ENVIRONMENTAL ENGINEERING/
REMEDIAL DESIGN SERVICES
(BILLING RATE)
R 12/16/13

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET

This contract authorizes the professional services contractor to provide professional services. (Authority: 1984 PA 431)

CONTRACT FOR PROFESSIONAL SERVICES: Billing Rate – Not To Exceed

THIS CONTRACT, authorized this _____ day of _____ in the year two-thousand and thirteen (2013), by the Director, Department of Technology, Management and Budget, BETWEEN the STATE OF MICHIGAN acting through the FACILITIES AND BUSINESS SERVICES ADMINISTRATION, DESIGN AND CONSTRUCTION DIVISION of the DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET, 7150 Harris Road, General Office Building 3B, Dimondale, Michigan, 48821, hereinafter called the Department, and

PSC NAME
ADDRESS
CITY, STATE ZIP

the Prime Professional Services Contractor, hereinafter called the Professional,

WHEREAS, the Department proposes securing professional services FOR THE FOLLOWING PROJECT:

Project Name & Description	Contract Amount $_____
Index No. INDEX NO.	Contract Order No. YNO.
File No. FILE NO.	Contract End Date:_____

NOW THEREFORE, the Department and the Professional in consideration of the covenants of this Contract agree as follows:

I. The Professional shall provide the professional services for the Project in the study, design and construction administration, Phase and Task sequence provided in this Professional Services Contract and to the extent authorized by the Department of Technology, Management and Budget Facilities and Business Services Administration (FBSA), Design and Construction Division (DCD) [The Department], and be solely responsible for such professional services. The Professional's services shall be performed in strict accordance with this Contract and be in compliance with the Project/Program Statement.

II. The State of Michigan shall compensate the Professional for providing their professional services for the Project in accordance with the conditions of this Professional Services Contract.

IN WITNESS, WHEREOF, each of the parties has caused this Professional Services Contract to be executed in blue pen and ink by its duly authorized representatives on the dates shown beside their respective signatures, with the Contract to be effective upon the date on which the Professional received a copy executed by the authorized State of Michigan representative(s) by regular, registered, or certified mail or by delivery in person.

FOR THE PROFESSIONAL:

_____ _____
Firm Name Federal Identification (I.D.) Number

_____ _____
Signature, Date

_____
Title

FOR THE STATE OF MICHIGAN:

_____ _____
Director, Department of Technology, Management and Budget Date

SAMPLE

WHEREAS, this Professional Services Contract constitutes the entire agreement as to the Project between the parties, any Contract Modification of this Contract and the Department's approved and attached Project/Program Statement scope of work requirements must be in writing, signed by duly authorized representatives of the parties, and shall be in such format and detail as the State may require. No Contract Modification may be entered into to compensate the Professional for correcting, or for responding to claims or litigation for, the Professional firm's final design Contract Documents/architectural and engineering design errors, omissions or neglect on the part of the Professional.

ARTICLE I
PROFESSIONAL SERVICES SCOPE OF WORK

The Professional shall provide, without exception, every professional, scientific, technical, and environmental discipline, staff and support personnel, along with all supplies, equipment and testing apparatus, and all other specialized personnel, services necessary to achieve the Project scope of work as described in the attached Project/Program Statement, in the best interest of the State, and be within the Professional's fee(s) herein authorized by the State. Project services shall comprise, without exception, every professional discipline and expertise necessary to meet all the requirements as described in the Project/Program Statement and be in accordance with the industry-accepted standard requisites for professional practice and services. The Professional's services include attendance at all Project related meetings and conferences. Professional services for this Project shall be provided in the Phase/Task sequence shown below and shall be rendered in accordance with the Professional's attached Project Study, Design, and Proposed Construction Schedule. The Professional's study, design, and proposed construction schedule shall be detailed, undated, and time sequence related for all Phase/Task services appropriate for the Project. The Professional shall field-check and verify the accuracy of all drawings and any data furnished by the Department, the State/Client Agency or any other Project related source. The Professional is ineligible to bid on the construction work of any Bidding Documents produced under this Contract. The Professional shall not employ or consult with any firms in completing the Professional's obligations herein who it anticipates will be a construction Bidder or supplier for the Project or any part thereof, unless specifically authorized, in writing, by the Department. The Professional acknowledges that the Department is the first interpreter of the Professional firm's performance under this Contract.

This Contract will remain in effect for three (3) years from the date of Contract award, but may be unilaterally terminated by the State of Michigan at any time, for cause or its convenience, by written notification of the State, to the Professional. Furthermore, this Contract may be extended for one (1) additional year, at the sole option and discretion of the State upon the Department providing written notice to the Professional prior to the expiration of the original three (3) year Contract time period. Any such time extension shall be subject to the terms and conditions of this Contract, including, but not limited to, the existing hourly billing rates included in this Contract for the Professional, their Consultant, and their employees or agents.

The Professional acknowledges by signing this Professional Services Contract, having a clear understanding of the requested Project and of the professional study, design, and construction administration services required by the Department to provide it, and further agrees that the terms and conditions of this Professional Services Contract provide adequate professional fee(s) for the Professional to provide the requested Project. No increase in fee to the Professional will be allowed unless there is a material change made to the Project as described in the attached Project/Program Statement and the change in scope to the Project/Program Statement is accepted and approved in writing, by the Department, Project Director, and the Professional. Professional services shall not be performed and no Project expenses shall be incurred prior to the issuance of a written and signed Professional Services Contract and a Contract Order authorizing the Professional firm to start the Project work on-site. Compensation for Department directed changes to the Project or modifications to the Project work will be provided to the Professional by a Contract Modification and/or Contract Change Order signed by the Department and the Professional.

The assignment of, or continuation of any assigned Project work is conditional upon satisfactory performance for the Department. All on-site management and supervisors directly responsible for, or who shall supervise personnel engaged in, hazardous waste operations shall have successfully completed the Department of Environmental Protection Agency's, Safety Training Program in accordance with the requirements of the General Industry Standards, 29 CFR 1910.120. The Professional shall provide a Health and Safety Plan (H.A.S.P.) before implementation of the approved Project work plan. Response to the assigned Project scope of work shall begin no later than two (2) business days from the date of written notification of the Department's need for Professional services. Where authorized, elsewhere in this Contract, the Professional may provide testing services, with a Department approved, and fully qualified laboratory on an authorized reimbursable expense basis.

The Professional shall reference current State of Michigan, federal statutes, and current administrative rules when implementing response activities or corrective actions at the sites with environmental contamination to comply with the current requirements of the Department of Natural Resources Environmental Protection Act (NREPA), 1994 PA 451, as amended.

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Soil Erosion and Sedimentation Control in the State of Michigan is regulated under the 1994 Public Act 451, as amended – The Natural Resources Environmental Protection Act, Part 91 – Soil Erosion and Sedimentation Control. Soil Erosion and Sedimentation Control associated with this Contract will be monitored and enforced by the Department.

The Professional shall reference current operational memoranda including the Tier 1 Risk-Based Screening Levels (RBLSs) look-up tables, the current edition of the American Society for Testing and Materials (ASTM), Standard Guide for Risk-Based Corrective Action (RBCA), E1739-95 including the policy decisions made to customize the standard Guide for Risk-Based Corrective Action process into a State of Michigan specific process and the General Guidance for Evaluating and Characterizing Petroleum Releases documents issued by the Department of Environmental Quality as needed to assist in implementing the corrective action activities undertaken under Part 213 of the 1994 PA 451, as amended.

For sites with activities undertaken under Part 201 of the 1994 PA 451, as amended, the Professional is required to refer to the operational memoranda including Part 201 Generic Clean-up and Screening Levels and the Training Material issued by the Department of Environment Quality, as needed to determine whether a remedial plan/response activity complies with the requirements of Part 201 of the 1994 PA 451, as amended.

The Professional shall immediately inform the Department whenever it is indicated that the Professional firm's authorized Project not-to-exceed Budget cost may be exceeded. The Professional shall make recommendations to the Department for revisions to the Project to bring the Project Cost back to the Professional firm's original authorized Budget amount. Any revision to the Project must be accepted and approved by the Department in writing.

The professional services may also include participation in legislative presentations as described in the "Major Project Design Manual for Professional Services Contractors and State/Client Agencies" and as the legislature or the Department may prescribe.

No substitution of any "Key Principal Personnel/Employee" essential for the successful completion of the Project and identified in the Professional's attached Project Organizational Chart will be allowed by the Professional for this Contract without the prior written consent from the Project Director. Before any "Key Principal Personnel/Employee" substitution takes place, the Professional shall submit a written request to the Project Director, and this substitution request shall include the following information: (1) A request in writing for a No Cost Contract Modification; (2) Detailed written justification for this substitution; (3) The Professional's qualifications of any proposed "Key Principal Personnel/Employee" replacement; and (4) A written statement from the Professional assuring the Department that the Project scope of work will not be adversely affected by this substitution. This request to modify their Professional Services Contract must be accepted and approved in writing by the Project Director and the Director of the Department.

The Department will designate an individual to serve as the Project Director for the Project scope of work who shall be fully acquainted with the Project/Program Statement and have the authority to render Project decisions and furnish information promptly. Except in connection with issues under the Article XII - Contract Claims and Disputes text, the Project Director will exercise general management and administration for the Professional's services in so far as they affect the interest of the State. The Professional shall indemnify, defend, and hold harmless the State against exposure to claims arising from delays, negligence, or delinquencies by the Professional for the professional services of this Contract.

During the study, design and construction Phase administration of this Project, the Professional shall be required to complete and submit the on-site inspection record form document titled "DMB-452, The Professional firm's Inspection Record" for all on-site Inspection visits to the Project site. The Professional firm's Inspection Record document shall be completed and signed by the Professional and compiled monthly with the original form document sent to the Project Director and copies sent to the State/client Agency and Construction Contractor. The Professional's Inspection Record shall be completed and accompany the Professional firm's monthly submitted payment request.

The "DMB-460, Project Procedures" documents package containing Department forms for use during construction administration shall be used by the Professional in the administration of this Contract.

All Project professional services will be consistent with the Department's current "Major Project Design Manual for Professional Services Contractors and State/Client Agencies" unless otherwise approved in writing by the Department.

The professional services required for each Phase of this Contract shall be performed by the Prime Professional and their Consultants in accordance with service descriptions in this article. The following service descriptions outlined in this Contract represents the Department's standard of care method for describing the Professional's responsibilities for providing the professional services of this Contract, but by inclusion, or omission, do not limit or exclude any regular or normal professional services necessary to accomplish the Project, in full compliance with all applicable safety and health regulations and be in accordance with the approved Project Budget and the best industries accepted requisites for professional practice, occupational safety, and health standards. However, all of the services outlined in this Contract may or may not be applicable to the Project/Program Statement and will require the Professional to identify

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only the services that are applicable for the Project at hand. The Professional shall determine and coordinate the interface of the services required for the Project and be responsible for identifying any additional services necessary to successfully complete the Project.

Should litigation occur as a result of this Project, only if through no fault of the Professional, the Professional firm shall be compensated by the Department on an actual hourly billing rate basis at the rate set forth in this Contract by a Contract Modification and/or Contract Change Order, if required to assist the Department of Attorney General, State Affairs Division in providing the professional services necessary during the course of litigation.

The following professional services, if they become necessary and essential for completing the Project, will be individually rendered by the Professional, only upon specific written authorization by the Department and the Project Director to the Professional and for the purpose, and to the extent so authorized.

LITIGATION: The Professional shall provide all information, presentations, depositions, testimony as "expert witness", and similar or related services, on behalf of the Department, as may be required in relation to the professional services of the study, design and construction of this Project.

ACCOUNTING: The Professional shall provide all specialized categorizations and distributions of the costs of study, design and construction services, construction costs, and operational costs, as may be required according to specified parameters.

PUBLIC AWARENESS: The Professional shall provide all design and construction related services to assist in, and make presentations of the professional services of the study, design, construction and operational aspects of the Projects as may be required for public meetings, hearings, and similar informational activities.

PHASE 100 - ENVIRONMENTAL INVESTIGATION/STUDY SERVICES

Provide complete and comprehensive site and/or facility surveys, environmental engineering investigation/study services and analysis/reports thereof with itemized construction cost estimates to define the environmental circumstances of various sites, buildings and/or structures based upon the Department's Project/Program Statement scope of work requirements to fulfill the following purposes:

Task 101 COORDINATION: Meet with the Project Team consisting of a representative of the Department, the State/Client Agency, and other enforcing agencies having Project jurisdiction, and others as considered appropriate by the Department. Soil Erosion and Sedimentation Control associated with this Contract is supervised and enforced by the Department of Technology, Management and Budget, Facilities Administration, Soil Erosion and Sedimentation Control Program. Define all areas of the Project scope of work investigation. Establish Project Team responsibilities and lines of communications. Present study documents to the State/Client Agency and Department for their review at the 50 percent and 90 percent completion intervals and at such other times as the Department deems necessary to completely develop and monitor the Project scope of work. Preside at all Project related meetings. Prepare and distribute to the Project Team, copies of minutes of all meetings, reports of site visitations, correspondence, memoranda, telephone, and other conversations or communications. Where essential or significant information is established or evaluated and/or critical decisions are made, distribute copies to the Department and participants within two (2) business days of the date of occurrence, otherwise meeting minutes shall be distributed within five (5) business days. Provide five (5) additional copies and distribute as the Department may direct.

Task 101.01 Organize, facilitate and attend periodic workshops at the direction of the Department, coordinate the various agencies involved in the Project and assist in preparing responses to the Potential Responsible Parties (PRP's) documents, proposals and positions.

Task 102 PHASE I - SITE ASSESSMENT: Conduct a Phase I - Site Characterization Assessment of the Project site, its buildings and/or structures, and the natural environment. The survey shall be performed, and reported, in accordance with the current edition of the American Society for Testing and Materials (ASTM) standard practice for **E1527-05** Environmental Site Assessment, the instructions for which are part of this Contract and its specifications. The subjects of investigation within the text of this standard practice guide shall be supplemented with such other topics of investigation as may be necessary, and appropriate, to completely describe the Project site. Upon finding any definitive indication of possible defect, or reaching any conclusion that a Phase II Site Assessment Investigation is necessary, photographs and additional site assessment investigations and sampling shall be performed while on-site, using manual and portable power tools and equipment.

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Task 102.01 PHASE II - SITE ASSESSMENT: Upon receiving the Department's written authorization, conduct the Phase II - Site Assessment Investigations to evaluate potential defects identified in the related Phase I - Site Characterization Assessment. Submit a summary report of the Phase II - Site Assessment Investigation in accordance with the Task 110 Report format.

Task 102.02 SITE CLASSIFICATION: Determine which classification scenarios (Class 1 through Class 4) fit the Project site based on their threat to human health, safety or sensitive environmental receptors in accordance with the Department of Environmental Quality operational memoranda and the American Society for Testing and Materials, Standard Guide for Risk-Based Corrective Action process for sites under Part 213 of the 1994 PA 451, as amended.

Task 103 INITIAL RESPONSE INVESTIGATIONS: Conduct such on-site investigations as may be necessary to assess any potential for, verify the occurrence/circumstance of, and Project the implications of, fugitive contamination. Except as may be otherwise directed by the Department, the following work of this Task shall be commenced within twenty-four (24) hours of Project authorization by the Department:

A. Perform site surveys and site investigations to identify, and initially assess, the extent of uncontrolled toxic/hazardous materials at the Project site. Conduct site Inspections to detect any immediate hazard to public health, safety, and welfare. Prescribe and oversee implementation of measures to arrest, stabilize, contain, and negate or remedy such hazards. In circumstances posing risk of fire, explosion, or release of toxic materials to the atmosphere, develop contingency response procedure plans for the affected area. Prepare submittals, and provide all information necessary to secure the approval of the State and the local disaster preparedness authority having governing jurisdiction at the Project site.

B. Recommend procedures for the safe execution of the affected State/Client Agency functions, consistent with the character and impacts of the site contamination. Provide appropriate information for notifications to personnel impacted by the site contamination, and/or for the Department of Environmental Quality's use in its public information program regarding the site contamination. Provide no statements to State/Client Agency staff, wards of the State, inmates, news media, or the public, regarding any circumstance of the site contamination.

C. Provide, on the Department's behalf, the appropriate notifications to the Department of Environmental Quality and the local and State government agencies and identify any reportable quantities of hazardous materials that may have been released, as required by the 1994 PA 451, as amended. Provide reports required by the 1994 PA 451, as amended, and make all other required notifications to the respective enforcing agency(s). Prepare and provide the initial response investigation(s) reports for this Task, in accordance with the Task 110 Report format or the format required by the enforcing agency.

D. Provide initial response services including emergency response to a new spill or source area at the request of the Department of Environmental Quality.

Task 104 PRELIMINARY SITE INVESTIGATION: Conduct the following on-site Inspections, and research, as appropriate, to define the Project site and the circumstances of the site contamination:

A. Identify and analyze the character, use, history, construction, utilities, and all other pertinent built and natural features of the site, and those within any proximate area which may be impacted by, subject to, responsible for, or contributory to, fugitive contamination. Secure, for reference, all site maps utility/building/structural drawings, well/boring records, surveys, any enforcement records, and all other applicable data. Conduct additional on-site surveys and investigations as necessary to adequately define and depict the Project site. Identify all known, and suspected, contaminants and those that may be predictable from previous site usage.

B. Conduct an evaluation of the existing data based on preliminary site data and the characteristics of the contaminants, and to the extent that reasonable predictions can be made, project the source(s), routes, and consequences of active contamination and inspect for indications thereof. As applicable, prepare and submit, on the Department's behalf, a site characterization plan in accordance with the 1994 PA 451, as amended. Prepare and provide preliminary site investigation report(s) for this Task in accordance with the Task 110 Report format requirements.

C. Conduct Tier 1 Assessment for sites under Part 213 of the 1994 PA 451, as amended. Gather site assessment data on source characterization, potential for exposure and degradation of beneficial uses and extent of contamination. Evaluate Tier 1 results for no action, final corrective action, interim corrective action or tier

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upgrade-further analysis. Prepare and provide the ninety (90) calendar day initial assessment report in accordance with the report format required by the Department.

Task 105 PROJECT WORK PLAN: Prepare a complete, cost effective, viable, and efficient, work plan to determine the extent and degree of environmental contamination at the Project site.

A. The work plan shall be consistent with the Department's Project/Program Statement scope of work and the governing enforcing agency's guidelines for preparation of Project work plan(s). Incorporate the Project specific adapted Project Health and Safety Plan and Quality Control/Quality Assurance Plan of Tasks 602 and 603 and the cost and schedule estimate of Task 108 and Task 109. Summarize the preliminary site investigation findings of Task 104. Develop an appropriate program of sampling and other specialized, nondestructive, investigations to adequately characterize the Project site with respect to geologic, hydrogeologic, hydrologic, topographic, surface and ground water, soil, sediment, air quality, biota, demographics, and other parameters influencing, or, influenced by the contaminants, and/or affecting the vertical and horizontal dispersal and intensities of contaminants, and the migration of the same. Support each line of site investigation with the logic and principals underlying and being applied to define test indicators, detection levels, expected background levels, and the prescribed Project work.

B. Where Project site sample analysis is to be by other than the Professional firm's own staff, or subcontracted laboratory, the work plan shall include, as appendixes, a listing of the type, method, and number, of environmental tests to be performed and an inventory of all sampling supplies required. The work plan shall be objectively composed and shall not identify the Professional, by name, as performing any part of the work plan. This document shall be so comprehensive, definitive, clearly presented, and self-contained, that the intended work may readily be competitively bid from that document. Review the work plan with the Project Team and revise as required. Where the Project requires, submit the work plan in accordance with the 1994 PA 451, as amended. Submit the work plan and report in accordance with the Task 110 Report work plan format requirements.

Task 106 REMEDIAL INVESTIGATION/SITE ASSESSMENT: Direct, or as appropriate supervise, the Phase 600 and 700 related Tasks of this Contract for site specific surveys, sampling and subsurface investigations as necessary to fully identify and/or monitor the circumstances of contamination.

Task 106.01 Conduct all site investigation work in accordance with the requirements of the accepted Project work plan (and such extensions and modifications thereof as the governing enforcement authority may require), and with the Project schedule. Notify the Department and the governing enforcing agency of all sampling with adequate advance notification to allow for their participation.

Task 106.02 Provide a summary report of all findings and determinations. Include and analyze the results of all laboratory testing. Conduct dispersion modeling as appropriate. Identify and define all geological parameters having influence. Depict the results of all data to graphically show the location(s), vertical and horizontal extent, profiles, and intensities of the site contamination, any plume orientation/rate of dispersion, and the characteristics of any impacted soils and surface/ground water. Identify all computer programs used to reduce, analyze, and otherwise use data. Analyze and provide a risk assessment of the site contamination consistent with the United States Environmental Protection Agency (USEPA) and the Department of Environmental Quality criteria. The finalized report shall be sufficiently objective, comprehensive, and inclusive that no other reference will be required to understand the circumstances of the site contamination, determine the appropriate method of remediation, and submit proposals for its design. Submit the remedial investigations reports in accordance with the Task 110 Report format requirements.

