MISSOURI
HIGHWAYS and TRANSPORTATION COMMISSION

JEFFERSON CITY, MISSOURI

GENERAL PROVISIONS AND
SUPPLEMENTAL SPECIFICATIONS TO 2016
MISSOURI STANDARD SPECIFICATIONS FOR
HIGHWAY CONSTRUCTION

Effective October 1, 2016

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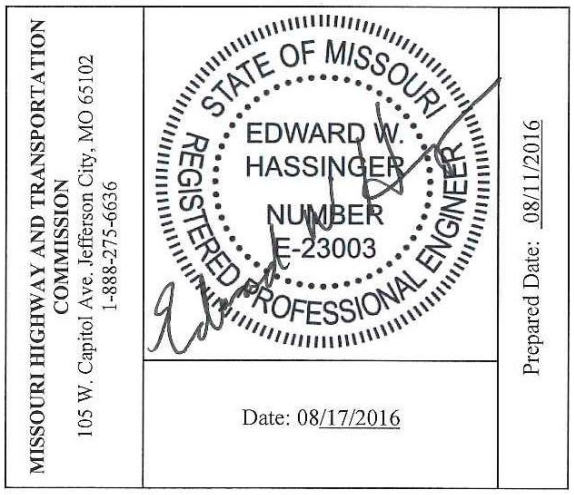

GENERAL PROVISIONS

SECTION 404 NATIONWIDE PERMIT GENERAL CONDITIONS

General Conditions. The following general conditions shall be followed in order for authorization by a Nationwide Permit (NWP) to be valid. Permit authorization from U.S. Army Corps of Engineers (USACE) may have additional conditions that will be binding to the project. The contractor shall refer to the permit authorization letter included in the contract.

1.0 Navigation. No activity shall cause more than a minimal adverse effect on navigation.

2.0 Soil Erosion and Sediment Controls. Appropriate erosion and sediment controls shall be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, shall be permanently stabilized at the earliest practical date. Work within waters of the USA shall be performed, when possible, during periods of low-flow or no-flow.

3.0 Aquatic Life Movements. No activity shall substantially disrupt the necessary life-cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams shall be installed such that low flow conditions are maintained.

4.0 Equipment. Heavy equipment working in wetlands shall be placed on mats, or other measures shall be taken to minimize soil disturbance.

5.0 Regional and Case-by-Case Conditions. The contractor's activity shall comply with any regional conditions that may have been added to the contract by the USACE Division Engineer, (see 33 CFR 330.4(e)), and with any case-specific conditions added by the USACE or by the state in the Section 401 water quality certifications.

6.0 Wild and Scenic Rivers. No activity shall occur in a component of the National Wild and Scenic River System; or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status; unless the appropriate Federal agency, with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation, or study status.

7.0 Tribal Rights. No activity shall impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

8.0 Endangered Species.

8.1 No activity will be authorized under any NWP that is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act, or that is likely to destroy or adversely modify the critical habitat of such species. Non-federal permittees shall notify the USACE District Engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, and shall not begin work on the activity until notified by the USACE District Engineer that the requirements of the Endangered Species Act have been satisfied and that the activity is authorized.

8.2 Authorization of an activity by a NWP shall not authorize the "take" of a threatened or endangered species as defined under the Federal Endangered Species Act. In the absence of separate authorization from the U.S. Fish and Wildlife Service, both lethal and non-lethal "takes" of protected species are in violation of the Endangered Species Act.

9.0 Historic Properties. No contractor activity, that may affect historic properties listed, or eligible for listing, in the National Register of Historic Places, will be authorized until the Commission has complied with the provisions of 33 CFR Part 325, Appendix C.

10.0 Section 404 Conditions. In addition to the General Conditions, the following conditions will apply only to activities that involve the discharge of dredged or fill material into waters of the USA, and shall be followed to maintain authorization by the NWPs.

10.1 Water Supply Intakes. No activity, including structures and work in navigable waters of the U.S. or discharges of dredged or fill material, shall occur in the proximity of a public water supply intake, except where the activity is for repair of the public water supply intake structures or adjacent bank stabilization.

10.2 Suitable Material. No activity, including structures and work in navigable waters of the U.S. or discharges of dredged or fill material, shall consist of unsuitable material such as trash, debris, car bodies, asphalt, etc. Material used for construction or discharged shall be free from toxic pollutants in toxic amounts in accordance with Section 307 of the Clean Water Act.

10.3 Mitigation. The project shall be constructed to avoid and minimize adverse effects to waters of the U.S. to the maximum extent practical at the project site.

10.4 Spawning Areas. Activities, including structures and work in navigable waters of the USA or discharges of dredged or fill material in spawning areas during spawning seasons shall be avoided to the maximum extent practical. Activities that result in the physical destruction of an important spawning area, such as excavation, fill or smother downstream by substantial turbidity, will not be permitted.

10.5 Management of Water Flows. Discharges shall not permanently restrict or impede the passage of normal or expected high flows or cause the relocation of the water, unless the primary purpose of the fill is to impound waters. The structure or discharge of dredged or fill material shall withstand expected high flows.

10.6 Adverse Effects from Impoundments. If the activity creates an impoundment of water, adverse effects on the aquatic system caused by the accelerated passage of water and/or the restriction of the water's flow shall be minimized.

10.7 Waterfowl Breeding Areas. Activities into breeding areas for migratory waterfowl shall be avoided.

10.8 Removal of Temporary Fills. Any temporary fills shall be completely removed entirety, and the affected areas shall be returned to the pre-existing elevation.

10.9 Section 404 Nationwide Permit No. 3.

10.9.1 The repair, rehabilitation, or replacement of any previously authorized, currently serviceable, structure or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for the fill in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or filled area, including those due to changes in material, construction techniques, or current construction codes or safety standards necessary to make repair, rehabilitation, or replacement will be permitted, provided the environmental effects resulting from such repair, rehabilitation, or replacement are minimal. Currently serviceable shall mean useable as is or with some maintenance, but not so degraded as to essentially require reconstruction. The NWP authorizes the repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events, provided the repair, rehabilitation, or replacement is commenced or under contract to commence within two years of the date of the destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, this two-year limit may be waived by the COE District Engineer, provided the permittee can demonstrate funding, contract, or other similar delays.

10.9.2 Discharges of dredged or fill material, including excavation, into all waters of the US to remove accumulated sediment and debris in the vicinity of, and within, existing structures, such as bridges, culverted road crossings, water intake structures, etc., and the placement of new or additional rip rap to protect the structure, provided the permittee notifies the COE District Engineer in accordance with General Condition 13. The removal of sediment shall be limited to the minimum necessary to restore the waterway in the immediate vicinity of the structure to the approximate dimensions that existed when the structure was built, but cannot extend further than 200 feet (60 m) in any direction from the structure. The placement of riprap shall be the minimum necessary to protect the structure or to ensure the safety of the structure. All excavated material shall be deposited and retained in an upland area unless otherwise specifically approved by the COE District Engineer under separate authorization. Any bank stabilization measures not directly associated with the structure will require a separate authorization from the COE District Engineer.

10.9.3 Discharges of dredged or fill material, including excavation, into all waters of the U.S. for activities associated with the restoration of upland areas damaged by a storm, flood, or other discrete event, including the construction, placement, or installation of upland protection structures and minor dredging to remove minor obstructions in a water of the U.S. The NWP applies to activities in waters of the U.S. associated with the replacement of the uplands. The restoration of the damaged areas shall not exceed the contours, or ordinary high water mark, that existing before the damage. Minor dredging to remove obstructions from the adjacent waterbody shall be limited to 50 cubic yards (38 m^3) below the plane of the ordinary high water mark, and shall be limited to the amount necessary to restore the pre-existing bottom contours of the waterbody. The dredging shall not be done primarily to obtain fill for any restoration activities. This permit cannot be used in conjunction with NWP 18 or NWP 19 to restore damaged upland areas. This permit does not authorize new stream channelization or stream relocation projects. Any work authorized by this permit shall not cause more than minimal degradation of water quality, more than minimal changes to the flow characteristics of the stream, or increase flooding.

10.10 Section 404 Nationwide Permit No. 12. Activities required for the construction, maintenance and repair of utility lines and associated facilities in waters of the U.S. shall be as follows.

10.10.1 Utility lines. The construction, maintenance, or repair of utility lines, including outfall and intake structures and the associated excavation, backfill, or bedding for the utility lines, in all waters of the U.S., provided there is no change in preconstruction contours. A ''utility line'' will be defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. Material resulting from trench excavation may be temporarily sidecast (up to three months) into waters of the U.S., provided that the material is not placed in such a manner that the material is dispersed by currents or other forces. The COE District Engineer may extend the period of temporary side casting, not to exceed a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches (150 to 300 mm) of the trench shall be backfilled with topsoil from the trench. Furthermore, the trench shall not be constructed in such a manner as to drain waters of the U.S., such as backfilling with extensive gravel layers, creating a french drain effect. For example, utility line trenches may be backfilled with clay blocks to ensure that the trench does not drain the waters of the U.S. through which the utility line is installed. Any exposed slopes and stream banks shall be stabilized immediately upon completion of the utility line crossing of each waterbody.

10.10.2 Foundations for Overhead Utility Line Towers, Poles, and Anchors. The construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the U.S., provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) shall be used where feasible.

10.10.3 Access Roads. The construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the US, provided the discharges do not cause the loss of greater than 1/2 acre (0.20 ha) of non-tidal waters of the U.S. Access roads shall be the minimum width necessary. Access roads shall be constructed so that the length of the road minimizes the adverse effects on waters of the US and as near as possible to preconstruction contours and elevations. Access roads constructed above preconstruction contours and elevations in waters of the U.S. shall be properly bridged or culverted to maintain surface flows. The term ''utility line'' does not include activities which drain a water of the U.S., such as drainage tile, or french drains; however, it does apply to pipes conveying drainage from another area. For the purposes of this NWP, the loss of waters of the U.S. includes the filled area plus waters of the U.S. that are adversely affected by flooding, excavation, or drainage as a result of the project. Activities authorized by paragraph 1.1 through 1.3 may not exceed a total of 1/2 acre (0.20 ha) loss of waters of the U.S. Waters of the U.S. temporarily affected by filling, flooding, excavation, or drainage, where the project area is restored to preconstruction contours and elevation, is not included in the calculation of permanent loss of waters of the U.S. This includes temporary construction mats (e.g., timber, steel, geotextile) used during construction and removed upon completion of the work. Mechanized land clearing necessary for the construction, maintenance, or repair of utility lines and the construction, maintenance and expansion of utility line substations, foundations for overhead utility lines, and access roads is authorized, provided the cleared area is kept to the minimum necessary and preconstruction contours are maintained as near as possible. The area of waters of the U.S. that is filled, excavated, or flooded must be limited to the minimum necessary to construct the utility line, substations, foundations, and access roads. Excess material shall be removed to upland areas immediately upon completion of construction. This NWP may authorize utility lines in or affecting navigable waters of the U.S. even if there is no associated discharge of dredged or fill material (See 33 CFR, Part 322).

10.11 Section 404 Nationwide Permit No. 13. The following bank stabilization activities will be necessary for erosion prevention provided the activity meets all of the following criteria.

10.11.1 No material is placed in excess of the minimum needed for erosion protection.

10.11.2 The bank stabilization activity is less than 500 feet (150 m) in length.

10.11.3 The activity will not exceed an average of one cubic yard per running foot (2.5 m^3 per running meter) placed along the bank below the plane of the ordinary high water mark.

10.11.4 No material is placed in any special aquatic site, including wetlands. Special aquatic sites include wildlife sanctuaries and refuges, wetland, mudflats, vegetated shallow and riffle and pool complexes.

10.11.5 No material is of the type, or is placed in any location, or in any manner, to impair surface water flow into or out of any wetland area.

10.11.6 No material is placed in a manner that will be eroded by normal or expected high flows (properly anchored trees and treetops may be used in low energy areas).

10.11.7 The activity is part of a single and complete project.

10.11.8 This NWP shall not be used for the channelization of a water of the U.S.

10.12 Section 404 Nationwide Permit No. 14. Activities required for the construction, expansion, modification, or

improvement of linear transportation crossings (e.g., highways, railways, trails, airport runways, and taxiways) in waters of the U.S., including wetlands, if the activity meets the following criteria.
10.12.1 The discharge does not cause the loss of greater than 1/2-acre (0.20 ha) of waters of the US.

10.12.2 The width of the fill shall be limited to the minimum necessary for the crossing.

10.12.3 This permit does not authorize stream channelization, and authorized activities shall not cause more than minimal changes to the hydraulic flow characteristics of the stream, increase flooding, or cause more than minimal degradation of water quality of any stream.

10.13 Section 404 Nationwide Permit No. 15. Discharges of dredged or fill material incidental to the construction of bridges across navigable waters of the U.S., including cofferdams, abutments, foundation seals, piers, and temporary construction and access fills provided such discharges have been authorized by the U.S. Coast Guard as part of the bridge permit. Causeways and approach fills will not be included in this NWP and will require an individual or regional Section 404 permit.

