will not adhere to wet or newly-coated surfaces.
- G. Maintain manpower and equipment, including dust mops, wet mops, brooms, buckets, and clean wiping rags for cleaning fine dust from floors in adjacent occupied areas.

3.03 DISPOSAL

- A. Promptly remove waste materials, debris, and rubbish from the site periodically and dispose of off the site in accordance with all federal, state and local regulations.
- B. Tightly covered containers shall be used to remove debris from the facility through all occupied areas to minimize dust and contamination from demolition materials. Facility waste containers and dumpsters shall not be used by the Contractor.
- C. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids. If conditions dictate, chute and containers shall be sprayed with water to maintain dust control. Chute opening shall be closed when not in use.

END OF SECTION

SECTION 01540

SECURITY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Security Check and Orientation
- B. DOC Project Coordinator
- C. Personnel Access
- D. Vehicle Access
- E. Tool Control
- F. Contraband
- G. Cell Phones / Cameras

1.02 SUMMARY

- A. This document outlines security provisions that the Contractor and its Subcontractors shall follow. The facility is a correctional institution and the performance of the Work could impact the operations of the facility. The Contractor must understand and shall comply with Department of Corrections (DOC) security requirements.
- B. The intent of this section is to prevent any escape, sabotage or assault attempt; any disturbance; or the importation of contraband.

1.03 RELATED REQUIREMENTS

- A. Section 01010 – Summary of Work
- B. Section 01300 – Submittals
- C. Section 01500 – Construction Facilities and Temporary Controls

1.04 SUBMITTALS

- A. Submit list of Contractor's and Subcontractor's personnel and a completed Request for Clearance form for each individual to the facility security officer.
- B. Submit Using Agency's Daily Log Sheet at the end of each shift or day.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 SECURITY CHECK AND ORIENTATION

- A. All personnel (Contractor and Subcontractor) working at the site will be required to undergo a security check before performing any work on the project. The Using Agency will provide a mandatory security briefing for all persons before commencement of on-site work.
- B. Submit the following data on a Request for Clearance form to the DOC Project Coordinator for each individual at least 72 hours before that individual is scheduled to commence work on the site:
 - Full name
 - Residence address
 - Telephone Number
 - Date of birth
 - Social Security Number
 - Valid driver's license and State of issue, or other photo identification
- C. The security check will screen (nationally) for recent or frequent past convictions or for outstanding warrants. The DOC reserves the right to disqualify anyone from access to the work site. A past conviction will not automatically disqualify.

3.02 DEPARTMENT OF CORRECTIONS PROJECT COORDINATOR

- A. DOC will designate an on-site project coordinator to be the liaison between the Contractor and the facility staff.
- B. In the event of an emergency affecting the secure operation of the facility, the Project Coordinator is authorized to direct the Contractor to take appropriate action. The directions of the Project Coordinator shall be followed immediately.
- C. The Project Coordinator shall be briefed each week by the Contractor regarding the Contractor's work requirements and weekly work plan for the subsequent week. This briefing may be performed concurrently with the progress meetings that may be required under the Contract.

3.03 PERSONNEL ACCESS

- A. Access to the worksite within a correctional facility will be monitored and controlled by the Department of Corrections in order to prevent importation of contraband and escape of inmates.
- B. Contractor personnel shall report as a group to the entrance control at the beginning of each shift to obtain their identification or visitor badges, and sign in on the Contractor's log. At the end of each shift, workers shall return their badges and sign out on the Contractor's log. If workers leave the facility at lunch, they shall turn in their badges and leave as a group. Contractor should encourage workers to bring lunch and eat in the facility.
- C. Contractor employees may be denied access or be removed from the facility for the following reasons:

Possession of firearms or deadly weapons

Workers that are incompetent, careless or otherwise detrimental to the work or the

security of the facility

Security requirements

Disruptive, abrasive, and/or argumentative conduct

Being under the influence of alcohol, drugs and/or any substance that is considered contraband by the Facility, including use of tobacco products

Refusal to submit to search of personal property, belongings, or themselves

Health problems

Failure to show proper identification

Failure to follow the direction of Correctional Officers and/or staff members

Having any contact or interaction with inmates

Failure to pass security check

Failure to secure tools and work areas. Contractor shall provide personnel to secure his work area and tools. A member of the Contractor's staff shall be in the active work area. If no Contractor personnel are physically present in the work area, the work area and/or tools shall be secured.

3.04 VEHICLE ACCESS

- A. No privately owned vehicles may enter inside the security fence without approval of the facility on-site Security Officer. Employee vehicles can be parked in the employee/visitor parking lot outside the security fence, and must be locked at all times. No firearms or deadly weapons are allowed inside vehicles on the facility grounds.
- B. Authorized work vehicles, i.e., job site trailers and trucks, may be left inside the fence if they can be secured, in a location approved by the facility Security Officer.

3.05 TOOL CONTROL

- A. Do not leave prisoner-accessible work areas unattended without first removing or securing all tools and objects that would be considered contraband.
- B. At the end of each work day, remove all tools and equipment from inmate-accessible work areas and store within locked cabinets, locked containers, or locked storage trailers.
- C. Maintain written daily inventory of tools and equipment. Tools and equipment that cannot be accounted for shall be reported immediately to the Project Coordinator or the Security Officer.

3.06 CONTRABAND

- A. The mailing, bartering, introducing, exchanging or buying of items between inmates and contractors or their employees is strictly prohibited without the written consent of the Superintendent of the Institution.

3.07 CELL PHONES / CAMERAS

- A. No cell phones, cameras or taking of pictures are allowed inside the secure perimeter. The Contractor's on-site superintendent may have a cell phone if no other phones are available in the facility. If necessary, pictures specifically of the work area may be permitted under the direct observation and supervision of the facility Security Sergeant. No photographs shall be taken on facility grounds, either inside or outside the secure perimeter.

The following reference is from the Alaska Statutes and is provided for the Contractor's information:

Title 11 – Alaska Statutes

Section 11.56.375, Promoting contraband in the first degree:

1. A person commits the crime of promoting contraband in the first degree if the person violates AS 11.56.380 and the contraband is:
 - a) a deadly weapon;
 - b) an article that is intended by the defendant to be used as a means of facilitating an escape; or
 - c) a controlled substance.
2. Promoting contraband in the first degree is a class C felony.

Section 11.56.380, Promoting contraband in the second degree:

1. A person commits the crime of promoting contraband in the second degree if the person:
 - a) introduces, takes, conveys, or attempts to introduce, take, or convey contraband into a correctional facility; or
 - b) makes, obtains, possesses, or attempts to make, obtain, or possess anything that person knows to be contraband while under official detention within a correctional facility.
2. Promoting contraband in the second degree is a class A misdemeanor.
 - a) contraband includes tobacco products.

Section 11.56.390, definition:

"Contraband" means any article or thing which persons confined in a correctional facility are prohibited by law from obtaining, making, or possessing in that correction facility.

END OF SECTION

SECTION 01560 - CLEANING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Execute cleaning during progress of the Work and at completion of the Work.

1.2 DISPOSAL REQUIREMENTS

- A. Conduct cleaning and disposal operations to comply with codes, ordinances, regulations, and anti-pollution laws.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.

PART - EXECUTION

3.1 DURING CONSTRUCTION

- A. Execute periodic cleaning to keep the Work, the site, and adjacent properties free from accumulations of waste materials, rubbish, and wind blown debris resulting from construction operations.
- B. Provide on-site containers for the collection of waste materials, debris, and rubbish.
- C. Properly remove waste materials, debris and rubbish from the site and legally dispose of.

3.2 DUST CONTROL

- A. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly coated surfaces.

3.3 FINAL CLEANING

- A. Employ skilled workmen for final cleaning.
- B. Remove grease, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior surfaces.
- C. Prior to final completion or Using Agency occupancy, the Contractor shall conduct an inspection of sight-exposed interior surfaces and all Work areas to verify that the entire Work is clean.

END OF SECTION

SECTION 01600 – MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Products.
- B. Transportation and Handling.
- C. Storage and Protection.
- D. Product Options.
- E. Products List.
- F. Substitutions.
- G. Systems Demonstration.

1.2 RELATED REQUIREMENTS

- A. Section 01300 – Submittals.
- B. Section 01730 - Operation and Maintenance Data.
- C. Section 01740 - Warranties and Bonds.

1.3 PRODUCTS

- A. Products include material, equipment, and systems.
- B. The Contractor shall be held responsible for any and all products to be installed under this contract. The Contractor will be required to make good at his own cost any injury or damage which said materials or equipment may sustain from any source or cause whatsoever before final acceptance.
- C. Components required to be supplied in quantity within a Specification section shall be the same, and shall be interchangeable.
- D. Comply with Specifications and referenced standards as minimum requirements.
- E. Reuse of Existing Materials:
 - 1. The Contractor shall not reuse any materials or equipment which are not specifically noted to be reused without written permission of the Project Manager. In cases where existing materials are found to be in usable condition, but not indicated to be reused by the contract documents, the Contractor shall, upon written approval of the Project Manager, incorporate these items into the project and an appropriate change order to the contract will be written.
- F. All products will be delivered, unloaded inside the appropriate building and completely installed by the Contractor, or his authorized agent.

1.4 TRANSPORTATION AND HANDLING

- A. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.
- B. Provide equipment and personnel to handle products by methods to prevent soiling or damage.
- C. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

1.5 STORAGE AND PROTECTION

- A. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.
- B. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.
- C. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged, and are maintained under required conditions.

1.6 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards.
- B. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not specifically named.
- C. Products Specified by Naming Only One Manufacturer with No Provision for Substitutions: No options, no substitutions allowed.
- D. Products Specified by Naming Several Manufacturers: Products of named manufacturers meeting specifications: No options, no substitutions allowed.

1.7 PRODUCTS LIST

- A. Within 30 days after Owner-Contractor Agreement, submit complete list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

1.8 SUBSTITUTIONS

- A. Only within 15 days after date of Owner-Contractor Agreement will Owner/Engineer consider requests from Contractor for substitutions. Subsequently, substitutions will be considered only when a product becomes unavailable due to no fault of Contractor.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- C. Request constitutes a representation that Contractor:
 - 1. Has investigated proposed product and determined that it meets or exceeds, in all respects, specified product.

2. Will provide the same warranty for substitution as for specified product.
 3. Will coordinate installation and make other changes which may be required for Work to be complete in all respects.
 4. Waives claims for additional costs which may subsequently become apparent.
- D. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals without separate written request, or when acceptance will require substantial revision of Contract Documents.
- E. Owner/Engineer will determine acceptability of proposed substitution, and will notify Contractor of acceptance or rejection in writing within a reasonable time.
- F. Only one request for substitution will be considered for each product. When substitution is not accepted, provide specified product.

1.9 SYSTEMS DEMONSTRATION

- A. Prior to final inspection, demonstrate operation of each system to Owner.
- B. Instruct Owner's personnel in operation, adjustment, and maintenance of equipment and systems, using the operation and maintenance data as the basis of instruction.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXECUTION

- A. The Contractor shall not unreasonably encumber site with materials or equipment.
- B. The Contractor is responsible for protection and safekeeping of products stored on premises, and shall move any stored projects which interfere with operations of Owner.
- C. The Contractor is responsible for any and all associated materials and labor necessary to provide a finished appearance.

END OF SECTION

SECTION 01700
CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Closeout Procedures
- B. Final Cleaning
- C. Project Record Documents
- D. Operation and Maintenance Data
- E. Warranties
- F. Spare Parts and Maintenance Materials

1.02 RELATED REQUIREMENTS

- A. Seciton 00700 - General Conditions: Fiscal provisions, legal submittals, and other administrative requirements.
- B. Section 01010 - Summary of Work: Using Agency occupancy.
- C. Section 01400 - Quality Control: Departmental Inspection Services.
- D. Section 01500 - Construction Facilities and Temporary Controls: Cleaning during construction.
- X. Section 01730 - Operation and Maintenance Data
- X. Section 01740 - Warranties and Bonds

1.03 CONTRACT CLOSEOUT PROCEDURES

A. SUBSTANTIAL COMPLETION

1. Submit the following prior to requesting a Substantial Completion inspection:
 - a. Evidence of Compliance with Requirements of Governing Authorities:
 - 1) Certificate of Occupancy.
 - 2) Required Certificates of Inspection.
 - b. Project Record Documents in accordance with Section 01720
 - c. Operation and Maintenance Data in accordance with Section 01730
 - d. Warranties and Bonds in accordance with Section 01740
 - d. Spare Parts and Maintenance Materials in accordance with Section 01700-1.08
2. Substantial Completion shall be considered by the Department when:
 - a. Written notice is provided 10 days in advance of inspection date.
 - b. List of items to be completed or corrected is submitted.
 - c. Operation and Maintenance Manuals are submitted and approved by the Department.
 - d. Equipment and systems have been tested, adjusted, balanced and are fully operational.
 - e. Automated and manual controls are fully operational.
 - e. Operation of system has been demonstrated to Department personnel.

- f. Certificate of Occupancy is submitted.
 - g. Certificates of Inspection for required inspections have been submitted.
 - h. Project Record Documents for the Work or the portion of the Work being accepted are submitted and approved.
 - i. Spare parts and maintenance materials are turned over to the Department.
 - j. All keys are turned over to the Department.
3. Should Department inspection find Work is not substantially complete, the Department will promptly notify Contractor in writing, listing observed deficiencies.
 4. The Contractor shall remedy deficiencies and send a second written notice of Substantial Completion.
 5. When the Department finds Work is substantially complete, the Department will prepare a Certificate of Substantial Completion in accordance with provisions of General Conditions.
 6. Using Agency will occupy existing facilities for the conduct of business, under provisions stated in Certificate of Substantial Completion

B. FINAL COMPLETION

1. When Contractor considers Work is complete, submit written certification that:
 - a. Contract Documents have been reviewed.
 - b. Work has been inspected for compliance with Contract Documents.
 - c. Work has been completed in accordance with Contract Documents, and deficiencies listed with Certificate of Substantial Completion have been corrected.
 - d. Work is complete and ready for final inspection.
2. Should the Department inspection find Work incomplete, Department will promptly notify Contractor in writing listing observed deficiencies.
3. Contractor shall remedy deficiencies and send a second certification of Final Completion.
4. When Department finds Work is complete, Department will consider closeout submittals.