Task 106.03 Conduct Tier 2 Assessment: Upon receiving the Department's written authorization, to consider site-specific target levels (SSTLs) and appropriate points of compliance in accordance with the Department of Environmental Quality operational memoranda and the American Society for Testing and Materials, Standard Guide for Risk-Based Corrective Action process. Evaluate the results of Tier 2 for no action, final corrective action, interim corrective action or tier upgrade. Provide a summary report of the Tier 2 assessment in accordance with the report format required by the Department of Environmental Quality.

Task 106.04 Conduct Tier 3 Assessment: Where the Project requires under Part 213 of the 1994 PA 451, as amended. Upon receiving the Department's written authorization, conduct Tier 3 assessment to consider a more refined site-specific target levels to improve the accuracy of the applicable models in accordance with the Department of Environmental Quality operational memoranda and the American Society for Testing and Materials, Standard Guide for Risk-Based Corrective Action process. Evaluate the results of Tier 3 for no action, final corrective action or interim corrective

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action. Provide a summary report of the Tier 3 assessment in accordance with the report format required by the Department of Environmental Quality.

Task 106.05 Conduct A Site Characterization: By collecting sufficient data to understand source area(s), define the nature and extent of contamination, understand contaminant transport and exposure pathways and design a remediation system. Conduct a feasibility study to select a viable and most economical remedial alternative for implementation as a corrective action plan at the site. Prepare the final assessment three-hundred and sixty-five (365) calendar day report. Prepare a closure report for the sites qualified for closure under Part 213 of the 1994 PA 451, as amended. Provide the reports in accordance with the report format required by the Department of Environmental Quality.

Task 106.06 BUILDINGS/AIR QUALITY: Define and conduct the appropriate testing program to confirm and/or establish the existing baseline/ambient air quality for the site/building(s)/facility and to identify any level(s) of contamination therein.

A. Determine the local air quality as reported by most current air quality report of the Department of Environmental Quality, Air Quality Division. Such program shall consist of one (1) or more sampling stations on-site and upwind of buildings. Within buildings and structures, identify and sample appropriate areas of homogeneous use, common air supply/return/circulation. Provide a minimum of three (3) samples per area known to contain hazardous materials or sources of contamination as well as one (1) or more representing the main ventilation system air return within each mechanical room, boiler room, and utility tunnel, at all open space or above ceiling plenums, and at such other locations as may represent quantifiable areas having common air supply or circulation characteristics.

B. Present test results in comparison to standard limits of concentrations allowed and/or recommended by the Department of Community Health, the Department of Environmental Quality, the Michigan Occupational Safety and Health Regulations, and the United States Environmental Protection Agency. Present findings in such format as the Department may prescribe. Verbally notify the governing enforcing agency and the Department of any test results exceeding allowable limits and confirm notice in writing. Provide a summary testing report in accordance with the Task 110 Report format requirements.

Task 106.07 HAZARDOUS MATERIALS: Define and conduct an appropriate bulk sampling program for suspected toxic/hazardous materials and/or for waste characterization.

A. ASBESTOS: Assess all asbestos containing materials and provide a management plan and operating/maintenance program in the following format:

(1) Assessment.
(2) Management Plan.
(3) Operations and Maintenance Program.

Task 107 RISK ASSESSMENT: Provide support to the Department to determine ecological and human health risks at the site due to the presence of contaminants. Conduct statistical analysis and data evaluations to support risk assessment. The Professional will evaluate site specific data on a reach by reach basis to develop statistically significant relations of contaminants, to the extent that the data allow.

Task 107.01 ECOLOGICAL RISK ASSESSMENT: Provide support to the Department to determine risks posed by contaminants at the site. Evaluate the studies, analysis, models and comments on the Ecological Risk Assessment provided by the Potential Responsible Parties (PRPs) and the United States Environmental Protection Agency (USEPA) and prepare a response to address the issues/comments.

Task 107.02 HUMAN HEALTH RISK ASSESSMENT: Provide support to the Department to determine risks posed by contaminants at the site to humans. Evaluate the studies, analysis, models and comments on the Human Health Risk provided by the PRPs and USEPA and prepare a response to address the issues/comments.

Task 108 PROJECT COST: Provide itemized construction cost(s) estimates for each Project and maintain current, the estimated cost for, and expenditures of each Task of each respective Phase. In addition to remediation costs, such costs shall include, and specifically identify, all professional, testing, construction, and remediation costs, as well as any costs to maintain the State/Client Agency facility operations. Project cost analysis shall consider funding sources availability, and all steps of the Project Budget and appropriation processes and similar allocation processes affecting

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funding availability. Such availability shall be compared to projected cash flows. Where any cost is projected to occur over more than one (1) fiscal year, the estimate shall reflect annual costs.

Task 109 PROJECT SCHEDULE: Provide and submit for the Department's acceptance, and maintain current for each Project, a schedule for the events of Tasks 104, 105, 106, and 107. The schedule format will be prescribed by the Department. This schedule shall include the procedural steps of Project Budget submittal, legislative appropriation, and the allocation and release of funds. Project schedules shall be in total compliance with the requirements of any court order(s), consent agreement(s) or other governing directive(s). Prescribed, agreed upon, or historically reasonable schedule times shall be included for reviews and approvals by the governing enforcing agency and for budgetary processes. Such schedules shall be provided in undated unit time durations (day(s), week(s), month(s), etc.) Project schedule dates will be incorporated when approvals or other written orders to proceed become known. Adherence by the Professional, to the Project's accepted schedule time/duration is a condition for satisfactory performance of this Contract.

Task 110 PROJECT STUDY REPORTS: Submit weekly written reports for the work of Tasks 103, 104, 106, and 107 (or as the Department may require) which briefly summarize the on-site field investigation activities, findings, significant decisions, and accomplishment of the preceding period. These reports shall transmit and summarize the findings of the on-site field investigation reports of the Phase 700 Project Tasks. Give notice of identified, or anticipated, problems which require response by the Project Team. Project study reports shall identify any significant deviations from the accepted Project work plan, itemized construction cost estimate, or schedule, and provide explanations of the same.

A. Submit the Task 102, draft, preliminary, and final versions, of the Project written report in accordance with the current edition of the American Society for Testing and Materials (ASTM) standard practice for E1527-05, Environmental Site Assessment and as outlined in the Department's Project/Program Statement, and the summary reports of Tasks 102, 103, 104, 106, and 107 as the Department may require. Prepare all revisions thereto as the Project Team may deem necessary to produce complete and acceptable report documents. The draft, preliminary, and final reports of Tasks 102.01, 103, 104, 105, 106, and 107 shall be as required by the governing enforcing agency or the Department, as appropriate, and shall include as a minimum the following items:

1. Problem
2. Conclusion
3. Recommendations
4. Discussion, details, and documentation

B. Provide copies of the finalized work plan of Task 105 and summary reports of Tasks 102, 103, 104, 106, and 107 as necessary for submittal to the governing enforcing agency and the Department, along with one (1) camera-ready original, suitable for legible reproduction. In addition, copies of the work plan, and all study reports of this Phase shall be provided to the Project Team members along with up to five (5) additional copies to be distributed as the Department may direct. Provide the Department copies of all electronic/computer data records generated for the Project scope of work, suitable for reapplication to the Project by others.

C. When directed by the Department, submit the Project work plan and reports to the governing enforcing agency on the Department's behalf. Monitor the progress of the approval process. Attend all Project related meetings, make presentations, explain all submitted technical data and proposals, provide and submit such amending information, and make such revisions, as may be necessary for the governing enforcing agency's evaluation and approval of the Project work plan and report. Provide environmental investigation/study presentations as indicated in the Project scope of work plan for Department acceptance and incorporate all study review comments required for Department written acceptance of the Project program analysis report. Provide one (1) acceptable environmental investigation/study presentation to the Project Team for this Task. Any additional environmental investigation/study presentations requested by the Department will be considered extra professional services and the additional environmental investigation/study costs will be paid to the Professional firm by the Department with a Contract Change Order.

Task 111 DATA MANAGEMENT: Review data submitted by the PRP to determine completeness, integrity, and comparability to other data sets. Develop and manage a comprehensive database to allow the Department access to all electronically submitted data. Run queries on the data at the direction of the Department's Project Director to support the Department's analysis and decision making processes. Review and validate data submitted by the PRP on quarterly basis. Provide data queries, maps, and associated summaries as requested by the Department.

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Task 112 DOCUMENT MANAGEMENT: Provide services to the Department to organize, log, maintain document database, and manage the documents associated with the administrative records for the site. Assist the Department in locating, copying, and distributing documents as requested through the Freedom of Information Act or as otherwise requested by the Department of Environmental Quality.

PHASE 200 - PROGRAM ANALYSIS

Amplify the Department's Project/Program Statement scope of work requirements and Phase 100 – Study, Final Report to embody the physical, functional, and programmatic relationships required to achieve the Project scope of work objectives. The proposed resultant analysis, when accepted and approved by the Department, shall amend the Project/Program Statement to comprise the general scope of work requirements of the Project. Such acceptance does not limit subsequent inclusion of minor, but essential, programmatic or design details whose necessity and arrangement may best become apparent during subsequent Phases of the environmental/remedial, architectural and/or engineering design development evolution.

Task 201 COORDINATION: Meet, as required, with representatives of the Department and other State/Client Agencies who, along with the Professional, comprise the Project Team. Soil Erosion and Sedimentation Control associated with this Contract is supervised and enforced by the Department of Technology, Management and Budget, Facilities Administration, Soil Erosion and Sedimentation Control Program. Assist the Project Team to finalize the attached Project/Program Statement and Phase 100 – Study, Final Report to completely define the proposed Project scope of work, and to establish lines of communication, authority, and responsibility and to establish a method for the State/Client Agency's to formally sign-off on the respective data input, the program analysis thereof and appropriate elements of the resultant design. Present proposed program analysis documents to the State/Client Agency and the Department for their review at the 50 percent and 90 percent completion intervals and at such other times as the Department or other State/Client Agencies deems necessary to completely develop and monitor the Project scope of work. Preside at all Project related meetings. Prepare and distribute to the Project Team, copies of minutes of all meetings, reports of on-site visitations, correspondence, memoranda, telephone, and other conversations or communications. Where essential or significant information is established or evaluated and/or critical decisions are made, distribute copies to the Department and participants within two (2) business days of the date of occurrence, otherwise meeting minutes shall be distributed within five (5) business days. Provide up to five (5) additional copies and distribute as the Department or other State/Client Agencies may direct.

Task 202 ANALYSIS: Identify and develop data to evaluate and clarify the proposed Project scope of work. Analyze the concepts as described in the Department's Project/Program Statement scope of work requirements and Phase 100 – Study, Final Report through discussions with the Project Team and establish the functional objectives of the State/Client Agency's program and operational needs, as well as operational factors, maintenance and other support features. Provide all additional research, studies, and analysis necessary to express such objectives and requirements in terms of a fully operable Project which will acceptably serve its intended use.

Task 203 DEVELOPMENT: Correlate, describe, and by appropriate Project scope of work environmental engineering tables, graphs, and drawings (on 24-inch by 36-inch or 30-inch by 42-inch mylar sheets, or sheet size approved in writing by the Department), transcribe and consolidate all existing data, studies and the analysis of Task 202 into a comprehensive report summarizing spaces, physical features, systems, functions, capacities, relationships, and interactions to be achieved by the proposed Project scope of work requirements. Selection of remedial alternatives shall be consistent with the Department's Project/Program Statement, Phase 100 – Study, Final Report and Project Budget. Revise program development design as may be required to achieve the Project scope of work objectives and incorporate review comments by the Project Team.

Task 209 PROJECT COST ESTIMATE: Provide an itemized cost estimate of the proposed Project program analysis/design based on the Department's Project/Program Statement scope of work requirements, Phase 100 – Study, Final Report and the program analysis/physical, functional, and programmatic relationships review and development. Verify to the Department, in writing, that the Professional firm's review of the Department's Project/Program Statement requirements, Phase 100 – Study, Final Report and the program analysis, and the legislatively approved Project Budget for the Project is adequate to achieve the proposed Project program analysis/design scope of work objectives. Revise proposed program analysis/design documents as necessary to provide an acceptable design within the Department's authorized Project Budget.

Task 210 PROGRAM ANALYSIS REPORT: Submit ten (10) copies of the proposed program analysis report to the Department, along with one (1) camera-ready original and an electronic copy suitable for legible reproduction. Provide one (1) acceptable presentation to the Project Team for this Task. Any additional program analysis

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presentations requested by the Department will be considered extra professional services and the additional program analysis costs will be paid to the Professional firm by the Department with a Contract Change Order.

PHASE 300 - SCHEMATIC/DESIGN DEVELOPMENT

Provide and/or confirm feasibility comparisons of options for Project site remediation and develop the environmental remedial design/performance parameters of the remediation system/process to be produced and/or used based upon the **Department's** Project/Program Statement scope of work requirements.

Task 301 COORDINATION: Meet with the Project Team consisting of a representative of the Department, the State/Client Agency, the Department of Environmental Quality and other governing enforcing agencies having Project jurisdiction, and others as considered appropriate by the Department. Soil Erosion and Sedimentation Control associated with this Contract is supervised and enforced by the Department of Technology, Management and Budget, Facilities Administration, Soil Erosion and Sedimentation Control Program. Define all areas of Project site investigation. Establish Project Team responsibilities and lines of communications. Present proposed schematic design documents to the State/Client Agency and Department for their review at the 50 percent and 90 percent completion intervals and at such other times as the Department deems necessary to completely develop and monitor the Project scope of work. Assist in obtaining data and timely decisions. Immediately notify the Project Team members of any unfulfilled commitments by the Department's Project personnel to provide any Project data and/or decisions necessary to perform the Project Phase/Tasks scope of work requirements. Determine and resolve any requirement for maintaining operation of current State/Client Agency facility, spaces, or systems. Preside at all design related Project meetings. Prepare and distribute to the Project Team, copies of minutes of all meetings, reports of site visitations, correspondence, memoranda, telephone, and other conversations or communications. Where essential or significant information is established or evaluated and/or critical decisions are made, distribute copies to the Department and participants within two (2) business days of the date of occurrence, otherwise meeting minutes shall be distributed within five (5) business days. Provide up to five (5) additional copies and distribute as the Department may direct.

Task 302 COMPARATIVE REMEDIATION: Develop, and present for the Project Team's review and acceptance an analysis of options for appropriate interim and long-term site remediation which compares them with the Professional firm's recommended approach. All methods considered shall provide a cost effective balance of environmental engineering design feasibility, technologies, equipment, historical performance of similar systems, effectiveness, impact on State/Client Agency operations, public health risks, environmental effects, implementation and life cycle costs, and length of site remediation time, plus all other parameters as the Project Team may require.

Task 303 SCHEMATIC PRESENTATION: Define and outline the character and features, and the design, construction, and operation, of the Project's site remediation system or process.

A. Where the accepted option involves an in-situ processes and/or environmental engineered plants, facilities, or systems, provide schematic diagrams and written explanations to show the scientific and environmental engineering theories, technical principals, and operating parameters. Outline the historical performance of such systems. Proprietary systems may be used only where the effectiveness, cost, and site remediation time are all superior to other approaches and with these being "equal," systems produced in the State of Michigan shall be named and given first preference.

1. Show the proposed State/Client Agency facility/system relative to the site contamination, the site, local environmental projects, all existing on-site operations, surface waters, wetlands, traffic patterns, adjacent properties and land-use, and all other features and factors affecting, and affected by, the proposed operation. Identify the place and means of all disposal of contaminated material.

2. Identify, provide the program for, and submit written justification of any proposed construction, implementation, and/or operation of any specialized equipment, systems, test runs, pilot plants, computer modeling, or any other experimental or developmental work.

3. Specify all required construction and environmental permitting. Define the Project site clean-up and closure criteria.

B. Where the accepted option involves the removal and/or replacement of structures or parts thereof, soils, or any other material, define the scope of work/volume thereof. Identify the available means and methods for treatment or disposal and the locations thereof. Define the Project site clean-up and closure criteria. Specify all Project required permitting.

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Task 304 REMEDIAL ACTION PLAN: Prepare a complete, cost effective, viable, and efficient remedial action plan for the development, design, construction implementation and operation of the Project's site remediation system/process. Incorporate the amended Health and Safety Plan, and the Quality Control/Quality Assurance Plans of Tasks 602 and 603, cost and schedule estimates of Task 300 and Task 309, and the outline approach of Task 303. Include all subjects of concern to, and/or required by, the governing enforcing agency. Submit the Project remedial action plan report in accordance with Task 310.

Task 308 PROJECT COST: Provide cost(s) for each Project site, and maintain current, the estimated cost for, and expenditures of each, Task of each respective Phase. In addition to remediation costs, such costs shall include, and specifically identify, all professional, testing, construction, and remediation costs, as well as any costs to maintain State Client/Agency facility operations. Project cost analysis shall consider funding sources, availability, and all procedural steps of Budget and appropriation processes and similar allocation processes affecting funding. Such availability shall be compared to projected cash flows. Where any cost is projected to occur over more than one (1) State fiscal year, the estimate shall reflect annual costs.

Task 309 PROJECT SCHEDULE: Provide a schedule for each Project site, and submit for acceptance, and maintain current, a schedule for the Tasks/events of all Phases of the Project. The schedule format will be prescribed by the Department. Project schedules shall be in total compliance with the requirements of any court order(s), consent agreement(s) or other governing directive(s). Prescribed, agreed upon, or historically reasonable schedule times shall be provided in undated unit time durations (day(s), week(s), month(s), etc.) Dates will be incorporated when approvals by the governing enforcing agency or other orders to proceed become known. Adherence by the Professional, to a Project's accepted schedule time/duration is a condition for satisfactory performance of this Contract.

Task 310 PROJECT REPORTS: Submit draft, preliminary, and final versions, of the Project work plan as the Department may require for review. Make all revisions as the Project Team may deem necessary to produce a complete and acceptable document. Provide copies of the finalized plan as necessary for submittal to the enforcing agency, along with one (1) camera-ready original and an electronic copy, suitable for legible reproduction. In addition, copies of the work plan and all reports of this Phase shall be provided to the Project Team members along with up to five (5) additional copies to be distributed as the Department may direct.

When directed by the Department, submit the Project work plan report to the governing enforcing agency's on the Department's behalf. Monitor the progress of the approval process. Attend all Project related meetings, make presentations, explain all submitted technical data and proposals, provide and submit such amending information, and make such revisions, as may be necessary for the governing enforcing agency's evaluation and approval of the Project work plan report. Revise schematic design documents, as necessary, to incorporate all requested review comments required for Department written acceptance of the Project schematic design scope of work. Provide one (1) acceptable schematic design/development presentation to the Project Team for this Task. Any additional schematic design/development presentations requested by the Department will be considered extra professional services and the additional schematic design costs will be paid to the Professional firm by the Department with a Contract Change Order.

PHASE 400 - PRELIMINARY DESIGN

Prepare progressive design drawings to develop and portray the preliminary design for the Project site based upon the Department's Project/Program Statement scope of work requirements and any approved environmental remediation method. Refine any schematic design as necessary to produce an acceptable preliminary design. The proposed preliminary design, together with an outline draft specification, shall be of such completeness and detail to establish and define the function, arrangements, spaces, location, operation, size and parameters of performance of equipment and materials comprising the principal design details of structures, equipment, and systems. Prepare and render the proposed preliminary design documents, appropriate to the Project site scope of work requirements, on 24-inch by 36-inch or 30-inch by 42-inch mylar sheets, (or sheet size approved in writing by the Department) utilizing applicable State of Michigan standards as defined by the Department for all disciplines. The proposed preliminary design drawings and the draft specifications shall clearly depict the Professional firm's proposed design of the systems, materials, equipment, utilities, site improvements, and other elements of the Project scope of work through single line diagrams, system layout drawings and developed plans. The level of design thus achieved must constitute the complete proposed preliminary design basis for detailing into final design drawings and specifications.

Task 401 COORDINATION: Meet with the Project Team to review the Department's Project/Program Statement, approved site remediation method and any approved schematic drawings to refine Project scope of work requirements. Soil Erosion and Sedimentation Control associated with this Contract is supervised and enforced by the Department of

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Technology, Management and Budget, Facilities Administration, Soil Erosion and Sedimentation Control Program. Present proposed preliminary design documents to the State/Client Agency and Department for their review at the 50 percent and 90 percent completion intervals and at such other times as the Department deems necessary to completely develop and monitor the Project scope of work. Assist the Project Team to progressively review development of the proposed preliminary design documents and to develop input and timely decisions therefore. Incorporate any design refinements within the Project scope work. Establish and define any equipment and/or materials to be furnished by the State. Preside at all design related Project meetings. Prepare and distribute to the Project Team, copies of minutes of all meetings, reports of site visitations, correspondence, memoranda, telephone, and other conversations or communications. Where essential or significant information is established or evaluated and/or critical decisions are made, distribute copies to the Department and participants within two (2) business days of the date of occurrence, otherwise meeting minutes shall be distributed within five (5) business days. Provide five (5) additional copies and distribute as the Department may direct.