10.14 Section 404 Nationwide Permit No. 23. Activities undertaken, assisted, authorized, regulated, funded, or financed, in whole or in part, by another Federal agency or department where that agency or department has determined, pursuant to the Council on Environmental Quality Regulation for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR Part 1500 et seq.), that the activity, work, or discharge is categorically excluded from environmental documentation because it is included within a category of actions which neither individually nor cumulatively have a significant effect on the human environment, and the COEUSACE Office of the Chief of Engineers (ATTN: CECW-OR) has been furnished notice of the agency's or department's application for the categorical exclusion and concurs with that determination.

10.15 Section 404 Nationwide Permit No. 33. Temporary structures, work and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites; provided that the associated primary activity is authorized by the USACE or the U.S. Coast Guard, or for other construction activities not subject to the USACE or U.S. Coast Guard regulations. Appropriate measures shall be taken to maintain near normal downstream flows and to minimize flooding. Fill shall be of materials, and placed in a manner that will not be eroded by expected high flows. The use of dredged material may be allowed if it is determined by the USACE District Engineer that it will not cause more than minimal adverse effects on aquatic resources. Temporary fill shall be entirely removed to upland areas, or dredged material returned to the original location, following completion of the construction activity, and the affected areas shall be restored to the pre-project conditions. Cofferdams shall not be used to dewater wetlands or other aquatic areas changing the use of these areas. Structures left in place after cofferdams are removed will require a Section 10 permit if located in navigable waters of the U. S. (See 33 CFR, Part 322).

SECTION 401 WATER QUALITY CERTIFICATION CONDITIONS

1.0 Description. When a Clean Water Act Section 404 Nationwide Permit is in effect, the contractor is automatically permitted to perform this work under a Water Quality Certification (Section 401) by the Missouri Department of Natural Resources (MDNR). The contractor shall adhere to the following conditions:

1.1 During construction, clearing of vegetation shall be kept to the minimum necessary to accomplish the project.

1.2 Petroleum products, equipment and solid waste shall not be stored after construction working hours below the ordinary high water mark.

1.3 Equipment shall not be operated, except where permitted, nor petroleum products stored in wetlands.

1.4 Riparian areas and stream banks shall be restored to a stable condition as soon as possible after final contouring.

1.5 Work done in streams shall be conducted during low flows whenever possible.

1.6 Petroleum products spilled into any water of the state, or in areas where material could enter waters of the state, shall be cleaned up immediately and disposed of properly.

1.7 The following material shall not be used for streambank stabilization: earthen fill, gravel, fragmented asphalt, broken concrete with exposed rebar, tires, vehicle bodies and liquid concrete, including grouted riprap.

DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM REQUIREMENTS

1.0 Disadvantaged Business Enterprise (DBE) Program Requirements. The subsequent Sections will apply only to contracts involving U.S. Department of Transportation (USDOT) federal-aid or federal financial participation. Federal-aid or federal financial participation includes, but is not limited to, any funds directly or indirectly received by MoDOT, or authorized for distribution to or through MoDOT, by the USDOT or any operating administration within the USDOT. These provisions will not apply to Commission contracts funded exclusively with state funds, or state and local funds. Any contractor, subcontractor, supplier, DBE firm, and contract surety involved in the performance of a federal-aid contract shall be aware of and fully understand the terms and conditions of the USDOT DBE Program, as the terms appear in Title 49 CFR Part 26 (as amended), the USDOT DBE Program regulations; Title 7 CSR Division 10, Chapter 8 (as amended), the Commission's DBE Program rules.

2.0 DBE Program Distinguished From Other Affirmative Action Programs. The USDOT DBE Program established by the U.S. Congress is not the same as, and does not involve or utilize, any of the elements or authority of other state or local affirmative action programs, nor does the program rely upon state legislation or gubernatorial executive orders for implementation or authorization, other than the general authority given the Commission in Section 226.150, RSMo. The USDOT DBE Program is implemented by the Commission and MoDOT, through and in conjunction with the FHWA, FTA and FAA, as a "recipient" defined in Title 49 CFR 26.5.

3.0 Policy Regarding DBE Firms. It is the policy of the U. S. Department of Transportation and MoDOT that businesses owned by socially and economically disadvantaged individuals have an opportunity to participate in the performance of contracts financed in whole or in part with federal funds. Consequently, the requirements of 49 CFR Part 26 (as amended) and the Commission's implementing state regulations in Title 7 CSR Division 10, Chapter 8, "Disadvantaged Business Enterprise Program", will apply to any contract with federal funds.

4.0 Opportunity for DBEs to Participate. Each contractor, subcontractor and supplier working on a contract financed in whole or in part with federal funds shall take all necessary and reasonable steps to ensure that DBEs have an opportunity to compete for, and participate in performance on project contracts and subcontracts.

5.0 Required Contract Provision. The federal-aid contract will include the following provision, as mandated by USDOT at Title 49 CFR 26.13(b):

(a) The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of the contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of the contract, which may result in the termination of the contract or such other remedy, as the recipient deems appropriate.

In this provision, "contractor" will be defined as the contractor on the contract; "subrecipient" will be defined as any subcontractor performing the work. For the purposes of any federal-aid contract awarded by the Commission, "the recipient" will be defined as either the Commission, or MoDOT, or both. The contractor shall include this same contract provision in every supply contract or subcontract the contractor makes or executes with a subrecipient.

6.0 Bank Services. The contractor, and each subrecipient on a federal-aid contract, is encouraged to use the services of banks owned and controlled by socially and economically disadvantaged individuals. Such banking services, and the fees charged for services, typically will not be eligible for DBE Program contract goal credit. Any questions on this subject should be directed to the MoDOT External Civil Rights Division. See Sec 7.0.

7.0 DBE Program Information. DBE Program information may be obtained from the MoDOT External Civil Rights Division, 105 W. Capitol Avenue, P.O. Box 270, Jefferson City, Missouri 65102-0270. Phone (573) 751-7801, Fax (573) 526-0558, E-Mail: dbe@modot.mo.gov. It will be the duty of each contractor, for the contractor and for the contractor's subrecipients and surety, to take the steps necessary to determine the legal obligations and limitations under the DBE Program, as an element of responsibility. It will be the duty of each certified DBE firm to know, understand and comply with the DBE firm's legal obligations and limitations under the DBE Program, as a requirement of program participation. A surety providing a bid or contract bond will be bound by those bonds to the duties of the surety's principal.

8.0 DBE Certification, and the Missouri Unified Certification Program. The Missouri Department of Transportation and other certifying agencies within Missouri have partnered to form the Missouri Regional Certification Committee (MRCC) and developed a Unified Certification Program (UCP) pursuant to 49 CFR 26.81 and 7 CSR 10-8.061. Only DBE firms certified by the MRCC are eligible to perform work on a federal-aid contract for DBE contract goal credit. It is the contractor's responsibility to ensure firms identified for participation are approved certified DBE firms. The MRCC DBE Directory can be found at the following link:

http://www.modot.mo.gov/business/contractor_resources/External_Civil_Rights/DBE_program.htm

9.0 DBE Program-Related Certifications Made By Bidders and Contractors. If the bidder makes a written, express disclaimer of one or more certifications or assurances in the bid, the bid will be considered non-responsive. By submitting a bid on any call involving USDOT federal financial participation, and by entering into any contract on the basis of that bid, the contractor makes each of the following DBE Program-related certifications and assurances to USDOT, to the Commission, and to MoDOT:

(a) The bidder certifies that management and bidding officers have reviewed and understand the bidding and project construction and administration obligations of the USDOT DBE Program regulations at Title 49 CFR Part 26 (as amended), the USDOT DBE Program regulations; Title 7 CSR Division 10, Chapter 8 (as amended), and the Commission's DBE Program rules. The bidder further certifies that the contractors management personnel on the project understand and are familiar with the requirements of these federal and state DBE Program regulations; and if the bidder was not familiar with or did not understand the requirements of these regulations, they have contacted the External Civil Rights Division of MoDOT and have been informed as to their duties and obligations under the DBE Program regulations by MoDOT staff and/or by USDOT DBE Program staff.

(b) The bidder certifies that the bidder has complied with the federal and state DBE Program requirements in submitting the bid, and will comply fully with these requirements in performing any federal-aid contract awarded on the basis of that bid.

(c) The bidder agrees to ensure that certified DBE firms have a full and fair opportunity to participate in the performance of the contract financed in whole or in part with federal funds. The bidder certifies that all necessary and reasonable steps were taken to ensure that DBE firms have an opportunity to compete for, and perform work on the contract. The bidder further certifies that the bidder not discriminate on the basis of race, color, age, national origin or sex in the performance of the contract, or in the award of any subcontract.

(d) The bidder certifies, under penalty of perjury and other applicable penal laws that if awarded the federal-aid contract, the contractor will make a good faith effort to utilize certified DBE firms to perform DBE work at or above the amount or percentage of the dollar value specified in the bidding documents. The bidder further certifies the bidder's understanding that the bidder may not unilaterally terminate, substitute for, or replace any DBE firm that was designated in the executed contract, in whole or in any part, with another DBE, any non-DBE firm or with the contractor's own forces or those of an affiliate of the contractor, without the prior written consent of MoDOT as set out below.

(e) The bidder certifies, under penalty of perjury and other applicable penal laws that a good faith effort was made to obtain DBE participation in the contract, at or above the DBE participation contract goal. The bidder further certifies, under penalty of perjury and other applicable penal laws, that if the bidder is not able to meet the Commission's DBE contract goal, and if the bidder is not able to meet that DBE contract goal by the time the proposed DBE participation information must be submitted, within three business days after bid opening, the bidder has submitted with and as a part of the bid, a true, accurate, complete and detailed written explanation of good faith efforts to meet the DBE Contract Goal.

(f) The bidder understands and agrees that if awarded the contract the contractor is legally responsible to ensure that the contractor and each DBE subcontractor and supplier, comply fully with all regulatory and contractual requirements of the USDOT DBE Program, and that each DBE firm participating in the contract fully perform the designated tasks, with the DBE's own forces and equipment, under the DBE's own direct supervision and management. The bidder certifies, under penalty of perjury and other applicable penal laws, that if it awarded the contract and if MoDOT or the Commission determine that the contractor, a DBE or any other firm retained by the contractor has failed to comply with the DBE Program requirements or federal or state DBE Program regulations, the Commission, through MoDOT, shall have the sole authority and discretion to determine the extent of the monetary value to which the DBE contract goals have not been met, and to assess against and withhold monetary damages from the contractor in the full amount of that breach. The Commission, through MoDOT, may impose any other remedies available at law or provided in the contract in the event of a contract breach. The bidder further understands and agrees that this clause authorizes the Commission, through MoDOT, to determine and fix the extent of the damages caused by a breach of any contractual or regulatory DBE Program requirement and that the damage assessment will be enforced in addition to, and not in lieu of, any other general liquidated damages clause in the contract. By submitting a bid for a federal-aid contract, and by entering into a contract, the bidder irrevocably agrees to such an assessment of liquidated damages for DBE Program purposes, and authorizes the Commission and MoDOT to make such an assessment of liquidated damages against the contractor, and to collect that assessment from any sums due the contractor under the contract, or any other contract, or by other legal process. The bidder makes this certification, agreement and authorization on behalf of itself, its subcontractors and suppliers, and the bid bond and contract bond sureties, for each federal-aid contract.

(g) The surety upon any bid or contract bond acknowledges the surety is held and firmly bound to the Commission for each and every duty of the surety's principal provided in any bid or contract regarding the DBE program.

10.0 Designation of DBE firms to perform on contract. The bidder states and certifies, under penalty of perjury or other applicable penal laws, that the DBE participation information submitted in the bid or within the stated time thereafter is true,

correct and complete and that the information provided includes the names of all DBE firms that will participate in the contract, the specific line item (s) that each DBE firm will perform, and the creditable dollar amounts of the participation of each DBE. The specific line item must reference the MoDOT line number and item number contained in the proposal. The bidder further states and certifies that the bidder has committed to use each DBE firm listed for the work shown to meet the DBE contract goal and that each DBE firm listed has clearly confirmed that the DBE firm will participate in and perform the work, with the DBE's own forces. Award of the contract will be conditioned upon meeting these and other listed requirements of 49 CFR 26.53.

(a) The bidder certifies the bidder's understanding that as the contractor on a contract funded in whole or in part by USDOT federal funds, the bidder may not unilaterally terminate, substitute for, or replace any DBE firm that was designated in the executed contract, in whole or in any part, with another DBE, any non-DBE firm or with the contractor's own forces or those of an affiliate, without the prior written consent of MoDOT. The bidder understands it must receive approval in writing from MoDOT for the termination of a DBE firm, or the substitution or replacement of a DBE before any substitute or replacement firm may begin work on the project in lieu of the DBE firm participation information listed in the executed contract.

