

# **Dallas Garage Foundation**

**Updated 8/01/07**

# **STATE PROJECT**

## BIDDING INSTRUCTIONS

1. Complete the bid forms with pen and ink.
2. The following are to be completed and returned with the bid:
  - a. A copy of the Notice to Contractors
  - b. Two (2) copies of the completed and signed Contract Offer, Agreement, & Award form
  - c. The completed Contractor Information Sheet
3. For security and other reasons, all Bid Packages which are mailed to Maine Department of Transportation, 16 State House Station, Augusta, Maine 04330-0016, shall be provided in double (one envelope inside the other) envelopes. The *Inner Envelope* shall have the following information provided on it:

Bid Enclosed - Do Not Open

Title:

Town:

Date of Bid Opening:

Name of Contractor with mailing address and telephone number:

In Addition to the usual address information, the *Outer Envelope* should have written or typed on it:

Double Envelope: Bid Enclosed

Title:

Town:

Date of Bid Opening:

Name of Contractor:

Hand-carried Bids may be in one envelope, and should be marked with the following information:

Bid Enclosed: Do Not Open

Title:

Town:

Name of Contractor:

4. If a paper Bid is to be sent, Federal Express overnight delivery is suggested as the package is delivered directly to the DOT Headquarters Building in Augusta located at 16 Child Street in Augusta. Other means, such as U.S. Postal's Service Express Mail has proven not to be reliable.

# NOTICE

**The Maine Department of Transportation is attempting to improve the way Bid Amendments/Addendums are handled, and allow for an electronic downloading of bid packages from our website, while continuing to maintain a planholders list.**

**Prospective bidders, subcontractors or suppliers who wish to download a copy of the bid package and receive a courtesy notification of project specific bid amendments, must provide an email address to Diane Barnes or Mike Babb at the MDOT Contracts mailbox at: [MDOT.contracts@maine.gov](mailto:MDOT.contracts@maine.gov). Each bid package will require a separate request.**

**Additionally, interested parties will be responsible for reviewing and retrieving the Bid Amendments from our web site, and acknowledging receipt and incorporating those Bid Amendments in their bids using the Acknowledgement of Bid Amendment Form.**

**The downloading of bid packages from the MDOT website is not the same as providing an electronic bid to the Department. Electronic bids must be submitted via <http://www.BIDX.com>. For information on electronic bidding contact Larry Childs at [Larry.Childs@maine.gov](mailto:Larry.Childs@maine.gov).**

# NOTICE

## Bidders:

Please use the attached “Request for Information” form when faxing questions and comments concerning specific Contracts that have been Advertised for Bid. Include additional numbered pages as required. Questions are to be faxed to the number listed in the Notice to Contractors. This is the only allowable mechanism for answering Project specific questions. Maine DOT will not be bound to any answers to Project specific questions received during the Bidding phase through other processes.



## **Vendor Registration**

Prospective Bidders must register as a vendor with the Department of Administrative & Financial Services if the vendor is awarded a contract. Vendors will not be able to receive payment without first being registered. Vendors/Contractors will find information and register through the following link –

<http://www.maine.gov/purchases/vendorinfo/vss.htm> .

## CONTRACTOR INFORMATION

\_\_\_\_\_  
**(Date)**

\_\_\_\_\_  
**(Signature)**

\_\_\_\_\_  
**(Name and Title Printed)**

\_\_\_\_\_  
**(Contractor Name)**

\_\_\_\_\_  
**Vendor Identification Number**

### Mailing Address:

\_\_\_\_\_  
**Street/PO Box                      City                      State                      Zip**

\_\_\_\_\_  
**phone                      fax                      email**

**Sole Proprietorship - Partnership - (circle one)**

**Corporation – Company - Association - Estate - (circle one)**

**STATE OF MAINE DEPARTMENT OF TRANSPORTATION  
NOTICE TO CONTRACTORS**

Sealed Bids addressed to the Maine Department of Transportation, Augusta, Maine 04333 and endorsed on the wrapper "Bid for **Dallas Garage Addition Foundation and Heat**" will be received from contractors at the Reception Desk, Maine DOT Building, Child Street, Augusta, Maine, until 11:00 o'clock A.M. (prevailing time) on **October 10, 2007**, and at that time and place publicly opened and read.

Description: PIN 14466.10

Location: Project is located in Dallas Plantation in Oxford County

Outline of Work: Construction of foundation walls, concrete slab and radiant heat.

For general information regarding Bidding and Contracting procedures, contact Scott Bickford at (207)624-3410. For Project-specific information fax all questions to **Gail MacMunn** at (207)624-3431. Questions received after 12:00 noon of Friday prior to bid date will not be answered. **There will be no Bid Bond, Performance Bond or Payment Bond required.** Bidders shall not contact any other Departmental staff for clarification of Contract provisions, and the Department will not be responsible for any interpretations so obtained. Hearing impaired persons may call the Telecommunication Device for the Deaf at (207) 624-3007.

Bid proposal packages are available at <http://www.maine.gov/mdot/comprehensive-list-projects/project-information.php> and may also be obtained at no cost at the MaineDOT building in Augusta, Maine or by telephone at 207-624-3536 between the hours of 8:00 A.M. and 4:30 P.M.

**Each Bid must be made upon blank forms provided by the Department.**

This Contract is subject to all applicable Federal Laws.

All work shall be governed by "State of Maine, Department of Transportation, Standard Specifications, Revision of December 2002", price \$10 [\$13 by mail], and Standard Details, Revision of December 2002, price \$20 [\$25 by mail] Standard Detail updates can be found at <http://www.state.me.us/mdot/project/design/homepg.htm>

The right is hereby reserved to the MDOT to reject any or all Bids.

Augusta, Maine  
September 19, 2007

  
\_\_\_\_\_  
Michael Burns  
Assistant Director  
Maintenance and Operations

**SPECIAL PROVISION 102.7.3**  
**ACKNOWLEDGMENT OF BID AMENDMENTS**

With this form, the Bidder acknowledges its responsibility to check for all Amendments to the Bid Package. For each Project under Advertisement, Amendments are located at <http://www.maine.gov/mdot/comprehensive-list-projects/project-information.php> It is the responsibility of the Bidder to determine if there are Amendments to the Project, to download them, to incorporate them into their Bid Package, and to reference the Amendment number and the date on the form below. The Maine DOT will not post Bid Amendments any later than noon the day before Bid opening without individually notifying all the planholders.

Amendment Number	Date

The Contractor, for itself, its successors and assigns, hereby acknowledges that it has received all of the above referenced Amendments to the Bid Package.

**CONTRACTOR**

\_\_\_\_\_ Date

\_\_\_\_\_ Signature of authorized representative

\_\_\_\_\_ (Name and Title Printed)

## **CONTRACT, AGREEMENT, OFFER & AWARD**

This CONTRACT is made on the date last signed below, by and between the State of Maine, acting through and by its Department of Transportation (“Department” or “MaineDOT”), an agency of state government with its principal administrative offices located at Child Street, Augusta, Maine, with a mailing address at 16 State House Station, Augusta, Maine 04333-0016, and \_\_\_\_\_ (“Contractor”) a corporation or other legal entity organized under the laws of the State of \_\_\_\_\_, with its principal place of business located at \_\_\_\_\_, with a mailing address of \_\_\_\_\_, telephone number \_\_\_\_\_ .

The Vendor Customer Number of the Contractor is \_\_\_\_\_.

The Department and the Contractor, in consideration of the mutual promises set forth in this Contract and Appendix A - Specifications of Work to be Performed, Appendix B - Provisions, The Department’s Notice to Contractors and any amendments (“Contract”), and Standard Specifications, Revision of December 2002 as updated through advertisement Sections 101, 102, 103 and 111 hereby agree as follows:

### **A. The Work.**

The Contractor agrees to complete all Work as specified or indicated in the Contract including Extra Work in conformity with the Contract, PIN 14466.10 Garage Foundation, in Dallas, Maine. The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

The Contractor shall be responsible for furnishing all supervision, labor, equipment, tools supplies, permanent materials and temporary materials required to perform the Work including construction quality control including inspection, testing and documentation, all required documentation at the conclusion of the project, warranting its work and performing all other work indicated in the Contract.

The Department shall have the right to alter the nature and extent of the Work as provided in the Contract; payment to be made as provided in the same.

### **B. Time.**

The Contractor agrees to complete all Work, except warranty work, on or before June 1, 2008. The Department may deduct from moneys otherwise due the Contractor, not as a penalty but as Liquidated Damages, in accordance with Sections 107.7 and

107.8 of the State of Maine Department of Transportation Standard Specifications, Revision of December 2002 and related Special Provisions.

**C. Price.**

The Offer, which is also the original contract amount, is  
 \_\_\_\_\_  
 (\$\_\_\_\_\_).

**D. Contract.**

This Contract, which may be amended, modified, or supplemented in writing only, consists of the following documents:

- 1) Offer and Award
- 2) Appendix B - Provisions
- 3) Appendix A - Specifications of Work to be Performed
- 4) The Department’s Notice to Contractors and any amendments
- 5) Standard Specifications, Revision of December 2002 as updated through advertisement Sections 101, 102, 103 and 111

**E. Certifications.**

By signing below, the Contractor hereby certifies that to the best of the Contractor’s knowledge and belief:

1. All of the statements, representations, covenants, and certifications required or set forth in the Bid Documents and the Contract are still complete and accurate as of the date of this Bid.
2. The Contractor knows of no legal, contractual, or financial impediment that prevents Contractor from entering into this Contract.
3. The person signing below is legally authorized by the Contractor to sign this Bid and to legally bind the Contractor to the terms of the Contract.

**F. Offer.**

The undersigned has carefully examined the Bid Documents, Special Provisions and the other Contract Documents for the Project located in Dallas, Maine described above in Part A as PIN # 14466.10 and is familiar with the Work necessary to perform the Contract for which this bid is being submitted. \_\_\_\_\_, the Bidder, does hereby bid and offer to enter into this contract to supply all the materials, tools, equipment and labor to construct the whole of the Work in strict accordance with the terms and conditions of this Contract at the unit prices in the attached Schedule of Items.

First: Bidder agrees to perform extra work, not described in Appendix A, which may be ordered by the Contract Administrator, and to accept as full compensation the amount determined upon a Force Account basis as provided in the State of Maine Department of Transportation, Standard Specifications, Revision of December 2002, and as addressed in the contract documents.

Second: Bidder understands that Work may commence upon Contract Execution, unless provided elsewhere in the contract and that Work must be completed within the time limits given in this Contract. Bidder further agrees to provide insurance as required by this Contract if this offer is accepted by MaineDOT in writing.

Third: This offer shall remain open for 30 calendar days after the date of opening of bids.

Fourth: The Bidder hereby certifies, to the best of its knowledge and belief that the Bidder has not, either directly or indirectly, entered into any Contract, participated in any collusion, or otherwise taken any action in restraint of competitive bidding in connection with its bid, and its subsequent contract with the Department.

IN WITNESS WHEREOF, the Contractor, for itself, its successors and assigns, hereby executes two duplicate originals of this Contract and thereby binds itself to all covenants, terms, and obligations contained in the Contract Documents.

CONTRACTOR

\_\_\_\_\_  
Date  
Representative

\_\_\_\_\_  
(Signature of Legally Authorized  
of the Contractor)

\_\_\_\_\_  
Witness

\_\_\_\_\_  
(Name and Title Printed)

**G. Award.**

Your offer is hereby accepted.  
documents referenced herein.

This award consummates the Contract, and the

MAINE DEPARTMENT OF TRANSPORTATION

\_\_\_\_\_

Date

\_\_\_\_\_

By: Michael Burns  
Assistant Director,  
Maintenance & Operations

\_\_\_\_\_

Witness

APPENDIX A  
SPECIFICATIONS OF WORK TO BE PERFORMED

Description This work shall consist of forming, furnishing and placing all cast-in-place concrete as shown on the plans and the grade provided and in accordance with contract documents. This work includes all concrete, steel reinforcement, form work, anchor bolts, sleeves, vapor barriers, rigid insulation and any other accessories necessary to complete the work.

This work shall include furnishing and installing a complete radiant slab heating system including, but not limited to, cast iron oil-fired boiler, related piping, valves, thermostats, fuel tank and accessories as shown on the plans and the grade provided and in accordance with contract documents.