Task 402 SPECIFICATIONS: Prepare proposed preliminary design outline draft specifications for, Divisions 00 through 49, in the 2004 MasterFormat Outline by the Construction Specifications Institute (C.S.I.), as applicable for the defined Project scope of work.

Sustainable Design shall be utilized wherever possible by the Professional in their Project design and an itemized list shall be provided with the preliminary design drawings and specifications requirements that identify the processes and products. Sustainable Design is defined in this Contract as the Professional firm's use of Project design resources with no negative impact to the natural ecosystems and when possible, achieving a net enhancement of the Project scope of work.

Task 403 CIVIL/SITE INVESTIGATION/DESIGN: The Professional shall retain a site survey and geotechnical testing Consultant and coordinate their proposed engineering services and prepare the site investigation survey program(s) required to establish and execute a complete proposed preliminary site design. Define the location of all State/Client Agency facilities and/or operations. Determine the Project site areas and volumes of contaminated/hazardous materials to be removed/replaced and/or treated. Identify proposed area(s) of disposal/discharge. Identify site areas having potential for soil erosion/sedimentation and storm run-off consequences. Secure, in writing, approval of any traffic regulating authority for traffic alterations arising from the Project scope of work. Illustrate and coordinate any off-site work necessary for a completely functioning Project. Revise site investigation/design as required.

Task 404 STRUCTURAL: Prepare proposed structural calculations appropriate to the Project scope of work, and size major components. Prepare proposed preliminary design structural plans, sections, elevations, and details drawings. Revise structural engineering design as required.

Task 405 MECHANICAL/HVAC/UTILITIES: Identify existing equipment and systems. Calculate heat loss, heat gains, and other demands for all spaces. Determine heating, ventilating and air conditioning (HVAC) system requirements. Calculate total loads, identify and size new equipment. Identify and/or calculate total utility loads. Include the needs of any original building or system design as well of those of the proposed Project. Provide basic engineering design appropriate for all principal site remediation components/systems and all pre-engineered equipment suitable, and acceptable for, the Project. This also applies to other utility systems. Verify clearances for all systems. Prepare proposed preliminary design mechanical/heating, ventilating, and air conditioning (HVAC)/utilities drawings. Review construction codes and incorporate applicable requirements. Revise as required. Secure in writing, the approval of capacities and connections for the Project scope of work from the appropriate utilities/ suppliers.

Task 406 ELECTRICAL: Prepare load calculations, including electric loads for fixed, movable, and furnished equipment appropriate to this Project. Determine electric service requirements and size major transformer and service equipment. Develop and outline basic equipment and distribution systems for lighting, power, remediation system(s), building control, process monitoring/recording, fire, security, television, data, communications and other specialized systems of the Project and produce single line diagrams for each system. Provide a basic description of how each such system is to function. Verify clearances for all systems. Prepare proposed preliminary design electrical drawings. Review construction codes and incorporate all applicable requirements. Revise as required. Secure in writing, the approval of capacities and connections for the Project scope of work from the appropriate utilities/suppliers.

Task 407 ENGINEERING: Prepare proposed preliminary design drawings, appropriate to the Project scope of work, to detail and define the Project affected remedial spaces. Coordinate design to integrate the Department's design requirements. Where the Project scope of work involves work in an existing building and/or utility system, identify and locate, in writing, and by diagram, any building and site utility areas which may have potential hazardous materials or

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contamination which may require site remediation and/or removal prior to the renovation or new construction work of the Project. Coordinate the Project scope of work with any hazardous material removal required to implement the Project. Depict energy efficient design features of the Project and provide summary calculations to demonstrate applicable compliance with the State of Michigan's current Energy Code requirements. Drawings will include plans, elevations, sections, and critical construction details in order that a detailed construction estimate can be made. Determine and prepare a list of proposed preliminary design drawings as related to the Project scope of work. Revise design as required.

Task 408 DRAFTING: Prepare and render the proposed preliminary design documents, appropriate to the Project scope of work requirements, on 24-inch by 36-inch or 30-inch by 42-inch mylar sheets, (or sheet size approved in writing by the Department), of all principal buildings/site utility systems, remedial services and coordinate the proposed Project preliminary design with related engineering design disciplines for completeness, accuracy and consistency. Prepare proposed preliminary design drawings utilizing applicable State of Michigan standards as defined by the Department for all Project related engineering design disciplines. The Professional shall field-check and verify the accuracy of all existing and proposed drawings and any data furnished by the Department, the State/Client Agency or any other Project related source.

Task 408.01 DESIGN DEVELOPMENT: Prepare proposed preliminary design drawings, specifications, operating procedures/instructions and other parameters as may be required to Bid, construct, and operate the specialized equipment, systems, or pilot plant, as may be necessary and authorized, to prove the performance of the environmental site remediation system, equipment, or process. Define the expected performance, the means by which it is to be measured, and the criteria against which it will be evaluated. Bid and assist in contracting for, and administer construction, in accordance with the Phases 600 and 700 services. Operate the system as authorized. Evaluate all findings and provide a summary report in the format and detail of the Phase 100, Task 110-A/Report requirements. Revise the proposed Project design parameters as appropriate to assure a functional remediation system.

Task 409 BUDGET/CONSTRUCTION SCHEDULE: Prepare, or update previously developed itemized Project construction cost estimate(s) based upon factors prevailing or reasonably predictable for the proposed construction bidding period. Evaluate cost/benefits of multi-prime construction. Recommend strategy method(s) and appropriate Phasing of contracting for construction. This shall be consistent with any approved Project Phasing. Include any early-order/long-lead items and/or any State provided materials, equipment or furnishings. Provide, in a format acceptable to the Department, the estimated operating utility cost for the completed Project. Prepare in standard bar chart format a detailed schedule of the design and proposed bidding and construction schedule, based on the Professional firm's Project Study, Design and Proposed Construction.

Task 410 PRELIMINARY DESIGN REVIEW: Prepare, reproduce, submit, and make such preliminary design presentations, as necessary, to review the status of the design with the Project Team to achieve the Project design. Present proposed preliminary design documents for the Project Team design review at the 50 percent and 90 percent completion intervals and at such other times as the Department may deem necessary, for review, determination of required revisions and written acceptance. With the 50 percent review, provide design criteria/data calculations of principal engineering/remedial, electrical, and mechanical systems demonstrating basic compliance with the State of Michigan's current Energy Code requirements. Provide a set of mylars suitable for legible reproduction and five (5) copies of completed proposed preliminary design documents to the Department for their review. Where legislative review is required upon completion of all revisions required by the Project Team and the Department's acceptance thereof, provide an additional twelve (12) copies of the Department approved preliminary design Phase documents to the Joint Capital Outlay Subcommittee. Make such legislative presentation as required. Revise proposed preliminary design Phase documents, as necessary, to incorporate all revisions found necessary to achieve legislative approval. Revise proposed preliminary design documents, as necessary, to incorporate all requested design review comments required for Department written acceptance of the Project preliminary design scope of work. Provide one (1) acceptable preliminary design presentation to the Project Team for this Task. Any additional preliminary design presentations requested by the Department will be considered extra professional services and the additional preliminary design costs will be paid to the Professional firm by the Department with a Contract Change Order.

PHASE 500 - FINAL DESIGN

Prepare for progressive, periodic review, Phase 500 Final Design Contract Bidding Documents which shall revise, refine, amplify and depict/describe, in detail, the Project as described and required by the Department's approved Project/Program Statement scope of work requirements and any approved preliminary design. Bidding Documents shall be prepared in Phases/Bid packages appropriate to the final design Project scope of work requirements and funding.

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The proposed final design and Contract Bidding Documents shall depict and document a complete and constructible Project. These documents shall incorporate and comply with all current, applicable regulations, environmental construction codes and statutes, and must have prior approval from appropriate federal, State or any local authorities having jurisdiction before presentation to the Department for written acceptance. Where design approvals are required, the Professional firm shall acquire and provide them. The final design and Contract Documents shall be without ambiguity and must be so complete that no significant design decision or any decision is left to the discretion of any qualified construction Bidder, producer of materials or products, or to the Construction Contractor. The final design and Contract Bidding Documents will not define, or quantify or in any other way represent any work as being assignable to, or to be performed by, any Consultant or subcontractor, except for fire suppression systems.

Bidding Documents shall consist of, but are not limited to, the Phase 500 - Final Design drawings, specifications, special, general and supplemental conditions of the Construction Contract, and modifications, if any, to standard document forms provided by the Department. Such standard document forms may consist of, but are not limited to: (1) Project Advertisement; (2) Instructions to construction Bidders; (3) Proposal Forms; (4) General Conditions; (5) Supplemental Conditions; (6) Any Special Conditions of the Construction Contract; and (7) Form of Agreement between the Department and the Construction Contractor for the work.

In addition to the requirements herein, the professional services for this Project shall include, but are not limited to, those set forth in the Department's "MICHSPEC 2001 Edition of The Owner and Contractor Standard Construction Contract and General Conditions for Construction (Long Form)" or the current DMB DCSPEC – Bidding and Contract Document for Minor Projects" as adopted and modified by the State of Michigan and incorporated into the Construction Contract, plus such other Department standard document forms general conditions as may be part of the Construction Contract. If the Professional firm intends to use any additional general condition requirements for this Project other than the Department's they must be accepted and approved by the Department in writing.

Contract Documents shall consist of the Phase 500 - Final Design drawings and specifications Bidding Documents and all Addendums and attachments thereto as may be necessary to comprise a complete Contract for the Project scope of work.

Task 501 COORDINATION: Review the Department's approved Project/Program Statement and any approved schematic and/or preliminary drawings with the Project Team for revisions. Incorporate any design refinements within the Project scope. Soil Erosion and Sedimentation Control associated with this Contract is supervised and enforced by the Department of Technology, Management and Budget, Facilities Administration, Soil Erosion and Sedimentation Control Program. Present proposed final design documents to the State/Client Agency and Department for their review at the 50 percent and 90 percent completion intervals and at such other times as the Department deems necessary to completely develop and monitor the Project scope of work. Preside at all design related Project meetings. Prepare and distribute to the Project Team, copies of minutes of all meetings, reports of site visitations, correspondence, memoranda, telephone, and other conversations or communications, where essential or significant information is established or evaluated and/or critical decisions are made. Distribute copies to the Department and participants within two (2) business days of the date of occurrence, otherwise meeting minutes shall be distributed within five (5) business days. Provide five (5) additional copies and distribute as the Department may direct.

Task 502 SPECIFICATIONS: Prepare proposed final design specifications in such format and approved Phasing as appropriate for the Project scope of work requirements as approved from Task 402. Include a schedule of all required submittals, as well as all other schedules necessary to clearly and completely supplement the definition of the Project scope of work provided by the specifications for Divisions 00 through 49. Specifications shall be in coordinated with the final design drawings and shall be prepared in the 2004 MasterFormat Outline by the Construction Specifications Institute (C.S.I.). The proposed final design specifications shall clearly define the Project design and construction requirements indicating the type and quality of materials, products, and workmanship.

Sustainable Design shall be used wherever possible by the Professional in their Project design and an itemized list shall be provided with the final design Contract Documents/drawings and specifications requirements that identifies the materials, finishes, processes and products. Sustainable Design is defined in this Contract as the Professional firm's use of Project design resources with no negative impact to the natural ecosystems and when possible, achieving a net enhancement of the Project scope of work.

Performance specifications shall be used when feasible. If performance specifications are not feasible, the Professional shall name at least three (3) acceptable materials, products, or systems, and the specifications shall contain an "or equal" clause. Whenever possible, products produced in the State of Michigan shall be named and given first preference. Proprietary specifications, or allowances, may be permitted, with the Department's acceptance and written approval, but only for special, unavoidable conditions. Provide Project specifications suitable for purchasing or construction bidding for any State-furnished materials, equipment or furnishings.

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Task 503 CIVIL/SITE/STAGING/DESIGN: If this site testing and survey Task has not been performed, and the Professional did not obtain a site specific geotechnical testing program for this Project and advise the Department under the Task 403 Site Investigation/Design, the Professional shall retain a civil, site survey and geotechnical testing Consultant and coordinate their environmental engineering services to prepare and provide a final design geotechnical site investigation and site staging design as directly related to the Project scope of work requirements. Prepare and render complete final site and site staging design documents, as directly related to the defined Project scope of work as approved from Task 403. This includes, but is not limited to, survey reference(s), locations of all existing and proposed facilities and utilities access, traffic control, demolition, Soil Erosion and Sedimentation Control, engineered fill, utilities, removal of obstructions/contaminations, borrow and spoil areas, bracing, shoring, waterproofing, dewatering, dredging, paving and similar work. Incorporate Project site design scope of work requirements into the final design Contract Documents. Soil Erosion and Sedimentation Control shall be implemented in accordance with the current edition of the Department's compliance manual and the 1994 Public Act 451, as amended – The Natural Resources Environmental Protection Act Part 91 – Soil Erosion and Sedimentation Control. Conduct, site specific testing program to adequately discover, identify and/or confirm site underground conditions and to accurately specify contractual requirements. Submit final site design drawings depicting Soil Erosion and Sedimentation Control measures to the Department of Technology, Management and Budget, Facilities Administration, Soil Erosion and Sedimentation Control Program for their review.

Task 504 STRUCTURAL: Prepare and render complete structural final design documents as approved from the Task 404 defined Project scope of work.

Task 505 MECHANICAL/HVAC/UTILITIES: Prepare and render complete mechanical and utility system final design documents as approved from the Task 405 defined Project scope of the work.

Task 506 ELECTRICAL: Prepare and render complete electrical system final design documents as approved from the Task 406 defined Project scope of work.

Task 507 ENGINEERING: Prepare and render complete final design documents as approved from the Task 407 defined Project scope of work. Assist the Department in the determination of and specification of furnishings as directly related to this defined Project scope of work.

Task 508 DRAFTING: Prepare complete final design drawings for bidding documents, as directly related to the Project scope of work approved from Task 408, on 24-inch by 36-inch or 30-inch by 42-inch mylar sheets, (or sheet size approved in writing by the Department) utilizing applicable State of Michigan standards as defined by the Department of Technology, Management and Budget's, Facilities Administration, Design and Construction Division and the Department. The Professional shall field-check and verify the accuracy of all existing and proposed drawings and any data furnished by the Department, the State/Client Agency or any other Project related source. Where the Professional firm's computerized drafting system is used, and is compatible with the Department's Auto CAD computer drafting system, the Project Bidding Documents derived from the Phase 500 - Final Design drawings and computer electronic/software system shall be made available and converted, when requested by the Department in writing, to the Department's Auto CAD computer drafting system. When requested by the Department in the scope of work for this Project, the Professional shall provide the computer/electronic data files for the final design Contract drawings of the Project for use by the Department. The software name and release number used to produce the Professional firm's Phase 500 - Final Design Contract drawings will be clearly identified on the computer tape or computer compact disk (CD). The sealed hard copy of the mylar Phase 500 - Final Design Contract drawings furnished by the Professional firm will be the controlling Contract Document for this Project.

Task 509 CHECKING CONTRACT DOCUMENTS: Check and coordinate all proposed documents for completeness and accuracy. Prepare final design Contract Documents that will protect the Department from unexpected cost increases after award of the Construction Contract to a qualified construction Bidder, Project delays or claim settlements for reason of defective rendering of the Professional firm's plans/drawings or specifications or for any delinquency by the Professional for performance of the professional design services under this Contract. Check the adequacy of all spaces and clearances. Cross-check and coordinate all proposed designs between environmental engineering disciplines. Cross-check the requirements of all drawing sheets for completeness, accuracy, and consistency. Similarly, cross-check and coordinate all proposed drawings against the Project specifications. Mark each drawing with the name of the checker and with the written approval of the appropriate Professional firm's "Key Principal Personnel/Employee".

Task 510 CONSTRUCTION CODES AND PERMITS: The Professional firm's final design and Contract Documents shall comply with the State Construction Code, the State of Michigan Energy Code requirements, and all Project related

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environmental code requirements in effect at the time of award of this Contract. List all environmental permitting to be required for the Construction Contractor. Assist the Department in obtaining approval of the Project and its design by appropriate governmental regulating and/or construction code enforcement authorities. Except as otherwise provided for in this Contract, design code compliance and plan review approval(s) shall be performed by the Department of State Police, Fire Marshal Division, and the Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, Plan Review Division and design code compliance and plan review approval fees shall be paid by the Department and are not the responsibility of the Professional firm. Any Project design code compliance and plan review fees paid by the Professional firm on the behalf of the Department will be compensated by the Department to the Professional firm as an authorized reimbursable expense item (See attached Professional's Proposal) in this Contract. Present and submit all modeling, testing, design data, and appropriate drawings/plans and applications for all permits, tests, and approvals, which the Department is required to secure as a prerequisite authorization for the Project's approval. Soil Erosion and Sedimentation Control final design plans/drawings will be submitted to the Department of Technology, Management and Budget, Facilities Administration, Soil Erosion and Sedimentation Control Program as the enforcing authority for this Project, no later than at the final design, 90 percent completion submittal stage. Provide energy efficient design features and summary calculations to demonstrate applicable Project compliance with the State of Michigan Energy Code requirements. Submit documents for review in a timely manner allowing appropriate time for review/permitting processes by respective authorities, such that the Project schedule is not unnecessarily delayed. Assist the State/Client Agency to secure any appropriate construction code waivers. Incorporate all required Contract Modifications into the Contract Bidding Documents. Follow through to ensure issuance of the construction codes and permits approvals. Secure all required design approvals before submitting the final design documents to the Project Team for the final design document review of Task 515. Any approval secured under this Task does not relieve the Professional from complying with the construction on-site field Inspections review/enforcement requirements.

Task 511 CONSTRUCTION/ON-SITE TESTING PROGRAM: Conduct on-site survey and appropriate research to identify site specific abnormal construction conditions. Coordinate site specific geotechnical testing program of areas, consistent with the Project design and siting, wherein underground construction problems could cause claims or delays. Conduct a testing program to adequately discover, identify and/or confirm underground conditions sufficient to accurately specify the Project scope of work contractual requirements. Establish at the 50 percent completion interval the required construction quality control testing program. Where the Project work involves the removal/replacement of soils or other bulk materials and which require environmental contamination testing to determine levels of contamination specify the testing program and procedures to be used. Define and specify types of on-site tests required and approximate quantities to be tested and projected cost thereof. Where such services are not provided by the Professional, prepare quality control testing **services** program Bidding Documents for construction Phase quality control testing services. The Department will retain a professional quality control testing **services** firm for construction Phase testing at the 50 percent Project document completion review of Task 515 (Construction Phase Testing services shall be estimated and identified as an authorized reimbursable expense item in this Contract).

Task 512 HAZARDOUS MATERIALS: Except as may be part of the Project work, hazardous material testing and removal from existing facilities and/or utilities to allow construction of this Project, will be performed by the Department with specialized firms who are licensed and insured to perform this service. Notify the Department of any area suspected of containing hazardous material. Provide testing and Contract preparation for the related work. Coordinate the professional design services of this Contract with any hazardous material removal required to implement the Project. Where the Project involves work in an existing site utility system, as part of the 50 percent review of Task 515, identify and locate for the Department, in writing, and by diagram, any site utility areas which may have potential hazardous material contamination which may require remediation and/or removal prior to the construction work of the Project. Include for the Department's use, drawings and specifications for all site restoration necessary following completion of the removal/remediation Project. Also, identify the time frame for the removal remediation Project to be completed. Incorporate appropriate provisions into the final design drawings and specifications of this Project to assure full coordination of all Project work.

Task 513 DESIGN AND CONSTRUCTION BUDGET: The Professional firm shall be responsible for all costs incurred by it, necessitated by for rebidding a Project if it is over Budget due to their design. Submit in writing the itemized estimate of the Project construction costs with each review. Include all construction Bid packaging and Phasing. Confirm, in writing, the estimated operating utility cost of the Project. Determine the amount and adequacy of any construction contingency. Upon submittal of 90 percent Bidding Documents, confirm, in writing to the Department, that in accordance with the Contract scope of work, an accurate itemized estimate of the construction cost is formulated and the total Project construction cost is predicted to be within the Project Budget.

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Notify the Department, in writing, if it becomes evident, during the final design Phase schedule duration of the Project, that this Project cannot be constructed within the Professional firm's estimated construction Budget. Unless the Department determines the problem to be outside the control or responsibility of the Professional, the Professional shall to the extent required to bring the actual Project construction Budget cost back to the Professional firm's original estimated construction Budget cost, revise their final design drawings and specifications to produce a complete design for the Project, and will otherwise be responsible for any costs incurred by the Department in rebidding the Project.

Assist the Department to rebid the Project in accordance with the Task 516 construction bidding/contracting procedures.

Task 514 CONSTRUCTION SCHEDULE: Determine the appropriate Project proposed construction schedule period to be part of the Construction Contract. Give consideration to all principal influencing factors, including, but not limited to, current and projected material delivery time, local labor Contract periods, and other historical principal causes of delays. Amplify the Professional firm's attached Project Study, Design and Proposed Construction Schedule to consider construction bidding, Phasing, seasonal influences and to account for any elements of construction having critical deliveries and/or construction times and of the Task 512 required scope of work.