(1) The bidder further certifies understanding, that if a DBE firm listed in the bid or approved in the executed contract documents ceases to be certified at any time during the performance of the contract work, and a contract or subcontract with that firm has not yet been executed by the prime and subcontractor, the contractor can not count any work performed by that firm after the date of the firm's loss of eligibility toward meeting the DBE contract goal. However, if the contractor has executed a subcontract with the firm before the DBE lost eligibility and ceased to be a certified DBE, the contractor may continue to receive credit toward the DBE contract goal for that firm's work.

(2) The bidder further certifies understanding, that if a DBE subcontractor is terminated, or fails, refuses or is unable to complete the work on the contract for any reason, the contractor must promptly request authority to substitute or replace that firm. The request shall include written documentation that the DBE firm is unwilling or unable to perform the specified contract work. The contractor shall make good faith efforts to find another DBE subcontractor to substitute or replace the dollar amount of the work that was to have been performed by the DBE firm. The good faith efforts shall be directed at finding another DBE to perform the same, or more, dollar amount of work that the DBE firm that was terminated was to have performed under the executed contract. The substitute or replacement DBE firm may be retained to perform the same or different contract work from that which the terminated firm was to have performed. The contractor shall obtain approval from MoDOT in writing before the replacement or termination of one firm with another before the work will count toward the project DBE goal.

(3) The bidder further certifies the bidder's understanding, that the dollar value of any work completed by a DBE firm prior to approval of the DBE's substitution or replacement, in writing, by MoDOT will not be credited toward meeting the DBE contract goal. The contractor will remain subject to appropriate administrative remedies, including but not limited to, liquidated damages for the full dollar amount that the DBE contract goal is not met. Liquidated damages will also be assessed against the contractor if the original, substitute or replacement DBE firms perform the required contract work, but are not paid in full for some or all of that work by the contractor, including back charges. No credit toward the DBE goal will be given for any amount withheld from payment to the DBE or "back charged" against monies owed to the DBE, regardless of the purpose or asserted debt.

11.0 Good Faith Effort to Secure DBE Services. The bidder shall make a good faith effort to seek DBEs in a reasonable geographic area to where the solicitation for subcontracts and material is made. If the bidder cannot meet the goals using DBEs from that geographic area, the bidder shall, as a part of the effort to meet the goal, expand the search to a wider geographic area.

11.1 Bidding Procedure. The following bidding procedure shall apply to the contract, for DBE program compliance purposes.

11.2 Contract Goal, Good Faith Efforts Specified. The bidder may submit the completed "DBE Identification Submittal" information in the bid documents at the same time as, and within the sealed bid, at the time the bid is submitted. However, if that information is not completed and submitted with the initial sealed bid, then as a matter of responsiveness and responsibility, the apparent low and second low bidder shall file the completed "DBE Identification Submittal" pages with MoDOT on or before 4:00 p.m. of the third business day after the bid opening date, directly to the External Civil Rights Division, Missouri Department of Transportation, 105 W. Capitol Avenue, P.O. Box 270, Jefferson City, Missouri 65102-0270. Telefax transmittal to MoDOT will be permitted at fax no. (573) 526-0558. The complete and signed original documents shall be mailed to MoDOT no later than the day of the telefax transmission. No extension of time will be allowed for any reason. The means of transmittal and the risk of timely receipt of the information shall be the bidder's.

11.3 Bid Rejection, Bid Security Disposition. The failure of either the apparent low bidder or the second low bidder to file the completed and executed "DBE Identification Submittal", listing actual, committed DBE participation equal to or greater than the DBE contract goal percentage specified in the bid by 4:00 p.m. on the third business day after the bid opening, will be cause for rejection of that bid, and the bid surety bond or bid guaranty of that bidder will be forfeited to and become the property of the Commission upon Commission demand.

(a) Any bidder rejected for failure to submit the completed and executed "DBE Identification Submittal" information in the bidding documents, with full documentation of sufficient DBE participation to satisfy the DBE contract goal cannot submit a bid on the same, or substantially similar, project, when and if the project is re-advertised for bids. By submitting a bid on a federal-aid project, the bidder accepts and agrees to this provision, and the disposition of the bidders bid bond or guaranty, on behalf of the bidder and the bidders bid surety or guaranty.

(b) The surety separately acknowledges the surety to be held and firmly bound to the Commission to immediately upon demand pay to Commission the face amount of the bid bond.

11.4 Good Faith Efforts Described. Good faith efforts to meet the DBE contract goal may include, but are not limited to, the following:

(a) Attending a pre-bid meeting, if any, scheduled by the department to inform DBEs of contracting and subcontracting opportunities.

(b) Advertising in general circulation trade association and socially and economically disadvantaged business directed media concerning subcontracting opportunities.

(c) Providing written notice to a reasonable number of specific DBEs so that the DBE's interest in the contract are solicited in sufficient time to allow the firm to participate effectively.

(d) Following-up on initial written notice or solicitations of interest by contacting DBEs to determine with certainty whether the DBEs were interested.

(e) Maintaining documentation of responses received in the effort to solicit DBE participation.

(f) Selecting portions of work to be performed by DBEs to increase the likelihood of meeting the DBE goal, including, where appropriate, breaking down contracts into economically feasible units to facilitate DBE participation.

(g) Providing interested DBEs adequate information about plans, specifications and requirements of the contract.

(h) Negotiating in good faith with interested DBEs, not rejecting DBEs as unqualified without sound business reasons based on a thorough investigation of the DBE's capabilities.

(i) Making efforts to assist interested DBEs in obtaining bonding, lines of credit or insurance required by MoDOT or by the bidder.

(j) Making effective use of available disadvantaged business organizations, minority bidders' groups, local, state and federal disadvantaged business assistance offices, MoDOT and other organizations that provide assistance in the recruitment and placement of DBEs.

11.5 Documentation, and Administrative Reconsideration of the Bidder's Good Faith Efforts. In the bidding documents, the bidder has the opportunity and responsibility to provide certified written documentation as to whether the bidder made a good faith effort to meet the DBE contract goal as proposed by the Commission. Any bidder that has not met the Commission's proposed DBE contract goal at the time of bid opening must submit the completed "Certification of Good Faith Efforts to Obtain DBE Participation". The certification should be included in the bidding documents, fully and in detail, at the time its sealed bid is submitted; however, if that information is not completed and submitted with the initial sealed bid, the bidder must submit the documentation to MoDOT on or before 4:00 p.m. of the third business day after the bid opening date, directly to the External Civil Rights Division, Missouri Department of Transportation, 105 W. Capitol Avenue, P.O. Box 270, Jefferson City, Missouri 65102-0270. Telefax transmittal to MoDOT will be permitted at fax no. (573) 526-0558. The complete and signed original documents shall be mailed to MoDOT no later than the day of the telefax transmission. No extension of time will be allowed for any reason. The means of transmittal and the risk of timely receipt of the information shall be the bidder's. The bidder shall attach additional pages to the certification, if necessary, in order to fully detail specific good faith efforts made to obtain certified DBE firm participation in the proposed contract work. If the apparent low bidder appears to have failed to adequately document in the bid that the bidder made a good faith effort to achieve sufficient DBE participation in the contract work, that firm will be offered the opportunity for administrative reconsideration upon written request, before MoDOT and the Commission reject that bid as non-responsive. However, regardless of the DBE contract goal participation level proposed by the bidder, or the extent of good faith efforts shown, the apparent low and second low bidders shall each timely and separately file their completed and executed "DBE Identification Submittal" or face potential sanctions and the bid bond or guaranty, as specified in Sec 10.0 of these provisions, may become the property of the Commission subject to Commission's demand.

12.0 DBE Participation for Contract Goal Credit. DBE participation on the contract will count toward meeting the DBE contract goal as follows:

(a) The applicable percentage of the total dollar value of the contract or subcontract awarded to the DBE will be counted toward meeting the DBE contract goal, only if that firm is certified by the Missouri Regional Certification Committee as a DBE before the due date for bids or offers on a contract which a firm seeks to participate as a DBE, and only for the value of the work, goods or services that are actually performed, or provided, by the DBE firm itself in the area(s) in which the DBE firm is certified.

(b) When a DBE performs work as a participant in a joint venture, the contractor may count toward the DBE goal only that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the contract work that the DBE has performed with the DBE's own forces. The MoDOT External Civil Rights Division shall be contacted in advance regarding any joint venture involving both a DBE firm and a non-DBE firm to review and approve the contractor's organizational structure and proposed operation. When a DBE subcontracts part of the work of the contract to another firm, the value of that subcontracted work may be counted toward the DBE contract goal only if the DBE's subcontractor at a lower tier is a MoDOT certified DBE. Work that a DBE subcontracts to a non-DBE firm will not count toward the DBE contract goal. The cost of supplies and equipment a DBE subcontractor purchases or leases from the prime contractor or the prime's affiliated firms, or from another non-DBE subcontractor, will not count toward the DBE contract goal.

(c) The contractor may count expenditures to a DBE subrecipient toward the DBE contract goal only if the DBE performs a commercially useful function (CUF) on that contract.

(d) A contractor may not count the participation of a DBE subcontractor toward the contractor's final compliance with the contractor's DBE contract goal obligations until the amount being counted has actually been paid to the DBE. A contractor may count 60 percent of the contractor's expenditures actually paid for material and supplies obtained from a DBE certified by MoDOT as a regular dealer, and 100 percent of such expenditures actually paid for materials and supplies obtained from a certified DBE manufacturer.

(1) A regular dealer will be defined as a firm that owns, operates, or maintains a store, warehouse or other establishment in which the material, supplies, articles or equipment required and used under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a regular dealer, the DBE firm shall be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question. Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions will not be considered regular dealers.

(2) A DBE firm may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone or asphalt, without owning, operating or maintaining a place of business where it keeps such items in stock, if the DBE both owns and operates distribution equipment for the products it sells and provides for the contract work. Any supplementation of a regular dealer's own distribution equipment shall be by a long-term lease agreement, and not on an *ad hoc* or contract-by-contract basis.

(3) If a DBE regular dealer is used for DBE contract goal credit, no additional credit will be given for hauling or delivery to the project site goods or materials sold by that DBE regular dealer. Those delivery costs shall be deemed included in the price charged for the goods or materials by the regular dealer, who shall be responsible for their distribution.

(4) A manufacturer will be defined as a firm that operates or maintains a factory or establishment that produces on the premises, the material, supplies, articles or equipment required under the contract and of the general character described by the project specifications. A manufacturer will include firms that produce finished goods or products from raw or unfinished material, or that purchases and substantially alters goods and materials to make them suitable for construction use before reselling them.

(e) A contractor may count toward the DBE contract goal the following expenditures to certified DBE firms that are not "regular dealers" or "manufacturers" for DBE program purposes:

(1) The contractor may count toward the DBE contract goal the entire amount of fees or commissions charged by a certified DBE firm for providing a bona fide service, such as professional, technical, consultant or managerial services, or for providing bonds or insurance specifically required for the performance of the federal-aid contract, if the fee is reasonable and not excessive, compared with fees customarily charged for similar services.

(2) The contractor may count toward the DBE contract goal the entire amount of that portion of the construction contract that is performed by the DBE's own forces and equipment, under the DBE's supervision. This includes the cost of supplies and material ordered and paid for by the DBE for contract work, including supplies purchased or equipment leased by the DBE except supplies and equipment a DBE subcontractor purchases or leases from the prime contractor or its affiliates.

(f) A contractor may count toward the DBE contract goal 100 percent of the fees paid to a certified DBE trucker or hauler for delivery of material and supplies required on a job site, but not for the cost of those materials or supplies themselves, or for the removal or relocation of excess material from or at the job site, when the DBE certified trucking company is not also the manufacturer of or a regular dealer in those material and supplies, provided that the trucking or hauling fee is determined by MoDOT to be reasonable as compared with fees customarily charged by non-DBE firms for similar services. The certified DBE trucking firm shall also perform a CUF on the project and not operate merely as a pass through for the purposes of gaining credit toward the contract DBE goal. Prior to submitting a bid, the contractor shall determine, or contact the MoDOT External Civil Rights Division for assistance in determining, whether a DBE trucking firm will meet the criteria for performing a CUF on the project.

(g) The contractor will receive DBE contract goal credit for the fees or commissions charged by and paid to a DBE broker who arranges or expedites sales, leases or other project work or service arrangements, provided that those fees are determined by MoDOT to be reasonable and not excessive, as compared with fees customarily charged by non-DBE firms for similar services. A broker will be defined as a person or firm that does not own or operate the delivery equipment necessary to transport materials, supplies or equipment to or from a job site; a broker typically will not purchase or pay for the material, supplies or equipment, and if the broker does purchase or pay for those items, those costs will be reimbursed in full. In most instances, the broker is merely the entity making arrangements for delivery of material, supplies, equipment, or arranging project services. To receive DBE contract goal credit, MoDOT must determine that the DBE broker has performed a CUF in providing the contract work or service.