This work shall include all excavation, filling, backfilling and removal of materials as shown on the plans and the grade provided and in accordance with contract documents.

Location The Maine DOT Maintenance Lot at 256 Stratton Road, Dallas, Maine

Contract Time

1. The contractor will be allowed to commence work anytime provided that all required submittals have been received and approved by MaineDOT.
2. The completion date for this cast-in-place concrete work is November 26, 2007.
3. The portion of the heating system not cast into the slab shall not be installed prior to building construction. The Department anticipates that the building will be sufficiently complete to allow installation of the remaining portion of the heating system six months following completion of the cast-in-place concrete work.

Method of Measurement The Concrete satisfactorily placed and the Radiant Slab Heating System installed and accepted will be measured as one lump sum.

Basis of Payment The accepted item for cast-in-place concrete and radiant slab heating system will be paid for at the Contract lump sum price complete in place and accepted which shall be full compensation for all labor, equipment, materials, including furnishing and placing of reinforcing steel, anchor bolts, sleeves, vapor barriers, rigid insulation, excavation, backfill, aggregate and grading of the aggregate, cast iron oil-fired boiler, related piping, valves, thermostats, fuel tank and all incidental items necessary to complete the work.

## **CONTRACT, AGREEMENT, OFFER & AWARD**

This CONTRACT is made on the date last signed below, by and between the State of Maine, acting through and by its Department of Transportation (“Department” or “MaineDOT”), an agency of state government with its principal administrative offices located at Child Street, Augusta, Maine, with a mailing address at 16 State House Station, Augusta, Maine 04333-0016, and \_\_\_\_\_ (“Contractor”) a corporation or other legal entity organized under the laws of the State of \_\_\_\_\_, with its principal place of business located at \_\_\_\_\_, with a mailing address of \_\_\_\_\_, telephone number \_\_\_\_\_ .

The Vendor Customer Number of the Contractor is \_\_\_\_\_.

The Department and the Contractor, in consideration of the mutual promises set forth in this Contract and Appendix A - Specifications of Work to be Performed, Appendix B - Provisions, The Department’s Notice to Contractors and any amendments (“Contract”), and Standard Specifications, Revision of December 2002 as updated through advertisement Sections 101, 102, 103 and 111 hereby agree as follows:

### **A. The Work.**

The Contractor agrees to complete all Work as specified or indicated in the Contract including Extra Work in conformity with the Contract, PIN 14466.10 Garage Foundation, in Dallas, Maine. The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

The Contractor shall be responsible for furnishing all supervision, labor, equipment, tools supplies, permanent materials and temporary materials required to perform the Work including construction quality control including inspection, testing and documentation, all required documentation at the conclusion of the project, warranting its work and performing all other work indicated in the Contract.

The Department shall have the right to alter the nature and extent of the Work as provided in the Contract; payment to be made as provided in the same.

### **B. Time.**

The Contractor agrees to complete all Work, except warranty work, on or before June 1, 2008. The Department may deduct from moneys otherwise due the Contractor, not as a penalty but as Liquidated Damages, in accordance with Sections 107.7 and

107.8 of the State of Maine Department of Transportation Standard Specifications, Revision of December 2002 and related Special Provisions.

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By signing below, the Contractor hereby certifies that to the best of the Contractor's knowledge and belief:

1. All of the statements, representations, covenants, and certifications required or set forth in the Bid Documents and the Contract are still complete and accurate as of the date of this Bid.
2. The Contractor knows of no legal, contractual, or financial impediment that prevents Contractor from entering into this Contract.
3. The person signing below is legally authorized by the Contractor to sign this Bid and to legally bind the Contractor to the terms of the Contract.

**F. Offer.**

The undersigned has carefully examined the Bid Documents, Special Provisions and the other Contract Documents for the Project located in Dallas, Maine described above in Part A as PIN # 14466.10 and is familiar with the Work necessary to perform the Contract for which this bid is being submitted. \_\_\_\_\_, the Bidder, does hereby bid and offer to enter into this contract to supply all the materials, tools, equipment and labor to construct the whole of the Work in strict accordance with the terms and conditions of this Contract at the unit prices in the attached Schedule of Items.

First: Bidder agrees to perform extra work, not described in Appendix A, which may be ordered by the Contract Administrator, and to accept as full compensation the amount determined upon a Force Account basis as provided in the State of Maine Department of Transportation, Standard Specifications, Revision of December 2002, and as addressed in the contract documents.

Second: Bidder understands that Work may commence upon Contract Execution, unless provided elsewhere in the contract and that Work must be completed within the time limits given in this Contract. Bidder further agrees to provide insurance as required by this Contract if this offer is accepted by MaineDOT in writing.

Third: This offer shall remain open for 30 calendar days after the date of opening of bids.

Fourth: The Bidder hereby certifies, to the best of its knowledge and belief that the Bidder has not, either directly or indirectly, entered into any Contract, participated in any collusion, or otherwise taken any action in restraint of competitive bidding in connection with its bid, and its subsequent contract with the Department.

IN WITNESS WHEREOF, the Contractor, for itself, its successors and assigns, hereby executes two duplicate originals of this Contract and thereby binds itself to all covenants, terms, and obligations contained in the Contract Documents.

CONTRACTOR

\_\_\_\_\_  
Date  
Representative

\_\_\_\_\_  
(Signature of Legally Authorized  
of the Contractor)

\_\_\_\_\_  
Witness

\_\_\_\_\_  
(Name and Title Printed)

**G. Award.**

Your offer is hereby accepted.  
documents referenced herein.

This award consummates the Contract, and the

MAINE DEPARTMENT OF TRANSPORTATION

\_\_\_\_\_

Date

\_\_\_\_\_

By: Michael Burns  
Assistant Director,  
Maintenance & Operations

\_\_\_\_\_

Witness

APPENDIX A  
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This work shall include all excavation, filling, backfilling and removal of materials as shown on the plans and the grade provided and in accordance with contract documents.

Location The Maine DOT Maintenance Lot at 256 Stratton Road, Dallas, Maine

Contract Time

1. The contractor will be allowed to commence work anytime provided that all required submittals have been received and approved by MaineDOT.
2. The completion date for this cast-in-place concrete work is November 26, 2007.
3. The portion of the heating system not cast into the slab shall not be installed prior to building construction. The Department anticipates that the building will be sufficiently complete to allow installation of the remaining portion of the heating system four months following completion of the cast-in-place concrete work.

Method of Measurement The Concrete satisfactorily placed and the Radiant Slab Heating System installed and accepted will be measured as one lump sum.

Basis of Payment The accepted item for cast-in-place concrete and radiant slab heating system will be paid for at the Contract lump sum price complete in place and accepted which shall be full compensation for all labor, equipment, materials, including furnishing and placing of reinforcing steel, anchor bolts, sleeves, vapor barriers, rigid insulation, excavation, backfill, aggregate and grading of the aggregate, cast iron oil-fired boiler, related piping, valves, thermostats, fuel tank and all incidental items necessary to complete the work.

APPENDIX B  
PROVISIONS

1. **BENEFITS AND DEDUCTIONS** If the Contractor is an individual, the Contractor understands and agrees that he/she is an independent contractor for whom no Federal or State Income Tax will be deducted by the Department, and for whom no retirement benefits, survivor benefit insurance, group life insurance, vacation and sick leave, and similar benefits available to State employees will accrue. The Contractor further understands that annual information returns, as required by the Internal Revenue Code or State of Maine Income Tax Law, will be filed by the State Controller with the Internal Revenue Service and the State of Maine Bureau of Revenue Services, copies of which will be furnished to the Contractor for his/her Income Tax records.

2. **INDEPENDENT CAPACITY** In the performance of this Contract, the parties hereto agree that the Contractor, and any agents and employees of the Contractor shall act in the capacity of an independent contractor and not as officers or employees or agents of the State.

3. **DEPARTMENT'S REPRESENTATIVE** The Contract Administrator shall be the Department's representative during the period of this Contract. The Contract Administrator has authority to curtail services if necessary to ensure proper execution of the Contract, to take actions needed to assure that the Contractor's Work conforms with the Contract, to decide questions regarding quality and acceptability of Work, to suspend Work, to reject Unacceptable or Unauthorized Work and to refuse to approve Progress and Final Payments until Unacceptable or Unauthorized Work is corrected.. The Contract Administrator shall certify to the Department when payments under the Contract are due and the amounts to be paid. He/she shall make decisions on all claims of the Contractor. Unless authorized by the Contract Administrator, other Departmental employees are not authorized to alter or waive the provisions of the Contract or to issue instructions contrary to the Contract.

The Department has the authority to inspect all Materials and every detail of the Work. The Contractor shall provide the Department with safe access to all portions of the Work in Conformity with all applicable OSHA requirements. The Contractor shall furnish the Department with all information and assistance required to make a detailed inspection.

4. **CONTRACT ADMINISTRATOR** All progress reports, correspondence and related submissions from the Contractor shall be submitted to:

Name: Gail MacMunn  
Title: Building Program Manager  
Address: 16 State House Station, Augusta, ME 04333-0016

who is designated as the Contract Administrator on behalf of the Department for this Contract, except where specified otherwise in this Contract.

5. **CHANGES IN THE WORK** The Department may order changes in the work, the Contract Amount being adjusted accordingly. Any changes to the Contract that affect compensation, time, quality, or other Contract requirements shall be by written Contract Modification, signed by both parties.

6. **SUBCONTRACTS** The Contractor shall at all times provide all Superintendents, forepersons, laborers, inspectors, Subcontractors, subconsultants, Equipment, Materials, and Incidentals needed to perform the Work in Conformance with the Contractor's Schedule of Work and within the Contract Time.

Any person employed by the Contractor or by any Subcontractor or any officer or representative or agent of the Subcontractor, who, in the opinion of the Contract Administrator, is intemperate or disorderly, shall be removed immediately by the Contractor or Subcontractor employing such person.

The Contractor is responsible for assuring that its subcontractors have sufficient skill and experience to perform the pursuant to the Contract. The Contractor is responsible for subcontractors that it employs and for coordinating and managing its subcontractors. The Contractor agrees to indemnify, defend, and hold harmless MaineDOT from and against all claims and causes of action arising out of any act or omission of Contractor's subcontractors, their agents, representatives, and employees. The Contractor agrees to indemnify the MaineDOT and hold it harmless from any claims asserted by, against or on behalf of Contractor's subcontractors. Included in this release is the Contractor's agreement to waive any claims against MaineDOT to recover losses allegedly suffered by a subcontractor. If Work under this Contract is performed pursuant to subcontracts, the Contractor's obligations are not diminished and the Contractor remains responsible for all Work under the Contract.

7. **SUBLETTING, ASSIGNMENT OR TRANSFER** The Contractor shall not sublet, sell, transfer, assign or otherwise dispose of this Contract or any portion thereof, or of its right, title or interest therein, without written request to and written consent of the Contract Administrator. No subcontracts or transfer of the Contract shall in any case release the Contractor of its liability under this Contract.

8. **EQUAL EMPLOYMENT OPPORTUNITY** During the performance of this Contract, the Contractor agrees as follows:

- a. The Contractor shall not discriminate against any employee or applicant for employment relating to this Contract because of race, color, religious creed, sex, national origin, ancestry, age, physical or mental disability, or sexual orientation, unless related to a bona fide occupational qualification. The Contractor shall take affirmative action to ensure that applicants are employed and employees are treated during employment,

without regard to their race, color, religion, sex, age, national origin, physical or mental disability, or sexual orientation.

Such action shall include but not be limited to the following: employment, upgrading, demotions, or transfers; recruitment or recruitment advertising; layoffs or terminations; rates of pay or other forms of compensation; and selection for training including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notices setting forth the provisions of this nondiscrimination clause.

b. The Contractor shall, in all solicitations or advertising for employees placed by or on behalf of the Contractor relating to this Contract, state that all qualified applicants shall receive consideration for employment without regard to race, color, religious creed, sex, national origin, ancestry, age, physical or mental disability, or sexual orientation.

c. The Contractor shall send to each labor union or representative of the workers with which it has a collective bargaining Contract, or other Contract or understanding, whereby it is furnished with labor for the performance of this Contract a notice to be provided by the contracting agency, advising the said labor union or workers' representative of the Contractor's commitment under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

d. The Contractor shall inform the contracting Department's Equal Employment Opportunity Coordinator of any discrimination complaints brought to an external regulatory body (Maine Human Rights Commission, EEOC, Office of Civil Rights) against their agency by any individual as well as any lawsuit regarding alleged discriminatory practice.

e. The Contractor shall comply with all aspects of the Americans with Disabilities Act (ADA) in employment and in the provision of service to include accessibility and reasonable accommodations for employees and clients.

f. Contractors and subcontractors with contracts in excess of \$50,000 shall also pursue in good faith affirmative action programs.

g. The Contractor shall cause the foregoing provisions to be inserted in any subcontract for any work covered by this Contract so that such provisions shall be binding upon each subcontractor, provided that the foregoing provisions shall not apply to contracts or subcontracts for standard commercial supplies or raw materials.