C. REINSPECTION FEES

1. Should status of completion of Work require more than one reinspection by the Department due to failure of Work to comply with Contractor's responsibility, the Department will deduct the cost of reinspection from final payment to Contractor as provided in the Contract Documents.
2. Reinspection fees shall not exceed \$5,000 for any one reinspection.

D. CLOSEOUT SUBMITTALS

1. Warranties and Bonds in accordance with Section 01740 Warranties and Bonds.
2. Evidence of Payment in accordance with Conditions of the Contract.
3. Consent of Surety to Final Payment.
4. Certificates of Insurance for Products and Completed Operations in accordance with Supplementary Conditions.
5. Certificate of Release.

E. APPLICATION FOR FINAL PAYMENT

1. Submit application for final payment in accordance with provisions of the General Conditions of the Contract.

2. Department will issue a final Change Order reflecting all remaining adjustments to Contract Price not previously made by Change Orders.
3. The full amount of the Schedule of Values line item labeled "Contract Closeout" will be withheld as a portion of the final payment.
4. Final payment will not be executed until the Department has fully reviewed the Project records and found them to be in compliance with the Contract Documents.

1.04 FINAL CLEANING

- A. Execute final cleaning prior to Substantial Completion inspection.
- B. Remove grease, adhesives, dust, dirt, fingerprints, temporary labels, stains, and other foreign substances from interior and exterior surfaces exposed to view; polish transparent and glossy surfaces; vacuum carpeted and soft surfaces. Clean equipment and fixtures to a sanitary condition, clean or replace filters of mechanical equipment. Clean roofs, gutters, downspouts, and drainage systems.
- C. Clean site; sweep paved areas, rake clean other surfaces.
- D. Use cleaning materials which will not create hazards to health or property, and which will not damage surfaces. Follow manufacturer's recommendations.
- E. Maintain cleaning until the Department issues certificate of Substantial Completion.
- F. Remove waste, debris, and surplus materials from the site. Clean grounds; remove stains, spills, and foreign substances from paved areas and sweep clean. Rake clean other exterior surfaces.

1.05 PROJECT RECORD DOCUMENTS

- A. In accordance with Section 01720 Project Record Documents

1.06 OPERATION AND MAINTENANCE INSTRUCTIONS

- A. In accordance with Section 01730 Operation and Maintenance Data.

1.07 WARRANTIES

- A. In accordance with Section 01740 Warranties and Bonds.

1.08 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual Specification Sections.
- B. Deliver to project site and place in location as directed, obtain receipt prior to final payment.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01720 – PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Maintenance of Record Documents.
- B. Submittal of Record Documents.

1.2 RELATED REQUIREMENTS

- A. Section 01300 - Submittals: Shop drawings, product data.
- C. Section 01700 - Contract Closeout Procedures.
- D. Individual Specifications Sections: Manufacturers' certificates and certificates of inspection.

1.3 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. In addition to requirements in General Conditions, maintain at the site for the Project Manager one record copy of:
 - 1. Contract Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
 - 6. Field test records.
 - 7. Inspection certificates.
 - 8. Manufacturer's certificates.
- B. Prior to Substantial Completion, provide original or legible copies of each item maintained by the Contractor as listed in Section 01720, 1.3A above.
- C. Delegate responsibility for maintenance of Record Documents to one person on the Contractor's staff as approved in advance by the Project Manager.
- D. Promptly following award of contract, secure from Project Manager, at no charge to Contractor, one complete set of all documents comprising the Contract.
- E. Immediately upon receipt of job set, described above, stamp each document with title "RECORD DOCUMENTS - JOB SET."
- F. Store Record Documents apart from documents used for construction. Provide secure storage for Record Documents.

- G. Label and file Record Documents in accordance with Section number listings in Table of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.
- H. Maintain Record Documents in a clean, dry and legible condition. Do not use Record Documents for construction purposes.
- I. Use all means necessary to maintain job set of Record Documents completely protected from deterioration and from loss and damage until completion of Work and transfer of recorded data to Project Manager.
- J. Keep Record Documents and samples available for inspection by Project Manager.
- K. Project Manager's approval of current status of Record Documents will be prerequisite to Project Manager's approval of and request for final payment.
 - 1. Prior to submitting request for final payment, submit final Record Documents to Project Manager and secure his approval.
- L. Do not use job set for any purpose except entry of new data and for review and copying by Project Manager.

1.4 RECORDING

- A. Record information on a set of black line or opaque Drawings, and in a copy of a Project Manual, provided by Project Manager.
- B. Using colored felt tip marking pens or colored pencil, maintaining separate colors for each major system, clearly describe changes by note and by graphic line, as required. Date all entries. Call attention to entry by a "cloud" around area or areas affected.
- C. Thoroughly coordinate all changes within Record Documents, making adequate and proper entries on each Specification Section and each sheet of Drawings and other Documents where such entry is required to properly show change or selection. Accuracy of records shall be such that future searches for items shown in Contract Documents may reasonably rely on information obtained from approved Record Documents.
- D. Record all entries within 24 hours of receipt of information and concurrently with construction progress. Do not conceal any Work until required information is recorded.
- E. Contract Drawings and Shop Drawings: Legibly mark each item to record actual construction, including:
 - 1. Use all means necessary, including proper tools for measurement, to determine actual location of installed items.
 - 2. Field changes of dimension and detail.
 - 3. Changes made by Modifications.
 - 4. Details not on original Contract Drawings.
 - 5. References to related shop drawings and Modifications.

6. Where changes are caused by Contractor-originated proposals approved by Project Manager, including inadvertent errors by Contractor which have been accepted by Project Manager, clearly indicate change by note.
 7. Show on job set Record Drawings, by dimension accurate within one inch (1"), centerline of each run of items described in sub-paragraphs 3 and 4 above. Identify item by accurate note such as "Buried Electrical Feeder", etc. Show by symbol or note, vertical location of item (in ceiling plenum", "exposed", etc.). Make all identification sufficiently descriptive that it may be related reliably to Specifications.
- F. Specifications: Legibly mark each item to record actual construction, including:
1. Manufacturer, trade name, and catalog number of each product actually installed, particularly optional items and substitute items.
 2. Changes made by Addenda and Modifications.

1.5 SUBMITTALS

- A. Upon submittal of completed total set of Record Documents to Project Manager, participate in review meeting(s) as required by Project Manager, make required changes in Record Documents, and promptly deliver final Record documents to Project Manager and samples under provisions of Section 01700.
- B. Transmit with cover letter in duplicate, listing:
1. Date.
 2. Project title and number.
 3. Contractor's name, address, and telephone number.
 4. Number and title of each Record Document.
 5. Signature of Contractor or authorized representative.

PART 2 - PRODUCTS - Not Used.

PART 3 - EXECUTION - Not Used.

END OF SECTION

SECTION 01730 – OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Format and content of manuals.
- B. Instruction of Department personnel.
- C. Schedule of submittals.

1.2 RELATED REQUIREMENTS

- A. Section 01300 - Submittals: Submittals procedures.
- B. Section 01300 - Submittals: Shop drawings, product data, and samples.
- C. Section 01700 - Contract Closeout Procedures.
- D. Section 01720 - Project Record Documents.
- E. Section 01740 - Warranties and Bonds.
- F. Individual Specifications Sections: Specific requirements for operation and maintenance data.

1.3 QUALITY ASSURANCE

- A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

1.4 FORMAT

- A. Prepare data in the form of an instructional manual.
- B. Binders: Commercial quality, 8-1/2 x three-ring binders with hardback, cleanable, plastic covers; two inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- C. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; list title of Project; identify subject matter of contents.
- D. Arrange content by systems, under section numbers and sequence of Table of Contents of this Project Manual.
- E. Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- F. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
- G. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

1.5 CONTENTS, EACH VOLUME

- A. Table of Contents: Provide DEPARTMENT's Project title; DEPARTMENT's Project number; names, addresses, and telephone numbers of Consultant(s) and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.
- B. For Each Product or System: List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- C. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- D. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control diagrams. Do not use Project Record Documents as maintenance drawings.
- E. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
- F. Warranties and Bonds: Bind in copy of each.

1.6 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Give function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
- B. Include as-installed color coded wiring diagrams.
- C. Operating Procedures: Include start-up and routine normal operating instructions and sequences. Include control, shut-down, and emergency instructions. Include any special operating instructions.
- D. Maintenance Requirements: Include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- E. Provide servicing schedule.
- F. Include manufacturer's printed operation and maintenance instructions.
- G. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- H. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- I. Additional Requirements: As specified in individual Specifications sections.

1.7 INSTRUCTION OF OWNER PERSONNEL

- A. Before final inspection, instruct DEPARTMENT designated personnel in operation, adjustment, and maintenance of products, equipment, and systems, at agreed upon times.
- B. Use operation and maintenance manuals as basis of instruction. Review contents of manual with personnel in detail to explain all aspects of operation and maintenance.
- C. Prepare and insert additional data in Operation and Maintenance Manual when need for such data becomes apparent during instruction.

1.8 SUBMITTALS

- A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. DEPARTMENT will review draft and return one copy with comments. Revise content of documents as required prior to final submittal.
- B. For equipment, or component parts of equipment put into service during construction and operated by DEPARTMENT, submit documents within ten days after acceptance.
- C. Submit three copies of revised volumes of data in final form within ten days after final inspection.

PART 2 - PRODUCTS - Not Used.

PART 3 - EXECUTION - Not Used.

END OF SECTION

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Format and content of manuals.
- B. Schedule of submittals.

1.2 RELATED REQUIREMENTS

- A. Section 00700 – General Conditions.
- B. Section 01700 - Contract Closeout.
- C. Section 01730 – Operation and Maintenance Data.
- D. Individual Specifications Sections: Specific requirements for operation and maintenance data.

1.3 FORM OF SUBMITTALS

- A. Bind in commercial quality, 8-1/2 x 11 inch three-ring binders with hardback, cleanable, plastic covers.
- B. Label cover of each binder with typed or printed title "WARRANTIES AND BONDS"; with title of Project and DEPARTMENT Project number; name, address and telephone number of CONTRACTOR; and name of responsible principal.
- C. Table of Contents: Neatly typed, in the sequence of the table of contents of the Project manual, with each item identified with the number and title of the Specification section in which specified, and the name of product or Work item.
- D. Separate each warranty or bond with index tab sheets keyed to the table of contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, Supplier, and manufacturer, with name, address, and telephone number of responsible principle.

1.4 PREPARATION OF SUBMITTALS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, Suppliers, and manufacturers, within ten days after completion of the applicable item of Work. Except for items put into use with DEPARTMENT permission, leave date of beginning of time of warranty until the date of Final Completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Retain warranties and bonds until time specified for submittal.

1.5 TIME OF SUBMITTALS

- A. Warranty period for equipment begins at Substantial Completion, unless otherwise approved by DEPARTMENT.
- B. For equipment or component parts of equipment put into service during construction with DEPARTMENT permission, submit documents within ten days after acceptance.

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- C. Make other submittals within ten days after date of Final Completion, prior to final Application for Payment.
- D. For items of Work when acceptance is delayed beyond date of Final Completion, submit within ten days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 - PRODUCTS - Not Used.

PART 3 - EXECUTION - Not Used.

END OF SECTION

SECTION 02300 - EARTHWORK

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Preparing subgrades for slabs-on-grade and foundations.
- B. Excavating and backfilling for buildings and structures.
- C. Excavating and backfilling trenches within building lines.
- D. Excavating and backfilling trenches for buried utilities and pits for buried utility structures.
- E. Gravel fills for pads.
- F. Compaction, dewatering and moisture control.

1.2 RELATED SECTIONS

- A. Section 02340 – Geotextile.
- B. Section 02350 – Rigid Insulation Board.
- C. Section 02510 – Underground Utilities.

1.3 REFERENCES

- A. Alaska Test Method (See Alaska Test Manual).
- B. AASHTO T11 - Standard Method of Test for Materials Finer Than 75 Micrometer (No. 200 Sieve in Mineral Aggregates by Washing.
- C. AASHTO T27 - Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates.
- D. AASHTO T89 - Determining the Liquid Limit of Soils.
- E. AASHTO T90 - Determining the Plastic Limit and Plasticity Index of Soils.
- F. AASHTO T96 - Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
- G. AASHTO T104 - Soundness of Aggregate by use of Sodium Sulfate and Magnesium Sulfate
- H. ASTM D 75 - Standard Practice for Sampling Aggregates.
- I. ASTM D 422 - Standard Test Method for Particle-Size Analysis of Soils.

- J. ASTM D 1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
- K. ASTM D 1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
- L. ASTM D 2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
- M. ASTM D 2216 - Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass.
- N. ASTM D 2487 - Classification of Soils for Engineering Purposes.
- O. ASTM D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
- P. ASTM D 3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
- Q. ASTM D 4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
- R. ASTM D 5918 - Standard Test Methods for Frost Heave and Thaw Weakening Susceptibility of Soils.
- S. WAQTC for AASHTO T89/T90.
- T. WAQTC TM1.
- U. Western Alliance for Quality in Transportation Construction (WAQTC).

1.4 DEFINITIONS

- A. Backfill: Soil materials used to fill an excavation.
 - 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support side of pipe.
 - 2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Base Course: Layer placed between the subbase course and the gravel surface course or asphalt paving.
- C. Bedding Course: Layer placed over the excavated subgrade in a trench before laying pipe.
- D. Borrow: Satisfactory soil imported from off-site for use as a fill or backfill.
- E. Completed Course: A course or layer that is ready for the next layer or next phase of the work.
- F. Drainage Course: Layer supporting slab-on-grade used to minimize capillary flow of pore water.