Task 515 FINAL DESIGN BIDDING DOCUMENTS REVIEW: Provide complete Phase 500 - Final Design Bidding Documents review. When the design is approximately 50 percent complete, submit documents to the Project Team for their review. If the design appears to exceed the Project Budget, review with the Department all cost reduction design options. Incorporate at 90 percent complete, all required design modifications applicable to the Project scope of work design criteria/data calculations for structural, engineering, mechanical/heating, ventilating, and air conditioning (HVAC), and electrical systems and resubmit to the Project Director. Determine and confirm in writing, that the final design can be achieved within the Project Budget and that all requirements of Tasks 509 and 510 have been met, submit 100 percent complete sets of final design Bidding Documents to the Project Team for their final review. Submit final design documents first to the State/Client Agency for their final design review of the Project programmatic design conformance adequacy. Submit final design Bidding Documents to the Department for their review and revise final design Bidding Documents, as necessary, to incorporate all requested final design review comments required for Department written acceptance of the final design Bidding Documents. Provide one (1) acceptable final design presentation to the Project Team for this Task. Any additional final design presentations requested by the Department will be considered extra professional services and the additional final design costs will be paid to the Professional firm by the Department with a Contract Change Order.

Task 516 CONSTRUCTION BIDDING AND CONTRACTING PROCEDURES: Assist the Department in the construction bidding and contracting process. Advertisement and award of this Construction Contract will be by the State of Michigan. Provide the Department with a list of recommended qualified construction Bidders' appropriate to the Project scope of work requirements. Recommend the appropriate construction bidding and/or contracting method to the Department. Prepare and distribute Bidding Documents and instructions as required to accommodate predetermined Bid packages and/or Phases. Maintain a qualified construction Bidders' list. Conduct pre-bid meetings. Issue preconstruction Addenda to all qualified construction Bidders as required. Include in each Addendum complete specifications for the Project scope of work requirements, if such specifications are not part of the final design Bidding Documents. Exert every practical means to obtain several, qualified construction Bidders for every Construction Contract. The Professional firm shall be compensated by the Department with a Contract Change Order for providing the professional services necessary to rebid the Project for reason of defaulted or disqualified construction Bidder(s) or unacceptable price range as required by the design and construction Budget text of Task 513. The Professional firm's construction bidding and contracting services for Task 516 are not complete until: (1) The lowest responsive, responsible qualified construction Bidder's Bid has been selected and accepted by the Department; and (2) The lowest responsive, responsible qualified construction Bidder's Contract has been executed.

Collect and Manage Construction Contract Bid Security Deposits: Administer receipt and return of Construction Contract Bid Security deposits. Within fifteen (15) business days of the award of the Construction Contract submit, to the Department, a full accounting of all associated Bid Security deposits, and turn over, to the Department, all defaulted Bid Security deposits. All Bid Security deposit checks will be payable to the "State of Michigan." Any returned or undistributed Bidding Documents shall be distributed as the Department may direct.

Construction Bid Evaluation and Recommendation of Construction Contract Awards: Review and evaluate the Department's submitted competitive construction Bids for the Project. Based on the Professional firm's review of the competitive construction Bids and the qualified construction Bidders, provide the Department with a written recommendation for the apparent lowest responsive, responsible qualified construction Bidder for the Project Construction Contract award(s) within five (5) business days of the date of the Department's construction Bid

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opening. Exempt from recommendation any firm that in the Professional firm's opinion is unqualified for the Project (documentation required) or that the Professional has a business association with on this Project, and any firm, that the Professional has used in preparation of the Phase 500 - Final Design Contract Documents/drawings and/or specifications or for any estimating work related to the Project. The Professional shall conduct pre-contract meetings with responsive, responsible qualified construction Bidder(s) to review the following items: (1) The design intent of the Professional firm's Phase 500 - Final Design Contract Documents/drawings and specifications; and (2) To advise and assist the Construction Contractor(s) in understanding the requirements of the Department's standard form of Construction Contract Documents, Project scope of work, and its Construction Contract award procedures.

Unless otherwise designated in the Department's, Notice of Intent to Award letter to the recommended Construction Contractor, within fifteen (15) calendar days from the date that the Notice of Intent to Award letter was mailed to the Construction Contractor, the Construction Contractor recommended for the award of the Construction Contract shall (a) Fill out and execute, the Department's MICHSPEC 2001 Edition of the Owner and Contractor Standard Construction Contract and General Conditions for Construction (Long Form)" standard form documents Section 00500, Contract Agreement and the Section 00800, Supplementary Conditions, in triplicate; (b) Execute Section 00610, Performance Bond, and the Section 00620, Payment Bond (and attach to each bond a separate, certified copy of Power of Attorney); and (c) Return to the Department, the Construction Contractor's executed Section 00500, Contract Agreement, Section 00610, Performance Bond, and Section 00620, Payment Bond forms, evidence of original Certificates of Insurance and any other legal documents required for submittal by the Department's, Notice of Intent to Award letter.

Task 517 FINAL DESIGN CORRECTION PROCEDURES: Correct at no additional cost to the Department any final design errors or omissions and/or other related deficiencies identified during the 600 and 700 Construction Phase. All reproduction costs for design interpretations and design clarifications and Bulletins related to the Professional firm's final design errors or omissions and similar or avoidable costs shall be accounted as part of the Professional firm's calculated hourly billing rates. Provide design clarification and design interpretations of the Contract Documents requirements necessary to: (1) Adequately describe Project scope of work; (2) Adapt final design documents during construction to accommodate on-site field conditions identified during construction; (3) Refine design details that are not feasible and identified during construction; and (4) Comply with construction/building and environmental codes, and for all such other Project related design and construction matters as may be necessary to produce a complete Project.

Design Interpretations and Clarifications: For elements of construction having no respective change in cost to the State the Professional will: (1) Provide instructions, and/or design interpretations and design clarification for design details within five (5) business days of the Construction Contractor's request, record same, in writing; and (2) Revise the Professional firm's original final design drawings and/or specifications as appropriate to the Project scope of work requirements. Marking and initialing of drawings is not an acceptable form of written instruction.

Bulletin Authorization: Request authorization to issue each individual Bulletin. The Professional firm's Bulletin Authorization request will: (1) Identify the problem requiring the change; (2) Describe clearly if such problem arises from final design errors or omissions; (3) Identify the anticipated design cost and the estimated construction cost to implement the change(s); and (4) Describe clearly in the Professional firm's opinion which part, if any, of the design and/or construction costs are the obligation of the State, the Professional or the Construction Contractor. Include a Contract Modification request for any work outside the Project scope of work. Identify any anticipated Project design or construction schedule implications.

Bulletins: All reproduction costs for design interpretations and design clarifications and Bulletins related to the Professional firm's final design errors or omissions and similar or avoidable costs shall be accounted as part of the Professional firm's calculated hourly billing rates. Describe, by Bulletin, design revisions necessary to correct final design errors or omissions, to address previously unidentified on-site field design conditions, to reduce costs and for all other matters approved by the Department involving costs or credit to the State. Postponement of action on items in order to accumulate multi-item Bulletins is not permitted.

Prepare and issue Bulletins within ten (10) business days of receipt of the Department's authorization. Bulletins shall be in such form and detail as the Department may prescribe. All Bulletin revisions data shall be incorporated, by the Professional, into the appropriate originals of all applicable final design drawings and specifications, if such specifications are not provided by the Contract Documents. Such revised drawings and specifications shall be issued as part of Bulletins. Each Bulletin shall prescribe a time frame for the Construction Contractor's response. Provide up to five (5) copies of each Bulletin to the Department and distribute as the Department may direct. Provide the

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Construction Contractor with the following number of Bulletin copies: (1) For construction costs less than one (1) million dollars, provide two (2) copies; and (2) All others, provide five (5) copies.

Evaluate the Construction Contractor's price quotation(s) and review and attempt to negotiate with the Construction Contractor to provide the Department with costs that are consistent with the value of the associated Project Bulletin(s) scope of work requirements. Recommend appropriate action to the Department regarding the Construction Contractor's quotations within five (5) business days of receipt thereof.

PHASE 600 - CONSTRUCTION REMEDIATION/ADMINISTRATION - LABORATORY SERVICES

The Department may appoint a State Project Manager to monitor and coordinate the performance of the Project construction/environmental remediation laboratory/office Phase services. Except where the Contract is assigned, the Professional is responsible to the State Project Manager for the adequacy and timeliness of their services.

During the construction Phase administration of this Project, the "DMB-460, Project Procedures" documents package shall be completed by the Professional and contains the following Department's documents: (1) DMB-413, General Release – Visitors; (2) DMB-426, Builder's Risk Claim; (3) DMB-434, Certification of Off-Site Material Storage; (4) DMB-437, Guarantee and Indebtedness Statement; (5) DMB-440, Payment Request; (6) DMB-441, Meeting Attendance Record; (7) DMB-445, Certificate of Substantial Completion; (8) DMB-452, Professional firm's Inspection Record; (9) DMB-485, Bulletin Authorization No.; (10) Instructions for Schedule of Value; (11) DMB-487, Material Stored on Project/Job Site; and (12) DMB-489, Instructions to Construction Contractors for Preparation of Bulletin Cost Quotations for Contract Change Orders.

The Professional shall be required to obtain from the Project Director, the on-site Inspection record form document titled "DMB-452, The Professional firm's Inspection Record" for all on-site Inspection visits to the Project site. This standard document form is a part of the "DMB-460, Project Procedures" documents package. The Professional firm's Inspection Record document shall be completed and signed by the Professional and compiled monthly with the original form document sent to the Project Director and the Construction Contractor. The on-site Inspection record standard document form shall be completed and accompany the Professional's monthly payment request.

The Professional shall provide all required construction Phase administration services and timely professional and administrative initiatives as the circumstances of the construction scope of work may require in order to allow the design intent requirements of the Professional firm's final design Contract Documents/drawings and specifications to be successfully implemented into a completed Project through the Construction Contractors completion of the Construction Contract work. In addition to the requirements herein, the professional services for this Project shall include, but are not limited to, those set forth in the Department's, "MICHSPEC 2001 Edition of the Owner and Contractor Standard Construction Contract and General Conditions for Construction (Long Form)" or the current DMB DCSPEC – Bidding and Contract Document for Minor Projects" as adopted and modified by the State of Michigan and incorporated into the Construction Contract, plus such other Department general conditions as may be part of the Construction Contract. If the Professional intends to use any additional general condition requirements for this Project other than the Department's they must be accepted and approved by the Department in writing.

Provide all laboratory and office engineering services to test, analyze, evaluate and report the results of all environmental and construction/site remediation services. Conduct, prepare, and submit all tests and test result reports and any associated correspondence.

Provide all required construction Phase administration services and take such timely professional and administrative initiatives as the circumstances of the Project environmental contamination and/or remediation may require in order to allow the design intent requirements of the Contract Documents to be successfully implemented and legally completed.

The Professional shall have access to the Construction Contractor(s) work at all times.

Establish and maintain effective construction administration laboratory/office procedures, systems and records to progressively, and exclusively, manage and control the Professional firm's obligations, commitments, achievements and expenditures under this construction Phase administration.

Monitor the quality and progress of the Project construction/site remediation work. Maintain all necessary Project records, provide on-site visitation reports and take such administrative office action as may be necessary to inform the Construction Contractor(s), in writing, to achieve the Project scope of work on schedule, within Project Budget, and be in accordance with the design intent of the Professional firm's Phase 500 - Final Design Contract Documents/drawings and specifications requirements, and to defend the Department against exposure to claims arising from delays, negligence or delinquencies by the Professional.

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Advise and assist the Department in taking all practical steps to address and complete the Project scope of work in the event of performance delays or defaults by the Construction Contractor(s).

In observed cases which may involve danger to human life, immediate safety hazards to personnel, existing or impending damage to the Project, to the Department's property or to other property; as may be impacted by the Project, the Professional shall inform the Construction Contractor(s) of the situation and their observations. The Professional shall immediately record and report such situations to the Department and certify any accrued Project costs in writing.

Task 601 COORDINATION: Coordinate all of the Professional's staff, Consultants staff, authorized hourly billing rates and direct cost reimbursement items, and other Project related resources. Preside at all Project related meetings. Prepare and distribute to the Project Team, copies of minutes of all meetings, site visitation reports of Phase 700 services, copies of correspondence, memoranda, records of telephone or other conversations and other communications. Where essential or significant Project information is established or evaluated, where critical problems are identified, or where crucial decisions are made, distribute copies to the Department and participants within two (2) business days following the date of occurrence, otherwise meeting minutes shall be distributed within five (5) business days. Provide five (5) additional copies and distribute as the Department may direct.

Task 602 HEALTH AND SAFETY PLAN: Within fifteen (15) business days of execution of this Contract, the Professional shall prepare and submit for acceptance, a basic Project Health and Safety Plan for all assigned work under this Contract. This plan must meet the following minimum requirements:

1.) 29 CFR 1910.120: Safety and Health Regulations for General Industry, Occupational Safety and Health Administration (OSHA), as amended December, 1986.

2.) Standard Operating Safety Guides, United States Environmental Protection Agency (EPA), November, 1984.

3.) Occupational Health and Safety Guidance Manual for Hazardous Waste Site Activities, National Institute of Occupational Safety and Health Administration (NIOSHA), Publication No. 85-115, October, 1985.

4.) Michigan Right-To-Know Law, 1986 PA 80, as amended.

All on-site management and supervisors directly responsible for, or who shall supervise personnel engaged in, hazardous waste operations shall have successfully completed the Environmental Protection Agency's Safety Training Program.

Within fifteen (15) business days of Project authorization, adapt and amend the accepted Health and Safety Plan as appropriate to include all provisions necessary for each Project site and its related work. No on-site or laboratory work may be performed without such a plan. Acceptance of the Professional firm's Health and Safety Plan imposes no expressed or implied responsibility, by the State, for the plan or its application. The Professional is exclusively responsible for their plan's effectiveness and for conducting all work in compliance with it. Production of an accepted plan, and amendments thereto, and adherence to the same, is a condition of satisfactory performance. Failure to do so is just and sufficient cause for suspension of the Professional firm's work, removal of their workers from any site, and any other actions, including termination of this Contract scope of work without prejudice to the State.

Task 603 QUALITY CONTROL/QUALITY ASSURANCE (QC/QA) PLAN: Prepare a basic Quality Control/Quality Assurance Plan and adapt for individual Projects as assigned.

Within fifteen (15) business days of execution of this Contract, prepare and submit for acceptance a Quality Control/Quality Assurance Plan for all work to be performed under this Contract. This plan shall be consistent with the attached Guidelines for Quality Control/Quality Assurance (QC/QA) Plan.

Within fifteen (15) business days of Project authorization, adapt and amend the accepted plan as appropriate to include all provisions necessary for each Project site and its related work. No on-site or laboratory work may be performed without such a plan. Acceptance of the Professional firm's work plan imposes no expressed or implied responsibility, on the State, for the plan or its application. The Professional is exclusively responsible for their Project work plan's effectiveness and for conducting all work in compliance with it. Production of an accepted plan, and amendments thereto, and adherence to the same, is a requisite condition of satisfactory performance. Failure to do so is just and sufficient cause for suspension of the Professional firm's work, removal of workers from any site, and any other actions, including termination of this Contract scope of work without prejudice to the State.

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Task 604 SHOP DRAWINGS/SUBMITTALS/APPROVALS: Monitor, evaluate, and take such action as is necessary to achieve timely processing of shop drawings and other submittals and such other approvals as are the responsibility of the Professional. Prepare and maintain current, for Project records, a schedule documenting all required, received, rejected, and approved submittals of shop drawings, color/material samples, finishes, and other items requiring the Professional firm's approval. Notify the Construction Contractor(s), in writing, (copy to the Department) of delinquent submittals, the consequences of such delays, and prescribe a time for their submittal/resubmittal, which will not jeopardize the Contract completion date.

No design revisions will be made as part of the Professional firm's review and approval of shop drawings, or other submittals. In addition to all other functions, the Professional firm's approval of shop drawings shall verify the submittals furnished by the Construction Contractor(s) conforms to the design intent of the Professional firm's final design Contract Documents/drawings and specifications requirements. Provide written approval or rejection of shop drawings within ten (10) business days of receipt in the Professional firm's office. Provide and distribute up to five (5) copies of approved submittals as directed by the Department.

Task 605 PAYMENT PROCEDURES: Monitor, evaluate, and provide timely administrative action, as necessary, to certify or reject, as appropriate, and process the Construction Contractor's schedule of costs and monthly submitted payment requests. Payment of the construction Phase professional fee, by the State of Michigan to the Construction Contractor, shall be based on the Construction Contractor's performance of authorized Contract professional service(s) expenses performed prior to the date of each monthly submitted payment request. Payment requests will be submitted monthly to the Department's Project Director as the Project progresses on a Department payment request form (DMB-440). Payment to the Construction Contractor by the Department for each monthly submitted payment request invoice shall be made to the Construction Contractor within thirty (30) consecutive calendar days following the Department's receipt and approval of an approved payment request invoice from the Professional. Certification or rejection of all submitted payment requests shall be made by the Professional, in writing, within ten (10) business days of receipt in the Professional firm's office. The Professional shall certify to the Department, in writing, the dollar ($) amount the Professional determines to be due to the Construction Contractor for their monthly payment request or the Professional shall return the payment request to the Construction Contractor indicating the specific reasons in writing for rejecting the Construction Contractor's monthly payment request certification. If a monthly payment request is returned to the Construction Contractor, the Construction Contractor shall make the necessary corrections and resubmit that payment request to the Professional. Certification or rejection of all payment requests will be made by the Professional within ten (10) business days of receipt in the Professional firm's office.

Issue an appropriate certificate for payment only pursuant to a correctly prepared and accurate payment request and only for acceptable Project work. Payment certification shall constitute a written representation by the Professional, to the Department, that based on the Phase 700 on-site field Inspections, and the Professional firm's evaluations of field reports, test results, and other appropriate and available factors, the quantity and quality of Project work for which the payment request is certified has been accomplished by the Construction Contract or in accordance with the design intent of the Professional firm's Phase 500 - Final Design Contract Documents/drawings and specifications requirements and that the payment request is consistent with the quantity and quality of acceptable Project work in place, and that acceptable materials are properly stored on-site and/or off-site.

No payment request certificate shall be submitted that requests payment for disputed Project work or any Project work showing deficient test results. No certificate may be submitted after the Contract completion date which does not provide for withholding of assessable and/or projected liquidated damages. Pursuant to the Department's notification, the Professional firm's certification shall reduce from the amount earned, two (2) times the amount of any current prevailing wage rate payment deficiency, as certified by the State of Michigan against the Construction Contractor or any subcontractor or supplier thereof. Payment request rejections shall be accompanied with a written explanation and a copy shall be submitted to the Department's Project Director and their Field Representative.

Task 606 CONSTRUCTION SCHEDULE PROGRESS: Monitor, evaluate, and take timely administrative actions, as necessary, to determine whether the Construction Contractor's construction work schedule and progress appear to be adequate to achieve the Project scope of work by the Construction Contract completion date. Notify the Department, and Construction Contractor, in writing, within three (3) business days of the receipt of the Construction Contractor's proposed Project schedule, or amendments thereto, if in the Professional firm's opinion, if such schedule will produce the Project within the allotted Construction Contract time. Notify the Construction Contractor and the Department, in writing, if in the Professional firm's opinion such schedule should be accepted or rejected. Revise the Professional firm's attached Project Study, Design and Proposed Construction Schedule of Task 514 to show that the proposed on-site visitations of Tasks 705-708 are consistent with the actual events of the Project construction schedule.

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Give prompt, written notification to the Construction Contractor(s) and to the Department of inadequate construction schedule progress. Unless the Department determines that the needs of the Project require other action the Professional shall proceed as follows: (1) Investigate at the time of occurrence, any areas of inadequate construction schedule progress whose consequence may be a delay in, or increased cost for, a work item; (2) Notify the Construction Contractor(s) and the Department of the Professional firm's opinion of the problem and responsibility for the delay and costs. Advise whether the delay in any work may result in delays in the Project construction completion date; and (3) Advise the Construction Contractor(s) and the Department, in writing, of recommended action(s) by respective parties necessary to facilitate actions by the Construction Contractor to complete the Project construction work on schedule.

Bulletin Costs: During the 600 and 700 Construction Phase, review and evaluate the Construction Contractor's quotations for Bulletin work. Negotiate as appropriate to assure the Department's costs commensurate with the actual value of the Project work. Provide the Department with written recommendation(s) within five (5) business days of receipt of the quotation.

Evaluate any documentable impact on the Project construction schedule claimed by the Construction Contractor(s) arising from Bulletin work. Take appropriate and timely action under terms allowable under the Construction Contract, to implement any Bulletin work which the Professional and the Department consider critical to the Project schedule, but whose cost is disputed.