9. **EMPLOYMENT AND PERSONNEL** The Contractor shall not engage any person in the employ of any State Department or Agency in a position that would constitute a

violation of 5 MRSA § 18 or 17 MRSA § 3104. The Contractor shall not engage on a full-time, part-time or other basis pursuant to this Contract any personnel who are or have been at any time during the period of this Contract in the employ of the State of Maine, except regularly retired employees, without the written consent of the State Purchases Review Committee. Further, the Contractor shall not engage on this project on a full-time, part-time or other basis during the period of this Contract any retired employee of MaineDOT who has not been retired for at least one year without the written consent of the State Purchases Review Committee. The Contractor shall cause the foregoing provisions to be inserted in any subcontract for any work covered by this Contract so that such provisions shall be binding upon each subcontractor, provided that the foregoing provisions shall not apply to contracts or subcontracts for standard commercial supplies or raw materials.

10. **STATE EMPLOYEES NOT TO BENEFIT** No individual employed by the State of Maine at the time this Contract is executed or any time thereafter shall be admitted to any share or part of this Contract or to any benefit that might arise therefrom directly or indirectly that would constitute a violation of 5 MRSA § 18 or 17 MRSA § 3104. No other individual employed by the State at the time this Contract is executed or at any time thereafter shall be admitted to any share or part of this Contract or to any benefit that might arise therefrom directly or indirectly due to his employment by or financial interest in the Contractor or any affiliate of the Contractor, without the written consent of the State Purchases Review Committee. The Contractor shall cause the foregoing provisions to be inserted in any subcontract for any work covered by this Contract so that such provisions shall be binding upon each subcontractor, provided that the foregoing provisions shall not apply to contracts or subcontracts for standard commercial supplies or raw materials.

11. **WARRANTY OF NO COLLUSION** The Bidder hereby certifies that it has not, directly or indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of competitive bidding in connection with this Contract. For breach or violation of this warranty, MaineDOT shall have the right to annul this Contract without liability. Further, MaineDOT shall have the right to recover the full amount of such fee, commission, gift, or the value of consideration that may have been transferred by the Contractor in violation of this clause.

12. **RECORDS; ACCESS.** The Contractor and its subcontractors shall maintain all books, documents, payrolls, papers, accounting records and information of any type on any medium ("Project Records") that pertain to this Contract for such period as specified under Maine Uniform Accounting and Auditing Practices for Community Agencies (MAAP) rules. Upon request by MaineDOT, the Contractor and its subcontractors shall make Project Records available for inspection and must provide MaineDOT with copies at all reasonable times without cost or liability to MaineDOT.

13. **TERMINATION** The performance of work under the Contract may be terminated by MaineDOT in whole or in part whenever for any reason the Contract Administrator shall determine that such termination is in the best interest of the Department. Any such

termination shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which performance of the work under the Contract is terminated and the date on which such termination becomes effective. The Contract shall be equitably adjusted to compensate for such termination and modified in writing to reflect adjustments.

14. **GOVERNMENTAL REQUIREMENTS** The Contractor warrants and represents that it will comply with all governmental ordinances, laws and regulations.

15. **GOVERNING LAW** This Contract shall be governed in all respects by the laws, statutes, and regulations of the United States of America and of the State of Maine. Any legal proceeding against the State regarding this Contract shall be brought in State of Maine administrative or judicial forums. The Contractor consents to personal jurisdiction in the State of Maine. The Contractor shall comply with all applicable federal, State, and local laws governing safety, health, and sanitation including all applicable laws and regulations of OSHA. The Contractor shall provide all safeguards, safety devices, and protective Equipment and take all other action that is necessary to continuously and effectively protect the safety and health of all persons from hazards related to the Work.

16. **STATE HELD HARMLESS** The Contractor agrees to indemnify, defend and hold harmless the State, its officers, agents and employees from any and all claims, costs, expenses, injuries, liabilities, losses and damages of every kind and description (hereinafter in this paragraph referred to as "claims") resulting from or arising out of the performance of this Contract by the Contractor, its employees, agents or subcontractors. Claims to which this indemnification applies include, but are not limited to, the following: (i) claims suffered or incurred by any Contractor, subcontractor, materialman, laborer and any other person, firm, corporation or other legal entity providing work, services, materials, equipment or supplies in connection with the performance of this Contract; (ii) claims arising out of a violation or infringement of any proprietary right, copyright, trademark, right of privacy or other right arising out of publication, translation, development, reproduction, delivery, use, or disposition of any data, information or other matter furnished or used in connection with this Contract; (iii) Claims arising out of a libelous or other unlawful matter used or developed in connection with this Contract; (iv) claims suffered or incurred by any person who may be otherwise injured or damaged in the performance of this Contract; and (v) all legal costs and other expenses of defense against any asserted claims to which this indemnification applies. This indemnification does not extend to a claim that results solely and directly from (i) the Department's negligence or unlawful act, or (ii) action by the Contractor taken in reasonable reliance upon an instruction or direction given by an authorized person acting on behalf of the Department in accordance with this Contract.

The Department's employees and other representatives act solely as representatives of the Department when conducting and exercising authority granted to them under the Contract. Such persons have no liability either personally or as Department employees.

17. **NOTICE OF CLAIMS** The Contractor shall give the Contract Administrator immediate notice in writing of any legal action or suit filed related in any way to the Contract or which may affect the performance of duties under the Contract, and prompt notice of any

claim made against the Contractor by any subcontractor which may result in litigation related in any way to the Contract or which may affect the performance of duties under the Contract.

18. **INSURANCE** The Contractor shall provide signed, valid, and enforceable certificate(s) of insurance complying with this Section. All insurance must be procured from insurance companies licensed or approved to do business in the State of Maine. The Contractor shall pay all premiums and take all other actions necessary to keep required insurances in effect for the duration of the Contract obligations, excluding warranty obligations.

Workers' Compensation For all Work performed by the Contractor and any subcontractor, the Contractor and each subcontractor shall carry Workers' Compensation Insurance or shall qualify as a self-insurer with the State of Maine Workers' Compensation Board in accordance with the requirements of the laws of the State of Maine. If maritime exposures exist, coverage shall include United States Long Shore and Harbor Workers coverage.

Commercial General Liability With respect to all Work performed by the Contractor and any subcontractors, the Contractor and any subcontractors shall carry commercial general liability insurance in an amount not less than \$100,000.00 per occurrence and \$400,000.00 in the Aggregate. The coverage must include products, completed operations, and Contractual liability coverages, and Insurance Services Office (ISO) form #CG25031185 or equivalent. The Contractual liability insurance shall cover the Contractor's obligations to indemnify the Department as provided in this Contract. The coverage shall also include protection against damage claims due to use of explosives, collapse, and underground coverage if the Work involves such exposures.

Automobile Liability The Contractor shall carry Automobile Liability Insurance covering the operation of all motor vehicles including any that are rented, leased, borrowed, or otherwise used in connection with the Project. The minimum limit of liability under this Section shall be \$300,000.00 per occurrence.

#### Administrative & General Provisions

A. Additional Insured Each policy with the exception of Workers' Compensation and Professional Liability insurance shall name the Department of Transportation as an additional insured.

19. **SEVERABILITY** The invalidity or unenforceability of any particular provision or part thereof of this Contract shall not affect the remainder of said provision or any other provisions, and this Contract shall be construed in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

20. **INTEGRATION** All terms of this Contract are to be interpreted in such a way as to be consistent at all times. If the Contractor discovers any ambiguity, error, omission,

conflict, or discrepancy related to the Contract, the Contractor must notify MaineDOT of the ambiguity or waive claims resulting from any such ambiguity. In the case of ambiguity the following components of the Contract shall control in the following descending order of priority:

- Bid Amendments (most recent to least recent)
- Appendix B – Special Provisions
- Appendix A - Specifications of Work to be Performed
- Any remaining appendices in alphabetical order.
- Standard Specification, Sections 101, 102, 103 and 111

21. **FORCE MAJEURE** The Department may, at its discretion, excuse the performance of an obligation by a party under this Contract in the event that performance of that obligation by that party is prevented by an act of God, act of war, riot, fire, explosion, flood or other catastrophe, sabotage, severe shortage of fuel, power or raw materials, change in law, court order, national defense requirement, or strike or labor dispute, provided that any such event and the delay caused thereby is beyond the control of, and could not reasonably be avoided by, that party. The Department may, at its discretion, extend the time period for performance of the obligation excused under this section by the period of the excused delay together with a reasonable period to reinstate compliance with the terms of this Contract.

22. **FURNISHING OF OTHER PROPERTY RIGHTS, LICENSES AND PERMITS** The Contractor shall acquire, at its sole expense, all property rights outside the Project Limits needed for construction staging, yarding, construction, waste disposal, or other Project-related purpose. The Contractor shall also acquire, at its sole expense, all licenses, Permits and other permissions that are necessary or appropriate to perform the Work that are not furnished by the Department.

23. **ALLOWABLE WORK TIMES** Work can be performed at any time except Sundays and Holidays, unless expressly specified otherwise in this Contract, including any applicable Permit conditions. If a Holiday occurs on a Sunday, the following Monday shall be considered a Holiday. Sunday or Holiday work must be approved by the Department, except that the Contractor may work on Martin Luther King Day, President's Day, Patriot's Day, the Friday after Thanksgiving, and Columbus Day without the Department's approval. The Contractor is solely responsible for the planning and execution of Work in order to complete the Work within the Contract Time.

24. **SET-OFF RIGHTS** MaineDOT shall have all of its common law, equitable and statutory rights of set-off. These rights shall include, but not be limited to, MaineDOT's right to withhold and take possession of monies due to the Contractor under this Contract up to any amounts the Contractor owes to the State of Maine pursuant to this Contract or any other contract, including any contract for a term commencing prior to the term of this Contract, plus any amounts that Contractor owes the State of Maine for any reason including, without limitation, tax delinquencies, fee delinquencies or monetary penalties relative thereto. MaineDOT shall exercise its set-off rights in accordance with normal State practices

including, in cases of set-off pursuant to an audit, the finalization of such audit by the State agency, its representatives, or the State Controller.

25. **WORKERS AND EQUIPMENT** The Contractor shall at all times provide all Superintendents, forepersons, laborers, inspectors, Subcontractors, subconsultants, Equipment, Materials, and Incidentals needed to perform the Work in Conformance within the Contract Time.

Any person employed by the Contractor or by any Subcontractor or any officer or representative or agent of the Subcontractor, who, in the opinion of the Resident, is intemperate or disorderly, shall be removed immediately by the Contractor or Subcontractor employing such person. The employee shall not be employed again in any portion of the Work without prior approval from the Resident.

Should the Contractor fail to remove such person or persons as required above or fail to furnish suitable and sufficient personnel for the proper prosecution of the Work, the Resident may suspend the Work by written notice until such orders are complied with.

All persons employed by or through the Contractor, except for registered trainees, shall have sufficient skill and experience to perform the Work properly. The Department may require that the Contractor discharge any such person who the Department determines jeopardizes safety of any person or the Project without cost or liability to the Department. If the Department determines that such person's performance jeopardizes the intent of the Contract otherwise, the Department may, but is not required, to notify the Contractor of such a determination. Such notice, or lack thereof, does not affect the Contractor's duties regarding Workers. Upon Receipt of such notice, the Contractor shall take any action it determines necessary to fulfill its obligations under the Contract.

26. **HEALTH AND SAFETY**

Compliance with Health and Safety Laws The Contractor shall comply with all applicable federal, State, and local laws governing safety, health, and sanitation including all applicable laws and regulations of OSHA.