13.0 Performing a Commercially Useful Function (CUF). No credit toward the DBE contract goal will be allowed for contract payments or expenditures to a DBE firm, if that DBE firm does not perform a CUF on that contract. A DBE performs a CUF when the DBE is solely responsible for execution of a distinct element of the contract work, and the DBE actually performs, manages and supervises the work involved with the firm's own forces. To perform a CUF, the DBE alone shall be responsible, and alone must bear the risk, for the material and supplies used on the contract, selecting a supplier or dealer from those available, negotiating price, determining quality and quantity, ordering the material and supplies, installing those materials with the DBE's own forces and equipment and paying for those materials and supplies. The amount the DBE firm is to be paid under the contract shall be commensurate with the work the DBE actually performs and the DBE credit claimed for the DBE's performance.

13.1 Contractor's Obligation to Monitor CUF Performance. It shall be solely the contractor's responsibility to ensure that all DBE firms perform a CUF. Further, the contractor is responsible to, and shall ensure that each DBE firm fully performs the DBE's designated tasks, with the DBE's own forces and equipment, under the DBE's own direct supervision and management. MoDOT is under no obligation to warn the contractor that a DBE's participation may not count toward the goal, other than through official notification with an opportunity for administrative reconsideration at the conclusion of the contract work.

13.2 DBEs Must Perform a Useful and Necessary Role in Contract Completion. A DBE does not perform a commercially useful function if the DBE's role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE participation.

13.3 DBEs Must Perform The Contract Work With Their Own Workforces. If a DBE does not perform and exercise responsibility for at least 30 percent of the total cost of the DBE's contract with the DBE's own work force, or the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, MoDOT will presume that the DBE is not performing a commercially useful function.

13.4 Factors Used to Determine if a DBE Trucking Firm is Performing a CUF. The following factors will be used to determine whether a DBE trucking company is performing a commercially useful function (CUF):

(a) To perform a CUF, the DBE trucking firm shall be completely responsible for the management and supervision of the entire trucking operation that the DBE is being paid for on the contract work. There shall not be contrived arrangement, including but not limited to, any arrangement that would not customarily exist under regular construction project subcontracting practices for the purpose of meeting the DBE contract goal.

(b) The DBE must own and operate at least one fully licensed, insured and operational truck used in performance of the contract work. This does not include a supervisor's pickup truck or a similar vehicle that is not suitable for hauling the necessary materials or supplies.

(c) The DBE receives 100 percent contract goal credit for the total reasonable amount the DBE is paid for the transportation services provided on the contract using trucks the DBE owns, insures and operates, using drivers that the DBE employs.

(d) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE firm that leases trucks from another DBE will receive credit for the total fair market value actually paid for of the transportation services the lessee DBE firm provides on the contract.

(e) The DBE may also lease trucks from a non-DBE firm, including an owner-operator. However, the DBE who leases trucks from a non-DBE is entitled to DBE contract goal credit only for the brokerage fee or commission the DBE receives as a result of the lease arrangement. The DBE will not receive credit for the total value of the transportation services provided by the non-DBE lessee. Furthermore, no DBE contract goal credit will be allowed, even for brokerage fees or commissions, where the DBE leases the trucks from the contractor on the project or a firm owned, controlled by, or affiliated by ownership or control to, the contractor.

(f) For purposes of this section, the lease shall indicate that the DBE firm leasing the truck has exclusive use of and control over the truck. This will not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, provided the lease gives the DBE absolute priority for and control over the use of the leased truck. Leased trucks shall display the name and identification number of the DBE firm that has leased the truck at all times during the life of that lease.

13.5 MoDOT Makes Final Determination On Whether a CUF Is Performed. MoDOT and the Commission will have the final authority to determine whether a DBE firm has performed a CUF on a federal-aid contract. To determine whether a DBE is performing or has performed a CUF, MoDOT will evaluate the amount of work subcontracted by that DBE firm or performed by other firms, and the other firms forces and equipment. Any DBE work performed by the contractor, or by employees or equipment of the contractor will be subject to disallowance under the DBE Program, unless the independent validity and need is demonstrated.

14.0 Verification of DBE Participation, Liquidated Damages.

14.1 Prior to final payment by the Commission, the contractor shall file with the Commission a detailed list showing each DBE used on the contract work, and the work performed by each DBE. The list shall show the actual dollar amount paid to each DBE for the creditable work on the contract, less any rebates, kickbacks, deductions, withholdings or other repayments made. The list shall be certified under penalty of perjury, or other law, to be accurate and complete. MoDOT and the Commission will use this certification and other information available to determine if the contractor and the contractor's DBEs satisfied the DBE contract goal percentage specified in the contract and the extent to which the DBEs were fully paid for that work. The contractor shall acknowledge, by the act of filing the detailed list, that the information is supplied to obtain payment regarding a federal participation contract.

14.2 Failure on the part of the contractor to achieve the DBE participation to which the contractor committed in the contract may result in liquidated damages being imposed on the contractor by the Commission for breach of contract and for non-compliance. If the contract was awarded with less than the original DBE contract goal proposed by the Commission, the revised lower amount shall become the final DBE contract goal, and that goal will be used to determine any liquidated damages to be assessed. Additionally, the Commission or MoDOT may impose any other administrative sanctions or remedies available at law or provided by the contract in the event of breach by the contractor by failing to satisfy the contractor's DBE contract goal commitment. However, no liquidated damages will be assessed, and no other administrative sanctions or remedies will be imposed when, for reasons beyond the control of the contractor and despite the good faith efforts made by the contractor, the final DBE contract goal participation percentage was not achieved. The contractor will be offered the opportunity for administrative reconsideration of any assessment of liquidated damages, upon written request. The administrative reconsideration officer may consider all facts presented, including the legitimacy or business reason for back charges assessed against a DBE firm, in determining the final amount of liquidated damages.

15.0 Prompt Payment Requirements. In accordance with Title 49 CFR 26.29, the contractor shall comply with the prompt payment requirements of that regulation, Section 34.057, RSMo., the provisions of the Commission's rule 7 CSR 10-8.111 and the contract. By bidding on a federal-aid contract, and by accepting and executing that contract, the contractor agrees to assume these contractual obligations, and to bind the contractor's subrecipients contractually to those prompt payment requirements at the contractor's expense.

16.0 Miscellaneous DBE Program Requirements. In accordance with Title 49 CFR Part 26 and the Commission's DBE Program rules in Title 7 CSR Division 10, Chapter 8, the contractor, for both the contractor and for the contractor's subcontractors and suppliers, whether DBE firms or not, shall commit to comply fully with the auditing, record keeping, confidentiality, cooperation and anti-intimidation or retaliation provisions contained in those federal and state DBE Program regulations. By bidding on a federal-aid contract, and by accepting and executing that contract, the contractor agrees to assume these contractual obligations, and to bind the contractor's subrecipients contractually, at the contractor's expense.

TRAINING PROVISION

1.0 Description. This provision supplements subparagraph 7(e) of the Contract Provision entitled "Standard Federal Equal Opportunity Construction Contract Specification" (Executive Order 11246)", and in the implementation of CFR Part 230, Subpart A, Appendix B.

2.0 Training Requirements. As part of the contractor's equal employment opportunity affirmative action program, training shall be provided as follows.

2.1 The contractor shall provide on-the-job training aimed at developing full journeymen in the type of trade or job classification involved.

2.2 The number of trainee hours to be provided under this provision will be specified in the bidding documents.

2.3 Trainee goals will be set in 1,000 hour increments or 1 slot (person). For example, if the trainee goal on the project is 2,000 hours a maximum of 2 trainees will be approved for the project. In the event a trainee leaves the project for valid reasons the trainee shall be replaced as soon as possible. No apprentice/trainee can be assigned less than 500 hours on a contract. Providing less than 500 hours is not considered to be beneficial training nor helping to achieve journey-level status. Therefore, a trainee/apprentice, regardless of craft, must have been trained on the contact for at least 500 hours to be eligible for reimbursement. However, the contractor may transfer the trainee, with MoDOT's approval, to another MoDOT highway construction project in order to continue the training. Upon reaching the 500 hours, the contractor will be compensated as noted herein. If the enrollee is transferred to a non-federal project, MoDOT, upon availability of funding, may have the option of reimbursing the contractor for those hours completed that achieve the 500-hour minimum and for any hours that continue the successful training of the individual(s). The same documentation will be required to be submitted in order to determine if hours will be approved. However, if the trainee is moved to another federally funded enhancement, then a "change order" could be requested for the additional hours, and thus offer the Contractor the necessary credit so as to accomplish the 500 hour plateau. FHWA and MoDOT will only approve training programs meeting the requirements of the Training Special Provisions (TSP). A program will be approved if it is reasonably calculated to meet the equal employment opportunity obligations of the Contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved but not necessarily sponsored by the Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training will also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts.

2.4 When a contractor subcontracts a portion of the contract work, the contractor shall determine how many, if any, of the trainee hours are to be trained by the subcontractor, provided, however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this provision.. The contractor shall also insure this training provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

2.5 The number of trainee hours shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment. Prior to commencing construction, the contractor shall submit to the engineer for approval a trainee notification for each individual they intend to train on the project. The contractor will be credited for the hours worked by each trainee employed on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter. If the trainee goal on the project is 1,000, no more than two trainees will be approved for the project. Each individual must complete at least 500 hours before reimbursement or hour will be counted towards meeting the goal. In the event a trainee leaves the training program prior to completing the minimum 500 hours the External Civil Rights Division will determine if that individual can be replaced on the project.

2.6 Training and upgrading of minorities and women toward journeyman status is a primary objective of this provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent that such persons are available within a reasonable area of recruitment. The contractor shall be responsible for demonstrating the steps taken in pursuance thereof, prior to a determination as to whether the contractor is in compliance with this provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

2.7 No employee shall be employed as a trainee in any classification in which the employee has successfully completed a training course leading to journeyman status or in which the employee has been employed as a journeyman. The contractor shall satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of

the method used the contractor's records shall document the findings in each case.

2.8 The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the engineer and FHWA. A program will be approved if it is reasonably calculated to meet the equal employment opportunity obligations of the contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period... Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a state apprenticeship agency recognized by the Bureau of apprenticeship and training programs approved, but not necessarily sponsored by, the Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training, will also be considered acceptable provided the training is being administered consistent with the equal employment obligations of Federal-aid highway construction contracts.

2.9 Approval or acceptance of a training program shall be obtained from the engineer prior to beginning work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training will be permissible in lower level management positions, such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications and must be approved by FHWA. Training in the laborer classification may be permitted, provided significant and meaningful training is provided and approved by the engineer. Some offsite training will be permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

2.10 Except as otherwise noted below, the contractor will be reimbursed $10.00 per hour of training given an employee in the contract in accordance with an approved training program. As approved by the engineer, reimbursement will be made for training persons in excess of the number of trainee hours specified in the contract. Reimbursement will be made even though the contractor receives additional training program funds from other sources, provided such other sources do not specifically prohibit the contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the contractor when the trainees are concurrently employed on a federal-aid project and the contractor does one or more of the following, and contributes to the cost of the training, provides instruction to the trainee, or pays the trainee's wages during the offsite training period. In order receive the reimbursement the trainee must complete at least 500 hours on the project

2.11 No payment will be made to the contractor if either failure to provide the required training or failure to hire the trainee as a journeyman is caused by the contractor and evidences a lack of good faith on the part of the contractor in meeting the requirements of this provision. It is normally expected that a trainee will begin training on the project as soon as feasible after start of work, utilizing the skill involved and remain on the project as long as training opportunities exist in the trainee's work classification or until the trainee has completed the training program. It is not required that all trainees be on board for the entire length of the contract. The contractor’s responsibilities under this provision will be fulfilled if the contractor has provided acceptable training for the number of trainee hours specified.

2.12 Trainees shall be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the U.S. Department of Labor or Transportation in connection with the existing program will apply to all trainees being trained for the same classification who are covered by this provision.

2.13 Contractor may choose to transfer trainee hours worked on another project, whether MoDOT or not. The contractor must submit monthly trainee reports for that project to the RE Office where the hours will be credited. The contractor must submit with the monthly trainee reports, copies of the certified payrolls so the RE Office can verify the number of hours worked on the project, as well as the wage the trainee was being paid. Once the RE reviews the monthly reports, copies of the monthly reports should be sent to the External Civil Rights Division. The RE Office should include with the report a note indicating the hours that are being transferred from the other project. Both job numbers must be included in the note.

2.14 When the job is 50% complete the contractor must have at least 50% of the trainee hours assigned on that job completed. The percentage of job completion is based on the total value of the contract paid to the Contractor. The remaining amount of the hours must be completed before the completion of the project or the Contractor will be subject to liquidated damages unless a GFE is submitted to and approved by the External Civil Rights Division.

