

# Job Order Contracting - SEP-14 - Final Report

## **History**

Starting in 2010, the Missouri Department of Transportation (MoDOT) has utilized an innovative contracting mechanism called Job Order Contracting (JOC) for use on preventative maintenance type projects, including asphalt and concrete pavement repair, guardrail and guard cable repair and bridge maintenance repair. Job Order Contracting is a procurement process that allows MoDOT to award fixed price construction contracts with indefinite delivery and indefinite quantity at individual work locations throughout the project limits.

## **Overview and Scope**

With some minor variations throughout the process, the JOC bid proposals contain a catalog of pre-established fixed unit prices for material, equipment and labor for various items of work to be used for completing each Job Order. The contractor bids adjustment factors for the expected overhead and profit and any additional business and construction related costs for performing the various types of work identified in the contract. There are three different Adjustment Factors: a Normal Work Adjustment Factor, Nighttime Work Adjustment Factor and Weekend Work Adjustment Factor. Adjustment Factors include business and construction related costs as defined below. It is the responsibility of the contractor to verify the fixed unit prices provided in the contract and to modify their bid for the Adjustment Factors accordingly.

Business Costs. Business related costs consist of profit, overhead costs, subcontractor profit and overhead, taxes, finance costs, and other costs including but not limited to;

- (a) insurance, bonds and indemnification
- (b) project meetings, training, management and supervision
- (c) project office staff and equipment
- (d) employee or subcontractor wage rates that exceed prevailing wages
- (e) fringe benefits, payroll taxes, worker's compensation, insurance costs and any other payment mandated by law in connection with labor that exceeds the labor rate allowances.
- (f) business risks such as the risk of low than expected volumes of work, smaller than anticipated Job Orders, poor subcontractor performance, and inflation or material cost fluctuations.

Construction Costs. Construction related costs include but are not limited to;

- (a) personnel safety equipment
- (b) security requirements

- (c) excess material waste
- (d) daily and final clean-up
- (e) costs resulting from inadequate supply of materials, fuel, electricity, or skilled labor
- (f) costs resulting from productivity loss
- (g) working in extreme and adverse weather conditions
- (h) any other discreet items of work required to complete a particular Job Order.

Job Order Contracts are awarded based on the lowest responsive bidder. The contract provisions typically include a mutual option provision to extend the JOC terms and budget for an additional time period (usually a year). Numerous JOC contracts have been awarded and several JOC contracts were extended to allow for a total two-year contract term. See Attachments for the history of JOC projects since 2010 and example contract language for a Bridge Maintenance JOC contract.

The JOC process was developed in collaboration with Industry. MoDOT held pre-bid meetings throughout the State to educate the contracting community and solicit contractor input on the new process. Overall, there was good contractor attendance and input at the meetings. MoDOT actively solicited input from Industry on establishing the fixed unit price lists for all JOCs. The fixed costs are periodically reviewed and updated to reflect the current market value. In the event the fixed costs change significantly, the Design Division coordinates with Industry to ensure Industry concurs with the revised fixed costs.

In summary:

- JOC contracts are competitively bid. The bid proposal includes the fixed pre-priced activities. The contractor's adjustment factor is applied to all prices in the catalog.
- The cost for each activity is priced by multiplying the fixed price in the bid proposal by the quantity.
- The amount of each Job Order is the sum of the cost the activities multiplied by the contractor's adjustment factor.
- Overall, JOC contracts eliminate the ability for contractors to unbalance the bid.
- JOC contracts provide reasonable value to the tax payers. JOC projects compare favorably and economically to time and material contracts and traditional design contracts.
- JOC contracts provide a timely response to identified preservation and maintenance needs as the time frame for each job order is eliminated and design time truncated.
- JOC contracts can be limited in scope. The scope of work for each JOC can be used to limit the types of asset the contract can be applied to.
- Federal legislation allows all preventative maintenance activities that extend the service life of a highway facility to be eligible for federal-aid funding.

## Evaluation and Measures

The effectiveness of the approach has been established. The JOC contracts allow for expeditious correction of identified emergent needs throughout the categories of work types. This serves to augment MoDOT's Maintenance staff's ability to provide to address issues as they develop, with the appropriate expertise and knowledge to ensure the repairs are made appropriately. This helps that staff focus on additional areas or issues, ultimately improving the condition of the system as a whole.

To aid in implementation, operation and consistency of the JOC program, MoDOT developed guidelines for MoDOT's Engineering Policy Guide at [Engineering Policy Guide Job Order Contracting](#). This serves an important tool for the Districts to use in designing and administering the JOC contracts consistently statewide.

**MoDOT has recognized the following benefits from the JOC program:**

### The contractor's ability to prepare job order proposals in a timely manner

- Contractor's respond to text or phone call requests for job orders and prepare proposals with visual documentation (photos) of needed repairs for confirmation.
- Expeditious response to emerging needs throughout the state on a variety of work types.
- Certain technical repair and construction activities are performed by certified staff, ensuring the correct and appropriate strategies, equipment and materials are used.

### Simplified fixed cost list (construction task catalog) for each type of work

- Regular collaboration with industry partners on improvements to JOC contracts reduces contractor risk and increases competition while ensuring scope of work is being completed.
- Open and upfront competition for developing emergency work, allowing for the longest potential advertising and bidding timelines and greatest contractor flexibility.

### Reduced staffing requirements for oversight and administration

- Allows for planning and obligation of STIP funds for this routine and upcoming work that cannot be traditionally geospatially located within our highway system in advance of the work.
- Allows contract advertisement, bid and award, without specific knowledge of the exact location or extent of the work, drastically improving the ability to react to emerging needs for these work types.
- Renewals reduce overall staff effort, yet provide for coverage of the associated work at an acceptable contract cost.

## Challenges

- The on-call and un-guaranteed nature of the work can result in higher than average costs associated with the work.
- Bidder interest in some JOC work fluctuates, especially in certain regions of the state. Timing and contractor capacity/current workload impact bidder interest, sometimes resulting in only single or no bidders.
- The volatile nature of some commodity type pricing can place certain work types at risk of speculative bidding.
- JOC administration can require processes outside of the traditional contract administration currently used by the DOT.
- Some contractors have expressed concerns about bonding capacity used by these contracts when they are not used. MoDOT is looking into modifying the bonding requirements to alleviate this issue.

## Lessons Learned:

- DOT definitions of the expected response times must be consistent and clearly communicated.
- Having a single year contracts with the ability to mutually extend one additional year, allows flexibility in handling the work from a programming and contract administration perspective.
- Periodic reviews of the contract provisions and unit costs provided in the JSP's should be performed to ensure that the costs are representative.
- Substantially skewed unit costs in the JSP's for non-primary work items can cause bidder exposure which can translate into factors being bid accordingly.
- Some work types do not lend themselves to JOC on call approach.
- Some work types lend themselves to having a mix of pre-identified locations and on-call work, allowing the contractor to commit time and resources to the identified locations and providing the capacity to address emergent need locations as they are identified.
- Regional interest to JOC work varies across the state and can be challenging for certain work types in the more rural locations.
- Flexibility in the approach to work types and work locations included in the JOC must be evaluated on an on-going basis to ensure appropriate changes in direction are made as the market and contractor interest changes.

MoDOT continues to evaluate the effectiveness of the JOC concept for each work type to meet the associated preservation needs.

## Federal Fiscal Year 2019

Federal Fiscal Year 2019 the program amounts for JOC projects range from \$100,000 to \$3.5 million. Locations are identified based on the history of repair and preventative maintenance needs for various routes. JOC projects are programmed in MoDOT's Five-year Statewide Transportation Improvement Program (STIP). For the Federal Fiscal Year 2019, MoDOT has utilized this innovative contracting strategy thirty-two times with fifty-three bidders which is 1.7 bids per call. MoDOT received no bids on three projects and rejected three projects out of the thirty-two projects.

Minor revisions to the Job Special Provisions (JPSs) were made for Federal Fiscal Year 2019. These included updated references to the 2019 standard plans, simplifying the utilities criteria, some reorganizing of the fix unit costs tables to better clarification.