Project Specific Emergency Planning Unless the Contract provides for closure of an existing facility, the Contractor shall ensure that essential police, fire, rescue, and ambulance services have reasonable and timely access to and through the Project Limits. The Contractor shall contact all emergency service providers in the area, discuss potential impacts on emergency operations (including water supply for fire suppression), and minimize any negative impacts.

27. **ENVIRONMENTAL REQUIREMENTS**

Temporary Soil Erosion and Water Pollution Control The Contractor shall provide continuous and effective soil erosion and water pollution control in compliance with Special Provision Section 656 - Temporary Soil Erosion and Water Pollution Control.

Hazardous Materials If the Contractor encounters any condition that indicates the presence of uncontrolled petroleum or hazardous Materials, the Contractor shall immediately stop Work, notify the Department, treat any such conditions with extreme caution, and secure the area of potential hazard to minimize health risks to Workers and the public, and to prevent additional releases of contaminants into the environment. Such conditions include the presence of barrels, tanks, unexpected odors, discoloration of soil or water, an oily sheen on soil or water, excessively hot earth, smoke, or any other condition indicating uncontrolled petroleum or hazardous Materials. The Contractor shall continue Work in other areas of the Project unless otherwise directed by the Department. The Contractor shall comply with all federal, State, and local laws concerning the handling, storage, treatment, and disposal of uncontrolled petroleum or hazardous Material.

Waste Materials All waste materials shall be disposed of in accordance with all federal, State, and local laws.

Environmental Non-compliance - Remedies and Costs The Contractor shall be in non-compliance if it, or Subcontractors at any tier, fail to comply with the terms of this Contract or any applicable environmental or land use law or regulation including Project specific permit conditions.

If the Contractor is in non-compliance, the Department may, at its discretion:

- A. Withhold all Progress Payments, or any portion thereof, during the period the Contractor is in non-compliance;
- B. Remedy such non-compliance using State forces or another Contractor and deduct all costs incurred by the Department from Progress Payments. Such costs include direct costs, Project Engineering costs, and Contractor costs from amounts otherwise due the Contractor, and/or
- C. Suspend the Work for cause and without cost or liability to the Department. Said suspension shall continue until the Contractor has addressed all non-compliance issues as directed by the Department.

The Contractor shall be responsible for any fines and penalties assessed by environmental or land use regulatory agencies due to such non-compliance. Such penalties may be withheld from amounts otherwise due the Contractor.

28. **MATERIAL QUALITY** Materials and manufactured products incorporated into the work shall be new unless otherwise specified, free from defect, and in conformity with the contract.

When material is fabricated or treated with another material or where any combination of materials is assembled to form a finished product, any or all of which are covered by

specifications, the Department may reject the finished product if any of the components do not comply with the specifications.

Materials shall meet the requirements of the contract at the time they are incorporated into the work.

The Department may reject materials not conforming to the Specifications at any time, and the Contractor shall remove them immediately from the project site unless otherwise instructed by the Department. The Contractor shall not store or use rejected materials on any Department project.

## 29. WARRANTY PROVISIONS

Warranty By Contractor The Contractor unconditionally warrants and guarantees that the project will be free from warranty defects for one year from the date of Final Acceptance. Final Acceptance includes receipt of all conforming closeout documentation.

If the Department discovers any warranty defects during the warranty period, the Contractor agrees to promptly perform all remedial work at no additional cost or liability to the Department.

Warranty Definitions Notwithstanding any other provision of the Contract, the following words or phrases have the following definitions for the purposes of the Contractor's warranty obligation under this Contract.

Warranty Defects Conditions that result from material, manufacture, or workmanship and that are not in conformity with the Contract or with industry standards applicable to the work prevailing at the time of submission of the bid. Warranty defects do not include (A) normal wear and tear, and (B) conditions caused by occurrences clearly beyond the Contractor's control and not attributable to material, manufacture, or workmanship. Examples of such excepted occurrences might be fires, floods, abnormally poor weather for the site of work, accidents, improper use, improper maintenance, vandalism, or acts of God.

Emergency Emergency means necessary for public safety or convenience, as determined by the Department.

Promptly Unless an emergency, "Promptly" means in the first construction season after the Contractor has been notified of the defect(s), but always within one year of such notice. In case of emergency, Promptly means within 48 hours.

Remedial Work "Remedial Work" means all work necessary to make the item in like new condition as reasonably determined by the Department and performed in accordance with the Contract and in a good and skillful manner. Remedial Work includes all design, permitting, project management, supervision, materials, and labor, including erosion control and traffic control.

Remedial Work Procedure and Requirements Within (30) Days of being notified of warranty defects, the Contractor shall submit to the Department for approval a Remedial Work Plan including the scope of work, conceptual work methods, schedule, construction phasing, and other significant aspects of the work (the “Work Plan”). Unless otherwise provided by the Department in writing, any work commenced prior to Department’s approval of the Work Plan will be at the Contractor’s sole risk. Before starting any on-site work, the Contractor shall deliver to the Department certificates of insurance complying with Section 18. Insurance.

If (A) the Contractor fails to submit a Remedial Work Plan, (B) the Contractor does not comply otherwise with written instructions from the Department, or (C) a State of emergency exists in which delay would cause serious risk of loss or damage, then the Department may perform or Contract for such remedial work and the Contractor will be responsible for all claims, costs, damages, losses, and expenses arising out of such work including fees and charges of engineers, consultants, attorneys, dispute resolution professionals, and court costs.

Upon a final inspection satisfactory to the Department, the Department will issue a written acceptance of the remedial work. The Contractor warrants and guarantees all remedial work to be free from warranty defects for one year after such acceptance.

Other Warranty Provisions The Contractor hereby assigns to the Department the right to enforce all manufacturer’s warranties or guarantees on all materials, equipment or products purchased for the work that exceed the nature or duration of the warranty obligations assumed by the Contractor under this Contract.

The Contractor agrees that the warranty obligations provided by this Contract shall be reported as an outstanding obligation in the event of bankruptcy, dissolution, or the sale, merger, or cessation of operations of the Contractor.

30. PAYMENT

Payment for Materials Obtained and Stored Acting upon a request from the Contractor and accompanied by Receipted bills, the Department will pay for all or part of the value of acceptable, non-perishable Materials that are to be incorporated in the Work, including Materials that are to be incorporated into the Work, not delivered on the Work site, and stored at places acceptable to the Department.

Materials paid for by the Department are the property of the Department, but the risk of loss shall remain with the Contractor. Payment for Materials does not constitute Acceptance of the Material. If Materials for which the Department has paid are later found to be unacceptable, then the Department may withhold amounts reflecting such unacceptable Materials from payments otherwise due the Contractor.

In the event of Default, the Department may use or cause to be used all paid-for Materials in any manner that is in the best interest of the Department.

Right to Withhold Payments The Department may withhold payments claimed by the Contractor on account of:

- A. Defective Work,
- B. Damages for Non-conforming Work,
- C. Failure to provide the Department the opportunity to inspect the Work,
- D. Damage to a third party,
- E. Claims filed or reasonable evidence indicating probable filing of claims,
- F. Failure of the Contractor to make payments to Subcontractors or for Materials or labor,
- G. Substantial evidence that the Project cannot be completed for the unpaid balance,
- H. Substantial evidence that the amount due the Department will exceed the unpaid balance,
- I. Regulatory non-compliance or enforcement,
- J. Failure to submit Closeout Documentation
- K. All other causes that the Department reasonably determines negatively affect the State's interest.

Taxes, Fees, Allowances, and Notices The Contractor shall pay all taxes, charges, fees, and allowances and give all notices necessary and incidental to the due and lawful prosecution of the Work. Except as expressly provided otherwise in this Contract, all such taxes, charges, fees, and allowances are Incidental to the Contract.

Most items are exempt from Maine sales tax. The Contractor shall Bid in accordance with the Maine statutory exemption from sales tax located at 36 M.R.S.A. §1760, subsections (2) and (61).

31. **NOTICE REQUIRED** When the Contractor becomes aware of facts or circumstances that may cause the Contractor to seek additional compensation, time, or any other change in Contract requirements ("Issue"), then the Contractor shall notify the Resident within 48 hours and before commencing any part of the Work relating to the Issue. The notice must describe the basic nature and extent of the Issue.

The written notice or confirmation will be known as a "Notice of Issue for Consideration". The Contractor will not be entitled to any additional compensation, time, or any other change to Contract requirements without a timely Notice of Issue for Consideration.

32. **ENTIRE CONTRACT** This document contains the entire Contract of the parties, and neither party shall be bound by any statement or representation not contained herein. No waiver shall be deemed to have been made by any of the parties unless expressed in writing and signed by the waiving party. The parties expressly agree that they shall not assert in any action relating to the Contract that any implied waiver occurred between the parties which is not expressed in writing. The failure of any party to insist in any one or

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more instances upon strict performance of any of the terms or provisions of the Contract, or to exercise an option or election under the Contract, shall not be construed as a waiver or relinquishment for the future of such terms, provisions, option or election, but the same shall continue in full force and effect, and no waiver by any party of any one or more of its rights or remedies under the Contract shall be deemed to be a waiver of any prior or subsequent rights or remedy under the Contract or at law.

## SPECIAL PROVISIONS

### SECTION 102 DELIVERY OF BIDS

102.1.1 Basic Requirements Delete the entire section and replace with the following: “To be eligible to Bid, prospective Bidders must (A) demonstrate the successful completion of at least five similar projects, (B) not have been debarred or suspended from Bidding, and (C) not be in Default with respect to any outstanding Contract with the Department, unless the Department grants written permission to Bid despite such Default. For related provisions, see Sections 102.9 - Bid Opening and 103.3 - Post-Bid Qualification.”

102.7.1 Location and Time Add the following sentence “As a minimum, the Bidder will submit a Bid Package consisting of the Notice to Contractors, the completed Acknowledgement of Bid Amendments form, 2 copies of the completed Agreement, Offer, & Award form, and any other Certifications or Bid Requirements listed in the Bid Book.”

102.11.1 Non-curable Bid Defects Replace E. with “E. The unit price and bid amount is not provided or a lump sum price is not provided or is illegible as determined by the Department.”

### SECTION 103 AWARD AND CONTRACTING

103.3.1 Notice and Information Gathering Change the first paragraph to read as follows: “After Bid Opening and as a condition for Award of a Contract, the Department may require an Apparent Successful Bidder to demonstrate to the Department’s satisfaction that the Bidder is responsible and qualified to perform the Work.”

**SPECIAL PROVISION**  
**SECTION 656**

Temporary Soil Erosion and Water Pollution Control

Standard Specification 656 of the Standard Specifications is deleted and replaced by this Special Provision.

The following information and requirements will constitute the Soil Erosion and Water Pollution Control Plan for this Project. The soil erosion and water pollution control measures associated with this work are as follows:

1. All work shall be done in accordance with the latest revision of the Maine Department of Transportation Best Management Practices for Erosion and Sediment Control (a.k.a. Best Management Practices manual or BMP Manual). The "Table of Contents" of the latest version is dated "1/19/00" (available at <http://www.state.me.us/mdot/mainhtml/bmp/bmpjan2000.pdf>.) **Procedures specified shall be according to the BMP Manual unless stated otherwise.**
2. The on-site person responsible for implementation of this plan, shall be the Contractor's Superintendent or other supervisory employee (the "Environmental Coordinator") with the authority to immediately remedy any deficient controls and shall provide the Resident with their numbers (telephone number, cellular phone and pager numbers, if applicable) where the Environmental Coordinator can be reached 24 hours a day.
3. Perimeter sediment control, such as silt fence or erosion control mix berm, shall be installed down gradient from all disturbed soil before any earthmoving activities begin. These practice shall be inspected before and after each rainfall event and on a weekly basis. They shall remain in good working order until final site stabilization. Onsite stockpiles shall be contained behind sediment control practices
4. All disturbed soil shall be stabilized as per the design before removal of sediment control practices. If areas are to be seeded they shall be mulched and that mulch shall be maintained until final vegetative cover is established. All previously mulched areas shall be maintained and re-mulched on a daily basis if bare areas develop.
5. Winter stabilization BMPs such as Erosion Control Mix shall be applied in accordance with the MDOT BMP Manual between November 1 and April 15 or during frozen ground conditions.
6. If the Work includes the handling or storage of petroleum products or Hazardous Materials including the on site fueling of Equipment, the Resident must be provided with a Spill Prevention Control and Countermeasure Plan (SPCCP) plan. At a minimum, the SPCCP shall include:
  - The name and emergency response numbers (telephone number, cellular phone and pager numbers, if applicable) of the Contractor's representative responsible for spill prevention;

**SPECIAL PROVISION**  
**SECTION 656**

Temporary Soil Erosion and Water Pollution Control

- General description and location of (1) handling, transfer, storage, and containment facilities of such products or Materials ("activities and facilities") and (2) potential receptors of such products or Materials including oceans, lakes, ponds, rivers, streams, wetlands, and sand and gravel aquifers ("sensitive resources") including the distances between said activities and facilities and said sensitive resources;
  - Description of preventative measures to be used to minimize the possibility of a spill including Equipment and/or Materials to be used to prevent discharges including absorbent Materials,
  - A contingency response plan to be implemented if a spill should occur including a list of emergency phone/pager numbers including the Contractor's representative, MDEP Spill Response, the Resident, and local police and fire authorities. For a related provision, see *Standard Specification, Section, 105.2.2 - Project Specific Emergency Planning*.
7. The Environmental Coordinator must inspect and maintain daily all controls for the duration of the project.
  8. Any costs related to this plan shall be considered incidental to the contract.
  9. If the Project Resident directs new soil disturbance that requires temporary erosion and sedimentation control, all permits shall be obtained by the DOT and a full SEWPCP will be required and paid for as Extra Work.