2.15 If the training hours have not been obtained and a GFE has not been displayed upon project completion, the Contractor will be assessed liquidated damages in the amount of $20.00 per hour for those hours not realized. For instance, if the project goal was 1,000 hours and only 450 hours were met, then liquidated damages would be assessed at 550 x $20.00 = $11,000.00.

2.16 In the event the External Civil Rights Division denies the Good Faith Effort (GFE) submitted by the contractor, the contractor shall have the right to an Administrative Reconsideration Hearing. The request for an Administrative Reconsideration Hearing must be made within seven (7) days of the receipt of the denial letter. The Administrative Reconsideration Committee may be constituted, as MoDOT deems appropriate and fair, provided no committee member on the Reconsideration Committee

shall have taken part in the original MoDOT determination that the contractor failed to meet the OJT contract goal and/or failed to make adequate good faith efforts to do so.

2.17 If the Administrative Reconsideration Committee does not find the contactor met the OJT contract goal, and/or does not find the contractor made adequate and sufficient good faith efforts to do so, then the Administrative Reconsideration Committee will recommend that liquidated damages as outlined in the non-compliance sanctions sections of the OJT Training Special Provision will be carried out. If the Administrative Reconsideration Committed does find that the contractor has met a good faith effort (GFE), then no liquidated damages will be assessed.

2.18 If the Contractor does not achieve the full OJT goal, they will not receive partial credit for hours completed. For instance, if the goal on the project was 1,000 hours and only 450 were convened, then no reimbursement will be given for any hours fulfilled. If the goal on the project is 2,000 hours and only 1,500 hours are completed and no GFE is demonstrated, the contractor will receive credit for the 1,500 hours and also be assessed liquidated damages in the amount of the 500 hours there were not met.

2.19 The contractor shall furnish to the trainee a copy of the training program the contractor will follow in providing the training. The contractor shall provide each trainee and the resident engineer with a certification showing the type and length of training satisfactorily completed.

2.20 The contractor shall provide for the maintenance of records and furnish monthly reports documenting the contractor's performance under this provision. Monthly reports shall include at least the following information:

Contractor's name and address
Period that the report covers
Job Number, Description, and Federal Aid number
Information for each employee being trained on the project, including:
- Name
- Social Security Number
- Trade/craft
- Pay percent, based on portion of training complete (if applicable)
- Journeyman's full prevailing wage applicable
- Trainee wage
- Hours this period
- Cumulative hours for the project

Total trainee hours for the project for this period
Cumulative trainee hours for the project

2.21 When a contractor submits a trainee who is economically disadvantaged the following information should be submitted with the trainee notification to verify this status:

- The previous year's tax return verifying the individual's income is less than the federal poverty guidelines.
- Verification of enrollment in food stamps received from Missouri Department of Social Services.
- Verification of housing assistance received from Missouri Department of Social Services.

COOPERATION BETWEEN CONTRACTORS FOR SAFE AND SOUND PROGRAM

1.0 The Missouri Department of Transportation has approved plans to improve 802 of Missouri's lowest rated bridges within five years. This initiative, the Safe and Sound Program, will be performed under subsequent contracts that may or may not impact this contract. It will be the responsibility of the contractor to coordinate with the project(s) under the initiative that will impact the contractor's operations to perform the work for this contract.

2.0 When necessary for proper prosecution of work, each contractor shall permit the other access through the overlapping construction areas and the use of any access or haul roads constructed by others. In the event of a conflict within the immediate vicinity of the bridge, as defined by the initiative's engineer, preference will be given to the prosecution of work on the Safe and Sound project.

3.0 The contractor agrees that any effects of the presence of another contractor shall not be compensable as a suspension of work, extra work, a change in the work, as a differing site condition or otherwise including but, without limitation, delay, impact, incidental or consequential damages. The contractor waives, for itself, its subcontractors and suppliers the compensability of the presence of another contractor any claim or action arising out of or in relation to the work under the contract.

4.0 A list of the Safe and Sound projects and a corresponding map indicating each bridge location may be found at the Missouri Department of Transportation website: http://www.modot.mo.gov/safeandsound/index.htm

OPTIONAL ROLLER COMPACTED CONCRETE SHOULDERS AND MAINLINE

01/16

1.0 Description. Roller Compacted Concrete (RCC) is an optional method to be used in constructing A2 and A3 shoulders or mainline pavement up to 7 inches thick in lieu of conventional PCCP or HMA placement. RCC may be used, as designed in the plans, for mainline pavements greater than 7 inches. RCC consists of aggregate, portland cement and water. Supplementary cementing materials, such as fly ash, slag cement (ground granulated blast- furnace slag - GGBFS), and silica fume may be used. RCC is proportioned, mixed, placed, compacted, and cured in accordance with these specifications. RCC shall conform to the lines, grades, thickness, and typical cross section shown in the plans or otherwise established by the Engineer.

2.0 Materials. All materials shall be in accordance with Division 1000, Materials Details, and specifically as follows:

Item	Section
Coarse Aggregate	1005.2
Fine Aggregate	1005.3
Ground Granulated Blast Furnace Slag	1017
Fly Ash	1018
Cement	1019
Concrete Admixture	1054
Curing Compound	407, 1055
Water	1070

2.1 Aggregate. The plasticity index of the aggregates used shall not exceed 5. The aggregate gradation shall be well-graded without gradation gaps and shall meet the following combined gradation for the application type for RCC specified in the contract:

Application	**RCC as a Base or Intermediate Lift** (Overlaid with 2-inch HMA or greater)	**RCC as the Final Surface or with a Thin Lift Overlay** (RCC as the final surface or capped with a thin HMA overlay less than 2-inches)
Sieve Size	**Percent Passing by Weight**	**Percent Passing by Weight**
1 inch	100	---
¾ inch	---	100
½ inch	70 - 95	85 - 100
3/8 inch	60 - 85	---
No. 4	40 - 60	60 - 85
No. 8	--	40 - 60
No. 200	0 - 8	0 - 10

3.0 Mix Design. At least 30 days prior to the beginning of placing RCC on the project, the Contractor shall submit a proposed mix design to the Engineer. The target and allowable gradation range of each fraction shall be included. The contractor may be required to submit representative samples of each ingredient to Construction and Materials for laboratory testing.

3.1 Required Information. The mix design shall contain the following information:

(a) Source, type and specific gravity of portland cement

(b) Source, type (class, grade, etc.) and specific gravity of supplementary materials, if used

(c) Source, name, type and amount of admixture, if used

(d) Source, type (formation, etc.), ledge number if applicable, of the aggregate

(e) Specific gravity and absorption of each fraction in accordance with AASHTO T 85 for coarse aggregate and AASHTO T 84 for fine aggregate, including raw data

(f) Unit weight of each fraction in accordance with AASHTO T 19

(g) Batch weights of portland cement and supplemental cementitious materials

(h) Batch weights of coarse, intermediate and fine aggregates

(i) Batch weight of water in pounds per cubic yard (optimum moisture content)

(j) Maximum laboratory density

(k) The laboratory proctor curves illustrating moisture contents vs. density for each cementitious material content.
The RCC mix design shall be done in a similar fashion as is done to determine the relationship between the moisture content and the unit weight as soils and soil aggregate mixtures. The apparatus and compacted effort used to fabricate the moisture density specimens correspond to that described in AASHTO T 180, Method D. Strength specimens shall be made in accordance with ASTM C 1176 or ASTM C 1435 at the optimum moisture content for each cementitious material content to verify minimum compressive strength requirements.

3.2 Trial Batch. The Contractor shall prepare and test a trial batch mixture at the mixing facility to verify that the RCC mix complies with the design criteria. The trial batch shall be prepared and tested in the presence of the Engineer.

3.3 Production. Production shall not begin until an approved mix design has been obtained and verified by the trial batch.

3.4 Design Strength. The mix design shall have a minimum compressive strength of 3,500 psi within 28 days when specimens prepared according to ASTM C 1176 or ASTM C 1435. Compressive strength test shall be performed in accordance with AASHTO T 22.

3.5 Minimum Water Content. The water-cement ratio shall not be lower than 0.25.

3.6 Minimum Cementitious Content. The total amount of cementitious materials shall not be below 450 pounds per cubic yard.

3.7 Supplementary Cementitious Material. RCC may use fly ash, slag cement (GGBFS), or silica fume. Ternary mixes will be allowed for RCC. Ternary mixes are mixes that contain a combination of portland cement and two supplementary cementitious materials. The amount of supplementary cementitious material content shall be limited to the following requirements:

Supplementary Cementitious Material (SCM)	
SCM	**Maximum Percent of Total Cementitious Material**
Fly Ash (Class C or Class F)	25 %
Slag Cement (GGBFS)	30 %
Silica Fume	8 %
Ternary Combinations	40 %

4.0 Equipment. RCC shall be constructed with any combination of equipment that will produce a pavement meeting the requirements for mixing, transporting, placing, compacting, finishing, and curing as provided in this specification.

4.1 Mixing Plant: The mixing plant shall be capable of producing RCC to the proportions defined by the final approved mix design and within the specified tolerances. The capacity of the plant shall be sufficient to produce a uniform mixture at a rate compatible with the placement equipment.

4.2 Paver: RCC shall be placed with a high-density or conventional asphalt type paver subject to approval by the Engineer. The paver shall be of suitable weight and stability to spread and finish the RCC material, without segregation, to the required thickness, smoothness, surface texture, cross-section, and grade.

4.3 Compactors: When a conventional asphalt type paver is used, self-propelled steel drum vibratory rollers shall be used for primary compaction. For final compaction, a steel drum roller, operated in a static mode, or a rubber-tired roller may be utilized to meet density requirements.

4.4 Haul Equipment: The hauling equipment shall be smooth, mortar-tight, metal containers capable of discharging the concrete at a controlled rate without segregation. Hauling equipment shall have a retractable cover to protect mix from weather and excessive evaporation.

4.5 Access for Inspection and Calibration: The Engineer shall have access at all times for any plant, equipment, or machinery to be used in order to check calibration, scales, controls, or operating adjustments.

5.0 Construction Requirements.

5.1 Preparation of Subgrade. Before the RCC processing begins, the subgrade and base course must be prepared in accordance with Sec 304.

5.2 Subbase Condition. The surface of the subbase shall be clean and free of foreign material and standing water prior to placement of the RCC. The aggregate base shall be uniformly moist at the time of RCC placement. RCC shall not be placed upon frozen subbase.

5.4 Mixing Time. Mixing time shall be adequate to ensure a thorough and complete mixing of all materials. Concrete shall be homogeneous with no aggregate segregation. In no case shall the mixing time, after all materials including water are in the mixer, be less than 90 seconds.

5.5 Operating Tolerances. The mixing plant shall receive the quantities of individual ingredients to within the following tolerances:

Material	Variation by Weight
Cementitious Materials	± 2.0%
Water	± 3.0%
Aggregates	± 4.0%

5.6 Plant Calibration. Prior to RCC production, the Contractor shall calibrate the plant in accordance with the manufacturer's recommended practice. A copy of the calibration shall be provided to the Engineer when requested.

5.7 Curing. Immediately after final rolling, the RCC surface shall be kept continuously moist until an approved curing compound is applied. The application of the curing compound shall progress such that no more than 10 linear feet of the final RCC surface is exposed without curing at any time.

5.7.1. Water Cure. Water cure shall be applied such that a uniform moist condition on the surface of the RCC is attained. Application of this moisture shall be done in a manner that will not erode or damage the finished RCC surface.

5.7.2 Curing Compound. When RCC is used as the final surface, either white pigmented curing compound applied at the rate of one gallon for each 100 square feet or a tack coat product applied at 0.14 gal/yd^2 shall be used for curing. When RCC is to be overlaid with asphalt, the curing compound shall be a tack coat product applied at 0.14 gal/yd^2 in accordance with Sec 407.

5.8 Weather Conditions.

5.8.1 Hot Weather Precautions. During periods of hot weather or windy conditions, special precautions shall be taken to minimize moisture loss due to evaporation.

5.8.2 Cold Weather. The contractor shall provide a method, meeting the approval of the engineer, of monitoring the concrete that demonstrates that the concrete has been protected from freezing.

5.8.3 Protection Against Rain. To protect against rain, the contractor shall have on location at all times material for the protection of the unhardened concrete. The contractor shall protect the concrete from damage due to rain.

5.9 Finished Surface. The finished RCC surface shall be smooth, uniform, and continuous without tears, ridges, or aggregate segregation once it leaves the paver. RCC mainline pavement shall meet the smoothness criteria of Sec 502.8. When RCC is the final surface, the finished surface texture shall be broom finished, diamond ground, or other finishes approved by the engineer. All finished surface textures shall be in accordance with Sec 502.4.

5.9.1 Inaccessible Areas. All areas inaccessible to either roller or paver shall be paved with cast-in-place concrete in accordance with Sec 502.

5.9.2 Handwork. Broadcasting or fanning the RCC material across areas being compacted is not permissible. Such additions of materials may only be done immediately behind the paver and before any compaction has taken place.