Federal Fiscal Year	Program Amount Range		Number of JOC Projects	Number of Bidders	Bidders per Call	Number of JOC Projects that Received No Bids	Number of JOC Projects Rejected
2018	\$28,000.00	\$3,380,000.00	43	77	1.8	0	1
2017	\$125,000.00	\$2,000,000.00	32	57	1.8	4	2
2016	\$40,000.00	\$2,217,000.00	35	63	1.8	2	0
2015	\$100,000.00	\$1,820,000.00	29	53	1.8	2	0
2014	\$100,000.00	\$2,000,000.00	30	60	2.0	0	0
2013	\$100,000.00	\$809,000.00	25	70	2.8	0	0
2012	\$50,000.00	\$1,961,000.00	39	107	2.7	1	3
2011	\$25,000.00	\$2,000,000.00	47	112	2.4	0	2

# Attachment A: Job Order Contracting Summary

## 2010 Job Order Contracting Summary

Job No.	Route	Contractor	Contract Type	STIP Budget
J4P2273	Major Rtes.	Chester Bross Const. Co.	Asphalt Repair	\$500,000
J2I2162F	Interstate	Chester Bross Const. Co.	Asphalt Repair	\$1,000,000
J2I2162G	Interstate	Freeman Concrete Const. LLC	Concrete Repair	\$1,000,000
J4P2300	Various	Comanche Construction, Inc.	Bridge Repair	\$500,000
J6I2171	Various	R.V. Wagner Inc.	Bridge Repair	\$1,000,000
J2I2162K	Interstate	Concrete Strategies LLC	Concrete Repair	\$500,000
J2I2162L	Interstate	N.B. West Contracting Co.	Asphalt Repair	\$1,000,000
J2I2162M	Interstate	N.B. West Contracting Co.	Asphalt Repair	\$1,000,000

## 2011 Job Order Contracting Summary

Job No.	Route	Contractor	Contract Type	STIP Budget
J2I2163B	I-29	Herzog Contracting Corp.	Asphalt Repair	\$250,000
J2I2163C	I-29 & I-229 I-35	Herzog Contracting Corp.	Asphalt Repair	\$250,000
J2I2163D	I-35	Herzog Contracting Corp.	Asphalt Repair	\$250,000
J2I2163E	I-35	N.B. West Contracting Co.	Asphalt Repair	\$250,000
J2I2163F	Interstate	Chester Bross Const. Co.	Asphalt Repair	\$1,000,000
J2I2163G	Interstate	Freeman Concrete Const.	Concrete Repair	\$1,000,000
J2I2163H	I-70	Chester Bross Const. Co.	Asphalt Repair	\$250,000
J2I2163I	I-70	Chester Bross Const. Co.	Asphalt Repair	\$250,000
J2I2163J	I-70	Chester Bross Const. Co.	Asphalt Repair	\$500,000
J6P2356	Non-Interstate	Pace Construction Co.	Asphalt Repair	\$500,000
J6P2356B	Non-Interstate	Lamke Trenching & Exc.	Concrete Repair	\$500,000
J2I2163K	Interstate	J L Brown Contracting Ser.	Concrete Repair	\$500,000
J2I2163L	I-44 & I-55	Pace Construction Co.	Asphalt Repair	\$1,000,000
J2I2163M	Interstate	Pace Construction Co.	Asphalt Repair	\$1,000,000
J2I2163N	I-44	APAC-Missouri, Inc.	Asphalt Repair	\$200,000
J8P2252	Major Rtes.	APAC-Missouri, Inc.	Asphalt Repair	\$100,000
J8P2253	Major Rtes.	APAC-Missouri, Inc.	Asphalt Repair	\$200,000
J2I2163O	I-44	APAC-Missouri, Inc.	Asphalt Repair	\$200,000
J2I2163P	I-44	Willard Asphalt Paving, Inc.	Asphalt Repair	\$200,000
J2I2163Q	I-44	Willard Asphalt Paving, Inc.	Asphalt Repair	\$200,000
J2I2163R	I-44	N.B. West Contracting Co.	Asphalt Repair	\$200,000
J2I2163S	I-55 & I-57	Fronabarger Concreters, Inc.	Concrete Repair	\$125,000
J2I2163T	I-55 & I-57	APEX Paving Co.	Asphalt Repair	\$125,000
J2I2163U	I-55 & I-155	Fronabarger Concreters, Inc.	Concrete Repair	\$125,000
J2I2163V	I-55 & I-155	APEX Paving Co.	Asphalt Repair	\$125,000
J1P2200	Various	Superior Rail System, LLC	GR/GC	\$300,000
J4P1910	Various	Superior Rail System, LLC	GR/GC	\$332,000
J4P1914	Various	Collins & Hermann Inc.	GR/GC	\$1,388,000
J5M0098	Various	Mar-Jim Contracting,	GR	\$200,000
J6M0173	Various	LLC Collins & Hermann Inc.	GR	\$702,000
J6M0174	Various	D & S Fencing Company	GR	\$225,000
J6M0175	Various	D & S Fencing Company	GR	\$350,000
Various	Various	D & S Fencing Company	GC	\$175,000

## 2012 Job Order Contracting Summary

Job No.	Route	Contractor	Contract Type	STIP Budget
J2I2164B	I-29	Herzog Contracting Corp.	Asphalt Repair	\$250,000
J2I2164C	I-29 & I-229	Herzog Contracting Corp.	Asphalt Repair	\$250,000
J2I2164D	I-35	Herzog Contracting Corp.	Asphalt Repair	\$250,000
J2I2164E	I-35	Chester Bross Const. Co.	Asphalt Repair	\$250,000
J2I2164G	Interstate	Realm Construction, Inc.	Concrete Repair	\$1,000,000
J4P2332	Non-Interstate	Realm Construction, Inc.	Concrete Repair	\$980,000
J2I2164F	I-70	Superior Bowen Asphalt Co.	Asphalt Repair	\$1,000,000
J4I1854	Non-Interstate	Superior Bowen Asphalt Co.	Asphalt Repair	\$490,000
J2I2164Q	I-44	Willard Asphalt Paving, Inc.	Asphalt Repair	\$200,000
J2I2164P	I-44	Willard Asphalt Paving, Inc.	Asphalt Repair	\$200,000
J2I2164N	I-44	APAC-Missouri, Inc.	Asphalt Repair	\$200,000
J2I2164O	I-44	APAC-Missouri, Inc.	Asphalt Repair	\$200,000
J3P2223	Various	Collins & Hermann Inc.	GR	\$135,000
J3P2224	I-70	Collins & Hermann Inc.	GC	\$250,000
J6I3006	Various	Collins & Hermann Inc.	GR	\$350,000
J6I3007	Various	Collins & Hermann Inc.	GR	\$225,000
J6I3008	Various	Collins & Hermann Inc.	GR	\$700,000
J6I3009	Various	Collins & Hermann Inc.	GC	\$450,000
J6I3010	Various	Freedom Fence, LLC	Fence	\$325,000
J8P2238	Various	Collins & Hermann Inc.	GR/GC	\$250,000
J8P2241	Various	Collins & Hermann Inc.	GR/GC	\$175,000
J1P2223	Various	Superior Rail System, LLC	GR/GC	\$300,000
J4P1994	Various	Superior Rail System, LLC	GR/GC	\$350,000
J4P1995	Various	Collins & Hermann Inc.	GR/GC	\$1,574,000
J5P3000	Various	Superior Rail System, LLC	GR/GC	\$550,000
J9P2236	Various	Collins & Hermann Inc.	GR/GC	\$500,000
J9P2238	Various	Collins & Hermann Inc	GR/GC	\$450,000

## 2013 Job Order Contracting Summary

Job No.	Route	Contractor	Contract Type	STIP Budget
J2I2163H	I-70	Chester Bross Const. Co.	Asphalt Repair	\$250,000
J2I2163I	I-70	Chester Bross Const. Co.	Asphalt Repair	\$250,000
J2I2163J	I-70	Chester Bross Const. Co.	Asphalt Repair	\$500,000
J6P2356	Non-Interstate	Pace Construction Co.	Asphalt Repair	\$500,000
J6P2356B	Non-Interstate	Lamke Trenching & Exc.	Concrete Repair	\$500,000
J2I2163K	Interstate	J L Brown Contracting Ser.	Concrete Repair	\$500,000
J2I2163L	I-44 & I-55	Pace Construction Co.	Asphalt Repair	\$1,000,000
J2I2163M	Interstate	Pace Construction Co.	Asphalt Repair	\$1,000,000
J8P2252	Major Rtes.	APAC-Missouri, Inc.	Asphalt Repair	\$100,000
J8P2253	Major Rtes.	APAC-Missouri, Inc.	Asphalt Repair	\$200,000
J2I2163R	I-44	N.B. West Contracting Co.	Asphalt Repair	\$200,000
J2I2163S	I-55 & I-57	Fronabarger Concreters, Inc.	Concrete Repair	\$125,000
J2I2163T	I-55 & I-57	APEX Paving Co.	Asphalt Repair	\$125,000
J2I2163U	I-55 & I-155	Fronabarger Concreters, Inc.	Concrete Repair	\$125,000
J2I2163V	I-55 & I-155	APEX Paving Co.	Asphalt Repair	\$125,000

