Exhibit B

MoDOT Standard Specifications
Sections 202, 201, & 806

SECTION 202

REMOVAL Of ROADWAYS AND BUILDINGS

202.1 Description. This work shall consist of the removal and disposal of all existing improvements from the right of way and within the limits of any construction area outside the right of way, except improvements designated or permitted to remain in place or to be removed under other items of work. These specifications will apply to all removal work performed by the contractor.

202.2 General Requirements.

202.2.1 Disposal of Material. All improvements not designated to remain shall be removed or disposed of by the contractor as required. The work may involve the generation of excess material, which may be solid waste under the definitions of the MDNR Solid Waste Management Program. The contractor shall dispose of solid waste in accordance with the Missouri Solid Waste Management Law and implementing regulations, 10 CSR 80.

202.2.1.1 Regulated solid waste, including waste tires, shall be handled, transported and disposed of in accordance with applicable regulations. Documentary proof of proper transport and disposal of this waste, including transport forms, disposal forms, scale tickets, cancelled checks and receipts, shall be provided to MDNR and to the engineer prior to acceptance of the work.

202.2.1.2 Material designated for use elsewhere shall not be removed from the project. Open burning of material shall be conducted in accordance with Sec 201.2.5.1. Uncontaminated underground storage facilities not requiring removal shall be dewatered, filled with sand or grout to within one foot (300 mm) of the top of the facility, and crushed.

202.2.2 Damaged Items. Any item damaged by the contractor's operations that is designated to remain in place, to be used elsewhere, or to be used by the public or an adjoining property owner, shall be repaired or replaced at the contractor's expense, in a manner satisfactory to the engineer in accordance with Sec 107.12.

202.2.3 Dust and Emissions Control. All operations during demolition and removal shall be adequately controlled to prevent dust and visible emissions, unless otherwise approved by the engineer. All measures taken shall be provided by the contractor at the contractor's expense unless specified otherwise.

202.2.4 Salvage. All material designated in the contract to be salvaged for Commission use from existing structures or improvements shall be removed without damage, in sections that may be readily handled, transported and stored as approved by the engineer. Unless otherwise designated in the contract, coldmilled material shall remain the property of the contractor. Guardrail material will remain the property of the Commission and stockpiled as specified in the contract or as directed by the engineer. All buildings, material and equipment of any description not designated for salvage by the Commission shall become the property of the contractor, unless owned and claimed by a political subdivision or utility company. Salvaged material becoming the property of the contractor shall not be stored on the right of way, or shall any portion of the right of way or land owned by the Commission be used by the contractor as a place of sale for salvaged material.

202.3 Construction Requirements.

202.3.1 Disposal of Material.

202.3.1.1 Clean fill, including uncontaminated soil, rock, sand, gravel, concrete, minimal amounts of wood, metal and inert solids, as approved by rule or policy by MDNR's Solid Waste Management Program, will not be regulated. These materials will not be considered solid waste, and may be disposed of without prior approval from MDNR's Solid Waste Management Program.

202.3.1.2 Material that is not clean fill by definition shall be disposed of in accordance with MDNR's or local regulations, and the contractor shall provide appropriate documentation, i.e. landfill receipts or a private owner waiver letter or statement from MDNR, that the disposal complies with applicable laws or regulations.

202.3.2 Removal Requirements. Removal of pavement, curb, gutter, sidewalk and other similar improvements, and where a portion of such improvements are to be left in place, shall be to an existing joint or to a joint sawed full depth. Sufficient removal shall be made to provide for proper grades and connections in the new work regardless of removal limits shown on the plans.

202.3.2.1 Removal of concrete or bituminous material shall consist of breaking up and disposing of the material in areas furnished at the contractor's expense, within a basement excavation where approved backfill material over 24 inches (600 mm) deep is to be placed over such broken material, or within embankments where new embankment over 24 inches (600 mm) is to be placed over the broken material. If concrete or bituminous slabs are to be left within an embankment or basement, the slabs shall be broken into pieces not exceeding 4 square feet (0.4 m^2). At locations shown on the plans where piling is to be driven, existing pavement, sidewalks, footings, foundations, walls and all other types of removal items shall be completely removed for a sufficient distance to permit piles to be driven. Existing improvements not removed in their entirety shall be removed to a minimum depth of 12 inches (300 mm) below the finished grade section or natural ground. All reinforcing steel extending from concrete shall be removed to the exposed face prior to placement within water or on exposed ground surfaces.

202.3.2.2 The contractor shall remove slabs on grade more than 6 inches (150 mm) higher than existing street or alley grades or surrounding low grades. All other aboveground concrete and masonry improvements, fences, posts and other structures on the parcel shall be removed to adjacent surface grades. For any location on the plans designated as a bridge site, the contractor shall remove all basement and foundation walls, footings, floors, and any other incidental masonry construction prior to backfilling. All material from such removals meeting the requirements of clean fill shall be disposed of as directed by the engineer. All other material shall be disposed of off site at the contractor's expense.

202.3.2.3 All sidewalk slabs over basements, areaways, and all beams, fixtures and supports shall be removed except slabs that are part of the public sidewalks adjacent to structures being demolished. The contractor shall not remove coal hole covers, trap doors, sidewalk doors, gratings and similar appurtenances that occur in the public sidewalk adjacent to buildings being demolished.

202.3.2.4 The contractor shall leave in place any walls or structures that retain adjacent property to ensure lateral support to that property. Any wall perpendicular to and connected to the said wall or structure shall remain in place and connected to the wall for a distance at least

one-half the height of the wall. The slope of the top of the perpendicular wall shall be 1:2 (2:1) or flatter, sloping downward from the top of the wall or structure.

202.3.3 Sewers and Drains. All sewers, drainage pipes and floor drains that have been or are to be abandoned shall be permanently sealed at the ends with a minimum 8-inch (200 mm) thick bulkhead constructed of Class B concrete, a commercial mix concrete in accordance with Sec 501.15 or brick masonry. The use of salvaged brick will be permitted for constructing bulkheads, provided the brick is clean and sound.

202.3.2 Backfill. All trenches, holes and pits resulting from the removal of improvements, contaminated material, soil, tanks and piping shall be backfilled and graded to shape and finish disturbed areas. Backfilling shall be performed in accordance with applicable portions of Sec 203 and compacted in accordance with Sec 203.5 unless otherwise designated by the engineer. Material shall be placed in the same manner and compacted to the same density required in adjoining areas and shall be done in such a manner as to ensure proper drainage.

202.3.4.1 Backfill material may consist of previously stockpiled uncontaminated soil or may be obtained from the right of way if approved by the engineer. Only approved material free of trees, stumps, rubbish and any other deleterious material shall be used in the construction of backfills. Rock, broken concrete or other solid material shall not be placed in bridge fill areas. No slope shall be steeper than 2:1 (1:2). Broken masonry resulting from demolition of buildings or other improvements on the parcel may be used for backfill provided the masonry meets the requirements of clean fill. In no case shall broken masonry extend closer than 12 inches (300 mm) to the finished surface. In the event there is insufficient material in the immediate vicinity, the contractor shall provide material, at the contractor's expense, from a source obtained by the contractor and approved by the engineer in accordance with Sec 106.

202.3.4.2 All trees, shrubs or other vegetation within the limits of the contractor's backfilling operations shall be removed and disposed of in accordance with Sec 201.

202.3.5 Hazardous Material.

202.3.5.1 The contractor may encounter small quantities of hazardous material as defined by MDNR. This material shall be recycled or disposed of in a manner that maintains the material's qualifications as "small quantities" in accordance with MDNR regulations.

202.3.5.2 In the event the contractor encounters what is reasonably suspected to be large quantities of hazardous material, the contractor shall immediately cease work and notify the engineer in accordance with the contract requirements. If the engineer determines the suspect material is not hazardous or does not constitute a large quantity of hazardous material, the contractor will be notified to continue the work. If the engineer determines the suspect material is hazardous or constitutes a large quantity of hazardous material, the engineer may require the contractor to perform work necessary to abate the hazardous material.