**Maine Dept. of Transportation**

**Cold Storage Building Addition  
Foundation Construction**

**Dallas**

**Technical Specifications prepared by  
Buck Engineering, Inc.**

***DIVISION 2 - SITEWORK***

02200	Earthwork	02200-1
02210	Temporary Erosion Control	02210-1

***DIVISION 3 - CONCRETE***

03300	Cast In Place Concrete	03300-1
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***DIVISION 15 – MECHANICAL***

15508	Radiant Slab Heating System	15508-1
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**SECTION 02200**

**EARTHWORK**

**PART 1 - GENERAL**

1.1 Description of Work

- A. Work Included: All excavating, dewatering, filling, backfilling, and removal of materials. Earthwork for utilities is included in this Section.
- B. Related Work Specified Elsewhere Includes:
  - 1. Section 02210 – Temporary Erosion Control.

1.2 Protection

- A. Paved Surfaces: Do not operate equipment on paved surfaces. Paved surfaces outside the specified limits of Work that are damaged shall be repaved by the CONTRACTOR at no additional cost to OWNER.
- B. Maintain excavations with approved barricades, lights, and signs to protect life and property until excavation is filled and graded to a condition acceptable to the ENGINEER.
- C. Protect structures, utilities, sidewalks, pavements, property monuments, monitoring wells, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations. The CONTRACTOR shall be responsible for actual cost of repair or replacement of any items damaged as a result of construction activities. This cost shall include any professional services required for inspection of repairs or replacement.

1.3 Quality Assurance

- A. Standards: 29 CFR 1926/1910 - OSHA Safety and Health Standards; Standard Specification for Highways and Bridges, Maine Department of Transportation, current revision.
- B. Testing and Inspection: See Section 01416 for general requirements. The OWNER shall be responsible for all quality control testing, unless otherwise noted. The CONTRACTOR shall be responsible for quality control coordinating with ENGINEER to allow for testing to be performed at the frequencies specified. A minimum of 48 hours notice for in-place testing shall be given to allow proper scheduling by ENGINEER.
- C. Inspection of Material Sources: The ENGINEER may inspect off-site sources of materials and order tests of these materials to verify compliance with these Specifications.

1.4 Testing Standards

- A. Laboratory and Field Testing: Procedures for testing earthwork shall be performed in accordance with the following standards:
  - 1. Sieve Analysis ..... ASTM D422
  - 2. Field Density ..... ASTM D2922
  - 3. Field Moisture Content..... ASTM D3017
  - 4. Moisture/Density (Proctor) Tests ..... ASTM D698

1.5 Submittals

- A. Material Test Reports: Submit reports on material gradations (sieve analysis) and maximum laboratory moisture density, (proctor).

1.6 Site Conditions

- A. CONTRACTOR may make his own borings, hand probes, explorations and observations to determine soil, water and other subsurface conditions at no cost to OWNER. Coordinate with OWNER prior to start of additional investigative work.

- B. Existing Utilities: Locate existing underground utilities within limits of Work and provide adequate means of support and protection during earthwork operations, if utilities are indicated to remain in place. Coordinate with utility companies for actual locations and shut-off services, if lines are active. Demolish and completely remove from site existing underground utilities indicated to be removed.

**PART 2 - PRODUCTS**

2.1 Materials

- A. General: All materials utilized for this project shall be obtained from a source approved by ENGINEER. The CONTRACTOR shall be required to submit evidence of compliance with specifications. The CONTRACTOR shall pay for all gradation and proctor testing to prove compliance with specifications. The Department will perform acceptance sampling, testing and inspection and may also perform IA. sample testing.
1. Suitable Materials: Materials complying with ASTM D2487 soil classification groups GW, SM, SW, and SP or AASHTO M145 soil classification groups A-1, A-2-4, A-2-5, and A-3.
  2. Unsuitable Materials: Material containing excessive amounts of water, blue or plastic clay, vegetation, organic matter, debris, pavement, stones or boulders greater than 12 inches in any dimension, frozen material, and material which, in the opinion of the ENGINEER, will not provide a suitable foundation or subgrade.
  3. On-Site Material: Any suitable material from on-site excavation.
  4. Material for embankments and general fills may contain pieces of excavated ledge having a greatest dimension of up to 12 inches, if approved by the ENGINEER.
  5. Sieve Analysis: Performed in accordance with ASTM D422-63.
- B. Gravel: Hard, durable stone with coarse to fine sand. Sieve analysis by weight:

<u>Sieve Size</u>	<u>Max. % Passing by Weight</u>
3"	100
1/4"	25-70
No. 40	0-30
No. 200	0-5

- C. 3/4" Crushed Stone: Durable, clean angular rock fragments obtained by breaking and crushing rock material. Sieve analysis by weight:

<u>Sieve Size</u>	<u>Max. % Passing by Weight</u>
1"	100
3/4"	95-100
1/2"	35-70
3/8"	0-20
No. 200	0-5

- D. Aggregate Base (MDOT 703.06) Type A: Hard durable gravel containing only particles passing the 2

inch sieve. Sieve analysis by weight:

<u>Sieve Size</u>	<u>Max. % Passing by Weight</u>
2"	100
1/2"	45-70
1/4"	30-55
No. 40	0-20
No. 200	0-5

- E. Aggregate Base (MDOT 703.06) Type B: Hard durable gravel containing only particles passing the 4 inch sieve. Sieve analysis by weight:

<u>Sieve Size</u>	<u>Max. % Passing by Weight</u>
4"	100
1/2"	35-75
1/4"	25-60
No. 40	0-25
No. 200	0-5

- F. Aggregate Base (MDOT 703.06) Type C: Hard durable gravel containing only particles passing the 6 inch sieve. Sieve analysis by weight:

<u>Sieve Size</u>	<u>Max. % Passing by Weight</u>
6"	100
1/4"	25-70
No. 40	0-30
No. 200	0-5

- G. Aggregate Subbase (MDOT 703.06) Type D: Hard, durable stone with coarse to fine sand containing only particles which will pass a 6" square mesh screen. Sieve analysis by weight for the portion passing the 3" sieve:

<u>Sieve Size</u>	<u>Max. % Passing by Weight</u>
1/4"	25-70
No. 40	0-30
No. 200	0-7

H. Sand: Granular material free from organic matter. Sieve analysis by weight:

<u>Sieve Size</u>	<u>Max. % Passing by Weight</u>
1"	100
1/2"	75-100
No. 4	50-100
No. 20	15-80
No. 50	0-15
No. 200	0-5

I. Select Borrow: Sieve analysis by weight:

<u>Sieve Size</u>	<u>Max. % Passing by Weight</u>
3"	100
1"	95-100
No. 4	75-100
No. 40	50-85
No. 200	30-60

J. Common Borrow: Earth suitable for embankment or general fill construction, free from frozen material, plastic clay, vegetation, perishable rubble, peat and other unsuitable materials. The moisture content shall be sufficient to provide required compaction and stable embankment. In no case shall the moisture content exceed 4% above optimum as determined by ASTM D698.

K. Refill Material: 3/4" crushed stone, for refilling excavation below normal grade, rock excavation or refilling excavated unsuitable material, unless otherwise directed by the ENGINEER.

L. Select Backfill: Use gravel or 3/4" crushed stone as directed by the ENGINEER.

### **PART 3 - EXECUTION**

#### **3.1 Excavation**

- A. General: Remove all materials encountered to the limits shown on the Drawing, or designated in the Specifications.
- B. Classifications: The following classifications of excavation will be considered incidental to the contract and no separate payment will be made.
  - 1. Rock Excavation for trenches and pits.
  - 2. Rock Excavation for open excavation.
  - 3. Excavation below normal grade.
  - 4. Select backfill.
- C. Earth Excavation: Remove and dispose of pavements and other obstructions visible on ground surface, underground structures and utilities indicated to be demolished and removed, and other materials encountered that are not classified as rock excavation or unauthorized excavation.
- D. Excavation for Structures: Conform to elevations and dimensions shown, within a tolerance of  $\pm 0.10'$ , and extending sufficient distance from footings and foundations to permit placing and removal of concrete form work, installation of services, other construction, and for inspection. While excavating for structures, take care not to disturb bottom of excavation. Excavate by hand to final grade just before concrete reinforcement is placed. Trim bottoms to required lines and grades to leave solid base to receive other work. Use shoring and bracing where sides of excavation will not support itself.

- E. Rock Excavation for Trenches and Pits: Includes removal and disposal of materials and obstructions encountered that cannot be excavated with modern, track-mounted, heavy-duty excavating equipment without drilling, ripping or blasting; includes boulders larger than 2 cubic yards each. Trenches in excess of 10 feet in width and pits in excess of 30 feet in either length or width are classified as open excavation.  
Do not perform rock excavation or excavation of unsuitable materials until material to be excavated has been cross-sectioned and classified by ENGINEER. Predrilling and blasting of bedrock through overburden may be allowed. If this method is used, the rock excavation quantities will be adjusted downward in proportion to the ground swell from this blasting method.  
Intermittent drilling or ripping performed to increase production and not necessary to permit excavation of material encountered will be classified as earth excavation.
- F. Rock Excavation in Open Excavations: Includes removal and disposal of materials and obstructions encountered not in a trench or pit that cannot be dislodged and excavated with modern, track-mounted, heavy-duty excavating equipment without drilling, blasting, or ripping.  
Do not perform rock excavation or excavation of unsuitable materials until material to be excavated has been cross-sectioned and classified by ENGINEER. Intermittent drilling or ripping performed to increase production and not necessary to permit excavation of material encountered will be classified as earth excavation.
- G. Rock Payment Limits:
1. Two feet outside of concrete work for which forms are required, except footings, base slabs, or anti-floatation slabs.
  2. One-and-a-half feet outside perimeter of footings, base slabs, anti-floatation slabs, and manholes (precast concrete and HDPE).
  3. Pipe trenches as shown on Drawings.
  4. Neat outside dimensions of concrete work where no forms are required.
- H. Excavation in Paved Areas: Sawcut pavement prior to excavation to provide a clean, uniform edge. Minimize disturbance of remaining pavement. Cut and remove the minimum amount of pavement required to do the work.
- I. Excavation for Trenches: Excavate to widths shown on the Drawings and depths indicated or required to establish indicated slope and invert elevations.  
Produce an evenly graded, flat trench bottom at the subgrade elevation required for installation of pipe and bedding material.  
Place backfill material directly into trench or excavation. Do not stockpile material to be used as backfill along edges of trenches.
- J. Unauthorized Excavation: Removal of materials beyond indicated subgrade elevations or dimensions without specific direction of ENGINEER. Unauthorized excavation, refilling shall be at the CONTRACTOR'S expense.
- K. Refilling Unauthorized Excavation:
1. Trenches: Use :  $\frac{3}{4}$ " crushed stone as directed by ENGINEER.
  2. Under Concrete Footings: Use concrete of similar strength as structure, see Specification Section 03300.
  3. Elsewhere: Backfill and compact unauthorized excavations as specified for authorized Excavations of same classifications, unless otherwise directed by ENGINEER.
- L. Excavation of Unsuitable Materials: When excavation has reached required subgrade elevations, notify ENGINEER to allow for an inspection of conditions. If unsuitable bearing materials are encountered, carry excavations deeper as directed by ENGINEER and replace excavated material with:  $\frac{3}{4}$ " crushed stone.
- M. Material Storage: Stockpile and maintain suitable surplus excavated materials for re-use as backfill within the project limits, as directed by ENGINEER. Place, grade and shape stockpiles for proper drainage.