## 2014 Job Order Contracting Summary

Job No.	Route	Contractor	Contract Type	STIP Budget
J2I2166B	29	Herzog Contracting Corp.	Asphalt Repair	\$1,000,000
J2I2166C	29 & 229	Herzog Contracting Corp.	Asphalt Repair	\$1,000,000
J2I2166D	35	Herzog Contracting Corp.	Asphalt Repair	\$1,000,000
J2I2166E	35	Chester Bross Construction Co.	Asphalt Repair	\$1,000,000
J2I2166J	70	Chester Bross Construction Co.	Asphalt Repair	\$1,000,000
J2I2166F	Interstate	Superior Bowen Asphalt Co., LLC	Asphalt Repair	\$1,000,000
J2I2166G	Interstate	R.A. Knapp Construction, Inc.	Concrete Repair	\$1,000,000
J4P2363	Non-Interstate	Superior Bowen Asphalt Co., LLC	Asphalt Repair	\$2,000,000
J4I3017	Various	Comanche Const.	Bridge Repair	\$750,000
J6P2354	Various	Concrete Strategies	Bridge Repair	\$750,000
J2I2166N	44	APAC-Missouri	Asphalt Repair	\$750,000
J2I2166O	44	APAC-Missouri	Asphalt Repair	\$750,000
J2I2166P	44	APAC-Missouri	Asphalt Repair	\$750,000
J2I2166W	49	Chester Bross Const.	Asphalt Repair	\$750,000
J2I2166X	49	APAC-Missouri	Asphalt Repair	\$750,000
J2I2166T	55 & 57	Apex Paving	Asphalt Repair	\$250,000
J2I2166V	55 & 155	Apex Paving	Asphalt Repair	\$250,000

## 2015 Job Order Contracting Summary

Job No.	Route	Contractor	Contract Type	STIP Budget
J0I3001C	Interstate	Herzog Contracting Corp.	Asphalt Repair	\$250,000
J0I3001H	Interstate	N.B. West Contracting Co.	Asphalt Repair	\$500,000
J4P3008	Non-Interstate	Freeman Concrete Construction LLC	Concrete Repair	\$350,000
J0I3001G	Interstate	APAC-Missouri, Inc.	Asphalt Repair	\$250,000
J0I3001Q	Interstate	Fronabarger Concreters, Inc.	Concrete Repair	\$125,000
J0I3001R	Interstate	Chester Bross Construction Company/C.B. Equipment, Inc.	Asphalt Repair	\$125,000
J0I3001S	Interstate	Fronabarger Concreters, Inc.	Concrete Repair	\$125,000
J0I3001T	Interstate	Chester Bross Construction Company/C.B. Equipment Inc	Asphalt Repair	\$125,000
J0I3001I	Interstate	R.V. Wagner, Inc.	Concrete Repair	\$600,000
J03001J	Interstate	Pace Construction	Asphalt Repair	\$600,000
J03001K	Interstate	Pace Construction	Asphalt Repair	\$800,000
J6P3003	Non-Interstate	Pace Construction	Asphalt Repair	\$1,250,000
J6P3003B	Non-Interstate	R.V. Wagner, Inc.	Concrete Repair	\$750,000

## 2016 Job Order Contracting Summary

Job No.	Route	Contractor	Contr. Type	STIP Budget
J0I3002B	Interstate	Herzog Contracting Corp.	Asphalt Repair	\$250,000
J0I3002C	Non-Interstate	Herzog Contracting Corp.	Asphalt Repair	\$250,000
J3I3002D	Interstate	Herzog Contracting Corp.	Asphalt Repair	\$250,000
J0I3002E	Interstate	Herzog Contracting Corp.	Asphalt Repair	\$250,000
J0I3002R	Interstate	N.B. West Contracting Co.	Concrete Repair	\$150,000
J6P2421	Non-Interstate	N.B. West Contracting Co.	Asphalt Repair	\$12,500,000
J0I3002L	Non-Interstate	N.B. West Contracting Co.	Asphalt Repair	\$600,000
J0I3002M	Interstate	N.B. West Contracting Co.	Asphalt Repair	\$800,000
J03I3002N	Interstate	Blevins Asphalt Construction Co.	Asphalt Repair	\$200,000
J0I3002O	Interstate	APAC-Central, Inc.	Asphalt Repair	\$200,000
J0I3002P	Interstate	Willard Asphalt Paving, Inc.	Asphalt Repair	\$100,000
J0I3002W	Interstate	Blevins Asphalt Construction Co.	Asphalt Repair	\$40,000
J0I3002X	Interstate	Blevins Asphalt Construction Co.	Asphalt Repair	\$150,000
J0I3002Y	Interstate	Blevins Asphalt Construction Co.	Asphalt Repair	\$60,000

## 2017 Job Order Contracting Summary

Job No.	Route	Contractor	Contr. Type	STIP Budget
J4P3227	VARIOUS	CHESTER BROSS CONSTRUCTION COMPANY/C.B. EQUIPMENT, INC	Concrete Repair	\$250,000
J0I3003K	VARIOUS	R. V. WAGNER, INC.	Concrete Repair	\$600,000
J6P3117	VARIOUS	COLLINS & HERMANN, INC.	GR	\$463,000
J6P3118	VARIOUS	COLLINS & HERMANN, INC.	GR	\$298,000
J6P3198B	VARIOUS	R. V. WAGNER, INC.	Concrete Repair	\$1,020,000
J1P3022	VARIOUS	SUPERIOR RAIL SYSTEM, LLC	GR/GC	\$350,000
J0I3003J	I-70	N.B. WEST CONTRACTING COMPANY	Asphalt Repair	\$250,000
J0I3003Q	I-44	N.B. WEST CONTRACTING COMPANY	Asphalt Repair	\$525,000
J5P3184	VARIOUS	COLLINS & HERMANN, INC.	GR/GC	\$510,000
J2I3092	VARIOUS	COLLINS & HERMANN, INC.	GC	\$250,000
J2P3093	VARIOUS	COLLINS & HERMANN, INC.	GR	\$135,000
J0I3003H	I-70	IDEKER, INC.	Asphalt Repair	\$250,000
J4M0258	VARIOUS	COLLINS & HERMANN, INC.	GR	\$1,100,000
J5P3183	VARIOUS	SUPERIOR RAIL SYSTEM, LLC	GR/GC	\$510,000
J5M0278	VARIOUS	COLLINS & HERMANN, INC.	GR	\$600,000
J8P2240	VARIOUS	COLLINS & HERMANN, INC.	GR/GC	\$1,700,000
J8P2243	VARIOUS	COLLINS & HERMANN, INC.	GR/GC	\$750,000
J0I3003S	55, 57	FRONABARGER CONCRETTERS, INC.	Concrete Repair	\$125,000
J0I3003U	55, 155	FRONABARGER CONCRETTERS, INC.	Concrete Repair	\$125,000
J9P3072	VARIOUS	COLLINS & HERMANN, INC.	GR/GC	\$250,000
J4P3232	VARIOUS	MAR-JIM CONTRACTING, LLC	GR Grading	\$1,000,000
J0I3004I	I-70	CAPITAL PAVING & CONSTRUCTION, LLC	Asphalt Repair	\$250,000
J0I3004Z	I-70	CAPITAL PAVING & CONSTRUCTION, LLC	Concrete Repair	\$250,000
J7I3290	44	BRANCO ENTERPRISES, INC.	Bridge Repair	\$600,000
J8I3136	VARIOUS	BRANCO ENTERPRISES, INC.	Bridge Repair	\$100,000
J7I3291	I-44	BRANCO ENTERPRISES, INC.	Bridge Repair	\$400,000