- G. Embankment: The fill material required to raise the existing grade in all areas.
- H. Excavation: Removal of material encountered above subgrade elevations.
- I. Fill: Soil materials used to raise existing grades.
- J. Imported Material: Material obtained by the Contractor from sources off the site.
- K. Influence Area: The area within planes sloped downward and outward at an angle of 60 degrees from the horizontal from:
 - 1. 1 foot outside the outermost edge at the base of foundations or slabs.
 - 2. 1 foot outside the outermost edge at the surface of roadways or shoulder.
 - 3. 0.5 foot outside the exterior edge at the spring line of pipes and culverts.
- L. Maximum Density: The laboratory maximum dry density as determined by ASTM D 1557 (modified proctor).
- M. Optimum Moisture Content: As determined by ASTM D 1557, the optimum moisture content corresponds to the maximum dry density. Field moisture content shall be determined on the basis of the fraction passing the 3/4-inch sieve.
- N. Organics: Highly organic soil ASTM D2487 Group PT, topsoil, roots, vegetable matter, trash and debris.
- O. Prepared Ground Surface: The ground surface after clearing, grubbing, stripping, excavation, and scarification and/or compaction.
- P. Selected Backfill Material: Material available on-site that the Engineer determines to be suitable for a specific use.
- Q. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- R. Subbase Course: Layer placed between the subgrade and base course for gravel surface course or asphalt paving, or layer placed between the subgrade and a concrete pavement or walk.
- S. Subgrade: Surface or elevation remaining after completing clearing or excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- T. Truck Measure: The truck volume shall be determined by leveling off selected loads in the truck box after the material has been transported from the site of loading to the site of placement. The Engineer may call for such measurement at any time. The Contractor shall cooperate with the Engineer in the measurement, and they shall together determine and agree upon the volume of material in the truck box.
- U. Unclassified Excavation: The nature of materials to be encountered has not been identified or described herein.

- V. Unsuitable Material: Highly organic soil and fine-grained soils ASTM D 2487 Group PT, topsoil, roots, vegetable matter, trash, debris and ice chunks larger than three inches in any dimension.
- W. Utilities: On-site at-grade, above-grade or underground pipes, conduits, ducts, and cables, as well as underground services within buildings, and above grade or overhead cables.
- X. Well-Graded: A mixture of particle sizes that has no specific concentration or lack thereof of one or more sizes. Well-graded does not define any numerical value that must be placed on the coefficient of uniformity, coefficient of curvature, or other specific grain size distribution parameters. Well-graded is used to define a material type that, when compacted, produces a strong and relatively incompressible soil mass, free from detrimental voids.

1.5 SUBMITTALS

- A. Work Plan: Submit a detailed description of the proposed work plan coordinated with utilities, property owners and the Owner. Describe the construction process with a proposed schedule indicating approximate time of hauling fill material and haul routes. Coordinate haul routes and schedule with local government.
- B. Submit laboratory gradation, in-situ moisture/density test results for all gravel fills for approval thirty (30) days before start of project. No fill placement will be allowed before submittal and approval of the fill material.
- C. Submit laboratory gradation and moisture content test results from interim samples taken during construction as required for Quality Assurance.
- D. Submit compaction density logs and/or certifications and in place moisture contents weekly.

1.6 IMPORTED MATERIAL ACCEPTANCE

- A. All imported materials specified in this section are subject to the following requirements:
 - 1. All tests necessary for the Contractor to locate an acceptable source of imported material shall be made by the Contractor. Certification that the material conforms to the Specification requirements along with copies of the test results from a qualified commercial testing laboratory shall be submitted to the Engineer for approval at least thirty (30) days before the material is required for use. All material samples shall be furnished by the Contractor at the Contractor's sole expense. Samples shall be representative and be clearly marked to show the source of the material and the intended use on the project. Sampling of the material source shall be done by the Contractor in accordance with ASTM D 75. Notify the Engineer at least twenty-four (24) hours prior to sampling. The Engineer may, at the Engineer's option, observe the sampling procedures. Tentative acceptance of the material source shall be based on an inspection of the source by the Engineer and/or the certified test results submitted by the Contractor to the Engineer, at the Engineer's discretion. No imported materials shall be delivered to the site until the proposed source and materials tests have been tentatively accepted in writing by the Engineer. Final acceptance will be based on tests made on samples of material taken from the completed and compacted course. The completed course is defined as a course or layer that is ready for the next layer or the next phase of construction. All testing for final acceptance shall be performed by the Engineer.

2. Tests by the Contractor shall be made on samples taken at the place of production prior to shipment. Samples of the finished product for gradation testing shall be taken from each 2,000 cubic yards of prepared materials, or more often as determined by the Engineer, if variation in gradation is occurring, or if the material appears to depart from the Specifications. Test results shall be forwarded to the Engineer within forty-eight (48) hours after sampling.
3. If tests conducted by the Contractor or the Engineer indicate that the material does not meet Specification requirements, material placement will be terminated until corrective measures are taken. Material which does not conform to the Specification requirements and is placed in the work shall be removed and replaced at the Contractor's sole expense. Sampling and testing performed by the Contractor shall be done at the Contractor's sole expense.

1.7 EXCAVATION SAFETY

- A. The Contractor shall be solely responsible for making all excavations in a safe manner. Provide appropriate measures to retain excavation side slopes and prevent rock falls and barricades and markers to ensure persons working near the excavation are protected.

1.8 TOLERANCES

- A. All embankments, roads and dikes shall be constructed to the grades shown on the plans with a tolerance of +0.1 foot, except where dimensions or grades are shown or specified as a minimum, or maximum. All grading shall be performed to maintain slopes and drainage as shown.

1.9 TEMPERATURE LIMITATIONS

- A. All structural fill material shall be unfrozen at time of placement and it shall only be placed under thawing conditions.

1.10 CONTAMINATED SOILS

- A. Contractor shall notify the Engineer if contaminated soils are encountered.

1.11 WATER CONTROL

- A. Dewatering
 1. Contractor shall design, provide and pay for all dewatering required to construct facilities in accordance with the Construction Documents.
- B. Moisture Control
 1. Contractor shall be responsible for maintaining moisture content in gravel fills and backfills to provide specified compaction level. This may include the addition or removal of water from the fills to maintain optimum water content for compactive efforts.

PART 2 PRODUCTS**2.1 UNCLASSIFIED EXCAVATION**

- A. Excavation is unclassified. Complete all excavation regardless of the type and nature, or condition of the materials encountered. Make own estimate of the kind and extent of the various materials to be excavated in order to accomplish the scope of work.
- B. Dispose of unused unclassified excavation at a location approved by the Owner.

2.2 IMPORTED FILL MATERIAL

- A. Imported fill may include all fills utilized during the project. Imported fills shall conform to the relevant fill category.
- B. Imported fill material shall not consist of any material containing hazardous substances or petroleum fuels. Hazardous substances are any element, compound, mixture, solution or substance designated pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). Hazardous substances include any hazardous wastes having the characteristics of ignitability, corrosivity, reactivity or extraction procedure toxicity.

2.3 PIPE BEDDING

- A. Natural soil, maximum size 1-1/2 inch; free from clay and organic material, with a maximum of 7 percent passing the No. 200 sieve. It shall have a liquid limit not greater than 25, and plasticity index not greater than 6 as determined by AASHTO T89 and T90.
- B. The pipe bedding shall not consist of any material containing hazardous substances or petroleum fuels. Hazardous substances are any element, compound, mixture, solution or substance designated pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). Hazardous substances include any hazardous wastes having the characteristics of ignitability, corrosivity, reactivity, or extraction procedure toxicity.

2.4 TOPSOIL

- A. Topsoil shall be a blend of 30% organic peaty material and 70 % sandy loam and shall have no stones larger than 2 inches. No fibrous wood materials allowed.
- B. The soil pH shall be conducive for healthy plant growth. Provide seed bed soil with a pH of 7.0. Acidic soils shall be corrected with application of lime. Alkaline soils shall be corrected with sulfur or gypsum.
- C. Topsoil shall be clean material free of contaminants.

2.5 WATER

- A. Only fresh water shall be used to increase moisture content of fill materials to achieve optimum compaction.
- B. Fresh water shall also be utilized in maintenance of seed beds to establish a healthy vegetative root mat.

2.6 COMPACTION EQUIPMENT

- A. Compaction equipment used for all embankments shall consist of equipment deemed adequate to obtain the results required. Compaction equipment shall be operated in strict accordance with the manufacturer's instructions and recommendations. Equipment shall be maintained in such condition that it will deliver the manufacturer's rated compactive effort.

2.7 DETECTABLE WARNING TAPE

- A. Acid and alkali resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, minimum 6 inches wide and 4 mils thick, continuously inscribed with a descriptor of utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep. Color and text on tape shall be ANSI standard and warning of type of buried utilities, such as "Caution Buried Water Line Below".

PART 3 EXECUTION**3.1 STRIPPING**

- A. Stripping or disturbance of vegetation outside of the project impact area is not allowed, unless specifically required by the Construction Documents.
- B. Disposal from stripping shall be the burden of the Contractor, when required by Contract Documents.

3.2 BORROW PIT OPERATION

- A. All borrow pits shall be kept neat and orderly. Work pits in a systematic manner. Keep borrow pits graded to drain and take all necessary precautions to minimize erosion. Maintain access roads as necessary at Contractor's expense.
- B. Maintain positive drainage away from stockpiled gravels. Best Management Practices shall be in place to prevent stormwater pollution as identified in the Department of Environmental Conservation accepted Construction Stormwater Pollution Prevention Plan.

3.3 GENERAL EXCAVATION

- A. Perform all excavation of every description, regardless of the type, nature, or condition of material encountered, as specified, shown, or required to accomplish the construction.

- B. Protect native vegetation, benchmarks, existing structures, fences, sidewalks, paving, and curbs from equipment and vehicular traffic.

3.4 SITE ACCESS

- A. Site access shall be coordinated with the Department of Corrections. Seven (7) days' notice shall be given prior to commencing any activities.
- B. Site disturbances shall be limited to the construction footprint.
- C. Access will require coordination with the Department of Corrections. Equipment, tools, and materials will not be allowed to remain overnight at the jobsite. The Contractor must demobilize to the front gate for overnighing equipment, tools, and materials.

3.5 LIMITS OF EXCAVATION

- A. Excavate to the depths and widths as shown on the Drawings. Excavation carried below the grade lines shown or established by the Engineer shall be replaced with the same fill material as specified for the overlying fill or backfill, and compacted as required for such overlying fill or backfill.

3.6 REMOVAL OF WATER/DEWATERING

- A. Provide and operate equipment adequate to keep all excavations and trenches free of water. Remove all water during periods when pipe is being laid, during the placing of backfill, and at such other times as required for efficient and safe execution of the Work. Dispose of water in a manner that will not damage adjacent property. When dewatering open excavations, dewater from outside the structural limits and from a point below the bottom of the excavation when possible. The Contractor shall design dewatering systems to prevent transport of fines from existing ground.

3.7 CONSTRUCTION OF EMBANKMENTS

- A. Use materials as specified. Construct embankment to lines and cross sections shown in the Construction Documents. Deposit fill material in lifts not exceeding 8 inches depth across width of embanks or trench. Compact each lift to density specified. Maintain compacting equipment in operating condition adequate to provide the manufacturer's rated compactive effort. Compact full width of the embankment or trench.

3.8 COMPACTION

- A. Compact all materials by mechanical means. Flooding or jetting will not be permitted. If compaction tests indicate that compaction or moisture content is not as specified, material placement shall be terminated and corrective action shall be taken by the Contractor prior to continued placement.
- B. Unless otherwise noted, all fills and trench backfill shall be compacted to a minimum density of 95% of maximum dry density.

- C. Topsoil shall be evenly spread on the designated areas to a depth of four inches. Spreading shall not be done when the ground is frozen, excessively wet, or otherwise in a condition detrimental to the Work.

3.9 MOISTURE CONTROL

- A. During all compacting operations, maintain optimum practicable moisture content required for compaction purposes in each lift of fill. Maintain moisture content uniform throughout the lift. Insofar as practicable, add water to the material at the site of excavation. Supplement, if required, by sprinkling the fill. At the time of maximum compaction, the water content of the material shall be at optimum moisture content, ± 2 percentage points.
- B. Do not compact fill material that contains excessive moisture. Aerate material by blading, discing, harrowing, cutting drainage trenches or other methods, to hasten the drying process.

3.10 FIELD DENSITY AND MOISTURE TESTING

- A. The following compaction measurements shall be required for each lift constructed:
 - 1. Road compaction tests shall be taken at 100-foot intervals in three locations on compacted surface; left shoulder, centerline and right shoulder.
 - 2. Embankment compaction tests shall be measured off of a grid with 50-foot intervals for each lift.
 - 3. Paved and Building Slab Areas shall be measured at least once per 2,000 SF of compacted lift, with no fewer than three (3) tests per lift.
 - 4. Foundation Wall Backfill shall be measured one test per 100 feet of wall per lift, with no fewer than two (2) tests per lift.
 - 5. Trench Backfill shall be measured one test per 150 feet of trench per lift, with no fewer than two (2) tests per lift.
- B. Scarify and moisten, aerate, or remove and replace soil to depth required for fills that do not meet compaction criteria. Recompact and retest until specified compaction is obtained at no additional cost to the Owner.
- C. The Engineer may test in-place density and moisture content by any one or combination of the following methods: ASTM D 2922, D 1556, D 2216, D 3017, or other methods selected by the Engineer. Cooperate with this testing work by leveling small test areas designated by the Engineer. Backfill test areas at Contractor's sole expense. The frequency and location of testing shall be determined solely by the Engineer. The Engineer may test any lift of fill at any time, location, or elevation.
- D. Owner and Engineer reserve the right to perform field density and moisture tests. Tests will not replace Contractor testing.

3.11 LABORATORY TESTING

- A. Contractor shall obtain and have an independent testing laboratory provide gradation, maximum laboratory density, water content and frost susceptibility classifications determinations of the specified materials.

3.12 DISPOSAL OF EXCESS EXCAVATION

- A. Dispose of all excess excavated materials, not required for backfill or fills, outside of the area of Work. Make arrangements for the legal disposal of the excess excavated material and bear all costs or retain any profit incidental to such disposal.
- B. Side slopes of excavation waste piles shall be sloped to match the material's natural angle of repose, or flatter.
- C. Excavation waste areas shall be completely within the limits of the property as located by a professional Land Surveyor.