202.4 Basis of Payment The accepted removal of improvements will be paid for at the contract lump sum price. If no lump sum unit for the removal of improvements is included in the contract, the removal of improvements required to complete the contract, or as directed by the engineer, will be considered incidental to the work and no direct payment for the removal will be made. If additional removals are encountered as described in Sec 202.30, payment will be accordance with Sec 104.3.

202.4.1 No direct payment will be made for the following work:

(a) Removal and disposal of abandoned fences and mailboxes.

(b) Sealing abandoned sewers, drainage pipes or floor drains.

(c) Removal and disposal of small quantities of hazardous material.

202.4.2 Payment for any additional work required for hazardous material abatement will be handled in accordance with Sec 104.3.

SECTION 202.10 PLUGGING AND CLOSURE OF WELLS

202.10.1 Description. This work shall consist of plugging and closing wells as shown on the plans or as directed by the engineer.

202.10.2 Conformance Requirements. The contractor shall notify the engineer at least 24 hours in advance of the contractor's intent to plug the well. The contractor shall be in possession of a valid MDNR permit for well or pump installation. The abandonment procedure for wells shall be in accordance with requirements in specific MDNR regulations for monitoring wells, heat pump wells, test holes or all other wells, as applicable. A copy of the completed closed well registration shall be furnished to the engineer.

202.10.3 Basis of Payment. The accepted quantity of plugged and closed wells will be paid for at the contract unit price per each. Payment will be considered full compensation for all labor, equipment and material for plugging and closing, and the costs and fees associated with closed well registration.

SECTION 202.20 SEPTIC TANK PLUGGING AND DISPOSAL

202.20.1 Description. This work shall consist of plugging and disposing of septic tanks shown on the plans or as directed by the engineer.

202.20.2 Conformance Requirements. The contractor shall notify the engineer at least 24 hours in advance of the contractor's intent to plug and dispose of the septic tank. Septic tanks shall be abandoned by pumping the septic tank, collapsing the top of the tank, plugging incoming and outgoing laterals, and breaking the bottom to permit drainage. The tank trench shall be backfilled with coarse gravel or rock, agricultural lime, or sand to a depth of 2 feet (600 mm) below the existing ground surface. The top 2 feet (600 mm) shall be backfilled with soil from the parcel and compacted in 6-inch (150 mm) lifts to the approximate density of the adjacent soil. In the event there is insufficient material in the immediate vicinity, the contractor shall provide material meeting the approval of the engineer, at the contractor's expense. All material pumped from septic tanks shall be properly disposed of at a permitted sewage treatment facility or other location approved by the engineer.

202.20.3 Basis of Payment. The accepted quantity of septic tanks, plugged and disposed of, will be paid for at the contract unit price per each. Payment will be considered full compensation for disposal of tank contents, permits, labor, equipment and material to complete the described work.

SECTION 202.30 REMOVAL OF IMPROVEMENTS FOR ROADWAY CONTRACTS

202.30.1 Description. This work shall consist of removing and disposing of all existing improvements for roadway contracts from the right of way and within the limits of any construction easement outside the right of way, except improvements designated to remain in place or to be removed under other items of work.

202.30.1.1 Removal of improvements shall include removing all drainage structures, pavement, surfacing and base courses, curb, gutter, sidewalks, house walks, steps, retaining walls, foundation walls, columns, footings, concrete floors, cisterns, catch basins, uncontaminated storage tanks, manholes, drainage and sewer pipes, water and gas main pipes, signs, fences, scattered or piled bricks, stones, broken masonry, rubbish, debris, outdoor advertising signs, etc., from existing improvements.

202.30.1.2 The plans may not show a complete list of all items to be removed. There may be an undetermined number of abandoned utilities, basement or foundation walls, columns, footings or other improvements encountered. The contractor shall determine the extent of the work to be performed under this item.

202.30.2 Method of Measurement. This work will not be measured for payment, but will be considered a lump sum unit. The work will include the removal of all items, regardless of whether the items are shown on the plans or encountered during construction, unless the presence of the improvement encountered could not have been determined by a visual inspection prior to bidding. No deductions will be made from the quantities measured for payment of excavation where existing improvements are removed from within the limits of the sections measured for determining pay quantities of excavation.

202.30.3 Basis of Payment. Accepted removal of improvements will be paid for at the contract lump sum price. If no lump sum unit for the removal of improvements is included in the contract, the removal of improvements required to complete the contract, or as directed by the engineer, will be considered incidental to the work and no direct payment for the removal will be made. If additional removals are encountered as described in Sec 202.30.2, payment will be made in accordance with Sec 104.3.

SECTION 202.40 DEMOLITION AND REMOVAL OF BUILDINGS

202.40.1 Description. This work shall consist of demolishing, removing and disposing of all existing buildings from the right of way or within the limits of any construction easement outside the right of way as shown on the plans. Removal of buildings shall include all attached structures, existing rubbish, trash and contents in and adjacent to the building on each parcel.

202.40.1.1 Notification of Demolition. The contractor shall provide proper notification to all appropriate federal, state and local agencies prior to demolition. Notification is necessary for the demolition of a building regardless of whether asbestos is present. The notification procedures and forms are available from MDNR. The contractor shall provide copies of all completed and approved forms to the engineer prior to any demolition work.

202.40.2 Schedule. The contractor shall submit a plan and schedule for demolition and removal of any designated improvements, asbestos containing material (ACM), buildings, contaminated material, and storage tanks on the parcel. Prior to the start of removals, the contractor shall obtain approval from the engineer for all schedules and plans. The work shall be performed in accordance with the approved plan and schedule unless otherwise approved by the engineer. The contractor shall complete all demolition, removal and disposal of buildings, other than ACM removal, within seven days after starting work on the building, unless otherwise approved by the engineer.

202.40.3 Demolition and Removal General Requirements.

202.40.3.1 Backfilling. Backfilling operations for residential basements shall be completed within four days after residential buildings are removed. Backfilling operations for

commercial basements shall be completed within 14 days after commercial buildings are removed in accordance with the demolition and removal work schedule required in Sec 202.40.2.

202.40.3.2 Site Maintenance. All parcels included with each notice to remove shall be maintained by the contractor and kept in a safe and clean condition until acceptance of the work by the engineer. All access to the interior of buildings located on a parcel for which a notice to remove has been issued shall be closed up and secured or otherwise covered such that the public cannot enter the buildings.

202.40.3.3 Utilities. Before beginning demolition, the contractor shall arrange for the disconnection of utilities to buildings to be demolished in accordance with the regulations of the utility concerned. The contractor shall take measures to prevent any material from entering storm and sanitary sewers. In the event that utility service lines are disrupted and utility service is needed, the contractor shall provide adequate substitute utility service, at the contractor's expense.

202.40.3.4 Site Security. Before starting demolition for each parcel, the contractor shall provide adequate security around buildings to be demolished to protect the public and workers from operating equipment and falling debris, and to block access to any situation that constitutes a hazard to the public

202.40.4 Removal of Asbestos Containing Material. Unless designated otherwise, the Commission will test all buildings or structures to be removed for ACM. Testing of buildings will be limited to ACM. Buildings will not be tested for other substances. The Commission disclaims any representation that the buildings are hazard-free. If ACM is present in a building or structure, the ACM shall be removed and disposed of by the contractor accordance with the contract documents. All regulated asbestos containing material (RACM), as defined in Sec 202.40.4.5, and Category I nonfriable ACM on concrete shall be removed from the buildings prior to demolition or salvage. Category II nonfriable ACM that does not have a high probability of becoming crumbled, pulverized or reduced to powder in the course of demolition, and Category I nonfriable ACM, except floor tile or sheeting on concrete, may remain in the building during demolition. All building demolition material, including the Category II nonfriable ACM and Category I nonfriable ACM, shall be disposed of in a licensed landfill. The contractor shall not crumble, pulverize or reduce to powder Category II nonfriable ACM and shall not cut, grind, sand, abrade or render the Category I nonfriable ACM friable during demolition and transportation to the licensed landfill. If the contractor elects to remove and dispose of Category II nonfriable ACM and Category I nonfriable ACM prior to demolition, disposal shall be performed properly and at the contractor’s expense.