## 2018 Job Order Contracting Summary

Job No.	Route	Contractor	Contr. Type	STIP Budget
J4P3244	VARIOUS	VANCE BROTHERS, INC.	MICROSURFACING	\$102,000
J6S3362	FF, NN, B	PACE CONSTRUCTION COMPANY	Asphalt Repair	\$1,200,000
J0I3004N	I-44	BLEVINS ASPHALT CONSTRUCTION COMP	Asphalt Repair	\$200,000
J0I3004O	I-44	BLEVINS ASPHALT CONSTRUCTION COMP	Asphalt Repair	\$200,000
J0I3004P	I-44	APAC-CENTRAL, INC.	Asphalt Repair	\$100,000
J0I3004W	I-49	APAC-CENTRAL, INC.	Asphalt Repair	\$40,000
J0I3004X	I-49	BLEVINS ASPHALT CONSTRUCTION COMP	Asphalt Repair	\$150,000
J0I3004Y	I-49	BLEVINS ASPHALT CONSTRUCTION COMP	Asphalt Repair	\$60,000
J0I3004B	I-29	HERZOG CONTRACTING CORP.	Asphalt Repair	\$250,000
J0I3004C	I-29, I-229	HERZOG CONTRACTING CORP.	Asphalt Repair	\$250,000
J0I3004D	I-35	HERZOG CONTRACTING CORP.	Asphalt Repair	\$250,000
J0I3004E	I-35	HERZOG CONTRACTING CORP.	Asphalt Repair	\$250,000
J0I3004L	VARIOUS	N.B. WEST CONTRACTING COMPANY	Asphalt Repair	\$600,000
J0I3004M	VARIOUS	N.B. WEST CONTRACTING COMPANY	Asphalt Repair	\$800,000
J6P3198	VARIOUS	N.B. WEST CONTRACTING COMPANY	Asphalt Repair	\$1,250,000
J4I3173	VARIOUS	CAPITAL ELECTRIC LINE BUILDERS, INC.	Lighting Repair	\$612,000
J0I3004R	I-44	N.B. WEST CONTRACTING COMPANY	Concrete Repair	\$150,000
J7M0262	VARIOUS	EWING SIGNAL CONSTRUCTION, LLC	Signal/Lighting	\$28,000
J7M0263	VARIOUS	EWING SIGNAL CONSTRUCTION, LLC	Signal/Lighting	\$65,000
J8M0259	VARIOUS	EWING SIGNAL CONSTRUCTION, LLC	Signal/Lighting	\$93,000
J0I3004S	I-55, I-57	FRONABARGER CONCRETTERS, INC.	Concrete Repair	\$125,000
J0I3004T	I-55, I-57	APEX PAVING CO.	Asphalt Repair	\$125,000
J0I3004U	I-55	FRONABARGER CONCRETTERS, INC.	Concrete Repair	\$125,000
J0I3004V	I-55	APEX PAVING CO.	Asphalt Repair	\$125,000
J2I3227	I-70	CONCRETE STRATEGIES, LLC	Bridge Deck Repair	\$150,000
J0I3004F	VARIOUS	IDEKER, INC.	Asphalt Repair	\$1,000,000
J0I3004G	VARIOUS	REALM CONSTRUCTION, INC.	Concrete Repair	\$1,000,000
J0I3004H	VARIOUS	IDEKER, INC.	Asphalt Repair	\$250,000
J3I3004	VARIOUS	SUPERIOR RAIL SYSTEM, LLC	GR/GC	\$598,000
J4I3042	VARIOUS	MAR-JIM CONTRACTING, LLC	GR/GC	\$3,380,000
J4P3063	VARIOUS	IDEKER, INC.	Asphalt Repair	\$500,000
J4P3064	VARIOUS	REALM CONSTRUCTION, INC.	Concrete Repair	\$500,000
J4P3065	VARIOUS	COMANCHE CONSTRUCTION, INC.	Bridge Repair	\$1,471,000
J6P3175	VARIOUS	FREEDOM FENCE, LLC	Fence Repair	\$404,000
J6P3176	VARIOUS	FREEDOM FENCE, LLC	GC Repair	\$558,000
J6P3177	VARIOUS	COLLINS & HERMANN, INC.	GR Repair	\$1,482,000
J7P3008	VARIOUS	MAR-JIM CONTRACTING, LLC	GR/GC	\$2,036,000
J8P3009	VARIOUS	MAR-JIM CONTRACTING, LLC	GR/GC	\$625,000
J9P3074	VARIOUS	J M SCHEIDLE, LLC	GR/GC	\$750,000
J4P3118	VARIOUS	TNR CONSTRUCTION, LLC	Fence Repair	\$200,000
J4P3245	VARIOUS	VANCE BROTHERS, INC.	MICROSURFACING	\$102,000
J6P3310	VARIOUS	CONCRETE STRATEGIES, LLC	Bridge Repair	\$2,000,000
J6P3371	61	ABOVE AND BELOW CONTRACTING, LLC	Concrete Repair	\$1,471,000
J7P3355	249	LEAVENWORTH EXCAVATING & EQUIPME	Slide Repair	\$575,000

## 2019 Job Order Contracting Summary

Job No.	Route	Contractor	Contr. Type	STIP Budget
J9P3577	VARIOUS	STF, LLC DBA TRAFFIC CONTROL COMPANY	Pavement Markings	\$1,112,000
J0I3005K	VARIOUS	R. V. WAGNER, INC.	Concrete Repair	\$600,000
J6P3335	VARIOUS	R. V. WAGNER, INC.	Concrete Repair	\$1,020,000
J1P3198	VARIOUS	SUPERIOR RAIL SYSTEM, LLC	GR/GC	\$350,000
J0I3005Q	I-44	N.B. WEST CONTRACTING COMPANY	Asphalt Repair	\$350,000
J0I3005R	I-44	N.B. WEST CONTRACTING COMPANY	Asphalt Repair	\$150,000
J2I3179	VARIOUS	COLLINS & HERMANN, INC.	GC	\$250,000
J2I3180	VARIOUS	COLLINS & HERMANN, INC.	GR	\$400,000
J3I3065	VARIOUS	SUPERIOR RAIL SYSTEM, LLC	GR/GC	\$368,000
J4I3154	VARIOUS	MAR-JIM CONTRACTING, LLC	GR/GC	\$3,518,000
J4P3183	VARIOUS	SUPERIOR RAIL SYSTEM, LLC	Asphalt Repair	\$510,000
J5P3223	VARIOUS	COLLINS & HERMANN, INC.	GR/GC	\$750,000
J5P3274	VARIOUS	COLLINS & HERMANN, INC.	GR/GC	\$600,000
J6P3309	VARIOUS	COLLINS & HERMANN, INC.	GR/GC	\$315,000
J6P3336	VARIOUS	COLLINS & HERMANN, INC.	GR	\$490,000
J7I3392	44	BRANCO ENTERPRISES, INC.	Bridge Repair	\$400,000
J8I3163	VARIOUS	BRANCO ENTERPRISES, INC.	Bridge Repair	\$190,000
J9P3289	VARIOUS	J M SCHEIDLE, LLC	GR/GC	\$650,000
J9P3289B	VARIOUS	J M SCHEIDLE, LLC	GR/GC	\$100,000
J0I3005J	I-70	Pace Construction Company	Asphalt Repair	\$250,000

## 2020 Job Order Contracting Summary

Job No.	Route	Contractor	Contr. Type	STIP Budget
J7I3405	VARIOUS	BRANCO ENTERPRISES, INC.	Bridge Repair	\$600,000
J8I3178	VARIOUS	BRANCO ENTERPRISES, INC.	Bridge Repair	\$100,000
J7I3406	VARIOUS	BRANCO ENTERPRISES, INC.	Bridge Repair	\$1,300,000
J9P3627	VARIOUS	PUTZ CONSTRUCTION, LLC	Erosion Control	\$500,000
J0I3006N	I-44	HUTCHENS CONSTRUCTION COMPANY, LLC	Asphalt Repair	\$200,000
J0I3006O	I-44	BLEVINS ASPHALT CONSTRUCTION COMPANY, INC.	Asphalt Repair	\$200,000
J0I3006P	I-44	WILLARD ASPHALT PAVING, INC.	Asphalt Repair	\$100,000
J0I3006W	I-49	BLEVINS ASPHALT CONSTRUCTION COMPANY, INC.	Asphalt Repair	\$40,000
J0I3006X	I-49	HUTCHENS CONSTRUCTION COMPANY, LLC	Asphalt Repair	\$150,000
J0I3006Y	I-49	BLEVINS ASPHALT CONSTRUCTION COMPANY, INC.	Asphalt Repair	\$60,000
J0I3006M	VARIOUS	N.B. WEST CONTRACTING COMPANY	Asphalt Repair	\$1,400,000
J6P3333	VARIOUS	N.B. WEST CONTRACTING COMPANY	Asphalt Repair	\$1,250,000
J9S3634	VARIOUS	PUTZ CONSTRUCTION, LLC	Concrete Repair	\$250,000
J0I3006B	I-29, I-229	HERZOG CONTRACTING CORP.	Asphalt Repair	\$500,000
J0I3006D	I-35	HERZOG CONTRACTING CORP.	Asphalt Repair	\$500,000
J1P3298	36	HERZOG CONTRACTING CORP.	Asphalt Repair	\$500,000
J0I3006T	VARIOUS	EMERY SAPP & SONS, INC.	Asphalt Repair	\$500,000
J0I3006U	VARIOUS	FRONABARGER CONCRETTERS, INC.	Concrete Repair	\$250,000
J9P3578	VARIOUS	COLLINS & HERMANN, INC.	GR/GC	\$1,100,000
J9P3578B	VARIOUS	COLLINS & HERMANN, INC.	GR/GC	\$150,000
J0I3006F	VARIOUS	Ideker, Inc.	Asphalt Repair	\$1,000,000
J4I3175	VARIOUS	COMANCHE CONSTRUCTION, INC.	Bridge Repair	\$1,500,000
J4I3239	VARIOUS	CUSTOM LIGHTING SERVICES, LLC DBA BLACK & MCDONALD	Lighting Repair	\$1,200,000
J4I3269	VARIOUS	COLLINS & HERMANN, INC.	Fence Repair	\$100,000
J4P3187	VARIOUS	REALM CONSTRUCTION, INC.	Concrete Repair	\$510,000
J6P3380	VARIOUS	J M SCHEIDLE, LLC	GR Repair	\$1,500,000
J6P3381	VARIOUS	FREEDOM FENCE, LLC	GC Repair	\$558,000
J6P3382	VARIOUS	FREEDOM FENCE, LLC	Fence Repair	\$404,000
J7P3416	VARIOUS	COLLINS & HERMANN, INC.	GR/GC	\$2,200,000
J8P3183	VARIOUS	COLLINS & HERMANN, INC.	GR/GC	\$800,000
J9S3637	VARIOUS	PUTZ CONSTRUCTION, LLC	ADA Transition Plan	\$100,000