5.9.3 Segregation. If segregation occurs in the RCC during paving operations, placement shall cease until corrective measures are taken.

5.10 Cold Joints. Prior to placing fresh RCC mixture against a cold vertical joint, the joint shall be thoroughly cleaned of loose or foreign material. The vertical joint face shall be wetted and in a moist condition immediately prior to placement of the adjacent lane.

5.11 Control Joints. Concrete control joints shall be constructed at 15-foot intervals in RCC mainline pavement. Control joint spacing for RCC shoulders adjacent to HMA or composite pavement shall be a minimum of 30-foot intervals. RCC shoulders adjacent to existing PCC pavement shall have control joints located to match the joints of the adjacent pavement. For all other PCC joint spacing; the RCC control joints shall match the adjacent PCC pavement's joints or cracks not to exceed a 30-foot interval. All control joints shall be tooled or cut to 1/3 the depth of the RCC thickness. Sealing the control joints is not required.

5.12 Opening to Traffic. The Contractor shall protect the RCC from traffic during the curing period. The RCC shoulder pavement may be opened to light traffic after one day and opened to unrestricted traffic after 5 days. The RCC mainline pavement may be opened to light traffic at 2,500 psi and opened to unrestricted traffic at 3,000 psi.

6.0 Material Acceptance.

6.1 Quality Control Testing. The contractor shall perform all quality control tests necessary to control the production and construction processes applicable to this specification. Quality control testing shall be performed by technicians qualified through MoDOT's technician certification program. Testing shall include, but not necessarily be limited to, deleterious content, aggregate gradation, coarse aggregate absorption, thin or elongated pieces, pavement thickness and density. The contractor shall record all test results and furnish a copy to the engineer no later than the beginning of the day following the test.

6.2 Quality Control Plan. A Quality Control Plan (QCP) for RCC mainline pavement and shoulders will be required as per Sec 502.11.1.

6.3 Testing.

6.3.1 Density. The density shall be determined in accordance with AASHTO T 310, direct transmission. Tests shall be performed no later than 30 minutes after the completion of the rolling. Only wet density shall be used for evaluation. QC shall determine the density of the RCC shoulder and mainline pavement at a frequency of no less than one per 7500 square yards. Sampling locations will be determined by the engineer using random sampling procedures in accordance with ASTM D 3665.

6.3.2 Thickness. The contractor shall determine thickness of the RCC shoulder and mainline pavement by testing the fresh concrete. The Resident Engineer will need to review and approve the testing procedure. QC shall determine the thickness of the RCC mainline pavement and shoulders at a frequency of no less than one per 7,500 square yards. Sampling locations will be determined by the engineer using random sampling procedures in accordance with ASTM D 3665.

6.4 Aggregate Gradation. A sieve analysis shall be performed once a week. Testing shall be performed in accordance with AASHTO T 27 from randomly sampled material taken from the discharge gate of storage bins or from the conveyor belt.

6.5 Deleterious Materials. Deleterious content shall be determined each day at a frequency of one test per 7500 square yards of material placed or fraction thereof. Test shall be performed in accordance with MoDOT TM 71 from randomly sampled material taken from the discharge gate of storage bins or from the conveyor belt. Tests shall be performed on coarse aggregate fractions.

6.6 Absorption. Samples for coarse aggregate absorption shall be taken from the discharge gate of storage bins or from the conveyor belt at least once every 2000 cubic yards with a minimum of once per project. Coarse aggregate absorption shall be performed in accordance with AASHTO T 85.

6.7 Thin or Elongated. Thin or elongated pieces shall be determined on samples of coarse aggregate taken from the discharge gate of the storage bins or from the conveyor belt. Test shall be performed in accordance with ASTM D 4791 using a ratio of 5:1. Test shall be performed on aggregate particles retained on the ¾ in. sieve. Tests shall be performed at least once every 10,000 cubic yards with a minimum of once per project.

6.8 Retained Samples. All aggregate samples taken by the contractor, including but not limited to gradation, deleterious, absorption, and thin or elongated pieces shall be retained for the engineer for a minimum of seven days unless otherwise instructed. The retained sample shall be the remaining half of the final reduction in sample size obtained for QC testing. These samples shall be maintained in clean covered containers, without contamination, readily accessible to the engineer. The retained sample's identification shall consist of, but is not limited to:

(a) Time and date sampled

(b) Product specification number

(c) Type of sample, i.e. belt, bin, stockpile

(d) Lot and sublot designation

(e) Sampler/Tester

(f) Project Job Number

6.9 Acceptance.

6.9.1 Density. The density shall not be less than 98 percent of the maximum laboratory density.

6.9.1.1 Compressive Strength. Roller compacted concrete properly placed and compacted, but not meeting the density requirements shall be cored and tested for compressive strength at no additional cost. Cores shall be taken in accordance with AASHTO T 24. The compressive strength shall be determined by approved methods. Cores shall be tested for compressive strength within 7 days of density testing. If the tested area achieves the design strength, the material will be paid for at full price. Areas that fail to comply with the design strength will be deemed unacceptable and shall be addressed in accordance with Sec 105.11.

6.9.2 Thickness. The thickness shall not be deficient by more than 10 percent of the plan thickness. Areas that fail to comply with the design thickness will be deemed unacceptable and shall be addressed in accordance with Sec 105.11.

6.9.3 Aggregate Gradation. When one test is outside the allowable gradation range, immediate steps shall be taken to correct the gradation.

6.9.4 Deleterious Materials. When one test is outside the specification limits, immediate steps shall be taken to correct the deleterious content.

6.9.5 Absorption. The contractor shall halt production and make appropriate adjustments whenever either of the following occurs:

(a) One point falls outside the action limit line for individual measurement

(b) Two points in a row fall outside the specification limit but within the action limit line for individual measurement

6.9.5.1 Action Limits. The following action limit shall be used to control the aggregate absorption.

Individual Measurements	
Control Parameter	**Action Limit**
Absorption	Mix Design plus 0.3% to Mix Design plus 0.6%

6.9.6 Thin or Elongated Pieces. The coarse aggregate shall not have more than 5 percent thin or elongated pieces.

7.0 Quality Assurance.

7.1 Independent Samples. Corrective action shall be required when any QA tests are outside the required ranges or action limits. The engineer will at a minimum, independently test at the following frequency:

Test	Frequency
Density	1 test per 30,000 square yards
Thickness	1 test per 30,000 square yards
Aggregate Gradation	1 per project
Coarse Aggregate Deleterious	1 per week
Absorption	1 per 10,000 cubic yards
Thin or Elongated	1 per project

7.2 Test Procedures. The engineer will use the same test procedures as the contractor for determining the density and thickness of the RCC.

7.3 Retained Samples. The QA inspector will test at least ten percent of the retained portion of the QC samples for aggregate gradations and deleterious content. The QA inspector will test at least twenty percent of the QC retained samples for absorption and thin or elongated pieces. Retained samples will be chosen at random. A comparison will be considered favorable when the QA results of a QC retained sample are within the applicable limits specified in Sec 403.

8.0 Method of Measurement. Final measurement of the completed pavement will not be made except for authorized changes during construction, or where appreciable errors are found in the contract quantity. Where required, measurement of the RCC mainline pavement and shoulders, complete in place, will be made to the nearest 1/10 square yard. The revision or correction will be computed and added to or deducted from the contract quantity.

9.0 Basis of Payment. The accepted quantities of RCC will be paid for at the contract unit price, for specified A2 or A3 shoulders or mainline. Sec 610 for smoothness pay factor adjustments will apply to the final RCC mainline pavement surface. The contract unit price for A2 or A3 shoulders or mainline pavement will be considered as full compensation for all materials, equipment, tools, labor, and incidentals necessary to satisfactorily complete the work. No additional compensation will be allowed for any excess thickness.

ASPHALT CEMENT PRICE INDEX

12/11

1.0 Asphalt Cement Price Index. Adjustments will be made to the payments due the Contractor for any plant mix bituminous base, plant mix bituminous pavement, plant mix bituminous surface leveling, asphaltic concrete pavement and ultrathin bonded asphalt wearing surface that contains performance graded (PG) asphalt binder when it has been determined that the monthly average price for the midpoint of the published prices of PG64-22 for St. Louis, Missouri area and Kansas City area has fluctuated from the monthly average price of the month the project was bid. The St. Louis, Missouri area and Kansas City area prices will be obtained from the Asphalt Weekly Monitor® published by Poten & Partners Inc. The 'asphalt base index' will be the price from the last published Asphalt Weekly Monitor® prior to MoDOT's monthly bid opening. The 'monthly asphalt index' will be the price from the Asphalt Weekly Monitor the month prior to the payment estimate period in which the asphalt was laid. Any asphalt laid on the first day of a month will be included in the second estimate period for the previous month.

1.1 The adjusted contract unit price will be applied to the actual amount of PG asphalt binder used by the Contractor for all asphalt items. For projects that are paid for with square yard pay items, the adjustments will be made for applicable tons calculated based upon the plan square yard quantity and thickness converted to tons excluding the 1:1 wedge. The adjustment will be applied to all Job Order Contract projects for all quantities of the wet ton and square yard asphalt mix. The percentage of virgin PG asphalt binder as shown in the job mix formula, in accordance with Sec 401, Sec 403 and Sec 413, will be the basis for adjustments for any asphalt mix type placed on the project during the monthly index period. The effective asphalt binder obtained from the use of Recycled Asphalt Pavement (RAP) and/or Recycled Asphalt Shingles (RAS) will not be eligible for adjustment. The base price index for PG64-22 will be applied to the asphalt mix for mixes using any PG asphalt binder.

2.0 Basis of Payment. To determine the adjustment for any material specified in this provision the following formula will be used.

A = (B x C) x (D-E)

Where:
A = Adjustment for mix placed during the payment estimate period
B = Tons of Mix Placed during the payment estimate period
C = % of virgin PG asphalt binder as listed in the job mix formula in use
D = monthly asphalt index
E = asphalt base index

3.0 The engineer will make adjustment payments, as defined above, for the applicable work completed during each payment estimate period except for projects on which the contractor is being charged liquidated damages, due to working beyond the project completion date, in accordance with Sec 108. In this case, the "D" value used for the price adjustment will be either the last "D" value prior to the date that liquidated damage assessment began or the current monthly "D" value, whichever is lower.

4.0 Optional. This provision is optional. If the bidder wishes to be bound by this provision, the bidder shall execute the acceptance form in the Bid. Failure by the bidder to execute the acceptance form will be interpreted to mean election to not

participate in the Asphalt Cement Price Index. If the Asphalt Cement Price Index is accepted, PG asphalt binder for the project will not be eligible for a material allowance as described in Sec 109.

SAFETY PLAN

04/16

1.0 Description. This contractor shall submit to the engineer a project Safety Plan (SP) for all work performed by the contractor and all subcontractors. The purpose of the SP is to encourage and enable all work to be performed in the safest possible manner and that all parties involved are aware of their individual responsibility for safety on the jobsite.

1.1 The SP shall be completed by the contractor and provided to the engineer prior to the beginning of any construction activity or phase on the project.

1.2 The contractor shall designate a person to serve as Project Safety Manager (PSM). The PSM shall be responsible for implementing and overseeing the SP. The PSM is not required to be present on the project at all times, but must be available to address safety issues and needs.

1.3 The PSM shall make revisions to the SP as necessary. Any new project activities or phases shall be included in the SP prior to work beginning on that activity or phase.

1.4 An example Safety Plan is available at: www.modot.org/safetyplan

2.0 Emergency Preparedness. The SP shall outline and detail for all workers, the specific procedures and actions necessary to respond to a jobsite emergency and the measures taken to communicate these requirements to all workers.

2.1 The SP shall include a list of local emergency contacts including phone numbers. A copy of the emergency contact list shall be accessible to workers.

2.2 In the case where there is no cellular or land line phone service at the jobsite, the SP shall identify how to reach the nearest available phone service.

3.0 Project Safety Analysis. The SP should contain a basic Project Safety Analysis (PSA) that outlines the actions necessary to complete each activity or phase of the project. The SP shall include a general description of the primary activities or steps required to safely complete the project.

3.1 Each activity should also include a general description of the work involved along with the known risks associated with the activity. In addition the PSA should outline the controls for those risks, including any Personal Protection Equipment (PPE) requirements for that activity or phase, and whether or not the activity or phase requires a specific safety meeting prior to beginning the activity or phase.

3.2 Submittal of the PSA for all activities or phases is not required with the initial submittal of the SP; however, the PSA for each activity or phase shall be completed prior to the beginning of that activity or phase.

4.0 Safety Meetings. The SP shall include the types of safety meetings that will be required of and conducted by the contractor.

5.0 Safety Training. The SP shall identify the required safety training provided to the contractor's personnel. The contractor shall require that the appropriate safety training for the contractor's personnel is completed prior to the beginning of work on each activity or phase.