3.13 SITE GRADING

- A. Perform all earthwork to the lines and grades as shown and/or established by the Engineer. Shape, trim, and finish slopes to conform with the lines, grades, and cross sections shown. Round tops of banks to circular curves, in general, not less than a 5-foot radius. Rounded surfaces shall be neatly and smoothly trimmed. Neatly blend all new grading into surrounding, existing terrain.

3.14 PROTECTION OF UTILITIES

- A. Buried and above grade utilities shall be protected during the project. Known utilities are shown on the Drawings. Contractor shall locate utilities prior to beginning any excavation, drilling or driving work. Damage to utilities shall be repaired at the Contractor's expense to the satisfaction and current standards of the Utility or the Owner.

END OF SECTION

SECTION 02340 - GEOTEXTILE**PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. Geotextile as specified on the Drawings.

1.2 RELATED SECTIONS

- A. Section 01300 – Submittals.
- B. Section 02300 – Earthwork.

PART 2 PRODUCTS**2.1 WOVEN GEOTEXTILE**

- A. Geotextile shall be a fuel resistant polypropylene woven fabric designed and manufactured for the reinforcement, and stabilization. Provide Amoco 2016, or approved equal.
- B. The geotextile shall be inert to commonly encountered chemicals, hydrocarbons, mildew, and rot resistant, resistant to ultraviolet light exposure, insect and rodent resistant and conforming to the properties in the following table. The average roll minimum value (weakest direction) for strength properties of any individual roll tested from the manufacturing lot or lots of a particular shipment shall be in excess of the average minimum values specified herein.

<u>Property</u>	<u>ASTM Test Method</u>	<u>Minimum Value</u>
Grab Tensile Strength (any direction)	D4632	315 pounds
Grab Tensile Elongation	D4632	15%
Mullen Burst Strength	D3786	800 psi
Equivalent Opening Size (U.S. Sieve)	D4751	No. 40
Trapezoidal Tear (any direction)	D4533	120 pounds
Puncture Strength	D4833	120 pounds
Fuel Resistance	None	Yes
UV Stability	D4355	80% at 500 hours

PART 3 EXECUTION

3.1 PREPARATION

- A. The geotextile shall be installed as shown on the plans. Place the woven geotextile directly on existing ground. Remove snow or ice with a depth of more than two inches prior to geotextile installation. Contractor shall not operate equipment directly on geotextile until a protective cover of gravel has been established.

3.2 INSTALLATION

- A. The Contractor shall roll out the geotextile and pull tight. Transverse end splices shall be no closer than 50 feet. All splices shall have a 3-foot minimum overlap. Install in accordance with manufacturer's instructions.

3.3 PROTECTION

- A. Ship and store geotextile in protective factory sun-bloc wrappings to prevent UV breakdown. Replace damaged geotextile at no additional cost to the Owner.

END OF SECTION

SECTION 02350 - RIGID INSULATION BOARD

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Furnish and install rigid insulation board as shown on the Drawings.

1.2 RELATED SECTIONS

- A. Section 01300 – Submittals.
- B. Section 02300 – Earthwork.

1.3 SUBMITTALS

- A. Submit catalog cuts on insulation board to the Engineer.

PART 2 PRODUCTS

2.1 MATERIALS

- A. All rigid insulation boards shall be extruded polystyrene foam boards with front and back skins and a minimum compressive strength of 40 psi or 60 psi (as indicated) at 5% deformation.
- B. Pre-approved materials:
 - 1. Dow HI-40 or HI-60
 - 2. Owens Corning, Foamular-400 or Foamular-600

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install rigid insulation board on a smooth, flat, compacted fill surface, not varying more than 1-inch in 8 feet using a straight edge. Replace broken boards with full sheets. Gaps between boards shall be not more than 1/4-inch. Install in the locations and at the elevations shown on the plans.
- B. Hand place fill on top of boards if required. Keep boards from “floating” out in front of backfill. Remove and replace boards which have shifted during backfill operation, or do not meet 1/4-inch maximum joint gap criteria.
- C. Stagger joints for layered installation by at least 1 foot.

END OF SECTION

SECTION 02510 - UNDERGROUND UTILITIES**PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. Provide all material, fabrication thereof, packaging, and transportation to the project site for High Density Polyethylene (HDPE) pipe, fittings and valves, and related materials as shown on the Drawings and as specified herein.
- B. This Section applies to piping located outside buildings and where required by the Drawings.
- C. This Section includes all pre-insulated pipe outside of buildings and where required by the Drawings.

1.2 RELATED SECTIONS

- A. Section 02300 – Earthwork.
- B. Section 02515 – Disinfecting of Water Utility Distribution.

1.3 REFERENCES

- A. ANSI B16.1 - Fittings, Flanges and Valves.
- B. ANSI B18.2 - Fasteners.
- C. ASTM A320 - Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for Low-Temperature Service.
- D. ASTM C518 - Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
- E. ASTM D638 - Tensile Properties of Plastics.
- F. ASTM D696 - Coefficient of Linear Thermal Expansion of Plastics between -30 degrees C and +30 degrees C.
- G. ASTM D792 - Density and Specific Gravity (Relative Density) of Plastics by Displacement.
- H. ASTM D1505 - Density of Plastics by the Density-Gradient Technique.
- I. ASTM D1565 Flexible Cellular Materials - Vinyl Chloride Polymers and Copolymers (open-cell foam).
- J. ASTM D1621 - Compressive Properties of Rigid Cellular Plastics.
- K. ASTM D1622 - Apparent Density of Rigid Cellular Plastics.
- L. ASTM D1693 - Environmental Stress-Cracking or Ethylene Plastics.

- M. ASTM D2240 - Standard Test Methods for Rubber Property - Durometer Hardness.
- N. ASTM D2657 - Heat Joining Polyolefin Pipe and Fittings.
- O. ASTM D2837 - Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials.
- P. ASTM D2842 - Test Method to Determine Apparent Water Absorption of Rigid Cellular Plastics.
- Q. ASTM D2856 - Open-Cell Content of Rigid Cellular Plastics by the AIR Pycnometer.
- R. ASTM D3035 - Polyethylene (PE) Plastic Pipe (DR-PR) based on Controlled Outside Diameter.
- S. ASTM D3261 - Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing.
- T. ASTM D3350 - Polyethylene Plastics Pipe and Fittings Materials.
- U. ASTM F594 - Standard Specification for Stainless Steel Nuts.
- V. AWWA C901 - Polyethylene (PE) Pressure Pipe and Tubing, ½ in. (13 mm) through 3 in. (76 mm), for Water Service.
- W. AWWA C906 - Polyethylene (PE) Pressure Pipe and Fittings, 4 in. through 63 in., for Water Distribution.
- X. Federal Register - 21 CFR 175.105.
- Y. FS TT-S-00230 - Sealing Compound, Elastomeric Type, Single Component.
- Z. FS TT-S-01543 - Sealing Compound, Silicone Rubber Base.
- AA. SWI (Sealing and Waterproofers Institute) - Sealant and Caulking Guide Specification.

1.4 SUBMITTALS

- A. Submit manufacturer's standard printed product data information and literature pertaining to this installation for materials specified under this section.
- B. Submit complete shop drawings for all shop fabricated items before fabrication is undertaken.
- C. Factory Hydrostatic Testing of Fittings:
 - 1. Submit proposed hydrostatic testing procedure for review and approval before any testing is undertaken.
 - 2. Provide written test documentation for all fittings tested.
- D. Submit qualifications for pipe joint fusers.
- E. Water Line - Hydrostatic and Leakage Testing:
 - 1. Submit a written plan to facilitate the installation, filling, hydrostatic testing, and freeze prevention after testing, and submit to the Engineer for approval. Submittal shall be at least four (4) weeks prior to the start of these activities.

2. Develop a step-by-step checklist, as a part of the written plan.
 3. Develop a flushing plan as part of written plan.
- F. Submit Hydrostatic Test documentation and identify any repairs made with location, description of problem, and photos.
- H. Submit Fusion Logs for each fusion completed on the project.
- I. Submit sample fusion joints for destructive testing. One joint per fusion technician per pipe size.

1.5 QUALITY ASSURANCE

- A. Engineer shall have open access to the prime fabrication (insulator) facility and any sub-tier suppliers to assure conformance with the Specifications and quality of workmanship.
- B. Engineer may, at his discretion, request a copy of any subsequent purchase orders (unpriced) to sub-tier suppliers, as well as prime fabricator and sub-tier Quality Assurance Programs.
- C. The prime fabricator (insulator) shall submit to the Engineer for approval a Quality Assurance Program which incorporates, at a minimum, the following:
1. A description of the method of manufacture.
 2. Shop Drawings (for review).
- D. Any deficiency found in a joint of pipe shall be cause for rejection of the entire joint of pipe. All rejected pipe shall be replaced by the supplier at no additional cost to the Owner.
- E. At the Engineer's request, up to ten (10) field fusion joints shall be cut out for quality control testing. The Contractor, at no additional expense to the Owner, will fuse the pipe together after removal of joint for testing.
- F. Fusion Logs will be required as part of the Quality Control program. Each joint fused will be specifically identified, and conditions of the fusion process noted. Logs will be submitted to the Engineer at the completion of the project.

1.6 PIPE MANUFACTURER

- A. All HDPE pipe and fittings supplied under this Specification shall utilize the same manufacturer of pipe. Supplier shall identify the core pipe manufacturer with his submittal.

1.7 PACKING

- A. Packing:
1. The ends of all insulated pipe shall be capped with plastic pipe caps approved by the Owner to prevent the entrance of foreign material.

1.8 HANDLING AND STORAGE**A. Storage:**

1. Pipes shall be stored on level ground, preferably turf or sand, free of sharp objects that could damage the pipe. Stacking the polyethylene pipe shall be limited to a height that will not cause excessive deformation of the bottom layers of pipes under anticipated temperature conditions. Where necessary, because of ground conditions, the pipe shall be stored on wooden sleepers, spaced suitably, and of such widths as not to allow deformation of the pipe at the point of contact with the sleeper or between supports.

B. Handling Pipe:

1. The handling of the joined pipeline shall be in such a manner that the pipe is not damaged by dragging it over sharp and cutting objects. Ropes, fabric, or rubber-protected slings and straps shall be used when handling pipes. Chains, cables, or hooks inserted into the pipe ends shall not be used. Two slings spread apart shall be used for lifting each length of pipe. Pipe or fittings shall not be dropped onto rocky or unprepared ground. Slings for handling the pipeline shall not be positioned at butt-fused joints. Sections of the pipes with cuts and gouges exceeding ten (10) percent of the pipe wall thickness or kinked sections shall be removed and the ends of the pipeline rejoined.

1.9 REQUIRED TESTS AND INSPECTIONS**A. The following is a listing of the testing and inspections required under this Specification:**

1. Hydrostatic Testing of Fittings (Fabricator Test).
2. Hydrostatic and Leakage Test - Field Final Acceptance.
3. Flushing new water mains and connected services.
4. Disinfection per Section 02515 - Disinfecting of Water Utility Distribution.
5. Up to ten (10) field joints selected by the Engineer for Quality Control testing.

PART 2 PRODUCTS**2.1 PIPE****A. HDPE Pipe:**

1. HDPE Pipe shall be industrial polyethylene pipe and fittings made of high density, extra high molecular weight material with a broad range molecular weight distribution designated as a PE 3408 with an ASTM D3350 cell classification number of 345434C.
 - a. Physical Properties
 - 1) Density: 0.955 gm/cm³, per ASTM D1505.
 - 2) Tensile strength, yield: 3,200 psi, per ASTM D638 (2 in/min.).
 - 3) Elongation at break: 750 per ASTM D638 (2 in/min.).
 - 4) Coefficient of linear thermal expansion: 1.2×10^{-4} (in/in/°F), per ASTM D696.
 - 5) Cell classification: 345434C, per ASTM D3350.
 - 6) Environmental Stress Crack resistance: 192 hrs per ASTM D1693, Condition C.
 - 7) Hydrostatic design basis: 1600 psi per ASTM D2837 (at 73.4 degrees F).
2. The polyethylene compound shall be suitably protected against degradation by ultraviolet light by means of a 2% concentration of carbon black, well dispersed by precompounding in with the resin (by the resin manufacturer).

3. The pipe shall contain no recycled compound except that generated in the manufacturer's own plant from resin of the same specification from the same raw material supplier. The pipe shall be homogeneous throughout and free of visible cracks, holes, foreign inclusions, or other deleterious defects, and shall be identical in color, density, melt index, and other physical properties.
4. The pipe shall be designed according to the ISO modified formula ASTM D3035. The design pressure rating shall be expressed in terms of the static working pressure in psi for water at 73.4 degrees F according to ASTM D2837.
5. HDPE pipe and fittings shall be National Sanitation Foundation (NSF) Standard 61 approved.

A. Ductile Iron Pipe

1. Ductile Iron Pipe must conform to the requirements of AWWA C151, with cement mortar lining conforming to the requirements of AWWA C104/ANSI A24.1. Class 52 pipe shall be used for all water pipe unless otherwise specified.

2.2 FITTINGS

- A. Polyethylene fittings shall be long-sweep mitered or fabricated fittings, or factory injection-molded fittings. All fabricated fittings shall be constructed from previously specified polyethylene pipe by means of thermal butt fusion. The end segments of fabricated fittings shall be mitered; the axis shall be parallel to that of the pipe to which they will be joined. All polyethylene fittings shall be fabricated from pipe which has the same or higher pressure rating as the pipe to which it will be joined. All fittings shall be long-sweep or fabricated fittings. Factory injection-molded fittings only where required due to space limitations.
- B. Fittings shall match adjoining pipe SDR. Machine fittings as required to accomplish this requirement.
- C. Ductile Iron Pipe Fittings, except for the bell protection devices, are to have exterior and interior surfaces coated with fusion bonded epoxy in accordance with AWWA C116/A21.13-09. Unless otherwise indicated on the Drawings, rubber gaskets for ductile iron pipe joints shall conform to AWWA C111 and rubber gaskets for PVC pipe joints shall conform to ASTM F477. Fittings shall be a minimum of 250 pounds pressure rating, mechanical joint or bell, lined or unlined, either cast iron or ductile iron, unless otherwise required by the Contract Documents. All fittings must conform to the requirements of AWWA C110/ANSI A21.10 or C153 A21.53-06.