## Attachment B: Example Bridge Job Order Contract

### **STATE OF MISSOURI HIGHWAYS and TRANSPORTATION COMMISSION**

JEFFERSON CITY, MISSOURI

**CONSTRUCTING OR IMPROVING**  
**Contract I.D. 190517-G10**

THIS JOB SHALL BE CONSTRUCTED UNDER  
FEDERAL PROJECT NUMBER(S): FAS-S602(089)

Job J8I3163 Route Various CHRISTIAN, GREENE County.

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Liquidated Damages.....	item (4)
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Trainees. ....	item (6)
DBE Certification*.....	item (7)
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Acceptance of Provision for Asphalt Cement Price Index.....	item (8b)
Max. Monetary Value of Awards Accepted this Bid Opening...	item (9)
Combination Bids.....	item (10)
Certification for Federal Jobs.....	item (11a)
Certification for State Jobs.....	item (11b)
Antidiscrimination. ....	item (12)
Preference to Missouri Firms in Awarding of Contracts.....	item (13)
Subcontractor Disclosure Form*.....	item (14)
Signature and Identity of Bidder.....	item (15)
Bid Guaranty*.....	item (16)

\*These forms are also available on MoDOT's Website, [www.modot.org](http://www.modot.org) under Information on the Bid Opening Info page of the Contractor Resources site.

**NOTICE TO CONTRACTORS**

Electronic bids submitted through the Bid Express website for the proposed work will be received by the Missouri Highways and Transportation Commission until 11:00 o'clock a.m. (prevailing local time) on 05/17/2019.

Bid bonds will be received at the office of the Secretary to the Commission in the Missouri Department of Transportation Central Office Building, 105 West Capitol Avenue, Jefferson City, Missouri; delivered by US Mail should be mailed to: Missouri Highways and Transportation Commission, Attention: State Design Engineer/Bid Bond, P.O. Box 270, Jefferson City, MO 65102 or delivered by parcel delivery services, (such as UPS, Fed Ex, DHL, etc.) should be shipped to Missouri Highways and Transportation Commission, Attention: State Design Engineer/Bid Bond, 105 West Capitol Avenue, Jefferson City, MO 65102.

(1) PROPOSED WORK: The proposed work, hereinafter called the work, includes:

\*\*\*\*(1): Job J8I3163 Route Various CHRISTIAN, GREENE County. Job Order Contracting for bridge repair at various locations in the urban Southwest District, the total length of improvement being 0 miles.

If more than one Job Number is listed for this call, then combination bids will be required on the Jobs listed above.

(2) COMPLIANCE WITH CONTRACT PROVISIONS: The bidder, having examined and being familiar with the local conditions affecting the work, and with the contract, contract documents, including the Missouri Highways and Transportation Commission's "Missouri Standard Specifications for Highway Construction, 2018," and "Missouri Standard Plans for Highway Construction, 2018", their revisions, and the request for bid, including appendices, the special provisions and plans, hereby proposes to furnish all labor, materials, equipment, services, etc., required for the performance and completion of the work. All references are to the Missouri Standard Specifications for Highway Construction, as revised, unless otherwise noted. All questions concerning the bid document preparation shall be directed to the Central Office - Design Division at (573) 751-2876.

(3) PERIOD OF PERFORMANCE: If the bid is accepted, the bidder shall continuously and diligently prosecute the work in such order and manner as will ensure the completion of the work within the time specified in the Job Special Provisions in accordance with Sec 108.

(4) LIQUIDATED DAMAGES: The bidder agrees that, should the bidder fail to complete the work in the time specified or such additional time as may be allowed by the engineer under the contract, the amount of liquidated damages as specified in the Job Special Provisions to be recovered in accordance with Sec 108.

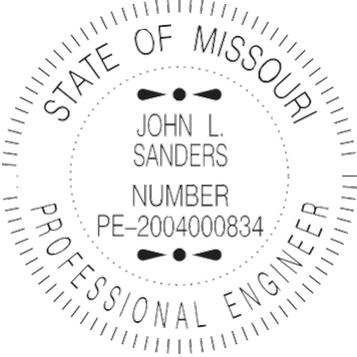
(5) ITEMIZED BID: The bidder should complete the following section in accordance with Sec 102.7. The bidder proposes to furnish all labor, materials, equipment, services, etc. required for the performance and completion of the work, as follows:

Line Number	Item Number	Quantity	Unit	Unit Price	Extension Price
Section 0001					
Roadway Items - J8I3163					
0010	6189916	9500.000	DLR		
	MISC. Emergency Work - Daytime Hours				
0020	6189916	19000.000	DLR		
	MISC. Emergency Work - Nighttime Hours				
0030	6189916	57000.000	DLR		
	MISC. Emergency Work - Weekend/Holiday Hours				
0040	6189916	38000.000	DLR		
	MISC. Planned Work - Daytime Hours				
0050	6189916	66500.000	DLR		
	MISC. Planned Work - Nighttime Hours				
Section 0001 Total					
Item Total					\$0.00

## **JOB SPECIAL PROVISIONS TABLE OF CONTENTS (ROADWAY)**

(Job Special Provisions shall prevail over General Special Provisions whenever in conflict therewith.)

- A. General
- B. Project Contact for Contractor/Bidder Questions
- C. Scope of Work
- D. Job Order Contract
- E. Procedures for Developing a Job Order
- F. Term of Contract
- G. Fixed Unit Price List
- H. Adjustment Factors
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- Z. Emergency Provisions and Incident Management
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- BB. Previous Job Order Information
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- DD. Construction Requirements
- EE. Concrete Masonry Repair
- FF. Rapid Set Concrete Patching Material – Horizontal Repairs
- GG. Dense Concrete Overlay Repair
- HH. Asphalt Wearing Surface Repair
- II. Epoxy Polymer Concrete Resurfacing Over and Near Streams and Wetlands
- JJ. Removal of Bridge Debris
- KK. Epoxy Polymer Concrete Overlay Repair
- LL. Stormwater Compliance Requirements
- MM. Restrictions for Migratory Birds
- NN. Work in the Floodplain
- OO. Airport Requirements
- PP. Bats On Bridges
- QQ. Protection Measures for Ozark Cavefish Recharge Areas
- RR. Protection Measures for Streams
- SS. Slurry And Residue Produced During Surface Treatment of PCCP And Bridge Decks

 <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<p><b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b> 105 W. CAPITOL AVE. JEFFERSON CITY, MO 65102 Phone (888) 275-6636</p>
	<p>If a seal is present on this sheet, JSP's has been electronically sealed and dated.</p>
	<p>JOB NO. J8I3136 GREENE COUNTY, MO Date Prepared: 11/8/2017</p>
	<p>Only the following items of the Job Special Provisions are authenticated by this seal: ALL</p>

## **JOB SPECIAL PROVISIONS**

### **A. GENERAL - FEDERAL JSP-09-02B**

**1.0 Description.** The Federal Government is participating in the cost of construction of this project. All applicable Federal laws, and the regulations made pursuant to such laws, shall be observed by the contractor, and the work will be subject to the inspection of the appropriate Federal Agency in the same manner as provided in Sec 105.10 of the Missouri Standard Specifications for Highway Construction with all revisions applicable to this bid and contract.

**1.1** This contract requires payment of the prevailing hourly rate of wages for each craft or type of work required to execute the contract as determined by the Missouri Department of Labor and Industrial Relations, and requires adherence to a schedule of minimum wages as determined by the United States Department of Labor. For work performed anywhere on this project, the contractor and the contractor's subcontractors shall pay the higher of these two applicable wage rates. State Wage Rates, Information on the Required Federal Aid Provisions, and the current Federal Wage Rates are available on the Missouri Department of Transportation web page at [www.modot.org](http://www.modot.org) under "Bidding". Effective Wage Rates will be posted 10 days prior to the applicable bid opening. These supplemental bidding documents have important legal consequences. It shall be conclusively presumed that they are in the bidder's possession, and they have been reviewed and used by the bidder in the preparation of any bid submitted on this project.