Within ten (10) business days of its receipt, evaluate and provide the Department with appropriate written recommendations, along with an analysis of any request by the Construction Contractor(s) for a time extension of their Construction Contract completion date. No recommendation for a Construction Contract time extension may be submitted to the Department which is not substantiated by the Professional firm's technical review and evaluation of the Project schedule showing critical path work, non-critical path work, and float time for the complete Project and any work at issue and having such detail as to clearly document the Construction Contractor's claim. The Professional must evaluate the Construction Contractor's performance/progress of the item(s) at issue and the Project in general. Any recommendation for an extension of the Construction Contractor's Contract completion date must include a complete analysis of all direct and indirect costs of the Construction Contractor, the Professional and the Department regarding the time extension. Where the Project is not substantially complete on the Construction Contract completion date, notify the Construction Contractor and the Department, in writing, of the expiration of the Contract completion date and of the assessment of liquidated damages.

Task 607 ENVIRONMENTAL TESTING/ANALYSIS: Where provided for in this Contract, provide laboratory testing and analysis of Phase 700 environmental sampling services. All laboratory testing and analysis services shall be in accordance with the United States Environmental Protection Agency, Document SW-846, the American Society for Testing and Materials Procedures, and all requirements and standards prescribed by the Department. Provide positive custody control records in such format and detail as the Department may require, or accept. The testing/analysis of Task 103 samples shall receive first priority in laboratory processing and, except where the method procedures may preclude, results shall be produced within five (5) business days of sampling. Analysis of samples from underground storage tank sites, having a confirmed release, shall be produced within ten (10) consecutive calendar days of sampling. All findings shall be reported, and graphically illustrated, in comparison to acceptable limits/standards as the Department may require. Notify the Department's Project Director of test results not meeting acceptable testing standards. Hold, and legally dispose of all expended samples, drill cuttings, water, mud, and all other constituents, debris from sampling and testing. Where testing and analysis services are by others, evaluate and approve, or disapprove, test reports within two (2) business days of the receipt of such reports, provide copies thereof marked with the Professional firm's approval. Provide written reports and appropriate correspondence summarizing the findings of testing and analysis.

Task 607.01 CONSTRUCTION TESTING PROGRAM: Monitor, evaluate, and take timely administrative action, as may be required, in response to the results of the construction quality control and material testing program. In circumstances where the testing is not provided by the Department, evaluate and approve, or disapprove the Construction Contractor(s) work plan for providing all test reports. Provide the Construction Contractor(s) and the Department with written evaluation of all test reports, copies of test reports, marked with the Professional firm's approval or disapproval within five (5) business days of receipt of the report. Within five (5) business days of the receipt of any test reports not meeting the Construction Contract requirements direct the Construction Contractor(s), in writing, to take appropriate, corrective, or replacement measures within a prescribed time. Follow up, as appropriate; to require the Construction Contractor(s) to achieve the design intent of the Professional firm's final design Contract Documents/drawings and specifications requirements and avoid delays to any element of work which may, in the

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Professional firm's opinion, may result in a delay in the Construction Contract completion date. Notify the Construction Contractor, in writing, of any delinquent corrections/replacement and take administrative action in accordance with Task 608.

Task 608 CONSTRUCTION CONTRACTOR PERFORMANCE: Throughout the execution of this Contract, monitor and evaluate the Project Construction Contractor(s) performance and quality assurance labor procedures and provide timely, administrative action to cause the Construction Contractor(s) to correct deficiencies. With the Department's concurrence, the Professional may direct, in writing, the exposure and testing of any work, already in place or covered, which the Professional, and/or the Department believes may not meet the design intent of the Professional firm's final design Contract Documents/drawings and specifications requirements.

Notify the Construction Contractor, and the Department, in writing, within five (5) business days of its identification, of any aspect of the Construction Contractor's performance which is inconsistent with the Contract Documents requirements or which, in the Professional firm's opinion, is inconsistent with the design intent of the Professional firm's final design Contract Documents/drawings and specifications. Prescribe a reasonable time for correction which will not jeopardize the Project schedule completion date. Exert all practical administrative means necessary to require the Construction Contractor to perform as required by their Construction Contract to meet the design intent of the Professional firm's final design Contract Documents/drawings and specifications requirements.

Deficient Performance: Upon identification of deficient performance, where the Construction Contractor fails to provide timely or acceptable performance, the Professional shall proceed as follows: (1) Notify within three (3) business days the Department, the Construction Contractor and any affected surety, in writing, and by registered mail delivery, of the potential for the Construction Contractor's default action and the Professional firm's recommendation; (2) Identify applicable Construction Contract references, with design interpretation of such references, and clearly explain where the Construction Contractor's performance fails to meet the design intent of the Professional firm's final design Contract Documents/drawings and specifications requirements; and (3) Specify a time and date for the Construction Contractor to begin active and continuous work towards Contract compliance and a specific time and date for Project completion.

Potential Default: Upon notification by the Department of potential default by the Construction Contractor, where the Project Construction Contractor fails to adequately perform, the Professional shall proceed as follows: (1) Document the potential default, in writing, to the Construction Contractor, the Construction Contractor's surety and the Department; (2) Provide an explanation of the consequences of the potential default to the Project; (3) Provide the Department with a complete set of Project record documentation necessary to assist the Department in the legal implementation of the Construction Contractor's default action; (4) Establish an appropriate amount and withhold from payment certification of the associated line item, include a retainage consisting of any costs expended for testing and other investigations necessary to establish unsatisfactory performance plus a contingency amount, adequate for the Department to correct such unacceptable performance by means other than the Construction Contractor; and (5) Notify the Construction Contractor and their surety, in writing, of the withholding.

Default: Upon notification of the Project Construction Contractor's default, the Professional shall proceed as follows: (1) Identify the extent of defaulted and/or remaining Project work; (2) Recommend a procedural program for the Department to achieve the defaulted work within the remaining Project construction time schedule if possible; and (3) Provide modified final design Contract Bidding Documents/drawings and specifications that will allow the Department to rebid the remaining portion of work using the Professional firm's recommendations. The Professional firm will be compensated by the Department with a Contract Change Order for providing the defaulted Construction Contractor assistance service.

Task 609 PUNCH LIST PROCEDURES: Prepare and distribute, as required, Punch Lists for each construction Contract. Prescribe a reasonable schedule for completion of all construction Punch List items and identify an amount to be withheld from payment consisting of a minimum of two (2) times the estimated value of the unacceptable construction work plus an amount sufficient to assure the Department sufficient funds to cover all costs as may become necessary to complete the remaining delinquent work. Distribute Punch Lists within five (5) business days of the on-site Inspection. Notify the Construction Contractor of any delinquent Punch List construction corrections and take appropriate action in accordance with Tasks 606 and 608.

Task 610 CLAIMS: Evaluate and respond to any claims (in whole or in part) against the Department within five (5) business days of the receipt of such claim, in the Professional firm's office. Where any element of claims or subsequent litigation, are based, in whole or in part, upon any deficiency or delinquency in the Professional firm's services, the Professional shall provide, in a timely manner, all professional services to defend the claim issue(s). No payment will

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be due for claim defense services accumulated under this Task until settlement or judgment of litigation concludes the claim issue. The claim settlement or judgment decision will be used as the basis for determining the Professional firm's obligation, if any, for the costs of such professional services and/or for any costs incurred by the Department for which performance by the Professional may be responsible or contributory. Billing under this Task will be in accordance with an appropriate Contract Modification and/or Contract Change Order.

Task 611 AS-BUILT DOCUMENTS: Incorporate and render the Construction Contractor's as-built drawings within ninety (90) consecutive calendar days after receipt of the properly prepared and submitted Construction Contractor documents into the Professional firm's original final design, Contract Documents/drawings and specifications. The Professional shall provide the Project Director and the State/Client Agency with the following two (2) types of Contract deliverable as-built original documents for Project close-out: (1) One (1) set of legible/reproducible mylars completely updated, as-built original tracings of the Contract Documents/drawings; and (2) Two (2) sets of completely updated as-built, close-out documents of the Project Contract Documents/drawings on computer compact disks (CD's) in an Auto CAD format that is "Auto CAD readable" and conforms to the American Institute of Architects (AIA) National CAD Standard format. The as-built documents shall depict all construction modifications, additions, and deletions made either by Addendum, Bulletin, supplemental written instructions, and the written notations shown on the Construction Contractor's as-built drawings. The Professional firm's as-built drawings shall be of such clarity, detail, and completeness that reference to other documents will not be required to describe or depict, the Project. The above referenced as-built documents shall be free of the Professional firm's original final design errors and omissions. The Professional shall revise the final design as-built drawings as necessary to incorporate all requested Department revisions as required for the Department's formal written acceptance and approval of the Project as-built drawings and the Project final on-site Inspection. The Professional firm's services for the Task 609, As-Built Documents are not complete until: (1) The as-built drawings have been verified, in writing, by the Professional to the Project Director as being accurate and complete; and (2) The as-built drawings have been turned over and accepted by the Project Director in writing.

Task 612 REMEDIATION OPERATIONS: Monitor, analyze, and provide all necessary reports to the governing enforcing agency regarding the performance of construction and/or remediation facilities and/or equipment.

Task 613 PROJECT REPORT/CLOSE-OUT PROCEDURES: Maintain for the Project record a schedule of the Construction Contractor's required submittals for Project close-out. Review and approve or reject all submittals as appropriate. Within ninety (90) consecutive calendar days after Substantial Completion of the Project, after building or Project occupancy, verify to the Project Director in writing, that the following documents have been received: (1.) All Project code compliance approvals; (2.) Final Inspections; (3.) Final occupancy permits; (4.) Construction Contractor's as-built final design marked-up drawings; (5.) Copies of "Operation and Maintenance Manuals" of the Project systems; and (6.) Equipment warranties and guarantees.

Prepare and provide to the Project Director within ninety (90) consecutive calendar days after Substantial Completion of the construction and/or remediation process Project, three (3) copies of "Operation and Maintenance Manuals" of the Project systems and equipment. These close-out manuals shall include copies of reduced size, as-built drawings, specifications, and all instructions published or furnished by respective manufacturers, construction code compliance certificates, equipment warranties and guarantees. The manuals shall also include a complete description of the Professional firm's Phase 500 - Final Design intent concepts, operation, and required maintenance of each system. Participate in the Construction Contractor's start-up and in the training instruction of State/Client Agency personnel in the operation and use of the Project systems.

Provide four (4) bound and indexed copies of a Project close-out report of the "Operation and Maintenance Manuals" of the systems and equipment. This Project report must include, but may not be limited to:

1. Summary of the Project purpose, scope, and design criteria employed to achieve the Project scope of work.

2. Reduced size, approved, as-built drawings and shop drawings.

3. Narrative and graphic description of the operation of all major systems and equipment, and specific operating instructions, along with a listing of normal operating parameters.

4. Required maintenance program including spare parts requirements and specifications/source.

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5. Records of all testing. Environmental test records must document that Project remediated site areas are within the legal limits acceptable to the governing enforcing agency. Construction testing must demonstrate full compliance with the final design Contract Documents/drawings and specifications requirements.

6. Record of all training provided as part of the Project scope of work along with all training aids and copies of certificates awarded.

7. Photographs showing the progress of the Project scope of work and principal, covered, or otherwise inaccessible, details of the work.

8. Copies of all permits, warranties, code compliance certifications from the respective governing enforcing agencies, records of legal disposal of debris and toxic/hazardous waste at treatment facilities or licensed landfill.

9. Where the construction Phase consists of the execution of a remediation process, provide legal documentation of site clearance or other certified verification that remediation/decontamination work has been legally completed to the satisfaction of the governing enforcing agency.

10. A narrative report on the conduct and conclusion of the Project.

This Project manual shall be so composed and complete as to be directly usable by individuals in the maintenance and operation of the State/Client Agency's site/facility.

Task 613.01 PROJECT CLOSE-OUT: When the remediation process and/or operation of the State/Client Agency facility has achieved remediation/decontamination, to within legal limits acceptable to the enforcing agency, provide all Project records, information, and analysis as may be required for the allowed type, or combination of types, of closure to be secured. When authorized by the Department, submit on the Department's behalf, request(s) for legal closure and provide all information as the governing enforcing agency may legally require for its consideration and approvals.

PHASE 700 - ENVIRONMENTAL RESPONSE/REMEDIAL ACTION - FIELD SERVICES

The Department may provide full- or part-time on-site State Field Inspectors to monitor the coordination and progress of the scope of work services of the Professional and the Project work of the remediation Construction Contractor(s). Such Inspections may generate reports, minutes of meetings, notes and documents, which will be available to, and may be useful for, the Professional. These Department State Field Inspectors will be under the direction of the Project Director and their Field Representative. The Project Director and the State/Client Agency, or their State Field Inspector has the authority to require the Professional to respond to and resolve study/design related problems, construction field problems and to attend Project related meetings.

The Professional shall provide sufficient on-site field Inspections of the work to administer the construction field services Phase, and its related construction Phase remediation/administration office services, as directly related to the degree of Project complexity and scope of work requirements, up to and including full-time on-site field Inspections. These Inspections shall occur as the construction on-site field conditions may warrant, and during regularly-scheduled monthly progress meetings. Inspections shall be performed by professional disciplines appropriate to the status of the Project scope of work. The Professional shall use for their construction on-site field Inspection services, only personnel having such professional expertise, experience, authority, and compatibility with departmental procedures as the Department may approve. The Professional agrees that such characteristics are essential for the successful completion of the Project scope of work. Such individuals shall be replaced for cause where the Department determines and notifies the Professional, in writing, of their unacceptable performance.

The Professional shall review the Project construction work in place and that sequentially planned. The Professional shall determine whether the actual construction schedule progress appears to be in accordance with the approved schedule and whether the quality of the work appears to be in accordance with the design intent of the Professional firm's Phase 500 - Final Design Contract Documents/drawings and specifications requirements and are without apparent defects or deficiencies. No on-site advertising by, or of, the Professional or Project signs other than those appropriate to locate an approved field office will be permitted.

Task 701 COORDINATION: Coordinate all the Professional firm's staff, Consultant firm's staff, Construction Contractor and all other Project related resources.

Task 702 ENVIRONMENTAL SAMPLING: Conduct on-site surveys, investigations, sampling and monitoring procedures in accordance with the following Phase 100 Study/Task Services: (1.) Task 102, Site Assessments; (2.) Task 103, Initial Response Investigations; (3.) Task 104, Preliminary Investigations; (4) Task 106, Remedial Investigations; and (5) Task 107, Risk Assessments.

SAMPLE

Where sampling by the Professional is required in this Contract, produce all sampling in accordance with the United States Environmental Protection Agency, Document SW-846, the Department of Environmental Quality's requirements, the American Society for Testing and materials procedures, and all other Project related governing regulations, standards, and procedures. Maintain positive custody control and records thereof in such format and detail as the State may prescribe or accept. Provide written report and appropriate analysis of all tests. Where testing services are by others, monitor, evaluate, and take timely action, as may be required, in response to the results of the testing program. Evaluate and approve, or disapprove as appropriate, all test reports. Verbally notify the Project Director and their Field Representative immediately of any field inspection/observation or test(s) not meeting applicable Project governing standards and confirm in writing. Provide the Department with copies of test reports, marked with the Professional firm's approval or disapproval within five (5) business days of receipt of the report. Provide up to five (5) additional copies and distribute as the Department may direct.

Task 703 OPERATIONAL SERVICES: Provide such operational and monitoring services as may be required in connection with the Task 408.01, Design Development scope of work.

Task 704 PRECONSTRUCTION MEETING: Preside at and record preconstruction/organizational meetings for each Construction Contract.

Task 705 CONSTRUCTION ON-SITE INSPECTION/TESTING SERVICES: Define, prepare, and conduct an appropriate in-field inspection/testing program in association with the Phase 100 and 600 operations requiring field inspection and testing services. Provide all field observations, sampling, testing, and inspections as necessary in association with Phase 100 and 600 services and testing program/requirements. Submit all tests, test result reports, and any Project associated correspondence. Verbally notify the Project Director and their Field Representative immediately of any field inspection/observation or test(s) not meeting applicable Projects governing standards and confirm in writing. Provide copies to the State/Client Agency, Project Director and their Field Representative.

The Professional firm and their Consultant firm's shall conduct, and record the principal events and status of the work of all scheduled, and other on-site Inspections/visitations and its appropriate contractors. The on-site field Inspections shall occur as the field conditions may warrant, and during the regularly scheduled monthly progress and payment meetings. All on-site construction progress Inspections shall be recorded in the form of a written report to the Department and the Construction Contractor within five (5) business days of the Project construction progress Inspection. The purpose of such on-site Inspection/visitations includes, but is not limited to: (1) Achieve and maintain a working familiarity with the status and quantity of Project work in place; (2) Determine if the actual construction schedule progress is in accordance with the approved Project construction schedule; (3) Review the installation and determine the acceptability of preparations for, and installation of, pending critical construction components and activities; and (4) The Inspection of Project construction work completed or in progress by the Construction Contractor to determine and verify, in writing, to the Project Director and their Field Representative that the quantity and quality of all Project work is in accordance with the design intent of the Professional firm's Phase 500 - Final Design Contract Documents/ drawings and specifications requirements.

Task 706 PROBLEM SOLVING MEETINGS: Conduct and record problem solving meetings between the Professional firm and the Professional firm's appropriate Consultants, the Construction Contractor(s), their subcontractors, the Department, the Project Director, the State Project Manager, and any construction managers and other affected parties on-site or elsewhere to assess the construction work progress, provide design interpretation decisions and to resolve problems affecting the construction work. These problem solving meetings shall be scheduled as the on-site field conditions and the Project scope of work requirements may require as a minimum, and/or shall be at such time as the Construction Contractor(s), the Professional, the Project Director and their Field Representative, the State/Client Agency, and any construction manager agree is appropriate to the work progress. Non-scheduled or emergency meetings shall be at such time as necessary to maintain schedule of various Project work items and to avoid delays in the Construction Contract completion date.

Task 707 PROGRESS MEETINGS: Conduct and record monthly scheduled on-site Project construction progress meetings with the Project Director and their Field Representative, the Construction Contractor(s), and any construction manager. Assess Project construction work progress, and take such timely, administrative actions as necessary to maintain the Project construction work on schedule and respond to and resolve all design related and construction items affecting Project construction cost, and be in compliance with the design intent of the Professional firm's Phase 500 - Final Design Contract Documents/ drawings and specifications requirements, in accordance with Tasks 513 and 514.

SAMPLE

Task 708 FINAL ON-SITE PROJECT INSPECTION: Conduct final on-site Inspections of the Project, in concert with the Construction Contractor(s), the Project Director and their Field Representative and any construction manager. Final on-site Inspections shall be conducted to witness and record equipment start-up and all testing, to determine the status of any part of the Project construction work where the Department intends to take beneficial use or occupancy, to verify, in writing, that each Construction Contractor has achieved substantial completion, and prepare Punch List(s) items, and to verify completion of Punch List work. Verify to the Project Director and their Field Representative, in writing, the completeness and accuracy of the Construction Contractor's as-built drawings during the Project construction Phase on-site field Inspection(s) and identify any corrections required. The Professional shall revise the final as-built drawings as necessary to incorporate all requested Department revisions as required for the Department's formal written acceptance and approval of the Project as-built drawings and the Project final on-site Inspection. Verify and certify in writing, that all work has been completed in accordance with the design intent of the Professional firm's Phase 500 - Final Design Contract Document/drawings and specifications requirements and that all equipment and systems function without identifiable defects. Where the Construction Contractor fails to complete all Punch List work in a timely manner, take action in accordance with Tasks 606 and 706.

ARTICLE II
COMPENSATION

In consideration of the performance of this Contract, the Department agrees to pay the Professional, as compensation for professional services, an hourly billing rate for each employee providing a direct service to this Project, on a not-to-exceed basis as specified herein, subject to subsequent modification mutually agreeable to the parties hereto; provided, however, the Professional may not incur costs, or bill the Department, for professional services in excess of the estimates established for this Project without the prior written agreement of the Department. The attached proposal prepared by the Professional in response to the Request for Proposal, by the Owner, may describe methodology, services, schedule, and other aspects of the work to be performed under the Contract but does not supersede the Contract.

Compensation to the Professional shall be on an hourly billing rate basis for professional services rendered by salaried and non-salaried professional, technical and technical support employees, except for any authorized reimbursable expenses provided for in this Contract. Total compensation for any Phase shall not exceed the amount authorized for that Phase, unless authorized in writing by the Department's approved Contract Change Order. Professional services shall not be performed and no Project expense shall be incurred by the Professional firm prior to the issuance of a written and signed Professional Services Contract and a DMB Form 402 - Contract Order by the Department to the Professional, authorizing the Professional to start the Project.