202.40.4.1 Asbestos Identification and Testing. Suspect ACM will be sampled and tested. The results of the testing for friable and nonfriable ACM requiring removal will be made available to the contractor or included within the contract documents. For those buildings with unknown quantities at the time of award, results of testing for friable and nonfriable ACM requiring removal will be provided with the notice to remove.

202.40.4.2 Licensing and Permits. The contractor performing friable asbestos abatement in accordance with the regulations shall be registered with MDNR and certified as an asbestos contractor with the agency. Before beginning work on any parcel, the contractor shall provide the engineer with copies of all permits, licenses and certifications in accordance with local, state, or federal agencies.

202.40.4.3 Notification and Reporting. The contractor shall provide all information regarding asbestos abatement to the EPA, OSHA, MDNR and local agencies in accordance with applicable regulations concerning asbestos removal work. Notification shall be provided

by the contractor to all applicable regulating agencies for all asbestos removal before removal and demolition begins. The contractor shall obtain any necessary authorization for the work from all applicable federal, state and local agencies. The contractor shall provide copies of all reports and authorization information to the engineer prior to beginning work on the project.

202.40.4.4 On-Site Supervisor. The contractor shall provide a trained supervisor to remain on site during all ACM removal work in accordance with EPA regulations. The contractor shall provide evidence of the supervisor's training to the engineer before any work begins.

202.40.4.5 Regulated Asbestos Containing Material and Category I Nonfriable Asbestos Containing Material on Concrete. The contractor shall remove, transfer and dispose of RACM and Category I nonfriable ACM (floor tile and sheeting on concrete) specified in the contract. The following material will be considered RACM:

(a) Friable asbestos material.

(b) Category I nonfriable ACM that has become friable.

(c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting or abrading.

(d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized or reduced to powder by the forces expected to act on the material in the course of demolition.

202.40.4.6 Unidentified Asbestos. If the contractor encounters suspect ACM not previously identified in the contract, the contractor shall immediately notify the engineer in accordance with the contract requirements. The engineer will have the suspect material sampled and tested, and the contractor shall not remove the additional suspect ACM until directed by the engineer.

202.40.4.7 No Salvage Permitted. No salvage of items containing asbestos material will be permitted.

202.40.4.8 Airborne Asbestos Particle Testing. The contractor shall monitor and test for airborne asbestos particles during working hours within the area of the property or fence line. The contractor shall conduct operations to keep airborne particles beyond this area within the established regulation limits. The contractor shall furnish the engineer copies of correspondence, test results, recommendations and other information to document contractor's compliance with the following requirements:

(a) When asbestos removal is completed, all work shall be inspected by the contractor for the presence of asbestos debris. Removal and cleaning shall continue until air monitoring clearance testing indicates the level of airborne fibers meets required levels. The engineer shall be notified when sampling is started. The contractor shall provide documentation to the engineer within 24 hours after the sampling has been completed that the level of airborne fibers meets required levels.

(b) For asbestos abatement projects requiring third party air monitoring as determined by the engineer, the contractor shall cooperate and coordinate with the engineer and the third party air sampler designated by the engineer to perform the third party air sampling. The contractor shall provide to the engineer a minimum of 48 hours notice of the time when the services of the third party air sampler will be required as a result of the contractor's work. The contractor shall arrange work so as not to interfere with the third party air sampler's ability to conduct the necessary air sampling. The contractor and the third party

air sampler shall work cooperatively with the engineer in a sequence such that air sampling shall be conducted in a proper and timely manner by the third party air sampler with minimal interruption to any other party.

202.40.4. 9 Disposal. All RACM and Category I nonfriable ACM shall be disposed of within seven days of removal from the building or structure. All RACM and ACM shall be disposed in accordance with applicable EPA, OSHA, MDNR and local agencies' regulations.

202.40.4.9.1 The contractor shall identify or mark hauling vehicles used to transport asbestos waste during loading, transporting and unloading in accordance with applicable regulations for transporting asbestos waste. The waste shall be transported in enclosed roll-offs or dumpsters, vehicles that have completely enclosed cargo areas, or a four-sided cargo area that shall be completely covered with two layers of 6-mil (0.15 mm) thick plastic sheeting or equivalent covering while the waste is being transported.

202.40.4.9.2 The contractor shall provide a Waste Shipment Record to the waste site owner or operator at the time the waste is delivered to the waste disposal site. A copy of the Waste Shipment Record shall be provided to the engineer.

202.40.5 Removal of Buildings. Removal of buildings shall include all attached structures. Under no circumstances shall the contractor burn, grind, pulverize or otherwise reduce any portion of the building into fine particles without prior approval from the engineer. Any buildings or portion thereof located on the parcel may be removed intact or substantially intact subject to the contractor's adherence to the following conditions:

(a) The contractor shall declare, in writing, the intention to move any building or substantial portion thereof to any other location. Such declarations shall be made within 30 days of the issuance of the notice to remove for the building. The contractor shall submit a separate declaration for each building.

(b) The name of the house mover or house moving company shall be included in the declaration. The engineer reserves the right to disapprove a house mover or house moving company with no prior performance record or based on unsatisfactory performance on previous moving jobs. Conditional approval may be given at the discretion of the engineer for previously disapproved house movers or house moving companies for one building at a time.

(c) No building or portion thereof shall be removed from the parcel until the contractor has received written approval from the engineer and other authority having jurisdiction over the area involved in the total move by issuance of the proper permits.

(d) The contractor shall commence the removal of buildings promptly. Buildings removed shall not be placed on other portions of state right of way for storage or for any other purpose, except as specifically allowed by issuance of an overdimension permit from the Commission

(e) Interim storage of buildings for resale or any other purpose will be limited to areas where zoning allows for such storage. No public lands or right of way shall be used unless a permit is granted by the responsible agency.

(f) The contractor shall remove all components of the building to the foundation level, including those components suspended from the main level subfloor structure. The primary components of the building shall be removed intact as a whole structure. The contractor will not be paid for ACM removal from these structures unless required from the disturbance of the foundation or on the remaining foundation components after building removal, as determined by the engineer.

202.40.5.1 Demolition of Walls. All exterior walls shall be removed to the level of existing adjacent ground, streets, alleys or sidewalks. Interior walls shall be removed to the level of existing basement floors.

202.40.5.1.1 Where joint or party walls exist between two buildings that are not being demolished at the same time, the part of wall or walls serving both buildings shall be removed with the demolition of the last structure. No demolition work shall damage or weaken walls or portions of walls serving adjacent buildings.

202.40.5.1.2 Remaining portions of party walls shall be left in sound condition with demolition terminating in neat vertical and horizontal lines. Care shall be taken to ensure demolition without damage to roofs or other parts of adjoining buildings.

202.40.5.2 Removal of Flooring. Floor construction over basements, sub-basements or cellars, and all other floors regardless of elevation, shall be removed. All existing wood and other material attached to concrete and masonry construction shall be removed.

202.40.5.3 Disposal of Debris. The contractor shall remove any debris resulting from demolition as work progresses and dispose of the material in a licensed landfill.

202.40.5.4 Cooling Systems. Buildings to be demolished may have various cooling systems that contain freon or other refrigerants. The contractor shall identify the type of refrigerant present in each system and properly recover the refrigerant prior to salvage or demolition of the cooling systems.

202.40.6 Removal of Appurtenances. Removal and disposal shall include all existing building appurtenances on each parcel in the demolition and removal contracts from the right of way and within the limits of any construction easement outside the right of way, except those items designated to remain in place or to be removed under other items of work.

202.40.6.1 All elevated sidewalks, steps, retaining walls, basement and foundation walls, columns, footings, concrete floors, cisterns, catch basins, uncontaminated storage tanks, manholes, signs, fences, bricks, stones, broken masonry, rubbish, debris and any other items not covered elsewhere in Sec 202 will be considered building appurtenances.