**1.2** The following documents are available on the Missouri Department of Transportation web page at [www.modot.org](http://www.modot.org) under "Business"; "Standards and Specifications". The effective version shall be determined by the letting date of the project.

General Provisions & Supplemental Specifications

July 2017 Missouri Standard Plans For Highway Construction

These supplemental bidding documents contain all current revisions to the published versions and have important legal consequences. It shall be conclusively presumed that they are in the bidder's possession, and they have been reviewed and used by the bidder in the preparation of any bid submitted on this project.

### **B. PROJECT CONTACT FOR CONTRACTOR/BIDDER QUESTIONS**

**1.0** All questions concerning this project during the bidding process shall be forwarded to the project contact listed below.

John Sanders, Project Contact  
MoDOT – Southwest District  
3025 E. Kearney St  
Springfield, MO 65803

Telephone Number (417) 829-8039  
E-Mail [John.Sanders@modot.mo.gov](mailto:John.Sanders@modot.mo.gov)

Fax Number (417) 895-3209

**2.0** Upon award and execution of the contract, the successful bidder/contractor shall forward all questions and coordinate the work with the contract administrator. The contract will be administered and inspected by the engineer/contract administrator listed below:

Brad Gripka, Resident Engineer  
MoDOT – Southwest District  
549 N. Mayfair Ave  
Springfield, MO 65803

Telephone Number: (417) 895-6720

E-Mail: [Gregory.Chapman@modot.mo.gov](mailto:Gregory.Chapman@modot.mo.gov)

### **C. SCOPE OF WORK**

**1.0** The scope of work for this project includes various types of maintenance and repair to select bridges, as determined by the engineer. The work will be prescribed through individual Job Orders negotiated between the contractor and the Commission on an as needed basis at each work location. A work location shall be limited to a specific bridge, twin structures, or a series of bridges within a common complex of structures. The engineer reserves the right to have others (including Commission forces) perform some or all of the work at individual locations based on the needs of the Commission.

**2.0** The work boundaries for the terms of the contract include all Commission owned bridge structures in Greene County within the limits of the MPO and the limits of Commission right-of-way.

**2.1** Planned Work and estimated quantities are anticipated, but not limited to, the following locations:

### **I-44 Bridge JOC Planned Work for Greene County URBAN AREA**

Estimated repair quantities for Spring 2018

County	Bridge #	Route	Feature	Repair Type	Repair Amount	Repair Type	Repair Amount
Greene	A3057	On Rt. D	Over		(sf)		(sf)
			James River	Half Sole	150		

**3.0** Job Orders for Asphaltic Concrete Overlay Repair will only be issued for work to be performed from April 1 to November 30, unless otherwise mutually agreed upon between the contractor and the engineer.

**4.0** The Commission is not bound to issue a minimum or maximum number of Job Orders during the contract term. It is the intent, however, to meet the anticipated budget, as noted elsewhere within this proposal. Award of contract does not guarantee any Job Orders during the duration of the contract.

## **D. JOB ORDER CONTRACT**

**1.0** A Job Order Contract is an indefinite quantity contract pursuant to which the contractor shall perform the work itemized in a Job Order at individual work locations throughout the project limits. The contractor shall perform all tasks itemized in the Job Order.

**2.0** The engineer will identify the required work at an individual work location in collaboration with the contractor at a Joint Scope Meeting. The engineer will provide the contractor with a draft Detailed Scope of Work which the contractor shall review. Once the detailed Scope of Work is agreed upon, the engineer will issue a Job Order to the contractor. The contractor will not be required to work more than one planned location at a time. However, an emergency repair may necessitate multiple job orders issues at the same time. If an emergency repair job order is issued while work is taking place on a planned repair job order, the contractor will have the option to suspend work on the planned repair job order to pursue work on the emergency repair job order. Should the contractor suspend work on a planned repair job order, no additional compensation for remobilizing and completing work for a planned job order will be provided.

**3.0** The contract includes a list of fixed cost pay items with fixed unit prices. Payment for the work will be determined by multiplying the fixed unit prices by an applicable Adjustment Factor. The contractor shall bid five separate Adjustment Factors to be applied to the fixed unit prices as applicable for planned work performed during normal working hours, planned work performed during nighttime hours, emergency work performed during normal working hours, emergency work performed during nighttime hours, and emergency work performed during weekend/holiday hours as defined elsewhere in this contract. The total cost of an individual Job Order will be determined by multiplying the fixed unit prices of each fixed cost pay item by the appropriate quantity and then multiplying the total cost of all pay items by the appropriate Adjustment Factor.

### **4.0 Definitions.**

**4.1. Detailed Scope of Work.** A written document that sets forth the work the contractor is obligated to perform in connection with a particular Job Order.

**4.2 Joint Scoping Process.** Field meeting between the engineer and the contractor to review site conditions and determine job tasks to be performed within the scope of an agreed to Job Order.

**4.3 Job Order Proposal.** A draft document that gives an itemized listing of the job tasks to be performed by the contractor, estimated quantities, fixed cost pay items and any non-fixed cost pay items and costs that have been determined. The Job Order must also include a proposed project schedule; a list of proposed subcontractors indicating D/M/WBE status; and any sketches, drawings, or layouts; amendments to the safety plan and an erosion and sedimentation control plan; or technical data or information on proposed materials or equipment.

**4.4 Job Order.** A written order from the engineer to the contractor directing the work required at an individual work location in accordance with the Detailed Scope of Work within the Job Order Completion Time.

**4.5 Job Order Completion Time.** The time within which the contractor must complete the Detailed Scope of Work for a particular Job Order. Time to complete the work will be assigned for emergency work only.

**4.6 Fixed Cost Pay Item.** Work for which a description and fixed cost is set forth in the fixed cost pay item list.

**4.7 Non-Fixed Cost Pay Item.** Work for which a description and fixed cost is not set forth in the pay item list. Payment for non-fixed cost pay items will be determined in accordance with Sec 109.4.2, 109.4.3, or 109.4.4. Non-fixed cost pay items will be paid using an Adjustment Factor of 1.000.

**4.8 Planned Work.** All work that is not defined as emergency work.

**4.9 Emergency Work.** Work that is given a Notice To Proceed less than 14 days after the initial notification of a joint scoping meeting

## **E. PROCEDURES FOR DEVELOPING A JOB ORDER**

**1.0 Initiation of a Job Order.** The engineer will notify the contractor of a potential Job Order by issuing a Notice of Joint Scope Meeting. The notification will be issued by electronic mailing or facsimile machine at the discretion of the engineer to the contractor, unless the engineer approves other arrangements. The contractor shall confirm receipt of all job orders by the same means as issued. Notification for emergency repair work can be initiated by telephone.

**1.1** The contractor shall attend the Joint Scope Meeting and be prepared to discuss, at a minimum:

- a. The general scope of the work;
- b. Existing conditions, presence of waterways, wetlands, or other natural resources,
- c. Presence of hazardous materials
- d. Methods and alternative for accomplishing the work;
- e. Access to the site;
- f. Staging area availability/location;
- g. Requirements for catalog cuts, technical data, samples and shop drawings;
- h. Requirements for professional services, including sketches, drawings, and specifications;
- i. Hours of operation;
- j. Construction duration;
- k. Liquidated damages;
- l. Specific quality requirements for equipment and material;
- m. Date on which Job Order Proposal is due.

**1.2** Upon completion of the joint scoping process, the engineer will prepare a draft detailed Scope of Work referencing any sketches, drawings, photographs, and specifications required to document accurately the work to be accomplished. The contractor shall review the detailed Scope of Work and request any desired changes or modifications thereto. When an acceptable detailed Scope of Work has been completed, the engineer will issue a Draft Job Order.

**1.3** The contractor does not have the right to refuse to perform any Job Order or any work identified in a Job Order. If the contractor refuses to perform any Job Order or any work identified in a Job Order, the contractor may be considered to be in default in accordance with Sec 108.

**2.0 Preparation Of The Job Order.** The engineer will prepare a Draft Job Order and submit the order to the contractor for final review. The contractor and the engineer will jointly review

the Draft Job Order and finalize the order. Establishment of pricing for any non-fixed cost pay items shall be in accordance with Sec 109.4.2 or 109.4.3. If no agreement to pricing can be made then the work will proceed with payment for non-fixed cost items under Sec 109.4.4.