Compensation to the Professional for services and authorized technical and technical support employees performing a direct service for this Project shall be determined using the Professional firm's billing rates. The Professional firm's hourly billing rate cost shall be the direct payroll amount for the employee services on the Project including, but not limited to, any fringe benefits, vacations, sick leave, other indirect costs, and profit. Such costs and the Professional firm's hourly billing rates shall not change during the life of this Contract without written approval by the Department. The Professional firm's hourly billing rates may also include: (1) All consumables used by the Professional or the Professional firm's Consultants for collection of samples to be tested and analyzed by others; and (2) The costs of owning, operating, maintaining, insuring, and replacing all direct reading/measuring and testing instruments designed for on-site field Inspection and testing work, along with their computer or data recorders, as the Professional may use for on-site field Inspections, investigations, measuring, sampling, or testing services See attached Appendix for the guide to overhead items allowed for the professional services contractor firm's hourly billing rate calculation. Reimbursement for the Project/Program Statement scope of work requirements will be provided only for Department approved items authorized for reimbursement compensation in this Contract. Compensation is approved and authorized by the Department on a per test basis for laboratory services by Professional firm(s) identified and listed in this Contract to: (1) Test and analyze samples collected by their technical employees; and (2) The Professional firm's per test costs shall be recognized by the Department to include all consumables necessary to prepare and secure the respective sample(s) and to conduct the required analytical testing procedures thereon.

The preparation of Bulletins and Contract Change Orders resulting from increases in the Project scope of work or previously unknown on-site field conditions will be compensated to the Professional firm, as approved by the Department on an hourly billing rate basis in accordance with this article. This compensation shall not exceed seven and one-half percent (7.5%) of the Construction Contractor's quotation for the Bulletin or Contract Change Order or an amount mutually agreed upon by the Professional and the Project Director.

The Professional shall provide, at no additional compensation, professional services necessary to respond to and resolve all Construction Contractor design related claims arising wholly or in part from the Professional's Contract Documents errors or omissions or other aspects of the Project's design or the Professional's performance which are inconsistent with the Professional or Construction Contract.

SAMPLE

Reproduction costs for the Professional firm's interpretations, study/design clarifications, and Bulletins necessary to achieve the Contract scope of work final design requirements is not allowable for reimbursement and shall be accounted as part of the Professional firm's lump sum fee of this Contract.

2.1 PREMIUM TIME/OVERTIME: This Contract anticipates that no premium or overtime is required to achieve the Project's scope of work. No compensation will be allowed to the Professional for any premium or overtime cost incurred to achieve the Project schedule of this Contract, unless directing in writing by the Project Director.

2.2 EMPLOYEE HOURLY BILLING RATES: Hourly billing rates will include all direct and indirect monetary costs to the State for the Professional's services under this Contract other than the authorized and approved reimbursements. Hourly billing rates shall be based on the Professional's documented historical operating expenses and adjusted for Project specific costs. In no case shall this documentation period include more than eighteen (18) months prior to the date of award of this Contract. The Professional may not provide different hourly billing rates for the same individual for different Phases.

No lump-sum amounts of any of the Firm's employees may be billed against this Contract. Any employee associated with this Project who performs the professional services of a subordinate or of a position classification having a lower classification/pay range shall be accounted and paid for at the lower hourly billing pay rate. The hourly billing rate charge of any employee may be changed by the Professional with a written and Department approved Contract Modification during the life of this Contract to account for normal personnel pay increases.

Hourly billing rates include, but are not limited to: Overhead items such as employee fringe benefits, vacations, sick leave, insurance, taxes, pension funds, retirement plans, meals, lodging, and all Project related travel expenses for Projects **less than** one-hundred (100) miles in each direction from the Professional's Michigan office, computer costs/operating costs and time, telephone, telephone-related services, and all reproduction services (except Contract Bidding Documents).

The hourly billing rate also includes all reproduction costs for design interpretations, study/design clarifications and Bulletins related to design errors or omissions, construction code compliance (precipitating either from design code compliance and plan review, design interpretations, or construction on-site/field Inspections), and all similar, or avoidable costs shall be accounted as part of the Professional's calculated hourly billing rate. All incidental postage, mail, or other shipping or delivery services, acquisition, bad debts, previous business losses, employment fees, depreciation, and operating costs for equipment, including computer design and/or computer drafting systems, and any specialized testing equipment are to be included. The hourly billing rate shall include, without exception, secretarial, computer/typing/word processing, editing, and clerical services utilized in any way for the Project as well as other non-technical and/or overhead employees. The hourly billing rate also includes all profit without regard to its form or distribution.

Items not allowable as part of the Professional's calculated hourly billing rate include, but are not limited to: Any costs associated with litigation and settlements for the Professional, or other liability suits, out-of-state offices, and associated travel, bonuses, profit sharing, premium/overtime costs, public relations, entertainment, business promotion, contributions, and various speculative allowances.

The hourly billing rate for the Professional may not be applied to the work of the Professional's Consultant's staff. Each Consultant firm must submit a separate hourly billing rate with proper documentation for the Consultant services they will provide as part of the Proposal. The hourly billing rate of the respective Consultant firm shall be used for that Consultant firm's personnel only. No mark-up to Consultant firm's charges will be allowed.

2.3 RANGE OF EMPLOYEE HOURLY BILLING RATES: The Professional shall identify the service being provided and include the Professional's or Consultant's employee(s) full names and position classifications for the Project and their current hourly billing rates at the beginning and at the anticipated end of the Project. This hourly billing rate range shall reflect any anticipated pay increases over the life of the Contract. The range of hourly billing rates for any employee position or classification may not be changed without an approved Contract Modification.

2.4 DIRECT COST REIMBURSEMENT ITEMS: The Professional's Consultant services and authorized reimbursable expenses shall be treated as an authorized reimbursable expense item at a direct cost. The Professional shall be responsible for the selection of the supplier of their professional services or materials, the coordination, adequacy and application of their professional services, whether provided by the Professional's staff or provided by their Consultant, any Project costs that exceed the Contract per Phase reimbursement Budget.

Project related travel expenses (mileage, meals, lodging) for Projects **more than** one-hundred (100) miles in one-way from the Professional's Michigan office shall be treated as an authorized reimbursable expense at the State of Michigan's current travel rates.

SAMPLE

Unless authorized elsewhere in this Contract, direct cost reimbursement items shall be limited to the actual cost of printing and reproduction of project deliverables such as Final Study Reports, Surveys, Bidding Documents, and U.S. Mail regular shipping postage of the project deliverables listed above. In addition, direct cost reimbursement items may include soil borings, site surveys and any required laboratory testing, Design Code Compliance and Plan Review Approval Fees by the licensing agency; reproduction of documents for legislative presentation, artistic productions, mobilization of testing equipment, laboratory costs for testing samples, per-linear-foot cost of soil borings and specialized inspections of the structural, mechanical, electrical, chemical or other essential components of the Project.

Compensation for this Contract shall not exceed the amounts per Project Phase shown in the attached Contract Order unless authorized by a Department approved Contract Modification. It shall be the Professional's responsibility to carefully monitor their and their Consultant firms Project costs, activities, and progress and to give the Project Director timely notification of any justifiable need to increase the authorized fee. The Professional may not proceed with professional services that have not been authorized by the Project Director and shall immediately notify the Project Director if such services have been requested or have become necessary.

Identification of Professional and Consultant staff, hourly billable rates, and an itemized list per Project Phase of authorized direct cost reimbursement items are identified in the attached Professional's proposal.

ARTICLE III
PAYMENTS

Payment of the professional services fee shall be based on the Professional's performance of authorized professional service(s) performed prior to the date of each submitted payment request. Payment requests shall be submitted monthly to the Project Director on a payment request form (DMB-440). Payment for each monthly submitted payment request shall be made within thirty (30) consecutive calendar days following the Department's approval of the payment request. Payment requests shall include signed certification by the Professional of the actual percentage of work completed as of the date of invoicing for each Phase and summarize the amounts authorized, earned, previously paid, and currently due for each Project Phase. Payment requests shall be supported by itemized records or documentation in such form and detail as the Department may require. Each of the Professional's Consultant's submitted payment request applications shall include similar information. This includes, but is not limited to:

a) Phase Numbers for the professional services provided.
b) Professional's personnel and position/classification providing service and hours worked
d) Current hourly billing rate charges for each individual position/classification.
e) Copy of certified on-site visitation log or site visit report showing time on-site.
f) Itemized invoices from each of the Professional's Consultant's documenting that firm's professional services charge and the Project work related services provided.
g) Authorized reimbursable expense items provided with receipts and invoices.

ARTICLE IV
ACCOUNTING

The Professional shall keep current and accurate records of Project costs and expenses, of hourly billing rates, authorized reimbursable expense items, and all other Project related accounting document to support the Professional's monthly application for payment. Project records shall be kept on a generally recognized accounting basis. Such records shall be available to the Department for a period of three (3) years after the Department's final payment to the Professional. The State of Michigan reserves the right to conduct, or have conducted, an audit and inspection of these Project records at any time during the Project or following its completion.

ARTICLE V
INSURANCE

The Professional shall purchase, maintain and require such insurance that will provide protection from claims set forth below which may arise out of or result from the Professional firm's services under this Contract, whether such service is performed by the Professional or performed by any of the Professional firm's Consultant's or by anyone directly or indirectly employed by them, or by anyone for whose acts they may be liable. The following insurance policy limits described below are intended to be the minimum coverage acceptable by the State:

For the purpose of this Section, "State" includes its departments, divisions, agencies, offices, commissions, officers, employees, and agents.

SAMPLE

(a) The Professional must provide proof that it has obtained the minimum levels of insurance coverage indicated or required by law, whichever is greater. The insurance must protect the State from claims that may arise out of or result from or are alleged to arise out of or result from the Professional's or a Subcontractor's performance, including any person directly or indirectly employed by the Professional or a Subcontractor, or any person for whose acts the Professional or a Subcontractor may be liable.

(b) The Professional waives all rights against the State for the recovery of damages that are covered by the insurance policies the Professional is required to maintain under this Section. The Professional's failure to obtain and maintain the required insurance will not limit this waiver.

(c) All insurance coverage provided relative to this Contract is primary and non-contributing to any comparable liability insurance (including self-insurance) carried by the State.

(d) The State, in its sole discretion, may approve the use of a fully-funded self-insurance program in place of any specified insurance identified in this Section.

(e) Unless the State approves, any insurer must have an A.M. Best rating of "A-" or better and a financial size of VII or better, or if those ratings are not available, a comparable rating from an insurance rating agency approved by the State. All policies of insurance must be issued by companies that have been approved to do business in the State. To view the latest A.M. Best's Key Ratings Guide and the A.M. Best's Company Reports (which include the A.M. Best's Ratings) visit the A.M. Best Company internet web site at http://www.ambest.com.

(f) Where specific coverage limits are listed in this Section, they represent the minimum acceptable limits. If the Professional's policy contains higher limits, the State is entitled to coverage to the extent of the higher limits.

(g) The Professional must maintain all required insurance coverage throughout the term of this Contract and any extensions. However, in the case of claims-made Commercial General Liability policies, the Professional must secure tail coverage for at least three (3) years following the termination of this Contract.

(h) The minimum limits of coverage specified are not intended, and may not be construed, to limit any liability or indemnity of the Professional to any indemnified party or other persons.

(i) The Professional is responsible for the payment of all deductibles.

(j) If the Professional fails to pay any premium for a required insurance policy, or if any insurer cancels or significantly reduces any required insurance without the State's approval, the State may, after giving the Professional at least 30 day notice, pay the premium or procure similar insurance coverage from another company or companies. The State may deduct any part of the cost from any payment due the Professional, or require the Professional to pay that cost upon demand.

(k) In the event the State approves the representation of the State by the insurer's attorney, the attorney may be required to be designated as a Special Assistant Attorney General by the Michigan Attorney General.

(l) If single policy limits are used to fill more than one of these requirements evidence of separate aggregate limits must be noted on the certificate.

5.1 Workers' Compensation and Employer's Liability Insurance

The Contractor must provide Workers' Compensation coverage according to applicable laws governing work activities in the state of the Contractor's domicile. If the applicable coverage is provided by a self-insurer, the Contractor must provide proof of an approved self-insured authority by the jurisdiction of domicile.

For employees working outside of the state of the Contractor's domicile, the Contractor must provide certificates of insurance proving mandated coverage levels for the jurisdictions where the employees' activities occur.

5.2 Motor Vehicle Insurance

If a motor vehicle is used in relation to the Contractor's performance, the Contractor must have vehicle liability insurance on the motor vehicle for bodily injury and property damage as required by law.

5.3 Commercial General Liability Insurance

For claims for damages because of bodily injury or death of any person, other than the Professional's employees, or damage to tangible property of others, including loss of use resulting therefrom, to the extent that such kinds of liability are not insured by other specific liability insurance and are ordinarily insurable under general liability insurance. The Contractor must list the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents as additional insureds on the Commercial General Liability certificate. The Contractor also agrees to provide evidence that insurance policies contain a waiver of subrogation by the insurance company.

Minimal Limits:
$1,000,000 Personal & Advertising Injury Limit;
$1,000,000 Each Occurrence Limit;
$2,000,000 General Aggregate Limit other than Products/Completed Operations; and
$2,000,000 Products/Completed Operations Aggregate Limit.

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5.4 Pollution Liability Insurance

Minimal Limits:
$1,000,000 Each Occurrence
$2,000,000 Annual Aggregate

5.5 Umbrella Insurance

Minimal Limits:
$1,000,000 Each Occurrence
$2,000,000 Annual Aggregate

5.6 Professional Liability Insurance (Errors and Omissions)

For claims for damages arising out of an error, omission or negligent act in the performance of professional services.

Minimal Limits:
$1,000,000 Each Occurrence
$2,000,000 Annual Aggregate

The Professional firm's Errors and Omissions coverage shall include coverage for claims resulting from acts of forbearance that cause or exacerbate pollution and claims of bodily injury and property damage in the amount of $1,000,000 minimum coverage per occurrence, $2,000,000 annual aggregate. This insurance is required of all Professional firms who conduct professional environmental services including, but not limited to, any of the following services:

(i) Remedial System Design.
(ii) Remediation Management.
(iii) Feasibility Development and Implementation.
(iv) Hydrogeological Evaluation.
(v) Media Testing and Analysis.
(vi) Subsurface and Geophysical Investigation.
(vii) Other related activities as determined by the Department.

Contractual Liability Insurance for claims for damages that may arise from the Professional's assumption of liability on behalf of the State under Article 6 concerning indemnification for errors, omissions, or negligent acts in the course of the professional service or other provision within this Contract to the extent that such kinds of contractual liability are insurable in connection with and subject to limits of liability not less than for the general liability insurance and the professional liability insurance and set forth in subsections (c) and (d) above.

Except where the State has approved a subcontract with other insurance provisions, the Professional must require any Consultant/Subcontractor to purchase and maintain the insurance coverage required in this Article. Alternatively, the Contractor may include a Consultant/Subcontractor under the Professional's insurance on the coverage required in that Section. The failure of a Consultant/Subcontractor to comply with insurance requirements does not limit the Professional's liability or responsibility.

Certificate of Insurance documents, acceptable to the State, shall be provided and filed with the Department prior to commencement of the Professional's Project services, unless otherwise approved in writing, and not less than 20 days before the insurance expiration date every year thereafter. Facsimile copies of the Certificate of Insurance will not be accepted. Certificate of Insurance documents must be either submitted hard copy or portable document file (.pdf). The Certificate of Insurance documents must specify on the certificate in the oblong rectangle space labeled "Description of Operations/Locations/Vehicles/Exclusions Added By Endorsement/Special Provisions/Special Items" the following items: **(1) The Project File No.; (2) The Project Title; (3) Description of the Project; and (4) The State of Michigan must be named as an "Additional Insured on the General Liability Insurance Policy."** The Certificate of Insurance documents shall contain a provision that the Project insurance coverage afforded under the insurance policies for this Contract will not be modified or canceled without at least thirty (30) consecutive calendar days prior written notice, except for 10 days for non-payment of premium, to the State of Michigan, Department.

The attached, Certificates of Insurance documents required for this Project shall be in force for this Project until the final payment by the State to the Professional is made and shall be written for not less than any limits of liability specified above. The Professional has the responsibility for having their Consultant firm's comply with these insurance requirements.

ARTICLE VI
INDEMNIFICATION

(a) To the extent permitted by law, the Professional shall indemnify, defend and hold harmless the State from liability, including all claims and losses, and all related costs and expenses (including reasonable attorneys' fees and costs of investigation, litigation,

SAMPLE

settlement, judgments, interest and penalties), accruing or resulting to any person, firm or corporation that may be injured or damaged by the Professional in the performance of this Contract and that are attributable to the negligence or tortious acts of the Professional or any of its Subcontractors/Consultants, or by anyone else for whose acts any of them may be liable.

(b) Employee Indemnification: In any and all claims against the State of Michigan, its departments, divisions, agencies, boards, sections, commissions, officers, employees and agents, by any employee of the Professional or any of its Subcontractors/Consultants, the indemnification obligation under this Contract shall not be limited in any way by the amount or type of damages, compensation or benefits payable by or for the Professional or any of its Subcontractors/Consultants under worker's disability compensation acts, disability benefit acts or other employee benefit acts. This indemnification clause is intended to be comprehensive. Any overlap in provisions, or the fact that greater specificity is provided as to some categories of risk, is not intended to limit the scope of indemnification under any other provisions.

(c) Patent/Copyright Infringement Indemnification: To the extent permitted by law, the Professional shall indemnify, defend and hold harmless the State from and against all losses, liabilities, damages (including taxes), and all related costs and expenses (including reasonable attorneys' fees and costs of investigation, litigation, settlement, judgments, interest and penalties) incurred in connection with any action or proceeding threatened or brought against the State to the extent that such action or proceeding is based on a claim that any piece of equipment, software, commodity or service supplied by the Professional or its Subcontractors/Consultants, or the operation of such equipment, software, commodity or service, or the use of reproduction of any documentation provided with such equipment, software, commodity or service infringes any United States patent, copyright, trademark or trade secret of any person or entity, which is enforceable under the laws of the United States.

In addition, should the equipment, software, commodity, or services, or its operation, become or in the State's or Professional's opinion be likely to become the subject of a claim of infringement, the Professional shall at the Professional's sole expense (i) procure for the State the right to continue using the equipment, software, commodity or service or, if such option is not reasonably available to the Professional, (ii) replace or modify to the State's satisfaction the same with equipment, software, commodity or service of equivalent function and performance so that it becomes non-infringing, or, if such option is not reasonably available to Professional, (iii) accept its return by the State with appropriate credits to the State against the Professional's charges and reimburse the State for any losses or costs incurred as a consequence of the State ceasing its use and returning it.

Notwithstanding the foregoing, the Professional shall have no obligation to indemnify or defend the State for, or to pay any costs, damages or attorneys' fees related to, any claim based upon (i) equipment developed based on written specifications of the State; or (ii) use of the equipment in a configuration other than implemented or approved in writing by the Professional, including, but not limited to, any modification of the equipment by the State; or (iii) the combination, operation, or use of the equipment with equipment or software not supplied by the Professional under this Contract.

ARTICLE VII
OWNERSHIP OF DOCUMENTS

All Project deliverables, including but not limited to: reports, Bidding Documents, Contract Documents, electronic documents and data, and other Project related documents, including the copyrights, prepared and furnished by the Professional shall become the property of the State of Michigan upon completion of the Project, completion and acceptance of the professional's work, or upon termination of the Contract. Project deliverables shall be delivered to the Department upon their request. The Professional shall have no claim for further employment or additional compensation as a result of this Contract requirement. The Professional may retain a copy of all Project documents for their files.

If the Professional is in default or breach of its obligations under this Contract, the State shall have full ownership rights of the Project deliverables, including Bidding Documents and Contract Documents, including all electronic data. If the Professional is in default or this Contract Agreement is terminated, the State shall not use the Contract Documents and deliverables of this Contract for completion of the Project by others without the involvement of other qualified Professionals who shall assume the professional obligations and liability for the Project work not completed by the Professional. To the fullest extent allowed by law, the State releases the Professional, the Professionals Consultant(s) and the agents and employees of any of them from and against legal claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of the State's use of the Contract Documents other than in accordance with this Contract Agreement.

All Contract deliverables listed may be published or issued for informational purposes without additional compensation to the Professional. The Professional may not use any of the Contract Documents and Contract deliverables for any purpose that may misrepresent the professional services they provided.

The Professional shall retain full rights to the Contract Documents and deliverables and the right to reuse component information contained in them in the normal course of the Professional's professional activities.

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The Contract deliverables, Contract Documents, or other documents produced under this Contract may be used by the Department, or others employed by the Department or State of Michigan, for reference in any completion, correction, remodeling, renovation, reconstruction, alteration, modification of or addition to the Project, without monetary compensation to the Professional.

The State of Michigan will not construct additional Projects or buildings based on the work of this Contract without notice to the Professional.

Whenever renderings, photographs of renderings, photographs or models, or photographs of the Project are released by the State of Michigan for publicity, proper credit for design shall be given to the Professional, provided the giving of such credit is without cost to the State of Michigan.