Fittings must utilize carbon steel or stainless steel nuts and bolts. Fittings with carbon steel bolts and nuts must conform to the dimensional and material standards as outlined in AWWA C111 and C115 and be factory-coated with a blue fluoropolymer coating system. Fittings with stainless steel bolts and nuts must conform to the dimensional standards as outlined in AWWA C111 and C115 and the material standards in ASTM F593 and F594 with a minimum tensile strength of 75,000psi. Bolts and nuts must have imprinted markings indicating the material and grade of the metal used in fabrication. Where bolts and nuts for fittings cannot be covered by the above references then the contractor must submit to the engineer for approval corrosion resistant bolts and nuts and supported reasons for the request of an alternate to this standard.

2.3 JOINTS

- A. HDPE Pipe: Thermal butt fusion, flanged, or electrofusion coupling connections as described in Section 3.03.A, unless shown otherwise on the Construction Documents.
 - 1. Flange: ASTM A240, Type 304, stainless steel backup ring with 125 pound, ANSI 16.1 standard drilling. Flanges shall be completed with one-piece, molded polyethylene stub ends. Flanged connections shall have the same pressure rating as the pipe or greater.
 - 2. Flange Gasket: Flat ring, 1/8" ethylene propylene rubber (EPR).
 - 3. Flange Bolt Kit: Stainless steel, ASTM A320, type 304 SS, hex-head bolts, or all-thread and F594, type 304 SS hex-head nuts. Bolts shall be fabricated in accordance with ANSI B18.2 and provided with two (2) SS washers per kit.
- B. Finished joints of pre-insulated pipe shall have the insulation and outer jacket cut back to leave between 16 and 24 inches of bare polyethylene pipe.
- C. The insulation material for each pipe joint shall consist of two split insulation halves (half shells) with outer jacket, precut to a minimum length of 24 inches, and shall be provided for each length of pipe.

2.4 GATE VALVE

- A. Gate Valve:
 - 1. Conform to AWWA A509.
 - 2. Resilient Seat gate.
 - 3. Direction to open: Counterclockwise.
 - 4. Stem seal shall be double O-ring.
 - 5. End connections shall be flanged per ANSI B16.1 class 125.
 - 6. Designed for working pressure of 200 psi.
 - 7. Operator: 2" nut.
- B. Valve Box:
 - 1. Slide type adjustable two piece cast iron valve box of a length suitable for the depth of bury.
 - 2. Head shall be round and shall coordinate with the lid.
 - 3. Lid shall be a locking cap, "Buffalo" style or other approved design.
 - 4. The least diameter of the shaft of the box shall be 5-1/4-inches.
 - 5. Give each box a heavy coat of bituminous paint.
 - 6. Provide extension rod from valve nut to surface. Lock rod to valve nut with set screws.

2.4 Thrust Restraint System

- A. Where specified on the Drawings and/or required in these Specifications, water distribution piping must be installed with a thrust restraint systems. Joints, fittings, valves and piping deflection points must utilize a thrust restraint system.

The Contractor shall provide pipe manufacturer submittals, which include thrust restraint calculations prior to construction. Contractor shall field demonstrate to the Engineer the installation and/or construction of each new restrained joint or restraining system. Contractor shall provide AWWU with a minimum of 48-hours notice, excluding non-working days, to coordinate the review of the field demonstration. The Contractor shall certify that the restrained joint system is installed in accordance with the manufacturer's instructions. If Contractor fails to

install the restrained joint system in accordance with manufacturer's instructions, in the opinion of the Engineer, Contractor shall remove the disapproved system and replace with a new restrained joint system. Contractor shall be responsible for access to the field demonstration location and all trench excavation, dewatering, and backfill operations prior to, during, and after the restrained joint system is reviewed by the Engineer. The cost for coordinating and providing access for review of Contractor's installation and/or construction of the restrained joint system shall be incidental to the bid item under construction.

Allowed ductile iron thrust restraint systems are EBAA Iron MEGALUG[®], Romac RomaGrip, Romac GripRing[™], Romac RFCA, Foster Adaptor, U.S. Pipe Field LOK 350[®] Gasket, Ford Uni-Flange Series 1400 or equal thrust restraint system. Tie back rods and/or tie back rod and shackle assemblies, along with thrust blocks will not be acceptable thrust restraining system for valves, fittings, piping deflection points, and inside casing.

2.5 Detectable Warning Tape

- A. Detectable underground warning tape is required for installation of all pipe types. Warning tape must not be less than five (5) mil, foil backed, six inches (6") wide vinyl tape, colored green, with "Caution Buried Water Line Below" continuously printed in black along the tape length. The warning tape must be continuously laid with the pipe and be at least eighteen inches (18") above and no more than thirty six inches (36") the pipe.

2.6 Tracer Wire

- A. Tracer wire shall be grounded at all dead ends, except fire hydrant legs, using a 24- inch long minimum copper clad grounding rod. A grounding clamp approved for direct burial use shall be used to connect the tracer wire to the grounding rod. Direct burial grounding clamps shall be EK17 as manufactured by Erico or approved equal

Tracer wire shall be securely affixed to the top exterior surface of the pipe using PVC pipe tape at 5-foot intervals. Tracer wire shall be looped around valves, saddles, curb stops, and other appurtenances in such a manner that there is no interference with the operation of the appurtenances. Tracer wire shall be continuous and without splices, breaks, or cuts except for spliced-in connections as approved by the Engineer. Where any approved spliced-in connections occur, 3M DBR watertight connectors, or approved equal, shall be used to provide electrical continuity. All spliced connections must be inspected by the Engineer before being buried.

Tracer wire shall be brought to the surface at all junctions and terminals, including at all valve boxes for water valves and fire hydrant legs. DryConn Waterproof Direct Bury Lugs as manufactured by King Innovation, or approved equal, shall be used to splice into the main line tracer wire. The main line tracer wire shall not be broken or cut. Tracer wire shall be spiral-wrapped around the exterior of the valve box riser pipe and brought into the valve box top section. Provide 5 feet minimum of additional wire neatly coiled within each valve box. Prior to final payment, a continuity test shall be performed on tracer wire with the Engineer present to verify that the trace wire is continuous and allows for the proper tracing of the piping. If the Engineer identifies locations where the trace wire is not continuous, to include all connection points between new and existing water mains, the Contractor, at no additional cost to the Owner, shall make necessary repairs/corrections.

PART 3 EXECUTION**3.1 SOURCE QUALITY CONTROL****A. System Dimensional Tolerances:**

1. Pipe ends shall be dressed for field butt fusion. End surfaces shall be smooth and perpendicular $\pm 1/8$ inch to the inner core pipe centerline axis.
2. Hydrostatic Testing of Fittings:
 - a. Fabricator shall pressure test all fittings. Fabricator shall provide the Engineer with five (5) days written notice of hydrostatic testing.
 - b. Fabricator shall hydrostatically test all water systems at 100 psi for one hour with no pressure loss. Test medium shall be potable water.
 - c. Fabricator shall provide all equipment for hydrostatic testing.

3.2 NOT USED**3.3 INSTALLATION****A. Joining Pipe Sections:**

1. Pipes shall be joined to one another and to the polyethylene fittings by thermal butt fusion or flanged jointed where required for connection to existing equipment.
 - a. Butt Fusion:
 - 1) Polyethylene pipe lengths, fittings, and flanged connections to be joined by thermal butt fusion shall be of the same type, grade, and class of polyethylene compound and supplied from the same raw material supplier.
 - 2) Install and cut HDPE pipe in accordance with ASTM D2657, thermal butt fusion, and in strict conformance with the manufacturer's recommendations.
 - 3) Perform butt fusion in accordance with the procedures established by the pipe manufacturer. Joining shall be conducted by personnel certified to perform butt fusion joining.
 - (a) Personnel who will perform the pipe butt-fusion shall attend a class given by a HDPE pipe manufacturer, and obtain a written certification from the pipe manufacturer stating they have successfully completed the class. If the fuser has not performed butt fusion in the past six months, the fuser must be re-certified by performing two butt fusions, using the piping materials for the given project, in the presence of the piping superintendent.
 - 4) Perform butt fusion joining of pipe and fittings on fusion machinery approved by the pipe manufacturer. Fusion pressures, temperatures, and cycle times shall be according to pipe manufacturer's recommendations. Do not allow any individual to join pipe or fittings until they are adequately trained and qualified in the technique involved. If the fuser has not performed fusion work within six months, the fuser must be re-certified by performing two butt fusions using the equipment for the given project.
 - 5) Clear and grade joining sites, if necessary, to provide enough space for pipe storage and fusion. The site shall be free of debris which could cut, scar, or gouge the pipe. Mount the fusion machine on a level, stable base or on a sled of design approved by the pipe manufacturer. In order to allow the joining operation to continue in adverse weather conditions (temperatures and precipitation), build a shelter for the joining machine.

- 6) Fuse like wall thickness pipe and/or pipe fittings. Machine inside wall of pipe or fittings a minimum depth of 2 inches from fusion face of pipe to prevent inconsistencies in the butt-fusions.
 - b. Flanges:
 - 1) Flanges shall be used to connect to valves or to facilitate pipe installation. The Contractor may use flanged connections to field joint preassembled mainline segments.
 - 2) Flanged joints shall be at ambient air temperature at the time they are bolted tight, to prevent relaxation of the flange bolts and loosening of the joint due to thermal contraction of the polyethylene. Re-tighten flange bolts at least once 24 hours after initial flange bolt tightening.
 - 3) Tighten bolts per gasket manufacturer's torque specifications.
- B. Field Installation:
1. Do not allow joints to deflect greater than the elastic capacity of the pipe. If pipe is found to be damaged, reduce the deflection and repair the damage or replace pipe.
 2. Tolerances:
 - a. Lay pipe to indicated line and grade.
 - b. The Engineer may require installations that do not meet these requirements to be removed and reinstalled at the proper grade.
 - c. Minor Changes in Direction:
 - 1) Pipe deflection will be allowed for small changes in direction provided that the pipe bending radius is greater than 30 times the diameter of the pipe.
 - d. Water Lines:
 - 1) Record elevations of completed bedding surface every 40 feet to ensure pipe is on proper grade.
- ### 3.4 FIELD QUALITY CONTROL
- A. Field Fabricated Sub-Assemblies:
1. Once each sub-assembly is completed, insert a rope in the sub-assembly and swab to remove foreign material and construction debris.
 2. After swabbing is completed and a visual inspection of the sub-assembly's interior is made, apply piping closures to both ends of the sub-assembly.
 3. The Engineer reserves the right to inspect the ends of each sub-assembly in the trench to ensure that no foreign materials are in the piping.
- B. Field Main and Service Pipeline Flushing:
1. Contractor shall prepare a plan to flush the water mains as detailed in Section 02515 – Disinfecting of Water Utility Distribution.
 2. Disinfection will not be allowed prior to flushing.
 3. Sewer mains shall be flushed to remove debris and pressure tested.
 4. Open bore flush the pipes to remove any foreign material. Minimum flushing velocity shall be 2.5 ft/sec. Contractor shall remove and install all fittings and piping required for flushing at no additional cost to Owner.
- C. Field Piping Pressure Test:
1. General:
 - a. Prior to the start of testing, the plan required in Section 1.4 above shall be submitted to the Engineer for approval. The plan shall include all necessary information to assure that the installation and testing program will be done in a safe manner and that all germane aspects of the Specifications are incorporated.

It is the Contractor's responsibility to perform all testing in a manner that is safe for all people and property in the project area.

2. Water Lines:
 - a. Contractor shall notify the Engineer, in writing, five (5) days in advance of all testing.
 - b. All new buried pipelines shall be hydrostatically tested for final acceptance. Isolate affected facilities prior to testing.
 - c. Contractor shall provide all equipment, labor, and materials for testing. This includes, but is not limited to, piping, pumps, and test gauges. The pressure gauge shall be a recording type, which will give a permanent record of the test. All manifolding related to testing will be incidental to the project.
 - d. Contractor shall hydrostatically test all water lines at a pressure of 100 psig for one (1) hour with no decrease in line pressure. Testing shall commence after repeated pipeline pressurizing with no decrease in pressure. Document testing conditions for thermal expansion and contraction effects on pipe.
 - e. Contractor shall repair any portion of the water piping system which leaks or which fails to pass the hydrostatic test. Work installed by Contractor under this Contract will be repaired at no expense to the Owner.
 - f. Keep all personnel well away from the pipe during the test to preclude injury in the event of a blowout.
 - g. Contractor shall deliver to the Owner a statement, signed by the Contractor's Authorized Representative, that the hydrostatic test was satisfactorily completed.
- D. Disinfection:
 1. Disinfect the potable water system as described in Section 02515 – Disinfecting of Water Utility Distribution.
 2. The Contractor may pressure test the water line after disinfection; however, should repairs be required, the initial disinfection will become null and void. In this event, the Contractor will be required to perform an additional disinfection of the water line at the Contractor's expense.
 3. Once the water line is disinfected, close water line valves to isolate the disinfected piping in order to remove the testing and disinfection manifolding.
- E. Field Joint Samples:
 1. Ten (10) random tests of field joints may be made by the Engineer/Owner, as determined necessary for Quality Control. The Contractor shall be responsible for removal and repair of fusion joints requested for Quality Control. All costs associated with removal and repair of these fusion tests will be the burden of the Contractor. Testing costs will be borne by the Engineer. The Engineer will maintain chain of custody for each sample requested.
 2. Should additional joints beyond the ten (10) random tests be questionable, in the opinion of the Engineer/Owner, said joints will be removed for testing. If testing shows a compromised joint, the cost of removal, testing and repair to the piping will be the sole burden of the Contractor; otherwise, these costs will be the burden of the Engineer/Owner.
- F. Continuity Tests
 1. The Contractor shall perform electrical conductivity tests on all tracer wires in the presence of a representative of the Owner. The Contractor shall propose a method to the engineer to verify that the tracer wire is continuous and unbroken.