**3.0 Job Order Proposal.** The engineer's Job Order Proposal shall include, at a minimum:

- a. Job Order Price Proposal;
- b. Required architectural or engineering drawings or sketches;
- c. Catalog cuts, technical data or samples;
- d. List of anticipated Subcontractors and Material Suppliers indicating DBE status and anticipated price;
- e. Construction schedule;
- f. Sample warranties or guarantees for materials, equipment or systems proposed;

**3.1** The engineer's Job Order Proposal shall be submitted by the date as agreed to by the contractor and the engineer at the Joint Scoping Meeting. It will be the contractor's responsibility to furnish any documentation or information as requested by the engineer in order to process the Job Order Proposal. The time allowed for preparation of the Job Order Proposal will depend on the complexity and urgency of the Job Order, but should typically be less than 7 days. On complex Job Orders allowance will be made to provide adequate time for preparation and submittal of the necessary documents.

**3.2 Job Order Issuance.** When the engineer and contractor have agreed to the scope of work and fixed price and non-fixed price tasks to be performed, the engineer will finalize the official Job Order and submit a signed Job Order for the contractor to review and sign. The affixed signatures by the engineer and the contractor shall bind the Job Order. The Job Order will reference the Detailed Scope of Work and set forth the amount to be paid and the time to complete the work.

**3.2.1** If the contractor is not clear or in disagreement with the terms of the Job Order he shall NOT sign the Job Order, but shall work with the engineer to clear up any discrepancies in the work to be done. If the contractor fails to execute the Job Order, the contractor may be considered to be in default in accordance with Sec 108.

**4.0** The Commission reserves the right to reject a Job Order Proposal or cancel a proposed work task for any reason. The Commission also reserves the right not to issue a Job Order if it is determined to be in the best interests of the Commission. The contractor shall not recover costs arising out of or related to the development of the Job Order including but not limited to the costs to attend the Joint Scope Meeting, review the Detailed Scope of Work, prepare a Proposal, subcontractor costs, and the cost to review the Job Order Proposal with the Commission.

**5.0 Notice to Proceed.** Each Job Order will include a notice to proceed, which will stipulate the date the contractor is expected to begin work. The notice to proceed date will normally be 14 calendar days after the job order is issued. Job orders that require an emergency response will normally have a notice to proceed of 48 hours from the time telephone contact is made with the contractor, identifying the Detailed Scope of Work to be performed. The executed Job Order shall be in place prior to work beginning on an Emergency Bridge Repair.

**5.1** The contractor shall provide 48-hour notification prior to start of repair work for emergency work Job Orders and 5-days notification for all other Job Orders.

**F. TERM OF CONTRACT**

**1.0** The term of this contract shall be for the period commencing **February 1, 2018** and shall end **January 31, 2019**.

**1.1** Any work already ordered or in progress when the contract term ends shall be completed in accordance with the provisions, price proposals and timelines established in the issued Job Order(s), or liquidated damages will be assessed against the contractor in accordance with the provisions of this contract.

**2.0** The contract may be extended under the original terms and contract prices for the period commencing **February 1, 2019** and shall end **January 31, 2020** for a maximum contract term of two (2) years. If, in the sole discretion of the Commission, the Commission desires to extend the contract, the contractor will be given written notification of the extension no later than December 1 of the current contract year. The contractor shall provide written notification of acceptance or rejection of the extension of this contract no later than January 1 of the current contract year. If the option for extending the contract is exercised by MoDOT, a time adjustment change order will be issued by the Commission to extend the contract to the new term limits. The contractor shall increase the performance contract bond to an amount equal to the original contract amount plus the extended contract amount (i.e., double the original bond amount).

**G. FIXED UNIT PRICE LIST**

**1.0 Description.** A fixed unit price list containing unit prices associated with bridge deck repair and traffic control is listed below. Fixed unit prices are for complete and in-place construction and include all labor, equipment and material required to complete the construction task. All labor, material, equipment and work required by a specification shall be considered part of the fixed unit price, unless otherwise stated elsewhere in this contract. Pay limits will be defined in the approved Job Order.

**2.0 Fixed Unit Price List for Bridge Deck Repair and Traffic Control.**

<b>Item Number</b>	<b>Description</b>	<b>Unit</b>	<b>Fixed Unit Price</b>
4019904	Asphaltic Concrete Overlay Repair	SF	\$12.00
6123000A	Truck Or Trailer Mounted Attenuator (TMA)	Each	\$250.00
6161005	Construction Signs	SF	\$1.00
6161008	Advanced Warning Rail System	Each	\$15.00
6161009	Flag Assembly	Each	\$2.00
6161025	Channelizer (Trim Line)	Each	\$3.00
6161030	Type III Moveable Barricade	Each	\$25.00
6161033	Directional Indicator Barricade	Each	\$6.25
6161040	Flashing Arrow Panel	Each	\$130.00
6161055	Sequential Flashing Warning Light	Each	\$50.00
6161098	CMS, contractor Furnished/Retained	Each	\$400.00
6169902	Single Lane Closure	Each	\$1,000.00
6169902	Double Lane Closure	Each	\$1,300.00
6169902	Interior Lane Closure	Each	\$1,300.00
6169902	Ramp Closure	Each	\$900.00

Item Number	Description	Unit	Fixed Unit Price
6169902	One-Lane Two-Way Operation with Flagger	Each	\$1,000.00
6234000	Polymer Concrete	CF	\$300.00
7049904	Bridge Deck Approach Slab Repair (Partial Depth) (Over 200 SF)	SF	\$40.00
7049904	Bridge Deck Approach Slab Repair (Partial Depth) (0-200 SF)	SF	\$80.00
7049904	Bridge Deck Approach Slab Repair (Full Depth)	SF	\$90.00
7049904	Repairing Concrete Deck (Half-Soling) (Over 600 SF)	SF	\$35.00
7049904	Repairing Concrete Deck (Half-Soling) (200-600 SF)	SF	\$50.00
7049904	Repairing Concrete Deck (Half-Soling) (Under 200 SF)	SF	\$60.00
7049904	Deck Repair with Void Tube Replacement (Over 80 SF)	SF	\$90.00
7049904	Deck Repair with Void Tube Replacement (0-80 SF)	SF	\$130.00
7049904	Full Depth Repair (Over 600 SF)	SF	\$60.00
7049904	Full Depth Repair (200-600 SF)	SF	\$80.00
7049904	Full Depth Repair (Under 200 SF)	SF	\$100.00
7049904	Dense Concrete Overlay Repair (Over 600 SF)	SF	\$20.00
7049904	Dense Concrete Overlay Repair (200-600 SF)	SF	\$30.00
7049904	Dense Concrete Overlay Repair (Under 200 SF)	SF	\$40.00
7049904	Epoxy Polymer Overlay Repair, Concrete Deck (Over 600 SF)	SF	\$8.00
7049904	Epoxy Polymer Overlay Repair, Concrete Deck (200-600 SF)	SF	\$12.00
7049904	Epoxy Polymer Overlay Repair, Concrete Deck (Under 200 SF)	SF	\$14.00

## H. ADJUSTMENT FACTORS

**1.0 Description.** Adjustment Factors include business and construction related costs as defined in this specification. It is the responsibility of the contractor to verify the unit prices provided in this contract and to modify their Adjustment Factors accordingly.

**1.1 Business Costs.** Business related costs consist of profit, overhead costs, subcontractor profit and overhead, taxes, finance costs, and other costs including but not limited to;

- (a) insurance, bonds and indemnification
- (b) project meetings, training, management and supervision
- (c) project office staff and equipment
- (d) employee or subcontractor wage rates that exceed prevailing wages
- (e) fringe benefits, payroll taxes, worker's compensation, insurance costs and any other payment mandated by law in connection with labor that exceeds the labor rate allowances
- (f) Business risks such as the risk of low than expected volumes of work, smaller than anticipated Job Orders, poor subcontractor performance, and inflation or material cost fluctuations

**1.2 Construction Costs.** Construction related costs include but are not limited to;

- (a) personnel safety equipment
- (b) security requirements
- (c) excess material waste
- (d) daily and final clean-up
- (e) costs resulting from inadequate supply of materials, fuel, electricity, or skilled labor
- (f) costs resulting from productivity loss
- (g) working in extreme and adverse weather conditions
- (h) any other discreet items of work required to complete a particular Job Order

**1.3 Mobilization Costs.** All costs in accordance with Sec 618 shall be included in the contractor's Adjustment Factors as defined in the contract except as otherwise noted in this contract.

**1.4 General Costs.** The above lists are not exhaustive and are intended to provide general examples of cost items to be included in the contractor's Adjustment Factors as defined in the contract.

**2.0 Planned Work-Daytime Hours Adjustment Factor.** The Adjustment Factor for *Planned Work-Daytime Hours* includes planned work conducted from 6:00 a.m. to 7:30 p.m. Monday through Friday.