202.40.6.2 The plans may not show a complete list of all items to be removed. There may be an undetermined number of basement or foundation walls, columns, footings or other improvements encountered. The contractor shall determine the extent of the work to be performed under this item.

202.40.7 Method of Measurement.

202.40.7.1 Final measurement of removal for ACM will be made to the nearest square foot (0.1 m^2) or linear foot (0.5 m) based on the asbestos survey test report.

202.40.7.2 Measurement for demolition and removal of buildings and appurtenances will be considered a lump sum unit per parcel.

202.40.8 Basis of Payment.

202.40.8.1 Payment for removal of ACM will be made for field-measured quantities as approved by the engineer at the contract unit price. If additional suspect material tests positive for the presence of asbestos, payment will be made per the contract unit price. No direct payment will be made for recovering refrigerant.

202.40.8.2 Payment for demolition and removal of buildings and appurtenances will be made at the contract lump sum unit price per parcel.

SECTION 202.50 REMOVAL OF CONTAMINATED MATERIAL AND STORAGE TANKS

202.50.1 Description. This work shall consist of removing and disposing of designated residual material, pavement, pump islands, all storage tanks and piping; excavation and disposal of uncontaminated and contaminated soil as required; obtaining the necessary regulatory permits; backfilling the excavated areas with uncontaminated soil after clean up levels have been achieved; and any incidental work or material required to complete the job.

202.50.2 Schedule. The contractor shall submit a plan and schedule for demolition and removal of any designated storage tanks on the parcel and shall obtain the engineer's approval prior to starting work. The work shall be performed in accordance with the approved plan and schedule unless otherwise approved by the engineer.

202.50.3 Removal Requirements.

202.50.3.1 Site Inspection. The contractor shall inspect and become familiar with the proposed work site, conditions and circumstances.

202.50.3.2 Conformance Requirements. Work shall be performed in accordance with industry recommended practices, including the American Petroleum Institute (API) Recommended Practices, and MDNR Underground Storage Tanks (UST) Closure Guidance (Closure Guidance).

202.50.3.3 Groundwater Monitoring Wells. The contractor shall protect all existing groundwater monitoring wells located within the area of underground storage tanks from damage and contamination, except for wells in an area of contaminated soil removal.

202.50.3.4 Tank Vapor Levels. Vapor levels in each tank shall be checked for explosive potential prior to removing the tank or piping. Non-sparking tools shall be used for gaining access to the tank atmosphere in order to measure the vapor level. If the explosive level is above 20 percent of the lower explosive limit, flammable vapors shall be removed in accordance with methods outlined by API Recommended Practices until the 20 percent level is reached. The contractor shall purge vapors from a vent pipe. Gasoline tanks shall not be purged during adverse weather conditions where vapors could accumulate at ground level and cause a public health or fire hazard.

202.50.3.5 Tank Dewatering and Removal. The contractor shall notify the engineer prior dewatering and removing storage tanks.

202.50.3.6 Residual Material. The contractor shall remove and dispose of all residual material in the tanks or drums on the site identified as being a regulated quantity of hazardous waste material. All product, sludge, and water in contact with the interior of a petroleum UST will be presumed to be hazardous waste, unless sample test results reporting the requirements of the Toxicity Characteristic Final Rule prove otherwise. Hazardous waste material shall be transported by a hazardous waste transporter licensed in the State of Missouri and manifested as hazardous waste to a Resource Conservation and Recovery Act (RCRA) treatment, storage or disposal facility. The generator's copy of the manifest shall be submitted to the engineer. The material in tanks or drums identified as being non-hazardous shall be managed properly.

202.50.3.7 Tank Pit Surface Water. Tank pits on the site may contain contaminated surface water or groundwater. The contractor shall remove, transport and dispose of all contaminated water from the tank pit at an appropriate treatment, storage or disposal facility.

202.50.3.8 Soil Excavation. Soil excavation shall be performed by the contractor to segregate contaminated soil from uncontaminated soil. Contaminated soil shall be excavated to the limits directed by the engineer. The contractor shall use calibrated field instrumentation approved by the engineer to evaluate approximate levels of contamination remaining in the unexcavated soil.

202.50.3.9 Hauling and Disposal of Contaminated Soil. Contaminated soil shall be hauled from the site and disposed of in a licensed landfill, or as directed by the engineer. Disposal of contaminated soil shall be in accordance with the Closure Guidance. The contractor shall provide the engineer with a copy of a completed MDNR form entitled *Disposal of Soil Contaminated With Virgin Gasoline or Virgin Fuel Oil.*

202.50.3.10 Use of Uncontaminated Soil. Uncontaminated soil may be reused as backfill at locations approved by the engineer.

202.50.3.11 Water Accumulated in Excavation. If stormwater accumulates in the excavated area and requires removal prior to backfilling, the contractor shall obtain an MDNR storm water discharge permit or approval to discharge accumulated water into a sewer system. Disposal of water removed from the excavated area will be at the contractor's expense.

202.50.3.12 Sample Analysis. The contractor's work will be regulated as follows:

(a) The contractor shall sample and analyze residual material, tank pit surface water or groundwater, and any stormwater that accumulates in the excavated area as necessary for proper disposal.

(b) The contractor shall provide the engineer with the name, location and testing requirements of the disposal facility for the contaminated material.

(c) The engineer will sample and analyze all soil prior to disposal; prior to beneficial reuse if beneficial reuse is designated in the contract; and prior to backfilling. Sampling and analysis will be done in accordance with the Closure Guidance and requirements of the Missouri Petroleum Storage Tank Insurance Fund.

(d) The engineer will obtain samples beneath the tank, down-gradient and around pumps and lines in accordance with the Closure Guidance.

(e) The engineer will determine if remaining soil requires excavation and when clean up levels have been achieved.

202.50.3.13 Backfill. The contractor shall not begin backfilling operations until directed by the engineer.

202.50.3.14 Closure Report. The contractor shall provide copies of all necessary documentation for tank cleaning and disposal, and soil, sludge and wastewater disposal to the engineer. Documentation shall be in accordance with the Closure Guidance and the Missouri Petroleum Storage Tank Insurance Fund. The engineer will prepare the underground storage tank closure report in accordance with the Closure Guidance.

202.50.4 Method of Measurement. Measurement of tank removal and disposal will be made per each; residual hazardous material removal and disposal will be measured per gallon (L);

tank pit surface water removal and disposal will be measured per 10 gallons (50 L); and hauling and disposing of contaminated soil will be measured per ton (Mg) based on landfill weight tickets. Measurement of excavation and backfill will be made to the nearest cubic yard (m^3), measured from the actual excavation limits to the existing surrounding ground line. A deduction equal to the volume of the tanks removed will be made from the volume measured for payment of contaminated soil excavation when existing tanks are removed from within the limits of the sections measured for determining pay volumes of excavation.

202.50.5 Basis of Payment.

202.50.5.1 The accepted quantities for removal and disposal of storage tanks will be paid for at the contract unit price per each.

202.50.5.2 The accepted quantity of hazardous residual material will be paid for at the contract unit price. Payment will be considered full compensation for sampling and analysis, removal of the material, appropriate containerization and labeling, transportation and treatment or disposal. Payment will not be made until the engineer receives a Certification of Treatment or Disposal for all material from the RCRA treatment, storage or disposal facility.

202.50.5.3 The accepted quantity of tank pit surface water and groundwater removal and disposal will be paid for at the contract unit price. Payment will be considered full compensation for all sampling and analysis, transportation, disposal fees, and processing of approvals.

202.50.5.4 The accepted quantity for excavation of contaminated soil will be paid for at the contract unit price.

202.50.5.5 The accepted quantity for hauling contaminated soil will be paid for at the contract unit price, based on landfill weight tickets. Payment will be considered full compensation for removal from the site and transportation for treatment or disposal.

202.50.5.6 The accepted quantity for disposal of contaminated soil will be paid for at the contract unit price, based on landfill weight tickets. Payment will be considered full compensation for all landfill fees and processing of landfill approvals.