END OF SECTION

SECTION 02512 - FIRE HYDRANTS**PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. Provide Furnish and installation of "L-Base" Fire Hydrant Assemblies, including the fire hydrant leg pipe, auxiliary gate valve, valve box, joint restraint, guard rails, and fire hydrants as shown on the drawings and as specified herein.

1.2 RELATED SECTIONS

- A. Section 02300 – Earthwork.
- B. Section 02510 – Underground Utilities.
- C. Section 02515 – Disinfecting of Water Utility Distribution.

1.3 REFERENCES

- A. ANSI B16.1 - Fittings, Flanges and Valves.
- B. ANSI B18.2 - Fasteners.
- C. ASTM A320 - Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for Low-Temperature Service.
- D. ASTM F594 - Standard Specification for Stainless Steel Nuts.
- E. AWWA C906 - Polyethylene (PE) Pressure Pipe and Fittings, 4 in. through 63 in., for Water Distribution.
- F. AWWA C502 for Dry Barrel Fire Hydrants.
- X. Federal Register - 21 CFR 175.105.
- Y. FS TT-S-00230 - Sealing Compound, Elastomeric Type, Single Component.
- Z. FS TT-S-01543 - Sealing Compound, Silicone Rubber Base.
- AA. SWI (Sealing and Waterproofers Institute) - Sealant and Caulking Guide Specification.

1.4 SUBMITTALS

- A. Submit manufacturer's standard printed product data information and literature pertaining to this installation for materials specified under this section.
- B. Submit complete shop drawings for all shop fabricated items before fabrication is undertaken.

1.5 QUALITY ASSURANCE

- A. Engineer shall have open access to the prime fabrication (insulator) facility and any sub-tier suppliers to assure conformance with the Specifications and quality of workmanship.
- B. Engineer may, at his discretion, request a copy of any subsequent purchase orders (unpriced) to sub-tier suppliers, as well as prime fabricator and sub-tier Quality Assurance Programs.
- C. The prime fabricator (insulator) shall submit to the Engineer for approval a Quality Assurance Program which incorporates, at a minimum, the following:
 - 1. A description of the method of manufacture.
 - 2. Shop Drawings (for review).

1.6 HANDLING AND STORAGE

- A. Storage:
 - 1. Pipes and parts shall be stored on level ground, preferably turf or sand, free of sharp objects that could damage the pipe. Where necessary, because of ground conditions, the pipe shall be stored on wooden sleepers, spaced suitably, and of such widths as not to allow deformation of the pipe at the point of contact with the sleeper or between supports.
- B. Handling Pipe:
 - 1. The handling of the joined pipeline shall be in such a manner that the pipe is not damaged by dragging it over sharp and cutting objects. Ropes, fabric, or rubber-protected slings and straps shall be used when handling pipes. Chains, cables, or hooks inserted into the pipe ends shall not be used. Two slings spread apart shall be used for lifting each length of pipe. Pipe or fittings shall not be dropped onto rocky or unprepared ground. Slings for handling the pipeline shall not be positioned at butt-fused joints. Sections of the pipes with cuts and gouges exceeding ten (10) percent of the pipe wall thickness or kinked sections shall be removed and the ends of the pipeline rejoined.

PART 2 PRODUCTS**2.1 FIRE HYDRANT ASSEMBLY**

- A. Fire Hydrants
 - 1. Fire hydrants shall be Mueller Centurian or equal.
 - 2. All fire hydrants shall be supplied with a five and one-fourth inch (5.25") main valve opening.
 - 3. All single pumper hydrants shall be furnished with a six inch (6") ANSI Class 125 standard mechanical-joint end. All double pumper hydrants shall be furnished with an eight inch (8") ANSI Class 125 standard mechanical-joint.
 - 4. All connections shall be mechanical-joint unless otherwise indicated in the Contract Documents.

5. Single pumper hydrants shall be furnished with two (2) two and one-half inch (2.5") hose connections and one (1) four and one-half inch (4.5") pumper connection. Double pumper hydrants shall be furnished with one (1) two and one-half inch (2.5") hose connection and two (2) four and one-half inch (4.5") pumper connections.
6. Unless otherwise required by the Contract Documents, all hydrants shall be furnished with a barrel length that will allow a minimum of ten feet (10') of bury. The lower barrel must be one piece to achieve a ten foot burial depth.
7. The main valves shall be of the compression type, where water pressure holds the main valve closed permitting easy maintenance or repair of the entire barrel assembly from above the ground without the need of a water shutoff.
8. All fire hydrants shall be furnished with a breakaway flange which allows both barrel and stem to break clean upon impact from any angle. Traffic flange design must be such that repair and replacement can be accomplished above ground.
9. Painting and coating shall be in accordance with cited AWWA Specifications. After installation, the hydrant section from the traffic flange to the top of the operating nut shall be painted "Caterpillar Yellow."
10. Operating and nozzle nuts shall be pentagon shaped with one and one-half inch (1.5") point to flat measurements.
11. Hose nozzle threading shall be in conformance with NFPA #194 for National (America) Standard Fire Hose Coupling Screw Threads.
12. 11. All working parts shall be bronze or noncorrosive metal in accordance with the requirements of ANSI/AWWA C502.
13. All hydrants shall be right hand opening (clockwise).
14. All hydrants shall be non-draining. Drain plugs shall not be removed.
15. The operating nut of the hydrants is to be a minimum of twenty eight (28") above the traffic breakaway flange. The traffic breakaway flange is to be between three inches (3") to nine inches (9") above adjacent grades.

B. Auxiliary Gate Valves

1. All gate valves and valve boxes shall be furnished and installed in accordance with Section 02510 Underground Utilities.

C. Thrust-Restraint System

1. Unless otherwise detailed on the Drawings, Contractor shall provide push-on rubber gasket type conforming to AWWA C111.
2. Where specified on the Drawings and/or Standard Details, Contractor shall install EBAA Iron MEGALUG, Romac Industries RomaGrip, U.S. Pipe Field LOK Gasket System, or approved equal, on restrained joint pipe.
3. Contractor shall ensure all restrained-joint installation areas shall include joints, fittings, and piping deflection points.

D. Guard Posts

1. The Contractor shall install guard posts at each hydrant installation in accordance with the Standard Details.

PART 3 EXECUTION

3.1 INSTALLATION

- A. The Contractor shall provide all trench excavation, backfill and compaction necessary to install the fire hydrant assembly in accordance with Section 02300 Earthwork.
- B. The Contractor shall tape coat the barrel section, shoe, MJ restraint, and all buried bolted connections with Densyl Tape as manufactured by Denso or approved equal.
- C. All surfaces shall be primed with Densyl Paste as manufactured by Denso or approved equal.
- D. The Contractor shall wrap the hydrant barrel section with three layers of 8-mil thick polyethylene encasement, up to the finish ground surface.
- E. The fire hydrant auxiliary valve shall be closed during installation and remain closed during all main line open bore flushing operations. The auxiliary gate valve shall be opened for hydrostatic pressure testing and disinfection and while the hydrant is being raised.
- F. All fire hydrant legs shall be installed level. The fire hydrant barrel shall be installed plumb.
- G. Fire hydrants will be adjusted to final grade by the Contractor.

3.4 FIELD QUALITY CONTROL

A Field Piping Pressure Test:

1. The fire hydrant assemblies shall be pressure tested as outlined in Section 02510 Underground Utilities.

D. Disinfection:

1. The fire hydrant assemblies shall be disinfected as outlined in Section 02510 Underground Utilities.

END OF SECTION

SECTION 02515 - DISINFECTING OF WATER UTILITY DISTRIBUTION**PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. Disinfection of water mains and service specified in Section 02510 - Underground Utilities.
- B. Testing and reporting results.

1.2 RELATED SECTION

- A. Section 02510 – Underground Utilities.

1.3 REFERENCES

- A. American Water Works Association:
 - 1. B300 - Hypochlorites.
 - 2. B301 - Liquid Chlorine.
 - 3. B303 - Sodium Chlorite.
 - 4. C651 - Disinfecting Water Mains.
 - 5. C652 - Disinfection of Water Storage Facilities.

1.4 SUBMITTALS

- A. Submit system flush procedure.
- B. Procedures and plans for disinfection and testing. Type of disinfecting solution and method of preparation. Disinfecting equipment manufacturer's data and catalog cut sheets.
- C. Testing Agency Qualifications: Independent testing agency.
- D. Sample collection and analysis procedures for bacteriological samples.
- E. Certified Bacteriological Test Results:
 - 1. Facility(ies) tested is free from coliform bacteria contamination.
 - 2. Forward laboratory test results directly to Engineer.
- F. Method of disposal for disinfecting wastewater.

1.5 QUALIFICATIONS

- A. Independent Testing Agency: Certified in the State of Alaska, with ten years of experience in the field of water sampling and testing is required for this project. Calibrated testing instruments and equipment, and documented standard procedures for performing specified testing are to be used.

1.6 SEQUENCING AND SCHEDULING

- A. Commence disinfection after completion of following:
 - 1. Hydrostatic testing of new water main per Section 02510 - Underground Utilities.
 - 2. Flushing of new water main.

PART 2 PRODUCTS**2.1 WATER FOR DISINFECTION AND TESTING**

- A. Clean, uncontaminated, and potable.
- B. Owner will supply potable quality water. Water will be available from the existing building water supply.

2.2 CONTRACTOR'S EQUIPMENT

- A. Furnish chemicals and equipment, such as pumps, gauges and hoses, to accomplish disinfection.
 - 1. Disinfection Chemicals: Chemicals shall conform to AWWA B300, B301, B303 and C651.
 - 2. Equipment: Equipment shall be rated for drinking water contact, NSF 61 listed or be constructed of stainless steel components.

PART 3 EXECUTION**3.1 GENERAL**

- A. Disinfect all pipes, fittings, fire hydrants, and all appurtenances installed or modified under this Project, intended to hold, transport, or otherwise contact potable water.
- B. Disinfect surfaces of materials that will contact finished water, both during and following construction, using the method described below. Disinfect prior to contact with finished water. Take care to avoid recontamination following disinfection.
- C. Prior to application of disinfectants, clean equipment and pipelines of loose and suspended material. Flush pipelines until clear of suspended solids and color. Use water suitable for flushing and disinfecting.
- D. Conform to AWWA C651 for pipes and pipelines, except as modified in these Specifications.
- E. Allow freshwater and stock disinfectant solution to flow into the pipe or vessel at a measured rate so that the chlorine-water solution is at the specified strength. Do not place concentrated commercial disinfectant in the pipeline or vessel before it is filled with water.

3.2 PIPING**A. Flushing:**

1. Before disinfecting, flush all foreign matter from pipeline. Provide hoses, temporary pipes, ditches, settling ponds, and other appurtenances as needed to dispose of flushing water without damage to adjacent properties, tundra or receiving water bodies. Flushing velocities shall be at least 2.5 fps. The existing fire pump may be required to obtain necessary flushing velocities. Consult owner for soft start sequence.
2. Flush pipelines through flushing branches and remove branches after flushing is completed. Operate valves during flushing process at least twice during each flush.

B. Disinfection:

1. Disinfecting Solution: Chlorine-water solution having a free chlorine concentration of not less than 50 ppm.
2. Disinfecting Procedure: In accordance with AWWA C651, unless herein modified.
 - a. Point of Application:
 - 1) Inject chlorine mixture into pipeline to be treated at beginning of line through corporation stop or suitable tap in top of pipeline.
 - 2) Control water to flow slowly into pipeline during application of chlorine.
 - 3) Control rate of chlorine solution flow in proportion to rate of water entering pipe so that combined mixture shall contain not less than 50 ppm of free available chlorine.
 - 4) Prevent backflow of chlorine solution into line supplying water.
 - (a) Retention Period:
 - (1) Retain disinfectant in pipeline for at least twenty-four (24) hours. If at end of 24-hour period, the disinfecting solution contains less than 10 ppm of free chlorine, the pipeline shall be recleaned, disinfecting solution shall be reapplied, and specified procedure repeated.
 - (2) Operate valves, hydrants, and appurtenances at least once every twelve (12) hours during disinfection to ensure that disinfecting solution is dispersed into all parts of pipeline, including dead-ends and areas that otherwise may not be treated.
 - (3) After disinfection, flush potable water through the pipeline until pipeline is chemically and bacteriologically equal to permanent source of supply. Flush branch lines individually after water main reaches background residual levels.
 - (b) Activation Delay:
 - (1) Once disinfection is complete, obtain bacteriological sample and send to test laboratory per Paragraph 3.05. Do not activate disinfected water main until laboratory results confirm no coliforms are present in Day 1 samples.

3.3 Not Used**3.4 DISPOSAL OF DISINFECTING WATER**

- A. Do not allow disinfectant to flow onto existing ground or into a waterway without neutralizing disinfectant residual.
- B. Neutralize disinfecting solution according to AWWA C651 Appendix C or AWWA C652 Appendix B. Disposal is not allowed through the wastewater collection system.

- C. Coordinate disposal of neutralized disinfecting water with PCC staff.
- D. Disposal is the responsibility of the Contractor. (Note: Incorrect disposal of water may result in criminal action by the State of Alaska against the Contractor).

3.5 TESTING

- A. Test Equipment:
 - 1. Clean containers and equipment used in sampling and assure they are free of contamination.
 - 2. Obtain sampling bottles from an independent testing laboratory. Follow all handling instructions and chain of custody procedures.
- B. Chlorine Concentration Sampling and Analysis:
 - 1. Sampling Frequency for Disinfecting Solution: One sample per application.
 - 2. Residual Free Chlorine Samples: One sample per application.
 - 3. Dechlorinated Disinfecting Water Residual Samples: Two samples per application.
 - 4. Samples and analysis shall be performed by the Contractor.
- C. After pipelines and appurtenances have been disinfected, and refilled with potable water, collect water samples and have them analyzed by an independent laboratory for conformance to bacterial limitations for public drinking water supplies. Samples shall be analyzed for coliform concentrations in accordance with the latest edition of Standard Methods for the Examination of Water and Wastewater.
 - 1. For Piping: Take a minimum of two sets samples, each sample set at least 24 hours apart. One sample per 1,200 LF of disinfected pipe plus one sample for the end of pipe and each branch. Analyze by standard procedures outlined by state and local regulatory agencies.
 - 2. Sampling points will be representative as accepted by the Engineer.
 - 3. Contractor shall employ an independent laboratory. The laboratory is subject to Owner approval.
- D. If the minimum samples required above test positive for coliform bacteria, the disinfecting procedures and bacteriological testing shall be repeated on the respective facilities until bacterial limits are met.