### 3.2 Stability of Excavations

- A. Slope sides of excavations to comply with OSHA Regulations and local codes. Shore and brace where sloping is not possible due to space restrictions or stability of material excavated. Maintain sides and slopes of excavation in safe condition until completion of backfilling.

3.3 Dewatering

- A. General: Perform all Work in the dry. Prevent surface water and subsurface or groundwater from flowing uncontrolled into excavations and resulting in the flooding of the Work and surrounding area.
- B. Do not allow water to accumulate in excavations. Provide and maintain all necessary pumps, hoses, pipes, well point dewatering system, and all other required components necessary to convey water away from excavations.
- C. Convey water removed from excavations and rainwater to collecting or run-off areas. Establish and maintain temporary drainage ditches and other diversions outside excavation limits for each structure. Do not use trench excavations as temporary drainage ditches.
- D. Provide all necessary means to prevent erosion and sedimentation and the discharge of soil matter into a water body.

3.4 Backfill and Fill

- A. General: Place acceptable soil material in layers to required elevations as shown on the Drawings. Fill, backfill, and compact to produce minimum subsequent settlement of the material and provide adequate support for the surface treatment or structure to be placed on the material. Place material in horizontal layers, beginning at lowest area to be filled. Do not impair drainage.
- B. Ground Surface Preparation: Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Scarify surfaces so that fill material will bond with existing surface.
- C. Placement: Place backfill and fill materials in layers not more than 12 inches in loose depth for material compacted by heavy compaction equipment, and not more than 6 inches in loose depth for material compacted by hand-operated tampers, unless otherwise indicated. Do not place backfill or fill material on surfaces that are wet, frozen, or contain frost or ice.
- D. Backfilling Pipe Trenches: Bed pipe in crushed stone. Maintain a minimum of 6 inches of material around piping to obtain an envelope unless otherwise indicated.

3.5 Compaction

- A. Methods: Use methods that produce the required degree of compaction throughout the entire depth of material without damaging material that has previously been placed.
- B. Degree of Compaction: Compact to the following minimum densities:

Area Classification	Density
Road Base and Subbase.....	95% of max.
Embankments (including slopes).....	92% of max.
Pipe Bedding.....	95% of max.
From invert to 1 foot above pipe.....	95% of max.
Beside Structure walls, manholes, retaining walls, tank walls, etc.(not below structures, embankments, paved areas, etc.)	92% of max.
Below structure floor slabs and footings.....	95% of max.
Maximum Density: ASTM D698 (Standard Proctor)	
Field Density Tests: ASTM D2922	

- C. Testing: testing to be in accordance with State of Maine Standard Specifications, Section 203, Excavation and Embankment.
- D. Minimum Number of Tests will be determined by the Department.

3.6 Grading

- A. Grading: Uniformly grade areas within limits of grading under this Section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.
- B. Finish surfaces free from irregular surface changes and shall be finished to required elevation 0.1 feet in 5 feet.
- C. Compaction: After grading, compact subgrade surfaces to the percentage of maximum density for

each area classification.

3.7 Maintenance

- A. Protection of Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.
- B. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape, and compact to required density prior to further construction.

3.8 Disposal of Excess Materials

- A. Disposal of excess material shall be disposed of off-site in a lawful manner.
- B. Keep roads traveled by construction vehicles free of debris. Use suitable watertight vehicles for hauling wet materials over roads and streets. Clean up materials dropped from or spread by construction vehicles promptly or when directed by the ENGINEER.

**END OF SECTION**

## SECTION 02210

### TEMPORARY EROSION CONTROL

#### PART 1 - GENERAL

##### 1.1 Description of Work

- A. Provide and maintain devices to control erosion, siltation, sedimentation and dust that occurs during construction operations.
- B. Provide measures to control dust caused whether on or off the Project site.
- C. Deficiencies in erosion control measures indicated by failures or erosion shall be immediately corrected by providing additional measures or different techniques to correct the situation and prevent subsequent erosion.
- D. Install erosion control measures in any ditch, swale or channel before water is allowed to flow in the waterway.
- E. Related Work Specified Elsewhere Includes: Section 02200 Earthwork.

##### 1.2 Quality Assurance

- A. Standards: Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices.
- B. All work involving earth disturbance shall be in compliance with the Erosion and Sedimentation Control Plan as specified in the site development plans for the Maintenance Facility (PIN 14062.10) Plan Sheets 7,8 and 11. Material stock piles and lay down areas must be approved by the Department.
- C. The contractor shall comply with the requirements of the Site Location of Development and Natural Resources Protection Act Permit, December 27, 2005 as applicable.
- D. All costs related to the implementation and maintenance of erosion and sedimentation control practices shall be incidental to the project.

##### 1.3 Submittals

- A. Submit manufacturer's data for all materials to be incorporated into the work.

#### PART 2 - PRODUCTS

##### 2.1 Materials

- A. Acceptable products:
  - 1. Siltation Fence: Mirafi Environfence, Amco 1380 Silt Stop, or approved equivalents.
  - 2. Mulch:
    - a. Long fibered hay or straw in dry condition and which are relatively free of weeds and foreign matter detrimental to plant life.
    - b. Mulch Binder: asphalt emulsion mulch binder.
  - 3. Temporary Erosion Control Matting:
    - a. Rolled matting blanket consisting of excelsior wood fiber, jute, straw, or paper bound with a weave of twisted craft paper, cotton cord or plastic mesh.
    - b. Provide staples for fastening matting to the ground. Staples shall be fabricated in a "U" shape from 11 gage or heavier stiff galvanized steel wire, 6 to 12 inches in length and 1 to 2 inches across.
  - 5. Hay Bales: Rectangular shaped bales of hay or straw weighing at least 40 lbs/bale, free from noxious weed seeds and rough or woody materials.
  - 6. Riprap: Sound, durable rock which will not disintegrate due to exposure to water or weather; angular in shape such as rough, unhewn quarry stone or fragments obtained by blasting, breaking or crushing natural rock. Rounded boulders or cobbles will not be permitted. Flat, platy stones and shale or slate rock with its largest length dimension three times greater than its shortest dimension will not be permitted.  
Stone size will correspond to the inch dimension indicated on Drawings. The D<sub>50</sub> of the stone

size represent 50% of the stone passing the  $D_{50}$  dimension sieve screen. The  $D_{20}$  stone size, (20% passing) shall be one half the  $D_{50}$  dimension. The maximum size limit,  $D_{100}$ , shall be twice the  $D_{50}$  stone size dimension.

$D_{20}$	=	20% passing $\frac{1}{2}$ $D_{50}$ dimension sieve
$D_{50}$	=	50% passing $D_{50}$ dimension sieve
$D_{100}$	=	100% passing $2D_{50}$ dimension sieve

### **PART 3 - EXECUTION**

#### **3.1 Construction**

##### **A. Silt Fence:**

1. Install silt fence prior to any earthwork including grubbing.
2. Place where shown on Drawings. Install parallel to contours where possible, prior to site clearing and grading activities.
3. Bury lower edge of fabric at least 8" below ground surface to prevent underflow, as noted in the Erosion Control Handbook.
4. Curve ends of fence uphill to prevent flow around ends.
5. Inspect frequently; repair or replace any damaged sections.
6. Remove fence only when adequate grass catch has been established and accepted by the Owner.

##### **B. Mulch:**

1. Place mulch immediately after each area has been properly prepared.
2. When seed for erosion control is sown prior to placing the mulch, place mulch on the seeded areas within 48 hours after seeding.
3. Apply mulch at 1.5 to 2.0 tons per acre.
4. Hay mulch should cover the ground enough to shade it, but the mulch should not be so thick that a person standing cannot see ground through the mulch.
5. Remove matted mulch.

##### **F. Hay Bales:**

1. Place as required to provide for temporary control of erosion, and in ditches at 100-foot minimum intervals.

##### **G. Dust Control:**

1. Apply sprinkled water to reduce the emission of airborne soil particulates from the Project site. Calcium chloride shall not be permitted for use.

##### **K. Riprap:**

1. Subgrade Preparation: Grade and compact, where possible, areas to receive protection to a uniform slope. Allow for depth of protection stone layer.
2. Filter Fabric Placement: Filter fabric may be used under the riprap in lieu of aggregates as shown on the Drawings. Filter fabric is to be placed in one continuous piece. Sew all seams as per manufacturer's recommendation.
3. Riprap Placement: Place required riprap to full depth shown on Drawings measured perpendicular to the face of the slope to obtain a uniform appearance true to line and grade. Place larger stones at bottom of slope. Place stones in close contact, with interlocking of face stones and backing stones. Fill openings between stones with smaller rocks or coarse gravel.

#### **3.2 Maintenance**

- A. Inspect erosion control practices immediately after each rainfall and at least daily during prolonged rainfall or snowmelt for damage. Provide maintenance and make appropriate repairs or replacement at no additional cost to the OWNER, until Project acceptance or as required to comply with maintenance requirements if longer.
- B. Remove silt from silt fence when it has reached one foot above grade or prior to expected heavy runoff or siltation.
- C. Repair matting if any staples become loosened or raised, or if any matting becomes loose, torn, or undermined, make satisfactory repairs immediately.

#### **3.3 Removal of Temporary Erosion Control**

- A. Remove temporary materials and devices when permanent soil stabilization has been achieved.
- B. Level and grade to the extent required to present a sightly appearance and to prevent any obstruction of the flow of water or any other interference with the operation of or access to the permanent works.
- C. Remove unsuitable materials from site and dispose of in a lawful manner.

**END OF SECTION**

**SECTION 03300**

**CAST-IN-PLACE CONCRETE**

**PART 1 - GENERAL**

1.1 Summary

- A. This work shall consist of furnishing and constructing all cast-in-place concrete as shown on the Drawings and as required to complete the work. This work includes all steel reinforcement, form work, anchor bolts, sleeves, vapor barriers, rigid insulation and any other accessories necessary to complete the work.

1.2 References

- A. All work shall comply with the applicable provisions of the following codes:
1. American Concrete Institute ACI-318-83 "Building Code Requirements for Reinforced Concrete".
  2. American Concrete Institute ACI-301-89 "Specifications for Structural Concrete for Buildings".
  3. Concrete-Reinforcing Steel Institute CRSI Handbook 1972.
  4. ASTM C94 Standard Specification For Ready-Mixed Concrete.

1.3 Submittals

- A. At least 30 days prior to the first placement, a concrete mix design shall be submitted by the Contractor to the Department for approval. No concrete shall be placed on a project until the concrete mix design is approved by the Department. The mix design submitted by the Contractor shall include the following information:

1. Description of individual coarse aggregate stockpiles, original source, bulk specific gravity, absorption and gradation. A combined coarse aggregate blended gradation shall be provided.
2. Description of fine aggregate, original source, bulk specific gravity, absorption, colorimetric, gradation and Fineness Modulus (F.M.).
3. Description and amount of cement.
4. Target water cement ratio.
5. Target water content by volume.
6. Target strength.
7. Target air content, slump and concrete temperature.
8. Target concrete unit weight.
9. Type and dosages of air entraining and chemical admixtures.

Approval by the Department will be contingent upon the ability of the mix design proportions to produce concrete strength requirement and other factors that affect durability. B.

The Contractor shall provide the Engineer with at least six (6) copies of shop drawings for all reinforcing steel and other accessories to be cast-in-place. Shop drawings shall be submitted at least 30 days in advance of concrete placement and shall be reviewed by the Engineer prior to placement.

1.4 Testing

- A. Concrete acceptance testing will be performed by the Department. The Department will determine the acceptability of the concrete through a quality assurance program. Quality Assurance tests will include compressive strength, air content and permeability. Concrete sampling for quality assurance tests will be taken at the discharge point, with pumped concrete sampling taken at the discharge end of the pump line.
- B. Compressive strength tests will be completed by the Department in accordance with AASHTO-T22 at <sup>3</sup> 28 days, except that no slump will be taken. The average of two concrete cylinders will constitute a test result and this average will be used to determine the compressive strength.
- C. Testing for Entrained Air in concrete, at the rate of one test per subplot, shall be in accordance with AASHTO T152.
- D. Concrete not meeting standards implied in these specifications or as indicated on the Drawings shall be removed and replaced by the Contractor at no cost to the Department.