202.50.5.7 The accepted quantity for backfill will be paid for at the contract unit price and will be considered full compensation for material, transportation and compaction.

SECTION 202.60 INDIVIDUAL WASTEWATER LAGOON CLOSURES

202.60.1 Description. This work shall consist of dewatering, sludge removal or treatment, and grading of individual residential wastewater lagoons as shown on the plans or as directed by the engineer.

202.60.2 Construction Requirements. The contractor shall notify the engineer at least 24 hours in advance of the contractor's intent to dewater by pumping and apply to a vegetated area approved by the engineer at a rate that will not cause runoff. Residual sludge remaining in the lagoon shall be mixed with soil on at least a one to one ratio. Lagoon berms shall be demolished and compacted over the lagoon bottom to the approximate density of the adjacent soil. The contractor shall provide material meeting the approval of the engineer to backfill the lagoon to the surrounding ground surface. Material required to backfill the lagoon will be considered incidental to the work. If material is available in the immediate vicinity of the lagoon, the engineer may authorize using on-site material. Disturbed areas shall be fertilized, seeded and mulched. All material pumped from the lagoon shall be properly disposed of at a sewage treatment facility unless otherwise directed by the engineer.

202.60.3 Method of Measurement. Measurement of individual residential wastewater lagoon closures will be made per each.

202.60.4 Basis of Payment. The accepted quantity of residential wastewater lagoon closures will be paid for at the contract unit price. Payment will be considered full compensation for removal, disposal of lagoon contents, required backfill material, seeding, fertilizing and mulching, permits, labor, equipment and material to complete the described work.

SECTION 201

CLEARING AND GRUBBING

201.1 Description. This work shall consist of clearing, grubbing, removing and disposing of items, debris and other objectionable matter from within the limits of right of way and easement areas, except vegetation designated to remain or to be selectively treated.

201.2 Construction Requirements.

201.2.1 General. The engineer will designate all trees, shrubs, plants and other objects that are to remain. All designated items shall be preserved. Any damage to natural terrain, vegetation or objects designated to remain shall be repaired or replaced, as determined by the engineer, at the contractor's expense.

201.2.2 Clearing and Grubbing. Unless otherwise specified in the contract documents, the entire length of the project shall be cleared and grubbed to the limits and requirements specified. Clearing and grubbing shall include removal of all trees, stumps, roots and any objectionable matter resting on or protruding through the surface of the original ground, except for those items designated to remain.

201.2.2.1 Clearing. The area for clearing shall be within the following limits:

(a) Highway construction areas on the right of way or right of way easements, including structures, frontage roads, streets, ramps, approaches, ditches, channels and all other access roads, connections and incidental items that are to be constructed. These areas shall extend 10 feet (3 m) outside of construction lines, or to the right of way limits if less than 10 feet (3 m).

(b) Material sites within the right of way or right of way easements.

(c) Areas enclosed by interchange loops and ramps.

(d) Site distance areas for intersecting routes.

201.2.2.2 Limits of Grubbing. Within the limits of the cut areas, grubbing shall be performed to a minimum depth of 18 inches (450 mm) below the finished earth grade of roadways, ditches, channels, borrows and structures. The areas below the natural ground surface shall be grubbed to a depth necessary to remove all stumps, roots, buried logs and other objectionable material. In embankment areas, undisturbed stumps and roots extending no more than 6 inches (150 mm) above the ground line may remain, provided the stumps and roots are a minimum of 4 feet (1.2 m) below the finished earth grade. Except in areas to be excavated, holes created by removals shall be backfilled with suitable material and compacted to the approximate density of the adjacent area.

201.2.2.3 Selective Clearing and Grubbing. All areas outside the limits designated for clearing and grubbing, but on the right of way, shall be free of unsightly vegetation, debris and other objectionable matter. In lieu of grubbing, undisturbed stumps outside the slope stake limits and in mowable areas may be cut to a maximum height of 3 inches (75 mm) above the

ground. Low hanging, unsound or unsightly branches on trees or shrubs designated to remain shall be removed as directed by the engineer.

201.2.3 Scalping. The contractor shall scalp all areas where excavation or embankment is to be performed, except mowed or burned over sod may remain where the embankment to be constructed is at least 4 feet (1.2 m) above natural ground. Scalping shall include the removal of surface material such as sod, grass, residue of agricultural crops, sawdust and any other vegetative matter without removing more earth than is necessary.

201.2.4 National Forest Land. Before beginning work on a highway to be constructed over national forest land, the contractor shall obtain information from the forest ranger in charge to determine rules and regulations covering construction procedures and shall follow those requirements. Before any fires are set, the contractor shall notify the forest ranger in charge, and shall secure a burning permit.

201.2.5 Removal and Disposal of Material. The contractor shall dispose of all trees, stumps, brush, roots and all other objectionable matter removed in the clearing and grubbing process.

201.2.5.1 Open Burning. Open burning in incorporated areas will be permitted only under a permit or waiver from MDNR. Open burning of tree trunks, tree limbs and natural vegetation from clearing operations may be allowable in out state areas as defined in MDNR regulations. The contractor shall obtain all necessary permits and approvals before open burning is initiated, and shall comply with permit conditions, MDNR regulations, and all laws in accordance with Sec 107. A contractor representative shall be present during all burning. Measures shall be taken to ensure that structures or vegetation on adjacent property, or items designated to remain on the right of way, shall not be jeopardized. Fires set for the purpose of training fire fighters and industrial employees in fire fighting methods may be permitted after coordination with MDNR or local fire departments, and shall be in strict accordance with NFPA standards.

201.2.5.2 Disposal of Wood. Burial of stumps and debris will not be permitted on the right of way. Products of clearing and grubbing may be removed from the right of way and disposed of out of sight from the roadway, provided there is no conflict with governing regulations for the wasted material. A signed, written agreement with the property owner shall be submitted by the contractor to the engineer prior to the disposal of material on that property.

201.2.5.3 Disposal of Scalping. The products of scalping shall be deposited at the toe of embankments where such areas are available within the limits of the roadway balance affected. If such areas are not available, the products shall be neatly and uniformly deposited on the right of way in such a manner that no drainage will be blocked.

201.2.5.4 Disposal of Timber. Except in national forest areas, all timber that has not been removed from the right of way prior to construction and is not designated to remain in place shall become the property of the contractor.

201.3 Method of Measurement. The work provided herein will not be measured for payment, but will be considered a plan quantity. The following exceptions will be made on a measured quantity basis:

(a) An authorized change in the line or grade, or appreciable deviations in the original ground elevations in accordance with Sec 203.8.1, significantly alters the original construction limits of the contract.

(b) Authorized alterations or corrections to the plans provide additional work outside the original construction limits of the contract and will materially affect the final payment quantity.

(c) Appreciable errors within the original limits of construction, if the contractor provides written notification, and measurements of the proposed change to the engineer prior to commencing clearing operations. The engineer will accept or reject the changes by the close of the next business day.

201.3.1 If payment for additional work is required, a combined measurement of clearing and grubbing will be made on an area basis to the nearest 1/10 acre (0.05 ha). An acre (ha) will consist of 87.12 (160) units, each unit being a rectangular area 50 feet (12.5 m) long and 10 feet (5 m) wide.

201.3.2 The total area of the right of way, except that part secured for channel changes, inlet or outlet easements, and borrow areas will be laid out in units beginning at the centerline of the highway with corners at whole or half stations and extending outward until all of the right of way has been included. The total area of the right of way secured for channel changes, inlet or outlet easements, and borrow areas will be laid out in units in the same manner from longitudinal base lines run or designated for these areas.

201.3.3 Clearing and grubbing will be considered as one item. If additional clearing or grubbing is required, the entire unit will be counted for measurement. Areas of mowing or scalping, removal of small trees or brush 5 feet (1.5 m) high or less, and all weeds, cornstalks and similar vegetation regardless of height, and the trimming of branches on trees and shrubs designated to remain, will not be measured and will be considered incidental to other required work. Only stumps 3 inches (75 mm) or more in diameter and 6 inches (150 mm) or more above the ground surface in areas where grubbing is required will be considered in the measurement of clearing and grubbing.