END OF SECTION

SECTION 02921 - REVEGETATION**PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. This section covers Work necessary for revegetating surfaces shown on the Drawings to provide for soil stabilization and erosion control. The Work shall include providing all required materials, equipment, and labor, to provide a smooth vegetated finished surface.
- B. For bidding purposes, the areas requiring stabilization are the exterior side slopes of pads and disturbed areas over buried pipelines which are not in driving areas. The right is reserved to modify the use, location, and quantities of the areas during construction as the Engineer considers being to the best interest of the Owner. During construction, the Engineer will designate the extent of stabilization used in each location throughout the project.

1.2 RELATED SECTION

- A. Section 02300 – Earthwork.

1.3 REFERENCES

- A. ASTM D 422 - Standard Test Method for Particle-Size Analysis of Soils.
- B. ASTM D 2944 - Standard Test Method of Sampling Processed Peat Material.
- C. ASTM D 2974 - Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils.
- D. ASTM D 2976 - Standard Test Method for pH of Peat Materials.

1.4 SUBMITTALS

- A. Contractor shall submit to the Owner certificates of inspection of seed by state or federal authorities, and copies of delivery invoices or other proof of quantities of erosion control materials, including silt, lime, fertilizer and seed.
- B. Submit material data sheets for each product specified.
- C. Submit mechanical gradation, moisture content, organic content, pH and salinity tests for Topsoil. Sampling frequency: 1 sample per 5,000 CY.
- D. The Contractor shall give at least three (3) days' notice to the Owner, of the time and place of starting the following operations:
 - 1. Delivery of materials.
 - 2. Broadcasting of fertilizer, seed and mulch.
- E. The Contractor shall keep the Owner advised of schedule of operations.
- F. Submit copies of daily reports indicating dates in which the revegetated areas were maintained, watered or repaired.

PART 2 PRODUCTS

2.1 SEED

- A. Seed shall be clean, delivered in original unopened packages and bearing an analysis of the contents, guaranteed 95 percent pure with minimum germination rate of 85 percent.
- B. Forty percent Arctared Fescue and sixty percent slender wheat grass.

2.2 FERTILIZER

- A. Fertilizer shall be commercial, chemical type, uniform in composition, free flowing, conforming to state and federal laws, and suitable for application with equipment designed for that purpose.
- B. Fertilizer shall be 20-20-10 Nitrogen-Phosphorus-Potassium (N.P.K.).

2.3 MULCH

- A. Virgin/recycled wood fiber, recycled paper (wood cellulose), or an acceptable blend containing up to 50% recycled paper, with the following characteristics:
 - 1. Contains no growth or germination inhibiting factors.
 - 2. Will remain in uniform suspension in water under agitation and will blend with grass seed, fertilizer and other additives to form a homogeneous slurry when required.
 - 3. Will form a uniform, blotter-like ground cover on application, having moisture absorption and percolation properties and the ability to cover and hold grass seed in contact with soil.
 - 4. Will not form a hard crust upon drying.
 - 5. Dyed a suitable color to facilitate inspection of its placement.

2.4 WATER

- A. Fresh water suitable to sustain plant growth.

PART 3 EXECUTION

3.1 TOPSOIL PLACEMENT

- A. The Contractor shall test silt pH and salinity prior to the application of fertilizer or seed. Sufficient lime will be added to the silt to adjust the pH to within the range recommended by the seed supplier.
- B. Spread the topsoil evenly on the designated areas to the depth shown on the Drawings. Do not place when the top soil is frozen, excessively wet or in a condition detrimental to the Work.
- C. Maintain the areas covered by topsoil until subsequent seeding is accomplished. Complete any repairs or topsoil replacement included damage or loss from erosion without extra compensation.
- D. Make topsoil reasonably free of ruts, holes and humps. Roughen the surface slightly by means of dozer-tracking or other approved method. Walk dozer parallel to the slope. Grouser

depressions shall be perpendicular to the slope to minimize erosion and to retain water in depressions.

3.2 SEED AND FERTILIZER APPLICATION

- A. Place seed mix, fertilizer and mulch by mechanical or hydraulic broadcasting device at the specified application rate.
- B. The Contractor shall notify the Engineer, in writing, of the application of seed and fertilizer.
- C. Application Schedule:
 1. Hydraulic application. Apply seed, fertilizer and mulch after breakup with temperatures conducive to vegetation growth, estimated start date approximately May 15. Specified areas shall be covered with seed, fertilizer and mulch by August 1. The intent of this Paragraph is for the seed to germinate promptly after application and to develop a hearty root mat to for winter survival.
- D. Application rates shall be:

Seed Mix	1.2 lbs/1,000 SF
Fertilizer	450 lbs/acre
Mulch	1,500 lbs/acre
Moisture content	Maintain at levels recommended by seed supplier to ensure germination and the establishment of vigorous growth.
- E. Use the following methods application and for first growth season repairs and maintenance:
 1. Mechanical (Dry) Method:
 - a. Use mechanical spreaders, seed drills, landscape seeders, cultipacker seeders, fertilizer spreaders or other approved mechanical spreading equipment.
 - b. Equipment shall distribute seed, fertilizer and mulch evenly.
 - c. Mix or rake the seed and fertilizer into the seed bed to a depth of 1/2", unless mulch material is to be promptly applied.
 2. Hydraulic Method:
 - a. Mix slurry of seed, fertilizer, water, and mulch. Add seed to slurry mixture no more than 30 minutes before application.
 - b. Use hydraulic seeding equipment that will maintain a continuous agitation and apply a homogeneous mixture through a spray nozzle. The pump must produce enough pressure to maintain a continuous nonfluctuating spray that will reach the extremities of the seeding area without causing damage to the seed bed. Use a hose attachment or other approved means to reach areas where a fixed nozzle cannot reach.
 - c. If mulch material is required, add it to the water slurry in the hydraulic seeder after adding the proportionate amounts of seed and fertilizer.
 - d. Apply slurry at a rate that distributes all materials evenly.

3.3 MAINTENANCE OF SEEDED AREAS

- A. Protect seeded areas against traffic and erosion using approved signs or barricades. Promptly repair surfaces that are gullied or otherwise damaged following seeding by regrading and reseeding, as directed. Maintain seeded areas in a satisfactory condition until final inspection and acceptance of the work.
- B. Keep temporary erosion control measures through first growth season.

- C. Water the seeded areas as required for proper germination and growth throughout the first growth season after seed placement. Use equipment that can acceptably water seeded areas with the topsoil/seeded areas.
- D. Reseed any seeded areas not showing evidence of satisfactory growth, as directed.

END OF SECTION

STATE OF ALASKA-DEPARTMENT OF CORRECTIONS PALMER CORRECTIONAL CENTER

WATER MAIN EXTENSION

9807 E. 58 MILE ROAD, SUTTON, ALASKA
LOT A1, SECTION 36, T19N, R2E, SM

SHEET INDEX

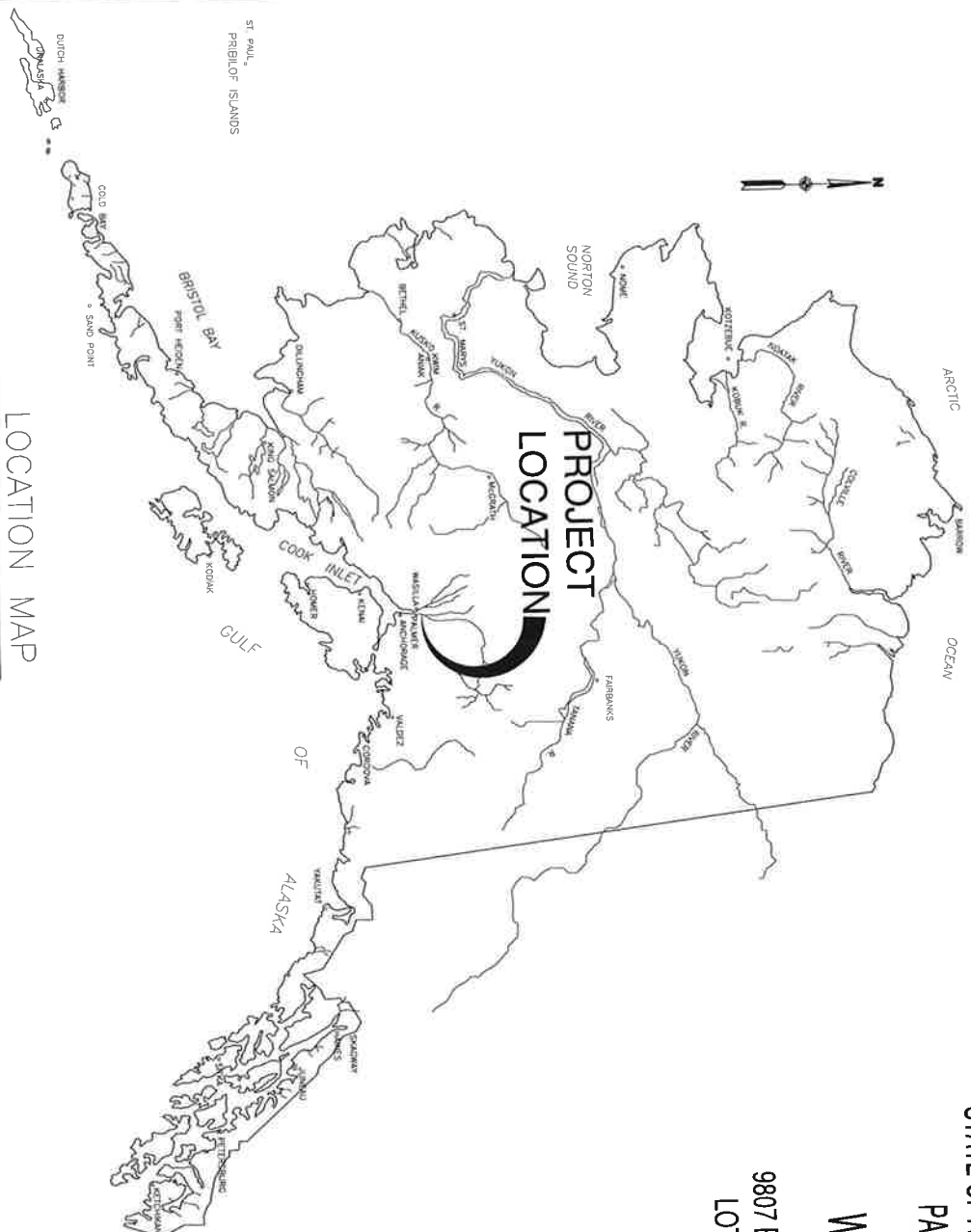
- C0.0 - COVER SHEET
- C0.1 - LEGEND, VICINITY MAP, CIVIL NOTES
- C1.0 - SITE LAYOUT
- C2.0 - WATER MAIN PLAN & PROFILE
- C3.0 - DETAILS

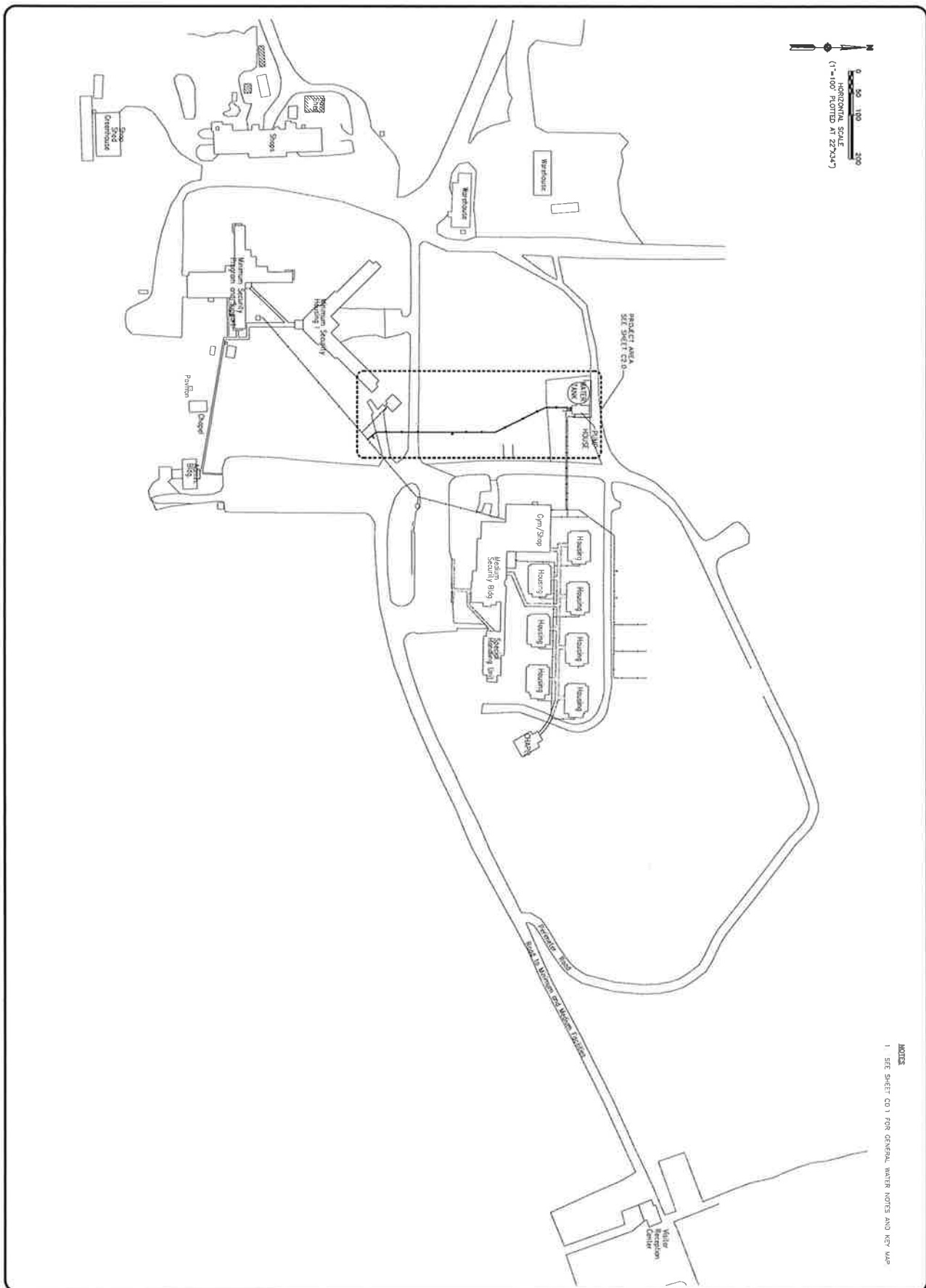
OWNERS REPRESENTATIVE:

SCOTT NICHOLS
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550 W. 7TH AVE., SUITE 1240
ANCHORAGE, AK 99501
PH: 907-269-7354
FAX: 907-269-7360

SDCS, LLC

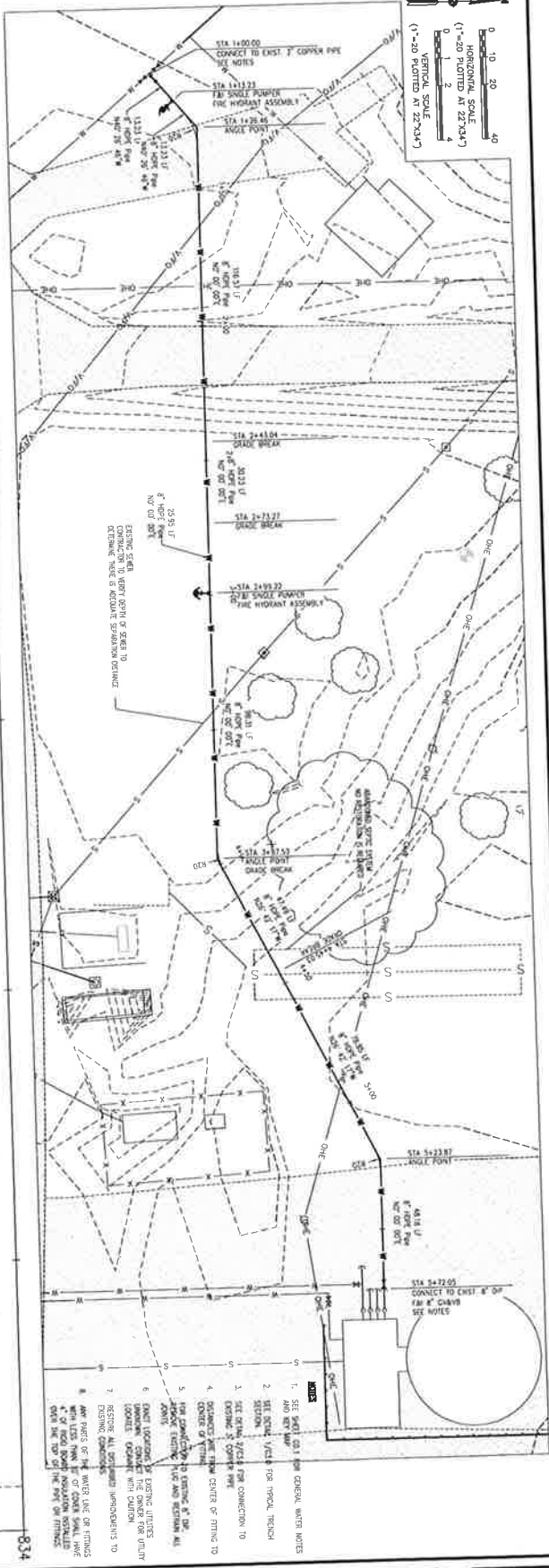
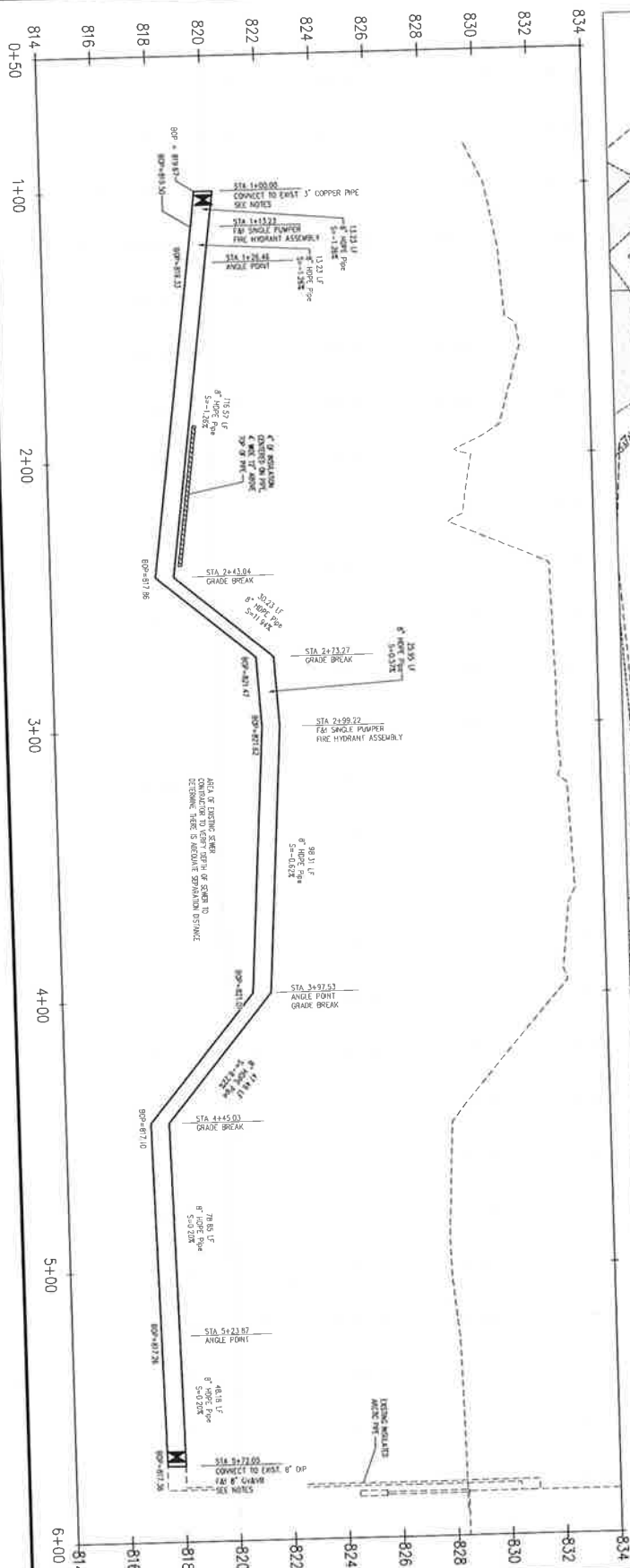
STERNER DESIGN & CONSTRUCTION SERVICES, LLC
5900 W. DENVERBY DR. PH: (907) 357-5609
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NOTES
1. SEE SHEET C01 FOR GENERAL WATER NOTES AND KEY MAP

SHEET C1.0	SHEET TITLE SITE LAYOUT	JOB NO.: 14-006 DATE: 7/22/14 DRAWN: DES REVIEWED: DES	BY DATE REVISIONS	STATE OF ALASKA-DEPARTMENT OF CORRECTIONS PALMER CORRECTIONAL CENTER WATER MAIN EXTENSION 9807 E. 58 MILE ROAD, SUTTON, ALASKA LOT A1, SECTION 36, T19N, R2E, SM	SDCS, LLC STEINER DESIGN & CONSTRUCTION SERVICES, LLC 5900 W. DEWBERRY DR. PH: (907) 357-5609 WASILLA, AK 99623 FAX: (907) 357-5608	



BY	DATE	REVISIONS

JOB NO.	14-006
DATE	7/22/14
DRAWN:	DES
EXTENDED DES	

SHEET TITLE
WATER MAIN
EXTENSION
PLAN & PROFILE

SHEET
C2.0

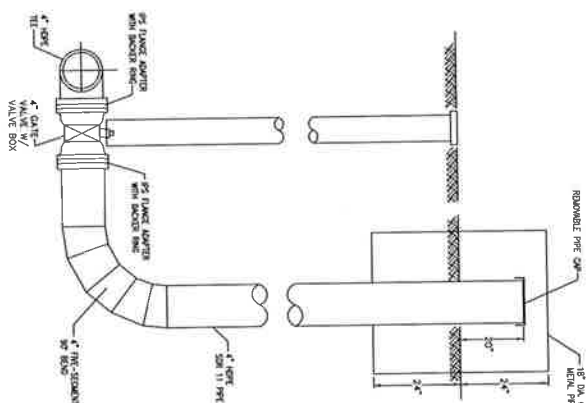
STATE OF ALASKA-DEPARTMENT OF CORRECTIONS
PALMER CORRECTIONAL CENTER
WATER MAIN EXTENSION
9807 E. 58 MILE ROAD, SUTTON, ALASKA
LOT 41, SECTION 36, T19N, R2E, S4

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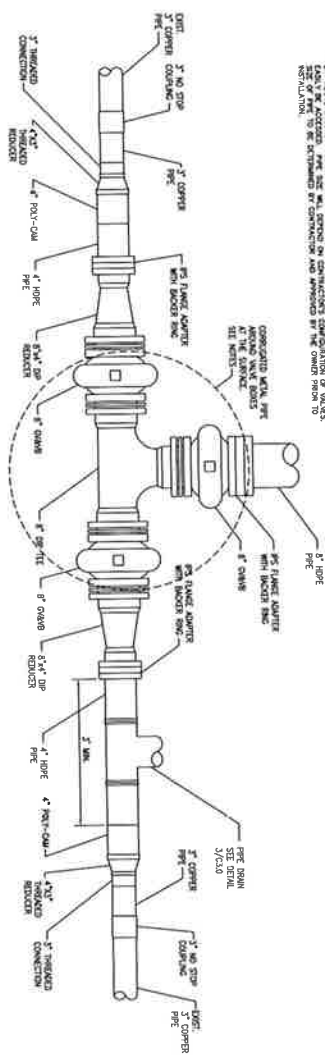
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- The diagram illustrates the cross-section of a well casing and its insulation. A central vertical pipe is labeled "C OF PIPE". The casing is surrounded by a layer of "INSULATION WHERE CALLED OUT FOR INSULATION LOCATIONS". This insulation is supported by "EXISTING NON-ARMED REINFORCED CONCRETE" and "NFS BACHILL AS DIRECTED BY THE ENGINEER". The casing is shown with a "SPRINKLE LINE" and a "6\" TYP. TOP AND BOTTOM" dimension. The casing is also shown with a "1 1/2\" MINUS NFS SOIL FOR BENCH" dimension. The diagram includes a "DEPTH (Varies)" dimension and a "6\" TYP. TOP AND BOTTOM" dimension. The casing is shown with a "SPRINKLE LINE" and a "6\" TYP. TOP AND BOTTOM" dimension. The casing is also shown with a "1 1/2\" MINUS NFS SOIL FOR BENCH" dimension.

1 TYPICAL TRENCH SECTION
C30 SCALE: NOT TO SCALE



3 PIPE DRAIN
CLO SCALE NOT TO SCALE

- [illegible]

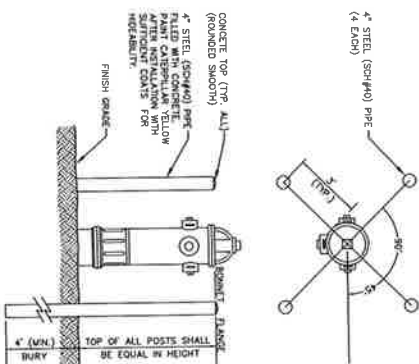


2 CONNECTION TO 3" COPPER PIPE
SCALE: NOT TO SCALE

-

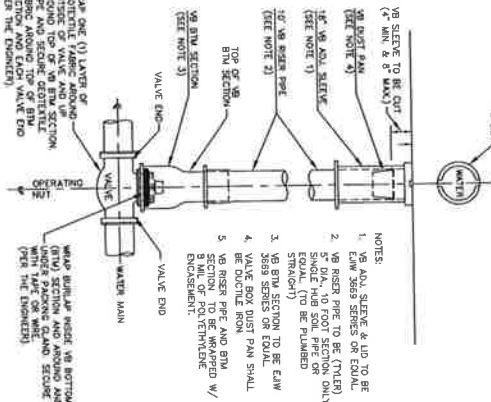
4	SINGLE PUMPER FIRE HYDANT ASSEMBLY
CLIO	SCALE NOT TO SCALE

- NOTES:
1 GUARD POSTS WILL BE FURNISHED & INSTALLED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.
2 GUARD POSTS SHALL BE INSTALLED PLUMB AND LOCATED TO ALLOW UNRESTRICTED ACCESS TO PUMPER AND HOSE CONNECTIONS.



5 GUARD POSTS
SCALE: NOT TO SCALE

- SCOTCHIE FABRIC AROUND
DIVISOR OF VALVE AND UP
AROUND TOP OF BNW SECTION,
TIEP AND SECURE DETACHED
FABRIC AROUND TOP OF BNW
SECTION AND EACH VALVE END
(PER THE ENGINEER).
- OPERATING
MUT
- WALD BUILDUP INSIDE BNW BOTTOM
DOWN SECTION AND AROUND MAIN
UNDER PACKING CLAND SECURE
WITH TAPE OR WIRE
(PER THE ENGINEER).



6 VALVE BOX
SCALE: NOT TO SCALE