1.5 Quality Assurance

- A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment. Measuring and batching of materials shall be performed at a Department approved batching plant.

**PART 2 - PRODUCTS**

2.1 Concrete

- A. Cement
  - 1. Cement shall be Portland Cement conforming to ASTM C-150 for Type I, II or III as specified. If not specified, Type II shall be used.
- B. Aggregates: Concrete aggregates shall conform to ASTM Specification C-33. All aggregates shall be free from frozen materials and other impurities.
  - 1. Fine aggregate shall be clean sand free from clay, loam, and other deleterious substances and shall meet the following gradation:

<u>Sieve Designation</u>	<u>Percentage by Weight Passing Square Mesh Sieves</u>
3/8 inch	100
No. 4	95-100
No. 8	70- 95
No. 16	45- 80
No. 30	25- 55
No. 50	10- 30
No. 100	2- 10
No. 200	5 Maximum

- 2. Coarse aggregate shall be durable, clean, crushed stone or gravel-free from clay, loam and other deleterious substances and shall meet the following gradation:

<u>Concrete</u>	<u>Sizes</u>	<u>2"</u>	<u>1-1/2"</u>	<u>1"</u>	<u>3/4"</u>	<u>1/2"</u>
AA	3/4			100	90-100	45-80
A	1		100	95-100	70-95	25-60
B	1-1/2	100	95-100	60-85	35-70	15-45

- C. Water
  - 1. Water shall be clean and potable containing no deleterious impurities which may be harmful to concrete or accessories.
- D. Admixtures
  - 1. Synthetic Fibers: nylon fiber conforming to ASTM C-1116. Synthetic fibers shall be

installed in all concrete slabs, exposed exterior concrete and special structures unless otherwise indicated.

2. Water Reducing Admixture: "Pozzolith 200N" by BASF Admixtures, Inc., or "Pastocrete 161" by Sika Chemical Corporation. The admixture shall conform to ASTM C494, Type F or G, and not contain more chloride ions than are present in municipal drinking water. Products must be listed on the Maine DOT Qualified Products List.
3. Water Reducing, Retarding Admixture: "Eucon Retarder-75" by The Euclid Chemical Company, "Pozzolith 100XR" by BASF Admixtures, Inc. or "Plastiment" by Sika Chemical Corporation. The admixture shall conform to ASTM C494, Type D and not contain more chloride ions than are present in municipal drinking water. Products must be listed on the Maine DOT Qualified Products List.
4. High Range Water Reducing Admixture (Superplasticizer): "Eucon 37" by The Euclid Chemical Company or "Sikament" by Sika Chemical Corporation. The admixture shall conform to ASTM C494, Type F or G, and not contain more chloride ions than are present in municipal drinking water. Products must be listed on the Maine DOT Qualified Products List.
5. Non-Corrosive, Non-Chloride Accelerator: "Accelguard 80" by The Euclid Chemical Company, or approved equal. The admixture shall conform to ASTM C494, Type C or E, and not contain more chloride ions than are present in municipal drinking water. The admixture manufacturer must have long-term, non-corrosive test data from an independent testing laboratory (of at least a year's duration) using an acceptable accelerated corrosion test method such as that using electrical potential measures.
6. Air Entraining Admixture: Conform to ASTM C260. Products must be listed on the Maine DOT Qualified Products List.
7. Prohibited Admixture: Calcium chloride, thiocyanates or admixture containing more than 0.05% chloride ions are **not** permitted.
8. Certification: Written conformance to the above mentioned requirements and the chloride ion content of the admixture will be required from the admixture manufacturer prior to mix design review by the Engineer.

## 2.2 Steel

- A. Reinforcing steel shall conform to ASTM A-615 and be of an approved manufacturer. All bars shall be new, grade 60 and shall be at the sizes shown on the Drawings.
- B. Welded wire mesh or fabric (WWF) shall conform to ASTM A-185 and shall be at the sizes and dimensions as shown on the Drawings, and fabricated in accordance with ACI-315 (Latest).
- C. Steel accessories shall be at the sizes and types as shown on the Drawings unless otherwise specified and shall include all spacers, chairs, ties and other devices for properly spacing, supporting and fastening reinforcement in place. Anchor bolts shall be Grade 60 or better and of the sizes and types as shown on the Drawings.
- D. Wall reinforcement in 8-inch walls shall be #4 bars at 18" intervals, both horizontally and vertically unless otherwise indicated on drawings.

## 2.3 Accessories

- A. Waterstops shall be neoprene, PVC, or other approved material of the size and style as shown on the drawings.
- B. Prefomed joint fillers shall be 1/4-inch fiber insulation board such as "Celotex" or approved equivalent.
- C. Non-shrink Grout shall be portland cement based, non-metallic, as manufactured by U. S. Grout Corporation - "Five Star Grout"; Dayton Superior Corporation - "Sure-Grip Utility Grout"; or approved equivalent. Non-shrink grout shall conform to ASTM C-827.

- D. Asphalt dampproofing shall be a heavy-bodied bituminous compound as manufactured by the Euclid Chemical Company or approved equivalent.
- E. Concrete Sealers (Exterior concrete): Water repellent concrete sealer shall be single component, colorless liquid, "Sikagard 70" by the Sika Chemical Corporation, "Euco-Guard" by the Euclid Chemical Company, or approved equivalents.
- F. Insulation and Vapor Barriers:
  - 1. Rigid insulation shall be plastic foam insulation such as "Styrofoam Brand SM" or approved equivalent.
  - 2. Vapor barriers shall be "Tu-Tuff 4" high density cross laminated polysheeting manufactured by Sto-Cote Products, Inc. or approved equivalent.

2.4 Joint Sealants

- A. Epoxy jointing compounds shall be two component, 100% solids, moisture insensitive, with a minimum shore A hardness of 75; "Euco 700" by the Euclid Chemical Company; "Sikadur 51 SL" by the Sika Chemical Corporation, or approved equivalents.
- B. Polyurethane-based sealants shall be one component, premium grade, non-sag elastomeric sealant; "Eucolastic I" by the Euclid Chemical Company; "Sikaflex - 1a" by the Sika Chemical Company, or approved equivalents.

**PART 3 - EXECUTION**

3.1 Concrete Proportioning

- A. Concrete shall be Ready-Mix conforming to ACI-301-72 Para. 7.1. B. Strength, cement and water requirements:

Use	Min.Strength 28-day-psi	Max.Size Coarse Agg	% Air (1%)	Min-Max Slump	Min Cem.Fac.	Max W/C	Fiber Reinf
Footings, Walls,	4,000	1"	6	2-4*	611 #/CY	.45	-----**
Misc. Fill Conc.	3,000	1"	6	2-5*	564 #/CY	.50	-----

\*Min-Max slump is before the addition of water reducing admixtures.

\*\*All concrete shall contain a high range, water-reducing admixture meeting the requirements of 2.1.D. Air content shall be 5-7% and maximum slump shall be 7" after admixtures.

3.2 Form Work

- A. All construction form work shall be of sufficient strength and construction to safely withstand the loads imposed, conforming to ACI 347. Forms shall be suitably tied and/or bolted together to maintain the specified dimensions. 3/4-inch chamfer strips shall be placed at all exposed corners unless otherwise specified.
- B. Materials - Forms shall be smooth, treated plywood or steel. Forms shall be coated with form oil, water or other approved substances to facilitate removal. Only non-staining substances shall be used. Form oil shall not be used on corners which will be waterproofed. Where concrete structures will contact potable water, provide only new, clean form panels. Form release agents shall be approved for use with potable water structures.
- C. Build into the forms all collars, sleeves or thimbles required for piping and wiring, and any anchors or inserts for supporting piping, fixtures or attachments; nailing blocks and strips, and all other items required in the Specifications or shown on the Drawings. Inserts supporting a mechanical or electrical fixture shall be furnished and located by the trade who will use them.
- D. Form Removal - Forms shall be left in place at least 5 days unless otherwise allowed by the Engineer. Forms for elevated slabs and beams shall be left in place and supported until concrete attains at least 80% of specified strength. Loads shall not be superimposed until allowed by the

Engineer. Care shall be taken in removing forms so as not to damage the concrete. No concentrated loads such as structural steel beams and trusses shall be placed upon finished concrete substructures until concrete cylinders cured with the slab establish that design strength has been reached. However, after a shorter period of time the Resident may permit handwork. No materials shall be stored on the slab during the 7 day curing period.

- E. Form Ties - Unless otherwise specified, form ties shall be snap-off type. For watertight construction as shown on the Drawings or as approved by the Engineer, form ties shall be snap-off type with 2-inch or 1-inch cones.

### 3.3 Placing Reinforcing Steel

- A. All steel shall be supplied and placed in accordance with ACI-318 and shall conform to the sizes, lengths and shapes as shown on the approved shop drawings.
- B. The bending of reinforcing to conform to the dimensions shown on the plans shall be accurately done. Heating of bar to facilitate bending is not allowed.
- C. Place reinforcing of all slabs in correct position as shown and hold in position with pre-cast blocks, polyethylene chairs, or other approved means.
- D. Minimum clearance between steel and form shall be 2 inches and steel and ground shall be three inches except as otherwise specified.
- E. Reinforcing steel shall be inspected and approved by the Engineer prior to placing concrete. At least 24 hours notice shall be given the Engineer to inspect all steel.
- F. Furnish and place all embedded items as shown on the Drawings and as otherwise required such as anchor bolts, frames, sleeves, etc.
- G. Provide adequate keys and dowels at all wall intersections and construction joints. Lap all reinforcements 36 bar diameters at splices, and 12 inches minimum at corners unless otherwise indicated on Drawings.
- H. Provide dowels in wall footings equivalent in size and number to vertical steel extending 24 bar diameters into footing and into wall unless otherwise indicated on Drawings or by the Engineer.
- I. Lower end of dowels shall have a 90-degree bend with a 4-inch minimum horizontal dimension.
- J. All 4-inch thick concrete slabs on fill shall be reinforced with 6" x 6" x W2.9 x W2.9 WWF unless otherwise indicated on Drawings or by the Engineer.

### 3.4 Joints

- A. Control joints shall be located where shown on the Drawings or at no more than 15-foot intervals. Saw cut at joints shall be made within 48 hours of concrete pour.
- B. Construction joints shall be used only where approved by the Engineer.
- C. Expansion joints shall be located where shown on the Drawings. Preformed joint fillers shall be placed in all expansion joints to within 1/4 inch of surface.
- D. Epoxy joint filler shall be installed as approved by the manufacturer in all horizontal, vertical and overhead control and construction joints not in contact with water or earth backfill, unless otherwise shown on the Drawings.
- E. Polyurethane-based elastomeric sealants shall be installed over the preformed joint filler in all expansion joints.