201.3.4 If any clearing or grubbing is performed within any unit, the entire area of that unit, except in the case of overlaps, will be included in the measurement. If individual trees or stumps cause the overlapping of units as laid out, only one unit of clearing and grubbing, as applicable, will be allowed. If a fractional unit occurs as a result of measurement or of overlap, the fractional unit will be counted as one unit. If the boundary line of any unit intersects a single tree or stump, counting of another applicable unit will not be made if there is any clearing and grubbing to be paid for in the adjacent unit.

201.4 Basis of Payment.

201.4.1 Clearing and grubbing will be paid for at the contract unit price based on plan quantity.

201.4.2 If a bid item for clearing and grubbing is not included in the contract, any necessary clearing and grubbing, including scalping, selective clearing and the removal and disposal of all the resulting material required within the contract items specified, will be considered incidental to the contract and additional compensation will not be made.

201.4.3 If additional clearing and grubbing in accordance with Sec 201.3 is required outside the initial contract work, payment for that clearing and grubbing will be made per acre (ha) at the contract unit price, or if separate payment for clearing and grubbing is not included in the contract, payment will be made in accordance with Sec 109.

SECTION 806

POLLUTION, EROSION AND SEDIMENT CONTROL

806.1 Description. This work shall consist of furnishing, installing, maintaining and removing temporary pollution, erosion and sediment control measures; furnishing and placing permanent erosion control features; or a combination of both as shown on the plans or as directed by the engineer.

806.2 Schedule of Work. Prior to the preconstruction conference and the start of construction, the contractor shall submit schedules for the implementation of temporary pollution control and temporary and permanent erosion control work, as applicable, for construction operations. The contractor's schedule shall address specifically the pollution and erosion control measures planned at all streams or other bodies of water. No work shall start until the pollution and erosion control schedules and methods of operations have been approved by the engineer. Any delay of the work resulting from failure to submit acceptable pollution and erosion control schedules and methods of operations will be considered nonexcusable.

806.3 Material. All material shall be in accordance with Division 1000, Material Details, and specifically as follows:

Item	Section
Fertilizer and Lime	801
Straw for Bales	802
Mulching	802
Seed	805
Geotextile Fabric	1011

806.4 Construction Requirements. The engineer will limit the surface area of erodible earth material exposed by clearing and grubbing or by excavation, borrow and fill operations in accordance with the following. The engineer may direct the contractor to provide immediate permanent or temporary pollution control measures to prevent contamination of adjacent streams or other bodies of water. Such work may involve the construction of temporary berms, dikes, dams, sediment basins and slope drains, and use of temporary mulches, seeding or other control devices or methods as necessary to control erosion and pollution.

806.4.1 If erosion control measures, as shown on the plans, are not suitable due to site conditions, a suitable system of Best Management Practices (BMP) as defined by MoDOT's current General Permit, from the Department of Natural Resources, for construction or land disturbance activities shall be applied as approved by the engineer.

806.4.2 The contractor shall exercise effective management practices throughout the life of the project to control pollution. Pollutants such as chemicals, fuels, lubricants, bitumen, raw sewage or other harmful material shall not be discharged on or from the project. Temporary pollution control measures, such as storage and handling of petroleum products and other pollutants, shall be coordinated with temporary and permanent erosion control features specified in the contract to ensure economical, effective and continuous erosion and pollution control. These requirements will also apply to work within easements designated by the Commission.

806.4.3 The contractor shall incorporate all permanent erosion and pollution control features into the project at the earliest practical time. Temporary measures shall be used to correct conditions that develop during construction which were not foreseen during the design stage, that are needed prior to installation of permanent pollution control features, or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.

806.4.4 Clearing and grubbing operations shall be scheduled and performed such that grading operations and erosion control features will follow immediately thereafter. The surface area of erodible earth material exposed at one time by clearing and grubbing, excavating fill or borrow shall not exceed 435,000 square feet (40,000 m^2) within any individual drainage area without installation of erosion controls for that drainage area. The total erodible surface area exposed at one time for an entire project shall not exceed 750,000 square feet (70,000 m^2) without specific, written approval from the engineer.

806.4.5 The engineer will limit the additional amount of erodible surface areas exposed by clearing and grubbing, excavation, borrow and fill operations with the amount of fill area in which the finished grading, mulching, seeding and other such permanent erosion control measures have not been completed and properly maintained. If seasonal limitations make such operations impractical, temporary erosion control measures shall be taken immediately.

806.4.6 Unless otherwise provided or approved in writing by the engineer, construction operations in streams or other bodies of water shall be restricted to those areas that must be entered for the construction of temporary or permanent structures. Streams or other bodies of water shall be promptly cleared of all falsework, piling, debris or other obstructions placed therein or caused by construction operations.

806.4.7 Fording of streams or other bodies of water with construction equipment will not be permitted, except as allowed by the engineer. Temporary bridges or other structures shall be used wherever an appreciable number of stream or other bodies of water crossings are necessary. Unless otherwise approved in writing by the engineer, mechanized equipment shall not be operated in streams or other bodies of water except as may be required to construct channel changes and temporary or permanent structures. If a Corps of Engineer Section 404 or Department of Natural Resources Section 401 permit is applicable for a project, the permit requirements and conditions will prevail.

806.4.8 The location of all material pits, other than commercially-operated sources, and all excess material sites will be subject to approval from the engineer. Erosion from construction operations and pollution control measures shall not cause water pollution.

806.4.9 In the event of conflict between these requirements and the pollution control laws, rules or regulations of other federal, state or local agencies, the more restrictive laws, rules or regulations will apply.

806.4.10 Unless otherwise specified, or directed by the engineer, all temporary erosion control measures shall be removed by the contractor after permanent erosion control measures are established.

SECTION 806.10 TEMPORARY BERMS

806.10.1 Description. This work shall consist of constructing and maintaining temporary berms of rock or compacted soil at the top of fillslopes or transverse to the centerline of fills.

806.10.2 Material. Temporary berms shall consist of graded material from within the project limits or any other suitable material approved by the engineer.

806.10.3 Construction Requirements. Temporary berms shall be constructed to the approximate dimensions shown on the plans.

806.10.3.1 Type A Berms. Type A berms shall be machine compacted with a minimum of one pass over the entire width of the berm.

806.10.3.2 Type B Berms. Type B berms shall be machine compacted with a minimum of three passes over the entire width of the berm. Material removed from Type B berms shall be incorporated in the embankment when possible. The contractor shall remove and dispose of any excess or unsuitable material to a location approved by the engineer.

806.10.3.3 Type A and Type B Berms. Temporary berms shall drain to a compacted outlet at a slope drain. On transverse berms, the top width of the berms may be wider and the sideslopes flatter to allow equipment to pass over these berms with minimal disruption.

806.10.3.4 Type C Berms. Type C berms shall be constructed of rock base material in accordance with Sec 303.2 or other material as approved by the engineer. A vegetative mulch or an equivalent erosion control blanket shall be placed on the upslope side of the Type C berm. The vegetative mulch shall be placed in such a manner that the final compacted thickness is 2 inches (50 mm). The material for the vegetative mulch shall be in accordance with Sec 802. The straw layer or equivalent erosion control blanket shall be removed and replaced as directed by the engineer.

806.10.4 Method of Measurement.

806.10.4.1 Quantities for Type A berms will be included in Class A or Unclassified Excavation quantities listed in the contract. Final measurement will not be made for Type A berms, except in accordance with Sec 203.8.1.1.

806.10.4.2 Measurement of Type B and C berms will be made to the nearest linear foot (m).

806.10.5 Basis of Payment.

806.10.5.1 Payment for Type A berms will be made at the contract unit price for Class A or Unclassified Excavation and will be considered full compensation for all labor, equipment and material to construct, maintain and remove Type A berms.