5.1 The SP shall identify the recommended safety training needs and PPE for MoDOT employees who will be exposed to the work activities. MoDOT will provide safety training and PPE to MoDOT employees based on MoDOT safety policies.

6.0 Payment. There will be no direct payment for compliance with this Safety Plan provision.

SAFETY EDGE

04/16

1.0 Description. An approved longitudinal shoulder wedge system shall be used to create a beveled edge at the edge of pavement for a roadway without a paved shoulder, or at the edge of shoulder for pavement with a paved shoulder up to and including 4 feet in width.

2.0 Construction Requirements. The shoulder wedge system shall result in a bevel measuring 30 degrees from horizontal and extending laterally from the edge of traveled way or shoulder to the point of intersection with the inslope. The construction tolerance shall be plus or minus 5 degrees.

2.1 The shoulder wedge system shall maintain contact between the device and road shoulder surface and allow automatic transition to cross roads, driveways and obstructions. The device must be removable or be able to be lifted when not in use.

2.2 All shoulder wedge systems to be used for the purpose of creating a Safety Edge must be approved by the engineer. The device must be designed to constrain the material, increase the consolidation of the extruded profile, and provide a smooth wedged surface. The use of a conventional single plate strike-off is not permitted.

3.0 Basis of Payment. There will be no direct payment for compliance with the requirements of this provision.

"RATE OUR WORK ZONE" SIGNS

03/12; 05/12

1.0 Description. This work shall consist of furnishing and installing a 72 X 36 inch or 48 X 24 inch "Rate Our Work Zone" signs, as indicated in the plans. The contractor shall furnish signs, labor, equipment, posts and hardware for installation of the signs in accordance with this provision, or as directed by the engineer.

2.0 Material. All material shall be in accordance with Division 1000, Material Details.

3.0 Construction Requirements. The signs shall be post-mounted and placed approximately 500 feet before the beginning of the project limits or the "ROAD WORK AHEAD" sign or the "ROAD WORK NEXT XX MILES" sign, if used, when these signs are located outside the project limits for each direction of travel affected by the project. A project on only one pavement of a dual divided facility will require only one sign. The contractor shall maintain all signs until completion of the project. Upon completion of the project, the contractor shall remove the signs, posts and hardware. The signs, posts and hardware shall remain the property of the contractor.

4.0 Basis of Payment. The accepted quantity of signs will be paid for at the contract unit price per square feet of construction signs.

"POINT OF PRESENCE" SIGNS

03/12; 05/12

1.0 Description. This work shall consist of furnishing and installing a 36 X 48 inch or a 96 X 48 inch “Point of Presence" signs, as indicated in the plans. The contractor shall furnish signs, labor, equipment, posts and hardware for installation of the sign in accordance with this provision or as directed by the engineer.

2.0 Construction Requirements. The sign shall be placed as shown on the plans. A project impacting only one direction of a divided highway will require only one sign. The contractor shall maintain all signs until completion of the project. Upon completion of the project, the “Point of Presence” signs shall remain in place ninety days with the “Completed as Promised” decal or plaque attached. After the ninety day period expires, the contractor shall be required to remove the sign. The sign, decal or plaque, posts and hardware will remain the property of the contractor.

2.1 The 36 X 48 inch “Point of Presence” sign shall be post mounted on two 3-pound/foot U-channel posts, or one-2 ½ inch perforated square steel tube post.

2.2 The 96 X 48 inch "Point of Presence" sign shall be post mounted on three 3-pound/foot U-channel posts with 32-inch spacing between posts.

3.0 Basis of Payment. The accepted quantity of "Point of Presence" signs will be paid for at the contract unit price per square feet of construction signing. The “Completed as Promised” decal or plaque shall be considered incidental to the “Point of Presence” sign.

SERVICE SIGNING

1.0 Description. All installation, relocation and repair of Missouri LOGO, Tourist Oriented Destination Signs (TODS) and General Service Signing shall be coordinated between the engineer, contractor and the designated Missouri LOGO representative.

1.1 It shall be noted by the contractor that Missouri LOGOS is responsible for the installation, relocation and repair of all LOGO, TODS and General Service Signs on MoDOT owned right of way. The contractor shall be solely responsible and liable for determining any impact to LOGO, TODS or General Service Signing due to contractor operations during construction of this contract. The contractor shall be responsible for notifying Missouri LOGOS at the time of the preconstruction meeting when a service sign is determined to be impacted and advise Missouri LOGOS of the project details. The Missouri LOGO representative will attend these meetings at their discretion.

The Missouri LOGO representative shall be contacted 24 hours a day, 7 days per week at (573) 291-6788.

1.2 Missouri LOGOS will be responsible any installation or relocation of service signs necessary for this contract. If Missouri LOGO's has to perform work within the limits of the project, Missouri LOGOS will conduct work so as not to interfere with or hinder the progress or completion of the work being performed by the contractor. Full cooperation of the contractors involved, in careful and complete coordination of their respective activities in the area, will be required.

2.0 Basis of Payment. No direct payment will be made to the contractor to recover the cost of equipment, labor, materials or time required to fulfill this provision.

REVISIONS TO 2016 MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION

SECTION 215 – SHAPING SLOPES

Amend Secs 215.1.3 thru 215.1.3.1 to include the following: ***10/16***

215.1.3 Shaping Slopes, Class III, shall consist of providing fill material and shaping slopes to construct additional shoulder width for the installation of guardrail and Type A crashworthy end terminals in accordance with Missouri Standard Plans for Highway Construction. Material used shall be Type 1, 5, or 7 Aggregate Base, or other granular material approved by the engineer. Any excess material shall be disposed of outside the limits of the right of way.

215.1.3.1 In lieu of aggregate base, earth material may be used for Shaping Slopes, Class III. When earth material is used, an approved seed mixture shall be applied in accordance with Sec 805, mulch shall be applied in accordance with Sec 802 and erosion and sediment control shall be utilized in accordance with Sec 806. All cost for seeding, mulching, and erosion control shall be incidental to the cost of Shaping Slopes, Class III.

Amend Sec 215.2.1 to include the following: ***10/16***

215.2.1 Benching of the existing slope may be necessary to provide stability to the additional shoulder width constructed by Shaping Slopes, Class III. All costs for benching shall be included in the cost of Shaping Slopes, Class III.

Delete Secs 215.3.2 thru 215.4 and substitute the following: ***10/16***

215.3.2 Shaping Slopes, Class I, Class II, or Class III will apply only to those sections that have been specifically designated as such on the plans.

215.4 Basis of Payment. The accepted quantity of shaping slopes will be paid for at the contract unit price for each of the pay items included in the contract. If Shaping Slopes, Class I, Class II, or Class III is not provided but is required, payment will be in accordance with Sec 104.3. No direct payment will be made for any additional material required for shaping slopes.

SECTION 401 – PLANT MIX BITUMINOUS BASE AND PAVEMENT

Delete Sec 401.4.5 and substitute the following: ***10/16***

401.4.5 Moisture Susceptibility. When required moisture susceptibility shall be tested in accordance with AASHTO T 283. The mixture shall have a tensile strength ratio (TSR) of 70 percent or greater when compacted to 3.7 inches with 7 +/- 0.5 percent air

voids. An approved anti-strip additive may be added to increase retained strength to a passing level. When testing is required by Sec 401.2.1 or 401.9, the mixture shall be tested during production in accordance with Sec 403.19.

Delete Sec 401.5 and substitute the following: ***10/16***

401.5 Gradation and Deleterious Content Control. The engineer shall be notified as soon as possible, but no later than 24 hours if a change is made to the cold feed settings, hot bin settings or the binder content. The contractor shall determine the mixture gradation at the frequency stated in Sec 401.8.1. The mixture gradation may be determined directly by using residual aggregate from the binder ignition process or by mathematical combination of the cold feed and recycled materials gradations. When the mathematical combination method is used, the RAS gradation shall be from the JMF and RAP gradation from the ignition or extraction residual aggregate. Mixtures as produced shall be subject to the following tolerances and controls:

(a) The maximum variations from the approved job-mix formula shall be within the tolerances as shown in the table below:

	Percent Passing by Weight	
Sieve Size	**Tolerance**	**Action Limit**
No. 8[a]	±5.0	± 10.0
No. 200	±2.0	± 4.0

[a] Use No. 16 sieve for BP-3

(b) The deleterious content of the material retained on the No. 4 sieve shall not exceed the limits specified in Sec 1004.2.

(c) The quantity of asphalt binder introduced into the mixer shall be the quantity specified in the job-mix formula. No changes shall be made to the quantity of asphalt binder without written approval from the engineer. The quantity of asphalt binder determined by tests on the final mixture shall not vary by more than - 0.3 to + 0.5 percent from the job-mix formula.

Delete Sec 401.7.5 and substitute the following: ***10/16***

401.7.5 Spreading. The base course, tacked or primed surface, or preceding course or layer shall be cleaned of all dirt, packed soil or any other foreign matter prior to spreading the bituminous mixture. The mixture shall be spread in the number of layers and in the quantity required to obtain the compacted thickness and cross section shown on the plans. When placing multiple layers with varying thicknesses, the thicker layer shall be placed first.

Delete Sec 401.7.8 and substitute the following: ***10/16***

401.7.8 Compaction. The compacted mixture shall have a minimum density of 92 percent of the theoretical maximum specific gravity. Density will be determined by the direct transmission nuclear method in accordance with MoDOT Test Method TM 41 or by a specific gravity method. When the contractor elects to place a lift of mixture greater than six times the nominal maximum aggregate size, cores shall be cut in half and the density of each half determined separately. In lieu of density requirements, mixtures used for wedging, transitions, existing shoulder overlays, new shoulders constructed on a sub-grade or base that does not specify density control, temporary bypasses to be maintained at the expense of the contractor, and areas where a commercial mixture is used shall be thoroughly compacted by at least three complete coverage's over the entire area with either a pneumatic tire roller weighing no less than 10 tons, a tandem-type steel wheel roller weighing no less than 10 tons or an approved vibratory roller. Rolling shall be performed at proper time intervals on each layer and shall be continued until there is no visible evidence of further consolidation.

Delete Sec 401.8.4 and substitute the following: ***10/16***

401.8.4 Pavement Testing. During construction, the engineer will designate as many tests as necessary to ensure that the course is being constructed of proper thickness, composition and density. Density of the roadway shall be determined by one core obtained by the contractor at a random location selected by the engineer for every 500 tons of production. The cores from each day's production will be averaged to determine acceptance. A joint density core shall be taken from the same transverse cross section as the mat core and alternate sides. The maximum theoretical density shown on the job mix formula shall be used for this determination. Minimum 4-inch diameter cores, shall be taken the full depth of the layer to be tested. Cores tested by AASHTO T 166 shall be in accordance with Sec 403.19.3.1.3. The contractor shall restore the surface from which samples have been taken immediately with the mixture under production or with a cold patch mixture acceptable to the engineer.

Delete Sec 401.9 and substitute the following: ***10/16***

401.9 Quality Assurance. Acceptance tests for gradation, deleterious content and asphalt content will be performed by the engineer at a minimum rate of one independent sample per 4 QC samples. A favorable comparison will be considered when a QA test is within the specification tolerances. An acceptance test for plasticity index will be performed at a minimum rate of one per project by the engineer on an independent sample taken during production. Initial testing will be performed the first week of production. When the plasticity index on an individual aggregate fraction is more than two percentage points above the value shown on the approved mix design, moisture susceptibility testing shall be required in accordance with Sec 401.4.5. At least once for every five days of production, a split of the contractor's sample will be tested. If the results of the split sample are not within five percent on all sieves above the No. 200, two percent on the No. 200, within the specification ranges on the deleterious content, and within 0.5 percent on the asphalt content from the contractor's results, another split sample will be taken jointly with the contractor and tested. If the second test results do not compare within the specification tolerances, production shall cease until the discrepancy is resolved. If the second test results compare within the above tolerances, production may continue. The engineer will retain one half of the plasticity index test and moisture susceptibility test for 7 days after testing is complete. Results of QA testing will be furnished to the contractor within 24 hours of obtaining the sample, with the exception of moisture susceptibility testing.

SECTION 503 – BRIDGE APPROACH SLAB

Delete Sec 503.3 and substitute the following: ***10/16***

503.3 Construction Requirements. Concrete bridge approach slabs shall be constructed in accordance with Secs 703 and 706, and shall attain a compressive strength of 4,000 psi prior to opening to traffic. Concrete bridge approach slabs shall be textured in accordance with Sec 703. Curing shall be in accordance with Sec 502, except the liquid membrane-curing compounds shall be in accordance with Sec 1055 for bridge curing compounds. Bridge approach slabs shall require sealing with a concrete sealer.