ARTICLE VIII
TERMINATION

The State may, by written notice to the Professional, terminate this Contract in whole or in part at any time, either for the State's convenience or because of the failure of the Professional to fulfill their Contract obligations. Upon receipt of such notice, the Professional shall:

a) Immediately discontinue all professional services affected (unless the notice directs otherwise), and

b) Deliver to the State all data, drawings, specifications, reports, estimates, summaries, and such other information and materials as may have been accumulated by the Professional in performing this Contract, whether completed or in process.

8.1 If the termination is for the convenience of the State, an equitable adjustment in the Contract price shall be made, but no amount shall be allowed for anticipated profit on unperformed professional services.

8.2 If the termination is due to the failure of the Professional to fulfill their Contract obligations, the State may take over the work and prosecute the same to completion by Contract or otherwise. In such case, the Professional shall be liable to the State for any additional cost occasioned to the State thereby.

8.3 If, after notice of termination for failure to fulfill Contract obligations, it is determined that the Professional had not so failed, the termination shall be deemed to have been effected for the convenience of the State. In such event, adjustment in the Contract price shall be made as provided in Section 8.1 of this article.

8.4 The rights and remedies of the State provided in this article are in addition to any other rights and remedies provided by law or under this Contract.

ARTICLE IX
SUCCESSORS AND ASSIGNS

This Contract shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns; provided, however, that neither of the parties hereto shall assign this Contract without the prior written consent of the other.

ARTICLE X
GOVERNING LAW

This Contract shall be construed in accordance with the laws of the State of Michigan.

ARTICLE XI
NONDISCRIMINATION

In connection with the performance of the Project under this, the Professional agrees as follows:

a) The Professional will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, age, sex, height, weight, marital status, or a physical or mental disability that is unrelated to the individual's ability to perform the duties of the particular job or position. The Professional will provide equal employment opportunities to ensure that applicants are employed and that employees are treated during employment, without regard to their race, color, religion, national origin, age, sex, height, weight, marital status, or a physical or mental disability that is unrelated to the individual's ability to perform the duties of the particular job or position. Such action shall include, but not

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be limited to, the following: employment, upgrading, demotion or transfer; recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

b) The Professional will, in all solicitations or advertisements for employees placed by or on behalf of the Professional, state that all qualified applicants will receive equal employment opportunity consideration for employment without regard to race, color, religion, national origin, age, sex, height, weight, marital status, or a physical or mental disability that is unrelated to the individual's ability to perform the duties of the particular job or position.

c) The Professional or their collective bargaining representative will send to each labor union or representative of workers with which is held a collective bargaining agreement or other Contract or understanding, a notice advising the said labor union or workers' representative of the Professional's nondiscrimination commitments under this article.

d) The Professional will comply with the Elliot-Larsen Civil Rights Act, 1976 PA 453, as amended, MCL 37.2201 et seq; the Michigan Persons with Disabilities Civil Rights Act, 1976 PA 220, as amended, MCL 37.1101 et seq; and all published rules, regulations, directives and orders of the Michigan Civil Rights Commission which may be in effect on or before the date of award of this Contract.

e) The Professional will furnish and file nondiscrimination compliance reports within such time and upon such forms as provided by the Michigan Civil Rights Commission; said forms may also elicit information as to the practices, policies, program, and employment statistics of the Professional and of each of their Consultant firms. The Professional will permit access to all books, records, and accounts by the Michigan Civil Rights Commission, and/or its agent, for purposes of investigation to ascertain nondiscrimination compliance with this Contract and with rules, regulations, and orders of the Michigan Civil Rights Commission relevant to Article 6, 1976 PA 453, as amended.

f) In the event that the Michigan Civil Rights Commission finds, after a hearing held pursuant to its rules, that the Professional has not complied with the contractual nondiscrimination obligations under this Contract, the Michigan Civil Rights Commission may, as part of its order based upon such findings, certify said findings to the State Administrative Board of the State of Michigan, which the State Administrative Board may order the cancellation of the Contract found to have been violated, and/or declare the Professional ineligible for future Contracts with the State and its political and civil subdivisions, departments, and officers, and including the governing boards of institutions of higher education, until the Professional complies with said order of the Michigan Civil Rights Commission. Notice of said declaration of future ineligibility may be given to any or all of the persons with whom the Professional is declared ineligible to Contract as a contracting party in future Contracts. In any case before the Michigan Civil Rights Commission in which cancellation of an existing Contract is a possibility, the State shall be notified of such possible remedy and shall be given the option by the Michigan Civil Rights Commission to participate in such proceedings.

g) The Professional shall also comply with the nondiscrimination provisions of 1976 PA 220, as amended, concerning the civil rights of persons with physical or mental disabilities.

h) The Professional will include, or incorporate by reference, the nondiscrimination provisions of the foregoing paragraphs a) through g) in every subcontract or Contract Order unless exempted by the rules, regulations or orders of the Michigan Civil Rights Commission, and will provide in every subcontract or Contract Order that said nondiscrimination provisions will be binding upon each of the Professional's Consultant's or seller.

ARTICLE XII
CONTRACT CLAIMS AND DISPUTES

In any claim or dispute by the Professional which cannot be resolved by negotiation, the Professional shall submit the claim or dispute for an administrative decision by the Department of Technology, Management and Budget, Director of Facilities and Business Services Administration within thirty (30) consecutive calendar days of the end of the disputed negotiations, and any decision of the Director of Facilities and Business Services Administration may be appealed to the Michigan Court of Claims within one (1) year of the issuance of the Director's decision. The Professional agrees that the Department's appeal procedure to the Director of Facilities and Business Services Administration is a prerequisite to filing a suit in the Michigan Court of Claims.

ARTICLE XIII
DEFINITION OF TERMS

The definition of terms and conditions of this Contract are described and outlined in the following Articles 1 through 14 and attached appendices. The capitalized defined terms used in this Professional Services Contract shall have the following definitions:

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ADDENDA: Written or graphic numbered documents issued by the Department and/or the Professional prior to the execution of the Construction Contract which modify or interpret the Project Bidding Documents, including drawings, and specifications, by additions, deletions, clarifications or corrections. The Addenda shall: (1) Be identified specifically with a standardized format; (2) Be sequentially numbered; (3) Include the name of the Project; (4) Specify the Project Index No., Project File No., the Contract Order No. Y, and a description of the proposed Addenda; and (5) Specify the date of Addenda issuance. As such, the Addenda are intended to become part of the Project Contract Documents when the Construction Contract is executed by the Professional's recommended lowest responsive, responsible qualified Construction Contractor. An Addendum issued after the competitive construction Bid opening to those construction Bidders who actually submitted a Bid, for the purpose of rebidding the Project work without re-advertising, is referred to as a post-Bid Addendum.

BID: A written offer by a construction Bidder for the Department. Project construction work, as specified, which designates the construction Bidder's base Bid and Bid price for all alternates.

BIDDER: The person acting directly, or through an authorized representative, who submits a competitive construction Bid directly to the Department.

BIDDING DOCUMENTS: The Professional's Project Contract Documents as advertised, and all Addenda issued before the construction Bid opening, and after the construction Bid opening, if the Project construction work is rebid without re-advertising. Bidding Documents shall consist of: the Phase 500 - Final Design drawings and specifications, any Addenda issued, special, general, and supplemental conditions of the Construction Contract, and modifications, if any, to standard forms provided by the Department. Such forms consist of: the Project advertisement, the instructions to Bidders, the proposal forms, general, supplemental, and any special conditions of the Construction Contract, and the form of agreement between the Department and the Construction Contractor for the Project work requirements.

BID SECURITY: The monetary security serving as guarantee that the Bidder will execute the offered Construction Contract or as liquidated damages in the event of failure or refusal to execute the Construction Contract.

BUDGET: The maximum legislatively authorized Budget amount to be provided by the State of Michigan and available for a specific purpose or combination of purposes to accomplish the Project for this Contract.

BULLETIN: A standard document form (DMB-485, Bulletin Authorization No. and the DMB-489, Instructions to Construction Contractors for Preparation of Bulletin Cost Quotations for Contract Change Orders) used by the Department to describe a sequentially numbered change in the Project under consideration by the Department and the Professional and to request the Construction Contractor to submit a proposal for the corresponding adjustment in the Contract price and/or Contract time, if any. These standard document forms are a part of the "DMB-460, Project Procedures" documents package.

CONSTRUCTION CONTRACT: A separate written Contract agreement between the Construction Contractor and the Department for the construction, alteration, demolition, repair, or rebuilding of a State/Client Agency building or other State property.

CONSTRUCTION CONTRACTOR: Any construction firm under a separate Contract to the Department for construction services.

CONSTRUCTION INSPECTION SERVICES: The Professional's field Inspections of the Project during the construction Phase of this Contract which includes but is not limited to: (1) Documenting the quantity and quality of all Project construction work and verifying that the Project construction work is properly completed; (2) Resolve Project problems that are affecting the Project construction work, certify payment requests, process Bulletins, Contract Change Order recommendations, and requests for information (RFI's) in a timely manner as prescribed in the Department's, "MICHSPEC 2001 Edition of The Owner and Contractor Standard Construction Contract and General Conditions for Construction (Long Form)" or the current Department, DMB Short Form 401 - Proposal and Contract/Front-End Package for Small Projects for Professional Services Contractors (PSC) with General Conditions for Construction and Instructions to Bidders" as adopted and modified by the State of Michigan and incorporated into the Construction Contract; and the (3) Inspection of Project construction work completed or in progress by the Construction Contractor to determine and verify to the Department's Project Director and their Department Field Representative that the Project construction work is in compliance with the Professional's design intent and that the Project has been completed by the Construction Contractor in accordance with the Professional's Phase 500 - Contract Documents/drawings and specifications requirements.

The Professional shall provide sufficient Inspections of the Project during the construction Phase to administer the construction Phase field and office services as directly related to the degree of Project complexity, up to and including full-time field Inspections. Construction field Inspections shall occur as the construction field conditions and the Project may require and during the regularly scheduled monthly progress and payment meetings. The Professional shall use for their construction field Inspection services, only personnel having professional expertise, experience, authority, and compatibility with departmental procedures as the Department may approve. The Professional agrees that such characteristics are essential for the successful completion of the Project. Such individuals

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shall be replaced for cause where the Department determines and notifies the Professional, in writing, of their unacceptable performance.

CONSULTANT: Any individual, firm, or employee thereof, not a part of the Professional's staff, but employed by the Professional and whose professional service cost is ultimately paid by the State of Michigan, either as a direct cost or authorized reimbursement. This includes the recipient(s) of Contract Orders for material, support, and/or technical services. Also, included are persons and firms whose management and/or direction of services are assigned to the Prime Professional as may be provided elsewhere in this Contract.

CONTRACT CHANGE ORDER: A standard document form (DMB-403) issued and signed by the State of Michigan and signed by the Professional which amends the Project Design Professional's Contract Documents for changes in the Project/Program Statement or an adjustment in Contract price and/or Contract time, or both.

CONTRACT DOCUMENTS: The Professional's Phase 100 – Study, Final Report and Phase 500 - Final Design plans/drawings, specifications, Construction Contract, instructions to construction Bidders, proposal, Bidding Documents, agreement, conditions of the Contract, payment bond, performance/labor and material bond, prevailing wages, all Addenda, and attachments as may be necessary to comprise a Construction Contract for the Project. Specifications for this Contract will be prepared for Division 00 through 49, in the 2004 MasterFormat Outline by the Construction Specifications Institute (C.S.I.), as appropriate for the Project.

CONTRACT MODIFICATION: A form (DMB-410) amending the Contract signed by the Department and the Professional. The preparation of Bulletins and Contract Change Orders resulting from changes in the Project/Program Statement or previously unknown on-site field conditions as approved by the Department will be compensated to the Professional by way of the Contract Modification in accordance with the Article 2, Compensation text of this Contract. Any Contract Modification of this Professional Services Contract must be in writing, signed by duly authorized representatives of the parties, and shall be in such format and detail as the Department may require. No Contract Modification will be approved to compensate the Professional for correcting, or for responding to claims or litigation for, the Professional's Phase 100 – Study, Final Report and Phase 500 - Contract Documents study/design errors, omissions or neglect on the part of the Professional.

CONTRACT ORDER: A form (DMB-402) issued and signed by the State of Michigan authorizing a Professional to: (1) Begin to incur Project expenses and proceed with the Project on-site; and (2) Provide professional services for the fee amount designated in the Phases of the Contract Order. Issuance of the DMB-402 certifies that: (1) The State will enter into a Professional Services Contract for the professional services described in the various Phases of this Contract; and that (2) The proper three (3) sets of Certificate of Insurance documents have been received and accepted by the State along with the approval and signing of the Professional's Professional Services Contract by the FBSA, DCD Director.

DEPARTMENT: The Department of Technology, Management and Budget, Facilities and Business Administration, Design and Construction Division. The Department will represent the State of Michigan in all matters pertaining to this Project. This Professional Services Contract will be administered through the Department on behalf of the State of Michigan and The State/Client Agency.

DESIGN MANUAL: Provides the Professional with information regarding the Department's current "Major Project Design Manual for Professional Services Contractors and State/Client Agencies" review process requirements regarding the uniformity in Contract materials presented to it by the Professional and the State/Client Agency(ies). This manual contains the following noted standards, instructions, and procedures information for: (1) General instructions for planning documents from Phase 100-Study through Phase 500-Final Design; (2) Net and gross area/volume; (3) Project cost format; (4) Outline architectural and engineering specifications; (5) Specifications in documentation Phase; (6) Instructions for proposal; (7) Bidders questionnaire; and the (8) Project job sign.

DIRECTOR: The Director of the Department of Technology, Management and Budget or their authorized State of Michigan representative.

DIRECTOR-FBSA: The Director of the Department of Technology, Management and Budget, Facilities and Business Services Administration or their authorized State of Michigan representative.

DEPARTMENT FIELD REPRESENTATIVE: An employee of the State under the direction of the Project Director who provides the Inspection of construction Projects for compliance with the design intent of the Professional's Phase 500 - Contract Documents/drawings and specification requirements and the building construction codes. The Department Field Representative is the liaison between the Construction Contractor, the Professional, and the Project Director. The Project Director, or their Department Field Representative, has the authority to require the Professional to respond to and resolve study/design related problems, construction field problems and to attend Project meetings. Unless delegated by specific written notice from the Department, the Department Field Representative has no authority to order any changes in the Project scope of work or authorize any adjustments in Contract price or Contract time.

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INSPECTION: The Professional and their Consultant firm's on-site and/or off-site examination of the Project construction work completed or in progress by the Construction Contractor to determine and verify to the Department's, Project Director and their Department Field Representative that the quantity and quality of all Project construction work is in accordance with the design intent of the Professional's Phase 500 - Contract Documents/ drawings and specifications requirements.

KEY PRINCIPAL PERSONNEL/EMPLOYEE: An individual employee of a Professional who is essential for the successful completion of the Project.

NOTICE OF INTENT TO AWARD: A written notice to the Construction Contractor, by the Department accepting the Professional's written recommendation to award the construction Bid to the lowest responsive, responsible qualified construction Bidder. The Notice of Intent to Award letter will also designate the Contract price and itemize the alternates that the Department, at its sole discretion has accepted.

PHASE: A discretely distinguishable step necessary to produce the Project in the course of the Professional providing study, design and construction administration services.

PRIME PROFESSIONAL SERVICES CONTRACTOR/PROFESSIONAL: An individual, firm, partnership, corporation, association, or other legal entity who is legally permitted by law to sign and seal final design construction Contract Documents and licensed under the State of Michigan's professional licensing and regulation provisions of the Occupational Code (State Licensing Law), Act 299 of the Public Acts of 1980, Article 20, as amended, to practice architecture, engineering, environmental engineering, geology, civil, land surveying, or landscape architecture services in the State of Michigan.

The Prime Professional Services Contractor/Professional is also legally permitted by the State of Michigan's regulation provisions of the State Construction Code, Act 230 of the Public Acts of 1972, as amended, and designated in a Construction Contract by the Department to recommend construction progress payments to the Construction Contractor.

PROJECT: Any new construction, existing site, new utilities, existing building renovation, roof repairs and/or removal and replacement, additions, alteration, repair, installation, construction quality control and material testing services, painting, decorating, demolition, conditioning, reconditioning or improvement of public buildings, works, bridges, highways or roads authorized by the Department that requires professional study/design services as part of this Contract.

PROJECT COST: The total Project cost including, but not limited to, site purchase, site survey and investigation, hazardous material abatement, construction, site development, new utilities, telecommunications (voice and data), professional fees, construction quality control and material testing services, testing and balancing services, furnishings, equipment, plan(s)/drawing(s) design code compliance and plan review approval fees and all other costs associated with the Project.

PROJECT DIRECTOR: The professional licensed employee of the Department who is responsible for directing and supervising the Professional's services during the life of this Contract. The Project Director, or their Department Field Representative, has the authority to require the Professional to respond to and resolve study/design related problems, construction field problems and to attend Project related meetings.

PROJECT/PROGRAM STATEMENT: The Project/Program Statement is provided by the Department and defines the scope of the problem, describes why this Project is desirable, and provides a preferred resolution of the problem.

PROJECT TEAM: The Professional, the Project Director, Department Field Representative, a representative of the State/Client Agency, and others as considered appropriate by the Department.

PUNCH LIST: A list of minor construction Project items to be completed or corrected by the Construction Contractor, any one of which do not materially impair the use of the Project work, or the portion of the Project work inspected, for its intended purpose. A Punch List shall be prepared by the Professional upon having made a determination that the Project work, or a portion of the Project construction work inspected, in concert with the Professional, the Construction Contractor, the Department, the Project Director and their Department Field Representative, the State/Client Agency and any construction manager, is substantially complete and shall be attached to the respective DMB-455, Certificate of Substantial Completion form. This standard document form is a part of the "DMB-460, Project Procedures" documents package.

SOIL EROSION AND SEDIMENTATION CONTROL: The planning, design and installation of appropriate Best Management Practices (as defined by the most current version of the Department's Soil Erosion and Sedimentation Control Guidebook) designed and engineered specifically to reduce or eliminate the off-site migration of soils via water runoff, wind, vehicle tracking, etc. and comply with the Soil Erosion and Sedimentation Control in the State of Michigan as regulated under the 1994 Public Act 451, as amended – The Natural Resources Environmental Protection Act, Part 91 – Soil Erosion and Sedimentation Control. Soil Erosion and

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Sedimentation Control associated with this Contract will be monitored and enforced by the Department of Technology, Management and Budget, Facilities and Business Services Administration, Soil Erosion and Sedimentation Control Program.

STATE: The State of Michigan in its governmental capacity, including its departments, agencies, boards, commissions, officers, employees, and agents. Non-capitalized references to a state refer to a state other than the State of Michigan.

STATE/CLIENT AGENCY: A Department of the State of Michigan, for whose use the Project will ultimately serve, which requires professional design services.

STATE FIELD INSPECTOR: An employee of the State of Michigan under the direction of the State/client Agency who provides the on-site, Inspection of construction Projects for compliance with the study/design intent of the Professional firm's Contract Documents/drawings and specification requirements and the building construction codes. The State Field Inspector is the liaison between the Construction Contractor, the Professional, and the State Project Manager. The State Project Manager, or their State Field Inspector, has the authority to require the Professional to respond to and resolve study/design related problems, construction on-site field problems and to attend Project related meetings.

STATE PROJECT MANAGER: The assigned staff of the Department or the State/client Agency authorized by the State to represent and act on behalf of the Project Director on a given Project and to thereby provide direction and assistance to the Construction Contractor. The State Project Manager may designate in writing a person to act on behalf of the State Project Manager when they are unable to perform their required duties or is away from the office. In such cases, the State Project Manager must notify the Construction Contractor and the Project Director.

SUBSTANTIAL COMPLETION: The form (DMB-445) stating that the Project work, or a portion of the Project work eligible for separate Substantial Completion, has been completed in accordance with the design intent of the Professional's Contract Documents to the extent that the Department and the State/Client Agency can use or occupy the entire Project work, or the designated portion of the Project work, for the use intended without any outstanding, concurrent work at the Project work site, except as may be required to complete or correct the Project work Punch List items.

SUSTAINABLE DESIGN: The Professional's use of a balance of appropriate materials, products and design methods that reduce the impact to the natural ecosystems and be within the Budget constraints of the Project. Sustainable Design shall be used wherever possible by the Professional in their Project design and an itemized list shall be provided with the Professional's Contract Documents that identifies the processes and products.

TASK: Shall mean the following: (1) A quantifiable component of design related professional study/design Task services required to achieve a Phase of the Project; (2) The most manageable sub-element within a study/design Phase; (3) A unique item of work within a study/design Phase for which primary responsibility can be assigned; and (4) Has a time related duration and a cost that can be estimated within a study, design, and construction Phase.

ARTICLE XIV
COMPLETE AGREEMENT/MODIFICATION

This Professional Services Contract constitutes the entire agreement as to the Project between the parties. Any Contract Modification of this Contract and the Project/Program Statement scope of work requirements must be in writing, signed by duly authorized representatives of the parties, and shall be in such format and detail as the State may require. No Contract Modification may be entered into to compensate the Professional for correcting, or for responding to claims or litigation for the Professional firm's final design Contract Documents/study/design errors, omissions or neglect on the part of the Professional.