806.10.5.2 The accepted quantities of Type B and C berms will be paid for at the contract unit price and will be considered full compensation for berm installation, maintenance, removal and any other work noted on the plans. No additional payment will be made for any costs associated with the straw layer or equivalent erosion control blanket on the Type C berm.

806.10.5.3 Any hand work at slope drain inlets will be considered part of the contract unit price for slope drains.

SECTION 806.20 TEMPORARY SLOPE DRAINS

806.20.1 Description. This work shall consist of constructing and maintaining temporary slope drains to carry water down slopes and to reduce erosion. The method selected shall be approved by the engineer prior to construction.

806.20.2 Construction Requirements. The contractor shall provide temporary, impermeable slope drains to carry water or water with suspended solids down fill slopes until permanent erosion control measures are established. The contractor shall provide temporary slope drains on fillslopes at approximately 500-foot (150 m) intervals or as directed by the engineer. All temporary slope drains shall be adequately anchored to the slope to prevent disruption of flow. Inlet ends shall be properly constructed to channel water into the temporary slope drain. Outlet ends shall have some means of dissipating the energy of the water to reduce erosion downstream. The contractor shall restore the site of the slope drains to the satisfaction of the engineer.

806.20.3 Method of Measurement. Measurement of temporary slope drains will be made to the nearest linear foot (m).

806.20.4 Basis of Payment. The accepted quantities of temporary slope drains will be paid for at the contract unit price.

SECTION 806.30 TEMPORARY DITCH AND INLET CHECKS

806.30.1 Description. This work shall consist of constructing and maintaining temporary ditch and inlet checks, removing sediment deposits from these checks and disposing of the sediment at a location approved by the engineer.

806.30.2 Material. All material shall be in accordance with Sec 806.3 and the following.

806.30.2.1 Posts. Wood, steel or synthetic posts may be used. Posts shall be of sufficient length, but no less than 4 feet (1.2 m), to ensure adequate embedment while fully supporting the ditch check and shall have sufficient strength to resist damage during installation and to support applied loads while in service.

806.30.2.2 Support Fence. All geotextile fabric for ditch checks shall be supported either externally by wire or other approved mesh to a height of at least 24 inches (600 mm) or by a suitably designed support system capable of keeping the material erect. Either method shall be strong enough to withstand applied loads.

806.30.3 Construction Requirements.

806.30.3.1 Type I Ditch Checks. Type I ditch checks shall be constructed of straw bales, geotextile fabric fence or an alternative erosion control measure as approved by the engineer. Type I ditch checks shall not be used where drainage areas exceed 3 acres (1.2 ha) or where ditch slopes exceed 10 percent. Type II ditch checks may be substituted for Type I ditch checks at the contractor's expense. Straw bale and silt fence ditch checks shall be constructed as shown on the plans in accordance with the contract documents. Approved alternate Type I ditch checks shall be installed and maintained according to the manufacturer's recommendations.

806.30.3.2 Type II Ditch Checks. Alternate Type II ditch checks may be used as approved by the engineer. Type II ditch checks shall not be used where drainage areas exceed 50 acres (20.2 ha) or where ditch slopes exceed 10 percent.

806.30.3.2.1 Rock Ditch Checks. Rock ditch checks shall be constructed of rock with a predominant size between 4 and 12 inches.

806.30.3.2.2 Sand Bag Ditch Checks. Sand or rock for sand bags shall be a uniform granulation with a maximum aggregate size of 2 inches (50 mm), shall be clean to allow percolation of water through the sand bag and shall meet the approval of the engineer. Sand

bags shall be of tightly woven burlap or other material that is sufficiently durable to remain intact for the time intended. Sand bags shall be filled approximately three-fourths full, shall weigh approximately 55 pounds (25 kg) and shall be securely closed. The sand bags shall be laid in horizontal courses, and successive courses shall break joints with preceding ones. The bags shall be packed against each other and tamped to provide a uniform surface.

806.30.3.2.3 Drop Inlet Checks. Drop inlet checks shall be constructed adjacent to the drop inlet as shown on the plans or as directed by the engineer, as necessary to prevent sediment from entering the inlet. Material shall be in accordance with the requirements of the Type II Ditch Checks or as approved by the engineer.

806.30.3..2.4 Maintenance. The contractor shall replace checks as directed by the engineer. Periodic sediment removal shall include removal and disposal of sediment to a location where sediment will not erode into construction areas, streams or other bodies of water. The contractor shall inspect the ditch checks for sediment accumulation after each storm event and shall remove the sediment when deposits reach approximately one-half the original height of the check. Alternate temporary erosion control methods shall be maintained in accordance with the manufacturer and as directed by the engineer.

806.30.2.5 Method of Measurement. Measurement of sediment removal will be made to the nearest cubic yard (m^3).

806.30.4 Basis of Payment. The accepted quantities of temporary checks will be paid for at the contract unit price for each pay item included in the contract. This shall include constructing, maintaining, repairing and removing and disposing of the check after completion of the work. The contractor will be compensated at the contract unit price if the engineer determines unusual conditions warrant repair or replacement of a check.

SECTION 806.40 SEDIMENT BASINS

806.40.1 Description. This work shall consist of constructing sediment basins as shown on the plans or as directed by the engineer to detain sediment. This work shall also include disposal of excavated material, sediment and basin removal and site restoration.

806.40.2 Construction Requirements. The area where a sediment basin is to be constructed shall be cleared of vegetation to enable sediment removal. The sediment basin shall be an excavated or dammed storage area with defined sideslopes. Inlet and outlet areas shall be lined with rock riprap.

806.40.2.1 The inlet of a sediment basin shall be constructed with a wide cross-section and a minimum grade to prevent turbulence and to allow deposition of soil particles. When the depth of sediment reaches one-half the original depth of the sediment basin in any part of the pool, all accumulation shall be removed.

806.40.2.2 The contractor shall dispose of accumulated sediment and excavated material removed during the construction of the sediment basin in locations where the material will not erode into the construction areas, streams or other bodies of water.

806.40.2.3 Sediment basins shall remain in service until all disturbed areas draining into the structure have been satisfactorily stabilized. When use of a temporary sediment basin is to be discontinued, the contractor shall remove any sediment and backfill, properly compact all excavations, restore the area to the existing ground's natural or intended condition, and seed and mulch in accordance with Secs 802 and 805.

806.40.3 Method of Measurement.

806.40.3.1 Measurement of sediment basin excavation and sediment removal will be made to the nearest cubic yard (m^3).

806.40.3.2 Measurement of all seeding required after the sediment basin is built, after removal of the sediment basin and for site restoration will be in accordance with Sec 805 .

806.40.4 Basis of Payment.

806.40.4.1 The accepted quantities for constructing a sediment basin and for sediment removal will be paid for at the contract unit price.

806.40.4.2 Payment for all seeding and mulching required after the sediment basin is built, after removal of the sediment basin and for site restoration, will be in accordance with Sec 805.

806.40.4.3 If additional clearing and grubbing is necessary for construction of a sediment basin, payment will be included in the contract unit price for sediment basin.

SECTION 806.50 TEMPORARY SEEDING AND MULCHING

806.50.1 Description. This work shall consist of furnishing and applying fertilizer, seed, vegetative mulch or other acceptable cover authorized by the engineer. This work shall produce a quick ground cover to reduce erosion in disturbed areas expected to be redisturbed at a later date. Finish grading of areas will not be required. Hydraulic seeding and fertilizing in accordance with Sec 805 will be permitted.

806.50.2 Construction Requirements. Seeding and mulching shall be a continuous operation on all cut and fillslopes, excess material sites and borrow pits during the construction process. All disturbed areas shall be seeded and mulched as necessary to eliminate erosion. When a project is shown in the contract to be constructed in stages and operations in those staged areas are suspended for a significant amount of time, the contractor shall receive payment for temporary seed and mulch. When the engineer allows the contractor to disturb additional ground beyond the restrictions in Sec 806.4.4 solely to enhance the contractor's operation, the contractor shall not receive compensation for temporary seed or mulch, as required by the engineer, for ground cover for areas exceeding the restrictions in Sec 806.4.4.