SECTION 610 – PAVEMENT SMOOTHNESS

Delete Sec 610.4.5.1 and substitute the following: ***10/16***

610.4.5.1 Quality Control Testing. The contractor shall perform quality control (QC) testing on all eligible profiling areas and provide electronic files for smoothness data in .PFF file format to the engineer in accordance with the testing and reporting procedures in MoDOT TM-59. Reported IRI for each segment is the average of both wheel paths. Furnishing inaccurate test results may result in decertification of the inertial profiler operator. Average segment IRIs shall meet the threshold requirement in Table 1.

Delete Secs 610.4.5.3 thru 610.4.5.5 and substitute the following: ***10/16***

610.4.5.3 Areas of Localized Roughness. An area of localized roughness (ALR) is any length of pavement with a continuous 25-foot average IRI measured in the right wheel path that exceeds the maximum threshold set in Table 1. ALRs shall be corrected.

610.4.5.4 Method of Correction. Corrective action to eliminate ALRs and improve the average IRI shall be accomplished by a method approved by the engineer. Diamond grinding may be used for bumps, but the use of an impact device, such as a bush hammer, will not be permitted. Total grinding depth shall be limited to ¼ inch. Satisfactory longitudinal grinding is acceptable as the final surface of the corrected pavements. All corrective work shall be completed prior to determination of pavement thickness. The contractor shall reprofile the corrected lengths to verify smoothness compliance and submit an electronic data file in .PFF format to the engineer within 48 hours after testing.

Table 1				
Treatment Type	**Posted speed > 45 mph**		**Posted speed ≤ 45 mph**	
	Maximum Segment IRI (in/mi)	**Maximum ALR IRI (in/mi)**	**Maximum Segment IRI (in/mi)**	**Maximum ALR IRI (in/mi)**
Full Depth Pavement	80.0	125.0	80.0	175.0
Multi-Lift Overlay > 3-inches	80.0	125.0	80.0	175.0
Multi-Lift Overlays ≤ 3-inches	**Posted speed > 45 mph and AADT > 3500**		**Posted speed ≤ 45 mph or AADT ≤ 3500**	
	Maximum Segment IRI (in/mi)	**Maximum ALR IRI (in/mi)**	**Maximum Segment IRI (in/mi)**	**Maximum ALR IRI (in/mi)**
	80.0	125.0	125.0	175.0

Delete Sec 610.4.6.1 and substitute the following: ***10/16***

610.4.6.1 Quality Control Testing. The requirements are the same as Sec 610.4.5.1, except that segment average IRIs shall meet the threshold requirements for multi-lift overlays less than or equal to 3 inches in Table 1.

Delete Secs 610.4.6.3 thru 610.4.6.4and substitute the following: ***10/16***

610.4.6.3 Areas of Localized Roughness. All ALRs, defined in Sec 610.4.5.3 exceeding 175.0 inches/mile shall be corrected.

610.4.6.4 Method of Correction. Corrective action to eliminate ALRs and improve the average IRI shall be accomplished with a method approved by the engineer. Diamond grinding bumps shall only be permitted for a 1½-inch or greater single lift overlay. Grinding depth shall be limited to ¼ inch. The contractor shall reprofile the corrected lengths to verify smoothness compliance and submit an electronic data file in .PFF format to the engineer within 48 hours after testing.

Delete Secs 610.4.7.1 thru 610.4.7.2 and substitute the following: ***10/16***

610.4.7.1 Pre-Construction Quality Control Testing. Prior to performing any surface work or pavement repairs, the contractor shall profile the right wheel path in accordance with TM-59. This control profile will serve as the baseline for calculating percent improvement for the project.

610.4.7.2 Post-Construction Quality Control Testing. As soon as practical after resurfacing, the contractor shall profile the right wheel path again. The same stationing shall be used to ensure a direct comparison with the pre-construction profile.

Amend Secs 610.4.7.3 thru 610.4.7.4 to include the following: ***10/16***

610.4.7.3 Post-Construction Quality Assurance Testing. The requirements are the same as Sec 610.4.5.2, except that the testing shall only be performed in the right wheel path.

610.4.7.4 Method of Correction. Corrective action to improve the average IRI shall be accomplished with a method approved by the engineer. Diamond grinding bumps shall only be permitted for a 1 1/2-inch or greater single lift overlay. Grinding depth shall be limited to ¼ inch. The final surface texture of corrected pavement shall be comparable to adjacent sections that do not require correcting.

Delete Secs 610.5.1.1 thru 610.5.1.2 and substitute the following: ***10/16***

610.5.1.1 Smoothness Adjustment. Smoothness adjustments will be paid per segment based on the IRI before any corrections, except for the allowances in Sec 610.5.1.4. Any segment with an IRI above the maximum limit in Tables 2 and 3 must be corrected through a method approved by the engineer to achieve the desired smoothness. When paving widths are greater than the travel lane widths, incentive payment will apply to the driving lane design width only.

610.5.1.2 Incentives. Incentive payment for smoothness shall be based on either Table 2 or Table 3. Table 2 shall be used for all pavements, having a final posted speed greater than 45 mph, except multi-lift overlays less than or equal to 3 inches on routes with AADT less than or equal to 3500 and multi-treatment overlays on routes with AADT less than or equal to 3500. Table 3 shall be used for pavements having a final posted speed of 45 mph or less and multi-lift overlays less than or equal to 3 inches on routes with AADT less than or equal to 3500 and multi-treatment overlays on routes with AADT less than or equal to 3500 at any posted speed. Constant-width acceleration and deceleration lanes shall be considered as mainline pavements.

Table 2	
International Roughness Index, Inches Per Mile	**Percent of Contract Price**
40.0 or less	105
40.1 - 54.0	103
54.1 - 80.0	100
80.1 or greater	100[a]

Table 3	
International Roughness Index, Inches Per Mile	**Percent of Contract Price**
70.0 or less	103
70.1- 125.0	100
125.1 or greater	100[b]

[a]After correction to 80.0 inches per mile or less.
[b]After correction to 125.0 inches per mile or less.

Delete Sec 610.5.2.1 and substitute the following: ***10/16***

610.5.2.1 The contract price for resurfacing will be adjusted based on the improvement in profile index according to Table 4 for each segment with an initial IRI greater than 60 inches per mile. Any segment with an initial IRI less than or equal to 60 inches per mile shall receive no percent improvement price adjustment if the segment IRI after placement of the overlay is also less than or equal to 60 inches per mile. Any segment with an initial IRI less than or equal to 60 inches per mile that has an IRI greater than 60 inches per mile after placement of the overlay shall be paid at 97 percent of the contract unit price for pavement, but no correction shall be required.

Table 4	
Percent Improvement (Change in IRI / Initial IRI) X 100	**Percent of Contract Unit Price For Pavement**
35.0 or greater	103
20.0 to 34.9	100
0.0 to 19.9	97[c]

[c] After correction to 0.0 or greater

SECTION 616 – TEMPORARY TRAFFIC CONTROL

Delete Sec 616.11 and substitute the following: ***10/16***

616.11 Basis of Payment. All temporary traffic control devices authorized for installation by the engineer will be paid for at the contract unit price for each of the pay items included in the contract. No direct payment will be made for the following:

(a) Incidental items necessary to complete the work, unless specifically provided as a pay item in the contract.

(b) Installing, operating, maintaining, cleaning, repairing, removing or replacing traffic control devices.

(c) Covering and uncovering existing signs and other traffic control devices.

(d) Relocating temporary traffic control devices, including permanent traffic control devices temporarily relocated, unless specifically included as a pay item in the contract.

(e) Worker apparel.

(f) Flaggers, AFADs, PFDs, pilot vehicles, and appurtenances at flagging stations.

(g) Furnishing, installing, operating, maintaining and removing construction-related vehicle and equipment lighting.

(h) Construction and removal of temporary equipment crossovers, including restoring pre-existing crossovers.

(i) Provide and maintaining work zone lighting and work area lighting.

SECTION 620 – PAVEMENT MARKING

Delete Secs 620.60.3.1.1 thru 620.60.3.1.2 and substitute the following: ***10/16***

620.60.3.1.1 Type 1 Temporary RPM's, with covers, shall be used for Seal Coat as defined in Sec 409 and for surface treatment projects as defined in Sec 413 with the exception of Sec 413.30. When used for other than surface treatment projects, Type 1 Temporary RPM's, with no covers, may be used as shown on the plans.

620.60.3.1.2 Type 2 Temporary RPM's shall be used as shown on the plans.

SECTION 703 – CONCRETE MASONRY CONSTRUCTION

Delete Sec 703.3.8 and substitute the following: ***10/16***

703.3.8 Surface Sealing for Concrete. Bridge decks shall be sealed with one application of an approved penetrating concrete sealer in accordance with Sec 1053. The penetrating concrete sealer shall also be applied to the top surface of the concrete bridge approach slabs, top and roadway faces of sidewalks, curbs, parapets, medians and barriers. The surfaces of deck patching shall not be sealed unless the surface of the rest of the deck is being sealed. The surface of a Latex Modified Concrete overlay shall not be sealed. The surface of all other dense concrete overlays shall be sealed.

SECTION 903 – HIGHWAY SIGNING

Delete Sec 903.6.1 and substitute the following: ***10/16***

903.6.1 Breakaway assemblies for pipe posts and structural steel posts, including the base connection, hinge plate, fuse plate, structural bolts and all other fabrication, complete in place, are incidental, regardless of the post size or shape. Breakaway assemblies for perforated square steel tube posts, complete in place, will be paid for at the contract unit price each, regardless of the post size.

SECTION 1032 – PRECAST CONCRETE FLARED END SECTIONS

Amend Sec 1032.2.1 to include the following: ***10/16***

1032.2.1 Steel Fibers. Steel fibers shall be in accordance with ASTM A820. The PAL process as outlined in Sec 106 shall apply to steel fibers used in flared end sections.

Delete Secs 1032.3 thru 1032.4.2 and substitute the following: ***10/16***

1032.3 Design.

1032.3.1 Standard Reinforcement. Flared end sections, utilizing rebar or cold drawn steel wire shall be in accordance with the Missouri Standard Plans for Highway Construction.

1032.3.2 Steel Fibers. Steel fibers may be used exclusively or in combination with standard reinforcement. When steel fibers are used, the amount of steel fibers and standard reinforcement required shall be determined through proof of design testing accordance with ASTM C1765, Section 9, for Class III pipe of the same diameter. Proof of design testing shall be performed every three years and the results provided to the engineer upon request. Additional proof of design testing shall be performed when the type of steel fiber is changed or when the dosage rate of the steel fibers is changed.

1032.4 Basis of Acceptance.

1032.4.1 Acceptance Criteria. Acceptability of end sections for all diameters will be determined by the results of such material tests as required in Sec 1026.3, by crushing tests on concrete cores or cured concrete cylinders, and by inspection of the finished end sections, including quantity and placement of reinforcement, to determine the conformance with the design and the freedom from defects.

1032.4.2 Workmanship. All protruding steel fibers shall be removed from the flared end prior to shipping.

SECTION 1042 – HIGHWAY SIGN MATERIAL

Delete Sec 1042.2.7.2 and substitute the following: ***10/16***

1042.2.7.2 Background sheeting applied to flat sheet and extruded panel signs shall be in accordance with ASTM D 4956 Type IV, Class 1. All yellow, orange and yellow green sheeted signs shall be fabricated with ASTM D 4956 Type IX, XI or AASHTO M 268 Type C or D fluorescent yellow, fluorescent orange and fluorescent yellow green sheeting respectively. Retroreflective sheeting shall be high intensity that is an unmetallized micro prismatic reflective material.

Delete Secs 1042.2.10 thru 1042.2.10.1 and substitute the following: ***10/16***

1042.2.10 Type of Characters. Letters, numerals, arrows, symbols, borders and other features of the sign message shall be of the type, size and series shown on the plans or as specified by the engineer. Completed letters, numerals and other units shall be formed to provide a continuous stroke width with smooth edges, and shall yield a flat surface free of air bubbles, wrinkles or other blemishes as determined by the engineer. Units of the sign message shown on the plans shall meet the requirements for the specified type.

1042.2.10.1 Screen Print, Transparent Overlay and Opaque Black Film.

Delete Sec 1042.2.10.2 and substitute the following: ***10/16***

1042.2.10.2 Direct Applied Characters. The letters, numerals, symbols, borders and other features of the sign message shall be cut from the color and type of sheeting shown on the plans, and applied to the sign field in accordance with the sheeting manufacturer's recommendations.

SECTION 1048 – PAVEMENT MARKING MATERIAL

Delete Sec 1048.50.2 and substitute the following: ***10/16***

1048.50.2 Type 1 Temporary Raised Pavement Markers. Markers shall consist of an L-shaped or T-shaped flexible polymer body with a minimum of 6.0 square inches of ASTM Type V reflective sheeting on both faces of the vertical section. The marker base shall have affixed a pressure-sensitive adhesive, protected by a release paper, for application to the pavement surface. A protective sleeve that prevents contamination of the reflective sheeting during pavement surface treatment operations shall be affixed to each marker in a minimum of two locations. The protective sleeve shall be easily removable after the surface treatment operation is complete.