### 3.5 Mixing and Placing Concrete

A. Transit Mix - Concrete mixed in transit mixers shall be placed within 90 minutes of addition of water at the plant. Delivery tickets shall state the time of water addition or departure from the plant if this is within 10 minutes. If the concrete cannot be placed within the specified time limitations, the Engineer may require that all cement be added at the job site. No additional water shall be added without consulting the Engineer. Any additional water added to the concrete on the site is the Contractor's sole responsibility and risk. The Contractor shall provide a Certificate of Compliance for each truckload of concrete to the Department at the time of the load placement. The Certificate of Compliance shall be a form acceptable to the Department and shall include:

Contract Name & Number  
Structure Name  
Manufacturing Plant (Batching Facility)  
Name of Contractor (Prime Contractor)  
Date  
Time Batched/Time Discharged  
Truck No.  
Quantity (Quantity Batched this Load)  
Type of Concrete by Class and Producer Design Mix No.  
Cement Brand or Type, and Shipment Certification No.  
Temperature of Concrete at Discharge  
Target Weights per cubic yard and Actual Batched Weights for:

1. Cement
2. Coarse Concrete Aggregate
3. Fine Concrete Aggregate
4. Water (including free moisture in aggregates and water added at the project)
5. Admixtures Brand and Quantity (fluid ounces/cubic yard)

Air-Entraining Admixture  
Water Reducing Admixture  
Other Admixtures  
Placement Location

- B. Placement - Concrete shall be placed with a minimum amount of handling to prevent segregation. Chutes and troughs shall be provided where required. Vertical drops over 8 feet will not be permitted without the use of a tremie or similar approved equipment. All placement shall be subject to the approval of the Engineer. Concrete shall not be placed until forms and reinforcing steel have been checked and approved by the Department's representative. The forms shall be clean of debris. The method and sequencing of placing concrete shall be approved before placement of concrete. All concrete shall be placed before it has taken its initial set. Concrete shall be placed in horizontal layers in such a manner as to avoid separation and segregation. A sufficient number of workers for the proper handling, tamping and operation of vibrators shall be provided to compact each layer before the succeeding layer is placed and to prevent the formation of cold joints between layers. Care shall be taken to prevent mortar from spattering on structural steel, reinforcing steel and forms. Any concrete or mortar that becomes dried on the structural steel, reinforcing steel or forms shall be thoroughly cleaned off before the final covering with concrete. Concrete in any section of a structure shall be placed in approximately horizontal layers of such thickness that the entire surface shall be covered by a succeeding layer before the underlying layer has taken its initial set. Layers shall not exceed 18 inches in thickness and be compacted to become an integral part of the layer below.
- C. Vibration - Power vibrators shall be provided to thoroughly consolidate and compact the concrete. Vibrators shall not be used to push or move concrete laterally in forms. Excessive vibration will not be permitted. A minimum of two (2) power vibrators shall be on the site when pouring concrete.

### 3.6 Protection of Concrete

- A. Fresh concrete shall be protected from rain, cold and excessive temperature. Concrete shall be placed at temperatures between 40°F and 90°F. When outside air temperatures are below 40°F, materials shall be heated and maintained above 50°F for at least 5 days after placement.
- B. Curing - Exposed concrete shall be kept continuously moist for at least 7 days after placement. In hot weather, slabs and other exposed concrete shall be covered with burlap, plastic sheeting or other approved materials and be sprinkled as required to prevent rapid drying. Curing compounds may be approved by the Engineer.
- C. All slabs shall be water cured only and kept continuously wet for the entire curing period of 7 days by covering with one of the following systems:

- 1). 2 layers of wet burlap,
- 2.) 2 layers of wet cotton mats,
- 3.) 1 layer of wet burlap and either a polyethylene sheet or a polyethylene coated burlap blanket,
- 4.) 1 layer of wet cotton mats and either a polyethylene sheet or a polyethylene coated burlap blanket.

Polyethylene sheets shall not be placed directly on the concrete, but may be placed over the fabric cover to prevent drying.

The covering of concrete slabs shall be kept continuously wet for the entire curing period by the use of a continuous wetting system and shall be located to insure a completely wet concrete surface for the entire curing period.

All other surfaces, if not protected by forms, shall be kept thoroughly wet either by sprinkling or by the use of wet burlap, cotton mats or other suitable fabric until the end of the curing period. Polyethylene sheets shall not be placed directly on the concrete, but may be placed over the fabric cover to prevent drying.

### 3.7 Finishing

- A. Exposed Concrete (Except Slabs)
  1. After removal of forms, remove all form ties to at least 1-inch below surface. Remove all loose and honeycombed concrete, fins and other surface irregularities.
  2. Concrete patching - After cleaning out all holes, honeycombs and other areas to be patched, moisten surface and apply non-shrink grout or a mixture of one part Portland Cement and 3 parts sand, taking care to match the color or concrete.
  3. All concrete, which will be exposed to view, shall be hand rubbed using carborundum bricks, burlap or other approved method. Finished surfaces should present a smooth, even appearance of uniform color.
- B. Unexposed Concrete
  1. All unexposed concrete shall have tie holes, honeycombs and other holes filled with patching mortar as above. Fins and other irregularities shall be removed so as to present a uniform surface.
  2. Unexposed concrete will not require a rubbed finish after patching.
  3. Concrete walls that are in contact with earth backfill shall receive two coats of bituminous asphalt dampproofing unless otherwise shown on the Drawings.
- C. Slabs
  1. Interior Floor Slabs shall be float finished and steel trowelled with a trowelling machine once the concrete has set sufficiently. The finish shall be smooth, uniform and hard. Surface tolerance shall be not more than 1/4-inch under a 10-foot straight edge. Slabs in areas where floor drains occur shall be pitched to drains with a uniform gradual pitch in all directions. Floor slabs shall be covered and sealed with polyethylene sheeting and burlap or other approved material and cured for not less than 7 days. Treat floor slabs with approved surface hardener/sealer according to manufacturer's directions. Treat floor slabs in garages and other commercial or industrial areas with approved surface hardener/sealer according to manufacturer's directions.
  2. Exterior Floor Slabs/Pavements shall be float finished and receive a moderate broom finish perpendicular to the direction of traffic. Floor slabs shall be covered and sealed with polyethylene sheeting and burlap or other approved material and cured for not less than 7 days. Apply approved sealer according to manufacturer's directions.
- D. Penetrations
  1. All wall or floor penetrations by pipes, conduit and other inserts shall be sealed with non-shrink grout around entire penetration to provide a watertight finish.

**END OF SECTION**

## SECTION 15508

### RADIANT SLAB HEATING SYSTEM

#### PART 1 - GENERAL

##### 1.1 Description

- A. Work Included: Furnish and install a complete radiant slab heating system including, but not limited to, cast iron oil-fired boiler, related piping, valves, thermostats, fuel tank, and accessories.
- B. Related Work Specified Elsewhere
  - 1. Concrete and rigid insulation specified in Section 03300.
- C. Other Trades: The Contractor shall arrange for electrical work as required for the completion of the heat system.

##### 1.2 Quality Assurance

- A. Requirements of Regulatory Agencies: The Contractor shall obtain at no expense to the Owner, all licenses or permits, pay all fees, and comply with all local and state rules and regulations.
- B. Boilers and all work shall be installed in complete accordance with all local, state and federal codes, including the Maine Oil and Solid Fuel Board, the Maine Plumbing Code, and BOCA Mechanical Code.
- C. All work shall be performed by a Maine licensed oil burner installer.
- D. All plumbing work shall be performed by a Maine licensed plumber.
- E. All electrical and control work shall be performed under the supervision of a licensed electrician or other qualified individual who is trained and experienced in the installation and operation of controls.

##### 1.3 Submittals to the Engineer

- A. The Contractor must submit for review within 10 days of the Notice To Proceed:
  - 1. Complete description and data for the materials proposed for the project and major equipment manufacturer's warranties.
  - 2. Calculated heat loss and projected fuel consumption of the system.
- B. Submit complete manufacturer's installation instructions.
- C. Only approved materials will be incorporated into the work.
- E. Contractor shall furnish two (2) additional copies of all Shop Drawings, Specifications, operating manuals, service manuals, parts lists, warranties (completed and submitted) and any other appropriate information for use of the Owner upon completion of the Project. This information shall be in 3-ring binders or similar binding.

##### 1.4 References

- A. All work shall be in accordance with the applicable building codes including, but not limited to the following.
  - 1. ASHRAE American Society of Heating, Refrigerating and Air Conditioning Engineers
  - 2. International Building Code 2003
  - 3. Maine Oil and Solid Fuel Board
  - 4. Maine Plumbing Code
  - 5. BOCA Mechanical Code
  - 6. UL Underwriter's Laboratory
  - 7. NEC National Electric Code
  - 8. ASME American Society of Mechanical Engineers
  - 9. OSHA Occupational and Safety Hazard Administration

##### 1.5 Design Parameters

- A. The contractor shall provide heat loss calculations to show the capacity and output of the boiler. The contractor shall provide a control diagram depicting the temperature control function. There shall be a minimum of one zone for the heating.

## 1.6 Performance Guarantees

- A. The Contractor shall provide a written two year warranty that the heating equipment and controls will provide consistent and adequate heat to the building. The Contractor shall respond in a timely manner to the Owner's service call throughout the warranty period. The Contractor shall provide service and warranty work to all equipment provided at no additional charge to the Owner.

## 1.7 Delivery, Storage and Handling

- A. Delivery: Deliver equipment in manufacturer's original unopened protective packaging or skids as job progress requires.
- B. Storage: Store equipment in original protective packaging so as to keep it clean and free of damage of any nature.
- C. Handling: Handle so as to prevent damage to the equipment during installation and storage.

## 1.8 Job Conditions

- A. The Contractor shall assume full responsibility for the care and protection of all materials and mechanical work until the Project is accepted by the Owner.
- B. Any material damaged or destroyed shall be immediately removed from the premises and replaced with equipment in full compliance with the Specifications without expense to the Owner.

## **PART 2 - PRODUCTS**

### 2.1 Boilers

- A. Boilers shall be sectional cast iron.
- B. Factory assembled.
- C. Wet base construction.
- D. Tappings as required.
- E. 20-year prorated warranty.
- F. Minimum AFUE (Annual Fuel Utilization Efficiency) shall be 84% using Department of Energy testing procedure.
- G. Acceptable manufacturers:
  - 1. Weil-McLain
  - 2. H.B. Smith
  - 2. Buderus
  - 3. Approved Equivalentents

### 2.2 Burner

- A. Arrange for #2 fuel oil.
- B. Flame retention type.
- C. UL labeled.
- D. Acceptable manufacturers:
  - 1. Beckett
  - 2. Carlin
  - 4. Riello
  - 5. Approved Equivalentents

### 2.3 Controls

- A. Complete package as required by NFPA 31 and UL-Listed.
- B. Cadmium sulfide flame detection.
- C. Low water shut-off, flame failure, timed pre-purge, high limit controls.
- D. Temperature reset
- E. Domestic Hot Water Controls

## 2.4 Accessories

- A. ASME relief valve.
- B. Immersion aquastat.
- C. Combination pressure gauge and thermometer.
- D. Drain valve.
- E. Air separator.
- F. Automatic air vent
- G. Breeching
- H. Expansion Tank
- I. Pressuer Reducing Valve
- J. All accessories as required for a complete installation

## 2.5 Circulators

- A. Acceptable manufacturers:
  - 1. Taco
  - 2. B & G
  - 3. Grundfos
  - 4. Approved Equivalentents

## 2.6 Valves

- A. Balancing - B & G Circuit Setter Plus or equivalent.
- B. Zone Control - Honeywell V8043 or equivalent.
- C. Gate - Nibco 7113 or equivalent.
- D. Check - Taco Flo-check or equivalent.
- E. Ball - Honeywell - Braukman B100T, B100S, or equivalent.

## 2.7 Pipe

- A. Pipe shall be Schedule 40 black steel with welded or threaded type fittings or;
- B. Type L copper, ASTM B88, with soldered joints.
- C. Radiant slab piping shall be equivalent to Zurn PEX

## 2.8 Fuel Equipment

- A. Furnish and install 275 gallon painted 12 ga. steel fuel tank complete with legs, gauge, fill cap, vent, whistle, filter, and firematic safety valve.
- B. Provide 1/2" OD type L copper oil line. Attach with plastic-covered clips, use flare type fittings.
- C. Fill and vent piping shall be black steel.

## 2.9 Electrical

- A. Provide transformers, relays, low voltage wiring, line voltage wiring, and other items as required for a complete system.

## 2.10 Controls

- A. Provide thermostat equivalent to Honeywell T-87 with a locking plexiglass cover.

## **PART 3 - EXECUTION**

### 3.1 Installation

- A. Install all equipment in accordance with manufacturer's directions.
- B. Install unions and stop valves on each side of each piece of equipment.
- C. Tie piping to bottom layer of mesh in concrete slab. Maintain constant air pressure in piping while pouring concrete floor. Lay radiant piping in the longest loops allowed by the system manufacturer. Terminate all

- piping in a manifold located as shown on the Drawings and as approved by the Department.
- D. All work shall be straight and neat.
- E. Provide adequate expansion loops in mains and offsets in branch lines to account for thermal expansion.

### 3.2 Start-up

- A. Make all adjustments to proportion water flow to within 10% of specified. Mark the position of all balancing valves.
- B. Operate all equipment in the presence of the Engineer and Owner. Provide training to Owner's Representative in operation and maintenance of all equipment and controls.
- C. Perform a full test on the boiler, adjust all equipment to maximize efficiency and provide a written efficiency test report.
- D. Provide three (3) copies of the balancing report to the Owner and Engineer.

**END OF SECTION**