806.50.2.1 The contractor shall provide permanent seeding and mulching as shown on the plans following temporary seeding.

806.50.2.2 Temporary seeding mixtures of cereal grains shall be applied at a rate of 100 pounds per acre (110 kg/ha). All erodible seeded areas shall provide a minimum of 20 plants of the species planted per square foot (0.04 m^2) on at least two random counts per acre (0.5 ha) in representative areas of the field. For areas with a large percentage of rock, the number of living plants shall be proportional to the percentage of erodible surface, as determined by the engineer. The counts will be conducted 60 days after the species is planted.

806.50.2.3 Mulch placed over temporary seed mixtures shall be applied in accordance with Sec 802.

806.50.2.4 Fertilizer shall be applied at a rate of 40 pounds (45 kg) nitrogen (N) per acre (ha).

806.50.2.5 Lime will not be required for temporary seeding.

806.50.3 Method of Measurement. Measurement of temporary seed mixtures and accompanying mulch as set forth in the contract will be made to the nearest 1/10 acre (0.05 ha).

806.50.4 Basis of Payment. The accepted quantities of temporary seed mixtures and the accompanying mulch will be paid for at the contract unit price per acre (ha).

SECTION 806.60 BLANK

SECTION 806.70 SILT FENCE

806.70.1 Description. This work shall consist of furnishing, installing, maintaining, removing and disposing of a silt fence designed to remove suspended particles from sheet flow passing through the fence and to prevent sediment from polluting nearby streams or other bodies of water. The quantities of silt fence shown on the plans may be increased or decreased at the direction of the engineer. At the engineer's discretion, the location may be modified to fit field conditions. Such variations in quantity will not be considered as a change in work.

806.70.2 Material. All material shall be in accordance with Sec 806.3.

806.70.2.1 Posts. Posts shall be in accordance with Sec 806.30.2.1.

806.70.2.2 Prefabricated Fence. Prefabricated fence systems may be used if the systems meet all of the above material requirements.

806.70.3 Construction Requirements.

806.70.3.1 Straw Bales. The contractor shall place bales at the bottom of embankment slopes or on the lower side of cleared areas to divert runoff and to detain sediment from sheet flow. When used to divert runoff or detain sediment, the bales shall be adequately anchored to withstand the applied load.

806.70.3.2 Fabric Fence. The contractor shall install silt fence as shown on the plans and at other locations directed by the engineer. Fence construction shall be adequate to handle the stress from hydraulic and sediment loading. Fabric at the bottom of the fence shall be buried a minimum of 6 inches (150 mm) to prevent flow under the barrier. The trench shall be backfilled, and the soil compacted over the fabric. Fabric splices with a minimum 2-foot (600 mm) overlay shall be located only at a support post. Any installation method acceptable to the engineer will be allowed as long as the effectiveness and intent of the silt fence is achieved. All geotextile construction shall be in accordance with Sec 624.

806.70.3.2.1 Post spacing shall not exceed 5 feet (1.5 m). Posts shall be driven a sufficient depth into the ground or placed on closer spacing as necessary to ensure adequate resistance to applied loads.

806.70.3.2.2 The silt fence shall be fastened securely to the upslope side of the post. When wire support fence is used, the wire shall extend into the trench a minimum of 2 inches (50 mm).

806.70.3.3 Maintenance. The contractor shall maintain the integrity of silt fences as long as the fences are necessary to contain sediment runoff. The contractor shall inspect all silt fences immediately after each rainfall and at least daily during prolonged rainfalls. Any deficiencies shall be immediately corrected by the contractor. In addition, the contractor shall make a daily review of the silt fences in areas where construction activities have changed the natural contour and drainage runoff to ensure the silt fences are properly located for effectiveness.

Where deficiencies exist, additional silt fences shall be installed as approved or directed by the engineer.

806.70.3.4 Sediment. The contractor shall remove and dispose of sediment when accumulations reach approximately one-half the fence height, or sooner when directed by the engineer. If required by heavy sediment loading, a second silt fence shall be installed as directed by the engineer.

806.70.3.5 Removal. The silt fence shall remain in place until removal is directed by the engineer. Upon removal, the contractor shall remove and dispose of any excess silt accumulation, grade and dress the area to the satisfaction of the engineer, and establish vegetation on all bare areas in accordance with the contract requirements. The fence material shall remain the property of the contractor.

806.70.4 Method of Measurement. Silt fence will be measured to the nearest linear foot (m) from end to end of each separate installation.

806.70.5 Basis of Payment. The accepted quantities of silt fence will be paid for at the contract unit price.

SECTION 806.80 TEMPORARY PIPE

806.80.1 Description. This work shall consist of installing and removing temporary pipe utilized to carry water under temporary roadways, silt fences, berms or other locations determined by the engineer and to prevent the contractor's equipment from coming in direct contact with water when crossing an active stream, intermittent streams created during heavy rainfalls or other bodies of water.

806.80.2 Material. Any pipe approved by the engineer may be used.

806.80.3 Construction Requirements. Installation of temporary pipe shall be in accordance with the specifications for permanent pipe and shall prevent water from causing erosion around the pipe. All backfill material for pipes shall be placed in 6-inch (150 mm) lifts and mechanically compacted. Compaction tests will not be required. Temporary pipe placed in intermittent or active streams shall be backfilled with clean rock.

806.80.4 Method of Measurement. Measurement of temporary pipe will be made to the nearest linear foot (0.5 m).

806.80.5 Basis of Payment. The accepted quantities of temporary pipe will be paid for at the contract unit price. Unless provided as a pay item in the contract documents, no direct payment will be made for the placement and removal of the backfill material or rock.

SECTION 806.90 TEMPORARY EROSION CONTROL BLANKETS

806.90.1 Description. This work shall consist of furnishing and placing erosion control blankets on slopes or ditches for short-term or long-term protection of seeded areas at locations shown on the plans or as directed by the engineer.

806.90.2 Material. Erosion control blankets shall be used as designated in the contract or as approved by the engineer. The contractor shall provide prequalified erosion control blankets of the class and type specified in the contract documents or as approved by the engineer. A manufacturer's certification for each type of blanket used stating that the blankets are in accordance with Sec 1011 shall be provided to the engineer.

806.90.3 Construction Requirements. Erosion control blankets shall be installed and maintained according to the manufacturer's recommendations.

806.90.4 Method of Measurement. Measurement of erosion control blankets will be made to the nearest square yard (m^2) of surface area covered by the completed mat.

Basis of Payment. The accepted quantity of blanket will be paid for at the contract unit price for each of the pay items included in the contract. If blanket is used in lieu of other erosion control measures, payment will be made at the contract unit price for the pay items in the contract for the respective items that the blanket replaces.

SECTION 806.100 TEMPORARY STREAM CROSSING

806.100.1 Description. This work shall consist of constructing a temporary stream crossing to facilitate the movement of equipment across a stream.

806.100.2 Material. Rock furnished for temporary stream crossings shall be in accordance with Sec 303.2.

806.100.3 Construction Requirements. The contractor shall be responsible for the design, installation, maintenance and removal of the temporary stream crossing and any structures installed for the construction of the temporary stream crossing. Appropriate measures shall be taken to maintain near normal downstream flows and to minimize flooding upstream. The temporary stream crossing shall be constructed to permit the free movement of the stream's aquatic life.

806.100.3.1 Prior to construction of the temporary stream crossing, all information shall be submitted to the engineer as needed for the issuance or modification of the Corps of Engineer permit. The contractor shall not begin construction on any temporary stream crossing without written permission from the engineer.

806.100.3.2 All approaches to the temporary stream crossing shall be maintained such that all storm water runoff is diverted to retention devices.

806.100.3.3 When the temporary stream crossing is no longer needed, the crossing shall be removed as soon as possible and the area shall be restored to pre-project conditions or to the satisfaction of the engineer.

806.100.4 Basis of Payment. No direct payment will be made for the design, installation, maintenance or removal of temporary stream crossings. The contractor shall be responsible for all costs, including damage and penalties.