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APPENDIX 1

PROJECT/PROGRAM STATEMENT

SAMPLE

APPENDIX 2

PROFESSIONAL'S PROPOSAL

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APPENDIX 3

GUIDELINES FOR QUALITY CONTROL/QUALITY ASSURANCE (QC/QA) PLAN

INDEX

1. Guidelines for Project Quality Control/Quality Assurance (QC/QA) Plan. ..... Appendix 3A

2. Guidelines for Preparation of the Project Quality Control/Quality Assurance (QC/QA) Plan . ..... Appendix 3B

3. Base Project Plan for Quality Control/Quality Assurance (QC/QA).. ..... Appendix 3C

4. Amendments to Project Quality Control/Quality Assurance (QC/QA) Plan. ..... Appendix 3D

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APPENDIX 3A

GUIDELINES FOR

QUALITY CONTROL/QUALITY ASSURANCE (QC/QA) PLAN

The Guidelines for Quality Control/Quality Assurance (QC/QA) Plan is prepared to prescribe criteria and procedures for efficient, cost effective, and reliable, acquisition, and accurate analysis, of data from a specific contaminated site, and to govern the implementation of that process. The Quality Control/Quality Assurance (QC/QA) Plan describes, in specific detail the following items:

1. Policy

2. Organization

3. Functional Activities (sample collection, chemical analysis, description of the laboratory, field methodologies, etc.)

4. Quality Control and Quality Assurance (QC/QA) Procedures necessary to achieve intended Project data quality goals.

This Quality Control/Quality Assurance (QC/QA) Plan must be prepared by the Professional, and accepted by the governing enforcing agency before any sampling, data analysis, or monitoring may begin at any site, or combination of sites which comprise a Project.

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APPENDIX 3B

GUIDELINES FOR PREPARATION OF THE PROJECT QUALITY CONTROL/QUALITY ASSURANCE (QC/QA) PLAN

This guideline specifies sixteen (16) elements that must be addressed in a Quality Control/Quality Assurance (QC/QA) Plan. The Project description, Project organization and responsibility and the Quality Control/Quality Assurance (QC/QA) Plan objective should be written first. Other elements are self explanatory and must be consistent with the Project description and especially the intended use of the data.

1. Title Page

   At the bottom of the title page, provisions must be made for the approval signatures. As a minimum, the Quality Control/Quality Assurance (QC/QA) Plan must be approved by the Department and in the case of a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site also, by the federal governing enforcing agency having governing jurisdiction at the Project site.

   A. Department and the State/Client Agency

   B. Department of Environmental Quality's Quality Control/Quality Assurance Officer

   C. Construction Contractor's Project Officer

   D. Construction Contractor's Quality Control/Quality Assurance Officer

2. Table of Contents

   The Table of Contents will address each of the following items:

   A. Introduction

   B. A serial listing of each of the sixteen (16) quality assurance Project plan components.

   C. A listing of any appendices included to augment the Quality Control/Quality Assurance (QC/QA) Plan as presented (i.e., standard operating procedures, etc.).

3. Project Description

   Provide a general description of the Project. This description may be brief but must have sufficient detail to allow those individuals responsible for review and approval of the Quality Control/Quality Assurance Plan (QC/QA) to perform their Task. Where appropriate, include the following:

   A. A brief summary of background information from previous studies.

   B. Dates anticipated for start and completion.

   C. Intended end use of acquired data, such as future enforcement actions, remedial action alternatives, determination of hazardous waste characteristics, protection of public health, definition of the extent of environmental contamination or future regulatory action.

   D. A description of the monitoring network design and rationale.

   E. A discussion of the sample matrices and parameters to be measured and their frequency of collection, if appropriate. Parameters should include field measurements, hydrogeological measurements and laboratory parameters. Sample parameters and matrices are best listed in two (2) groups which may require different sampling, analytical and quality control procedures.

   F. Wastes including on-site sludges, barrels, liquids and contaminated soils, which are often analyzed to determine waste disposal alternatives.

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G. Ambient monitoring of air, ground water, soils, surface water, river sediments, fish, etc. These types of determinations usually are intended to measure the extent of environmental contamination and to assess public health risks. Specifications for filtered or unfiltered sample aliquots of ground water should be included.

Selection of analytical methods requires familiarity with any regulatory requirements of intended data usage(s). For example, disposal of wastes during remedial removals will require testing of materials pursuant to the Resource Construction and Recovery Act (RCRA). In this case, the Resource Construction and Recovery Act (RCRA) codified regulations may dictate choices of analytical methods. Discharge of treated ground water to surface waters may require a National Pollutant Discharge Elimination System (NPDES) permit, monitoring requirements and use of Clean Water Act Methods. Similarly operation of an air stripper may require use of Clean Water Act Methods.

4. Project Organization and Responsibility

Include a table or chart showing the Project organization and line authority. List the key individuals, including the Quality Assurance Officer, who are responsible for ensuring the collection of valid measurement data and the routine assessment of measurement systems for precision and accuracy.

All laboratories including the State's contracted laboratory, the Professional firm's own, and all subcontracted laboratories must be identified. If a subcontractor laboratory has an existing Contract Laboratory Program (CLP) Contract and these same Contract Laboratory Program (CLP) protocols will be used, this arrangement should be described. If the Contract Laboratory Program (CLP) procedures are to be used then this element should identify final data review of routine Contract Laboratory Program (CLP) services.

5. Quality Control/Quality Assurance (QC/QA) Plan Objectives for Measurement Date in Terms of Provision, Accuracy, Detection Limits

For each martrix (or martrix groups) and parameter, objectives should be established for:

A. Accuracy (sample spikes, surrogate spikes, reference sampled, etc.).

B. Precision (replicate sample analyses, etc.).

C. Sensitivity or Method Detection Limits.

These should be established on Project needs, if possible, but must be discussed with support laboratories so they are realistic. Quantitative limits should be established for these objectives.

For example, mean spike recoveries for volatile halogenated organic compounds in water using purge and trap gas chromatography techniques, should be 90-100 percent (%), and range between 80 and 120 percent (%) recovery. Reference sample results should be accurate within 20 percent (%) of true values. Precision objectives should be that duplicate sample aliquot values do not differ more than 10 percent (%) at the 95 percent (%) confidence level when concentrations are measured significantly larger than the method detection limit. Except for methylene chloride, method detection limits objectives can realistically be established at 0.2 ug/1 for this gas chromatography technique.

Screening of hazardous waste site liquids may well only require 50 to 150 percent (%) recoveries of spike surrogate compounds during the Gas Chromatograph/Mass Spectroscopy (GC/MS) determinations and method detection limits of 0 ug/1 for volatile halogenated organic compounds.

Quality Assurance objectives must be consistent with the capabilities of the analytical methods identified in element number 9 below. Sound objectives require careful thought and the talents of analysts and the people who are going to use the resulting data. These need to be established in advance of monitoring.

SAMPLE

6. Sampling Procedures

For each major parameter(s), provide a description of the sampling procedures to be used. Where applicable, include the following:

A. Description of techniques used to select sampling sites.

B. Inclusion of specific sampling procedures to be used.

C. A description of containers, procedures, reagents, etc., used for sample collection, preservation, transport, and storage.

D. Special procedures for the preparation of sampling equipment and containers to avoid or measure sample contamination.

E. Sample preservation methods and holding times.

F. Time considerations for shipping samples promptly to the laboratory.

G. Forms, notebooks, and procedures to be used to record sample history, sampling and conditions and analyses to be performed.

7. Sample Custody

Sample custody is a part of any good laboratory or field operation. Where samples may be needed for legal purposes, "chain-of-custody" control procedures must be used. However, as a minimum, the following sample custody procedures will be addressed in the Quality Control/Quality Assurance (QC/QA) Plan:

A. Procedures and forms for recording the exact location associated with sample acquisition.

B. Standardized field tracking reporting system to establish sample custody in the field prior to shipment.

C. Identification of responsible party to act as sample custodian at the laboratory facility authorized to sign for incoming, field samples, and verify the data entered onto the sample custody records.

D. Provision for a laboratory sample custody log consisting of serially numbered standard laboratory tracking report sheets.

E. Specifications of laboratory sample custody procedures for sample handling, storage and disbursement for analysis.

F. Custody procedures for final evidence files. Final evidence files include all originals of laboratory reports and are maintained in a secure area.

This element should provide examples of chain-of-custody control records or forms used to record chain-of-custody control for samplers, laboratories and evidence files.

8. Calibration Procedures and Frequency

Calibration procedures are usually a part of specific analytical methodology. This element can be combined with element number 9, analytical procedures.

9. Analytical Procedures

For each measurement parameter, reference the applicable standard analytical procedure(s) or provide a written description of the analytical procedure(s) to be used. Provide performance information for each analytical procedure in terms of accuracy, precision and detection limits. Method performance information should meet or exceed the Quality Assurance objectives identified in element number 5. For the sake of convenience, all or part of elements number 8, 9, 10, 11, and 13 may be incorporated into this element.

SAMPLE

The choice of when to reference a manual's test procedure and when to document a complete Standard Operating Procedure (SOP) can only be made on a case-by-case basis. It has been observed that few laboratories, external to the Contract Laboratory Program (CLP), follow exactly, all important details of a standard reference method. Other times standard reference methods provide or allow options (example - the use of different gas chromatography columns for polychlorinated biphenyl (PCB) determinations).

Reference to analytical methods in the United States Environmental Protection Agency (EPA) Publications, the American Society for Testing and Materials (ASTM) or "Standard Methods" can be appropriate; however, required sample preparation procedures (filtration, digestion, etc.) also need to be referenced. For example, the United States Environmental Protection Agency's "Methods for Chemical Analysis of Water and Wastes" provides three (3) different test procedures for most metal determinations and at least four (4) sample preparation protocols for each metal. Each combination of metal determination and sample preparation exhibits different degrees of accuracy, precision, and sensitivity of measurement. Different quality control audits are used for each combination of metal determination and sample preparation. The exact combination used for each metal must be specified.

10. Data Reduction, Validation and Reporting

For each major parameter, briefly describe:

A. The data reduction scheme planned on collected data, including all equations used to calculate the concentration or value of the measured parameter and reporting units.

B. The principal criteria that will be used to validate data integrity during collection and reporting of data.

C. The methods used to identify and treat outliers.

11. Internal Quality Control Checks

The specific quality control procedures actually being followed for each test or determination should be specified i.e., sample spikes, surrogate spikes, independently prepared reference samples or controls, blanks, etc. The frequency of these audits should be specified. The compounds used for surrogate and sample spikes should be specified where appropriate - arsenic, mercury, priority pollutant organic compounds, etc. The acceptance limits or control chart limits for these audits should be in place so that analyses can be validated prior to reporting of data.

12. Performance and System Audits

This Quality Control/Quality Assurance (QC/QA) Plan must describe the performance audits which will be required to monitor the capability and performance of the total measurement system(s). The Quality Control/Quality Assurance (QC/QA) Plan should include a schedule for conducting performance audits for each parameter, including a performance audit for all measurement systems. Project plans should also indicate, where applicable, scheduled participation in inter-laboratory performance evaluation studies.

The Environmental Protection Agency performance evaluation samples, National Bureau of Standards reference samples or samples from inter laboratory studies may be used for this purpose.

13. Preventive Maintenance

The following preventive maintenance items should be considered and addressed in the Quality Control/Quality Assurance (QC/QA) Plan:

A. A schedule of important preventive maintenance tasks that must be carried out to minimize downtime of the measurement systems.

B. A list of any critical spare parts that should be on hand to minimize downtime.

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14. Specific Routine Procedures Used to Assess Data Precision and Accuracy

For each major parameter, the Quality Control/Quality Assurance (QC/QA) Plan must describe the routine procedures used to assess the precision, and accuracy. These procedures should include the equations to calculate precision and accuracy, and the methods used to gather data for the precision and accuracy calculations.

15. Corrective Action

Corrective action procedures must include the following elements:

A. The predetermined limits for data acceptability beyond which corrective action is required.

B. Procedures for corrective action.

16. Quality Assurance Reports to Management

The Quality Control/Quality Assurance (QC/QA) Plan should provide a mechanism for periodic reporting to the Department and the State/Client Agency on the performance of measurement systems and data quality. These reports should include:

A. Periodic assessment of measurements data accuracy and precision.

B. Results of performance audits.

C. Results of system audits.

D. Significant Quality Assurance problems and recommended solutions.

SAMPLE

APPENDIX 3C

BASE PROJECT PLAN
FOR QUALITY CONTROL/QUALITY ASSURANCE

SAMPLE

APPENDIX 3D

AMENDMENTS TO QUALITY CONTROL/QUALITY ASSURANCE PLAN

SAMPLE

APPENDIX 4

PROJECT SITE HEALTH AND SAFETY PLAN

INDEX

1. Base Project Health and Safety Plan . . . . . Appendix 4A

2. Amendments to Project Health and Safety Plan. . . . . .Appendix 4B

SAMPLE

APPENDIX 4A

BASE PROJECT HEALTH AND SAFETY PLAN

SAMPLE

APPENDIX 4B

AMENDMENTS TO PROJECT HEALTH AND SAFETY PLAN

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APPENDIX 5

STANDARD REFERENCE OF ACRONYMS

SAMPLE

Acronyms

AE ..... Authorized Expeditor
AHERA ..... Asbestos Hazard Emergency Response Act
AIA ..... American Institute of Architects
AOC ..... Administrative Order of Consent
ARA ..... Acute Risk Abatement
ARAR ..... Applicable or Appropriate, Relevant and to be Considered Requirement
AST ..... Aboveground Storage Tank
ASTM ..... American Society for Testing and Materials
BOA ..... Basic Ordering Agreement
BTEX ..... Benzene, Toluene, Ethylbenzene, Xylene
CA ..... Corrective Action
CAD ..... Computer-Aided Design
CAP ..... Corrective Action Plan
CD ..... Compact Disc
CERCLA ..... Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CM ..... Construction Management
CMS ..... Corrective Measures Study
CPA ..... Certified Public Accountant
CPFF ..... Cost Plus Fixed Fee
CPG ..... Certified Professional Geologist
CPM ..... Critical Path Method
CS ..... Contract Specialist
CSI ..... Construction Specifications Institute
CWA ..... Clean Water Act
DTMB ..... Department of Technology, Management & Budget
DCD ..... Design and Construction Division
DNAPL ..... Dense Non-Aqueous Phase Liquid
EE/CA ..... Engineering Evaluation/Cost Analysis
ESA ..... Environmental Site Assessment
EVA ..... Earned Value Analysis
FAR ..... Final Assessment Report
FM ..... Financial Manager
FP ..... Fixed Price
FS ..... Feasibility Study
FFS ..... Focused Feasibility Study
GDRRA ..... Greater Detroit Resource Recovery Authority
GSI ..... Groundwater-Surface Water Interface
H&S ..... Health and Safety
HASP ..... Health and Safety Plan
HAZWOPER .. Hazardous Waste Operations and Emergency Response
HSM ..... Health and Safety Manager
LOE ..... Level-of-Effort
LS ..... Legal Specialist
LUST ..... Leaking Underground Storage Tank
MCL ..... Michigan Compiled Law
MDEQ ..... Michigan Dept. of Environmental Quality
MDTMB ..... Michigan Dept. of Technology, Management & Budget
MDNR ..... Michigan Department of Natural Resources
MIOSHA ..... Michigan Occupational Safety and Health Act
MOP ..... Miscellaneous Operating Project yd^3
NEPA ..... National Environmental Policy Act
NIOSH ..... National Institute for Occupational Safety and Health
NREPA ..... National Resources Environmental Protection Act (Act 451 PA 1994 as amended)
FA ..... Facilities Administration
O&M ..... Operation and Maintenance/Manual
OSHA ..... Occupational Safety and Health Administration
PA ..... Public Act
PAHS ..... Polynuclear Aromatic Hydocarbons
PCB ..... Polychlorinated Biphenyls
PE ..... Licensed Professional Engineer
PPE ..... Personal Protective Equipment
PM ..... Project Management
PRP ..... Potentially Responsible Parties
PSC ..... Professional Services Contractor
QAPP ..... Quality Assurance Project Plan
QA/TC ..... Quality Assurance/Technical Consultant
QC ..... Qualified Consultant
QC/QA ..... Quality Control/Quality Assurance
RA ..... Remedial Actions
RAP ..... Remedial Action Plan
RBCA ..... Risk-Based Corrective Action
RBSLs ..... Risk Based Screening Levels
RC ..... Remedial Construction
RCRA ..... Resource Conservation and Recovery Act
RD ..... Remedial Design
RFI ..... RCRA Facility Investigation
RFP ..... Request for Proposal
RI ..... Remedial Investigation
RI/FS ..... Remedial Investigation/Feasibility Study
RP ..... Responsible Party
RRD ..... Remediation and Redevelopment Division
SA ..... Site Assessment
SARA ..... Superfund Amendments and Reauthorization Act
SDWA ..... Safe Drinking Water Act
SHSC ..... Site Health and Safety Coordinator
SI ..... Site Investigation
SM ..... Site Manager
SOW ..... Scope of Work
SPCC ..... Spill Prevention Control and Countermeasures
SSTLs ..... Site Specific Target Levels
SVE ..... Soil Vapor Extraction
TAT ..... Technical Assistance Team
TCE ..... Trichloroethylene
TM ..... Time and Materials
TS ..... Technical Specialist
TSCA ..... Toxic Substances Control Act
UP ..... Unit Price
U.S. ATHAMA .. U.S. Army Toxic and Hazardous Material Agency
U.S. EPA ..... United States Environmental Protection Agency
UST ..... Underground Storage Tank
USPS ..... United States Postal Service
VOC ..... Volatile Organic Compounds
VSR ..... Verification of Soil Remediation
WPO ..... Work Plan Outline
yd^2 ..... Square Yards
yd3 Cubic Yards

SAMPLE

APPENDIX 6

ORIGINAL CERTIFICATES OF INSURANCE

SAMPLE

APPENDIX 7

PROFESSIONAL/CONTRACTOR DEMOGRAPHICS, STATISTICS AND CERTIFICATION

AND

CERTIFICATION OF A MICHIGAN BASED BUSINESS

AND

CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS

SAMPLE

APPENDIX 8

OVERHEAD ITEMS ALLOWED FOR THE PROFESSIONAL SERVICES CONTRACTOR FIRM'S HOURLY BILLING RATE CALCULATION

SAMPLE

The following instructions are to be used by the Professional Services Contractor firm's to determine the hourly billing rate to use on State of Michigan Projects.

The Professional's Consultant must submit a separate hourly billing rate for the professional Consultant services they will provide for State of Michigan Projects. No mark-up of the Professional's Consultant services hourly billing rates will be allowed.

The Department will reimburse the Professional for the actual cost of printing and reproduction of the Contract Bidding Documents, soil borings, surveys and any required laboratory testing services and use of field equipment. No mark-up of these Project costs will be allowed.

2013 HOURLY BILLING RATE

Based on 2012 Expenses

OVERHEAD ITEMS ALLOWED FOR THE PROFESSIONAL SERVICES CONTRACTOR FIRM'S HOURLY BILLING RATE CALCULATION

SALARIES:
Principals (Not Project Related)
Clerical/Secretarial
Technical (Not Project Related)
Temporary Help
Technical Training
Recruiting Expenses

OFFICE FACILITIES:
Rents and Related Expenses
Utilities
Cleaning and Repair

SUPPLIES:
Postage
Drafting Room Supplies
General Office Supplies
Library
Maps and Charts
Magazine Subscriptions

SERVICES (PROFESSIONAL):
Accounting
Legal
Employment Fees
Computer Services
Research

FINANCIAL:
Depreciation

EQUIPMENT RENTALS:
Computers
Typewriter
Bookkeeping
Dictating
Printing
Furniture and Fixtures
Instruments

TRAVEL:
All Project-Related Travel*

MISCELLANEOUS:
Professional Organization Dues
for Principals and Employees
Licensing Fees

SERVICES (NONPROFESSIONAL):
Telephone and Telegram
Messenger Services

TAXES:
Franchise Taxes
Occupancy Tax
Unincorporated Business Tax
Property Tax
Single Business Tax
Income Tax

INSURANCE:
Professional Liability Insurance
Flight and Commercial Vehicle
Valuable Papers
Office Liability
Office Theft
Premises Insurance
Key-Personnel Insurance

EMPLOYEE BENEFITS:
Hospitalization
Employer's F.I.C.A. Tax
Unemployment Insurance
Federal Unemployment Tax
Disability
Worker's Compensation
Vacation
Holidays
Sick Pay
Medical Payments
Pension Funds
Insurance - Life
Retirement Plans

PRINTING AND DUPLICATION:
Specifications (other than Contract Bidding Documents)
Drawings (other than Contract Bidding Documents)
Xerox/Reproduction
Photographs

LOSSES:
Bad Debts (net)
Uncollectible Fee
Thefts (not covered by Project/Contract bond)
Forgeries (not covered by Project/Contract bond)

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APPENDIX 9

CERTIFICATE OF AWARDABILITY

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