**2.1** In addition to the time period specified in 2.0, work performed during *Daytime Hours* must also be done during daylight hours, unless the contractor provides the necessary lighting equipment. Daylight hours are defined as ½ hour after sunrise to ½ hour before sunset. If the contractor chooses to work during the hours specified in 2.0, but outside of the defined daylight hours, the contractor shall provide lighting equipment at no additional cost to the Commission.

**3.0 Planned Work- Nighttime Hours Adjustment Factor.** If the engineer determines traffic volumes are such that work cannot be performed during the daytime, Monday through Friday, without significant traffic impacts, the Job Order will specify nighttime repair operations. The Adjustment Factor for Planned Work-Nighttime Hours includes any planned work conducted from 7:30 p.m. to 6:00 a.m. Monday through Thursday.

**3.1** Any costs for additional lighting equipment necessary to perform nighttime repair operations is considered included in the Planned Work- Nighttime Hours Adjustment Factor.

**4.0 Emergency Work- Daytime Hours Adjustment Factor.** The Adjustment Factor for *Emergency Work-Daytime Hours* includes emergency work conducted from 6:00 a.m. to 7:30 p.m. Monday through Friday.

**4.1** In addition to the time period specified in 4.0, work performed during *Daytime Hours* must also be done during daylight hours, unless the contractor provides the necessary lighting equipment. Daylight hours are defined as ½ hour after sunrise to ½ hour before sunset. If the contractor chooses to work during the hours specified in 4.0, but outside of the defined daylight hours, the contractor shall provide lighting equipment at no additional cost to the Commission.

**5.0 Emergency Work- Nighttime Hours Adjustment Factor.** If the engineer determines traffic volumes are such that work cannot be performed during the daytime, Monday through Friday, without significant traffic impacts, the Job Order will specify nighttime repair operations. The Adjustment Factor for Emergency Work-Nighttime Hours includes any emergency work conducted from 7:30 p.m. to 6:00 a.m. Monday through Thursday.

**5.1** Any costs for additional lighting equipment necessary to perform nighttime repair operations is considered included in the Emergency Work- Nighttime Hours Adjustment Factor.

**6.0 Emergency Work- Weekend/Holiday Hours Adjustment Factor.** If the engineer determines that emergency work is necessary, and that pursuing such work will require work to be performed during Saturday, Sunday, or on a Holiday, the Job Order will specify Emergency Work- Weekend/Holiday Hours. The Adjustment Factor for Emergency Work- Weekend/Holiday

Hours includes any work conducted from 7:30 p.m. on Friday through 6:00 a.m. on Monday, night or day, or a Holiday.

**7.0** All work shall be scheduled to avoid major holidays. During the term of this contract there are six major holiday periods: Memorial Day, Independence Day, Labor Day, Thanksgiving, Christmas, and New Year's Day. All lanes shall be scheduled to be open to traffic during these holiday periods, from 12:00 noon on the last working day preceding the holiday until 9:00 a.m. on the first working day subsequent to the holiday, unless designated as Emergency Work-Weekend/Holiday Hours by the engineer.

**8.0** The work hours and corresponding Adjustment Factor will be specified on each Job Order. If the contractor chooses to work different, but acceptable, hours other than what is specified in the Job Order, a different adjustment factor will not be applied to the work order. If the Job Order does not otherwise restrict nighttime or weekend hours, the contractor may, with the approval of the engineer, perform some or all of the repair operations during nighttime or weekend hours but will be paid the Adjustment Factor specified in the Job Order (i.e. the contractor may be allowed to complete nighttime work on the weekend but will be paid the Nighttime Adjustment Factor).

**9.0** The Notice to Proceed and corresponding Adjustment Factor (Planned Work vs Emergency Work) will be included with every Job Order. Should the contractor choose to start repair work before the Notice to Proceed of a Planned Adjustment Factor work order, this will not constitute the application of the Emergency Work Adjustment Factors for said Job Order. If the Job Order does not otherwise restrict a quicker start than what is specified in the Job Order, the contractor may, after providing the require notice and with the approval of the engineer, immediately perform some or all of the repair operations but will be paid the Adjustment Factor specified in the Job Order (i.e. the contractor may be allowed to complete Job Order work immediately but will be paid the Planned Work Adjustment Factor included in the Job Order).

## **I. BIDDING THE ADJUSTMENT FACTORS**

**1.0** The bidder shall complete the bid form by writing in five Adjustment Factors, one for Planned Work- Daytime Hours, Planned Work- Nighttime Hours, Emergency Work- Daytime Hours, Emergency Work- Nighttime Hours, Emergency Work-Weekend/Holiday Hours. The Adjustment Factors shall be specified to three decimal places. Note that these are contract pay items for contractor payment, not work items.

**EXAMPLE:** The Adjustment Factors shall be entered as the following example illustrates.

1 . 1 9 8

OR

0 . 9 8 7

**J. CONTRACT AWARD**

**1.0** The Commission will evaluate the bids with the intent of awarding the contract to the lowest responsible bidder. The anticipated budget for this project is \$100,000.

**2.0** The lowest bid will be determined by multiplying each individual Adjustment Factor by the anticipated budget for each individual adjustment factor. For purposes of determining award of this contract, the estimated percentage of work performed during Planned Work- Daytime Hours is 10%, the estimated percentage of Planned Work- Nighttime Hours is 25%, the estimated percentage of Emergency Work- Daytime Hours is 5%, Emergency Work- Nighttime Hours is 50%, and the estimated percentage of Emergency Work- Weekend/Holiday Hours is 10%. The extended amount for each item will then be totaled, and the total sum will be used for bid comparison purposes. The initial contract value will be equal to the total sum. The dollar quantities provided in the bid form are anticipated budgets and are not intended to represent the actual value of work that will be assigned.

**EXAMPLE:** The initial contract value is determined by entering the Adjustment Factors as the following example illustrates:

Item Description	Approximate Quantity	Unit	Unit Price	Bid Amount
			Dollar  Cts	Dollar  Cts
6189916 Planned Work- Daytime Hours Factor	10,000	DLR	<b>0.950</b>	9,500.00
6189916 Planned Work- Nighttime Hours Factor	25,000	DLR	<b>1.005</b>	25,125.00
6189916 Emergency Work- Daytime Hours	5,000	DLR	<b>1.000</b>	5,000.00
6189916 Emergency Work -Nighttime Hours Factor	50,000	DLR	<b>1.005</b>	50,250.00
6189916 Emergency Work- Weekend/Holiday Hours	10,000	DLR	<b>1.05</b>	10,500.00
Bid Total				100,375.00

**K. BONDS**

**1.0** The amount of the Bid Bond shall be 5% of the anticipated budget for this project.

**2.0** The amount of the Performance Bond shall be 100% of the anticipated budget for this project.

**L. EMERGENCY BRIDGE REPAIR**

**1.0** If a significant failure (partial or full depth) suddenly develops in a bridge deck, expansion device or other structural member, and the engineer determines the safety of the public is unduly compromised by the damage, the work will be designated as an emergency repair. Commission forces or others may initially respond to the location and temporarily cover the deteriorated area with steel plates or perform other such work as necessary to reduce the immediate danger to the public as required to safely accommodate traffic.

**2.0** The contractor will be notified by telephone of the location of the emergency repair and extent of work needed. Written confirmation of the required work will be provided by fax, e-mail or personal delivery immediately after notification. The contractor shall provide a means for the engineer to contact the contractor 24 hours a day for emergencies. The Job Order will be negotiated, issued by the Commission and executed by the contractor within 24 hours of notification to the contractor. It is estimated that emergency bridge repairs could account for 25% of the work on this project. There is no guarantee that any emergency bridge repair will be needed during the term of the contract. There is no maximum number of call outs to perform emergency bridge repair within this contract.

**3.0** The contractor shall respond to the work location and begin the emergency repair work within 24 hours of execution of the Job Order. After beginning the emergency repair work, the contractor shall continuously and diligently pursue the work according to the mutually agreed upon schedule in the Job Order until all of the repairs described in the Job Order are complete, unless otherwise approved by the engineer. After completing the repair, the contractor shall remove and transport the steel plates to the Missouri Department of Transportation's Bridge Maintenance Facility located at 2455 N Mayfair Ave., Springfield, MO 65803.

**4.0** The appropriate Adjustment Factor for emergency work will be applied to the job order.

## **M. NOTICE TO PROCEED**

**Delete Sec 108.2 and substitute the following:**

**108.2 Notice to Proceed.** For each Job Order, the engineer will include a notice to proceed, which will stipulate the date the contractor is expected to begin work. The notice to proceed date will normally be 14 calendar days after the job order is issued.

**108.2.1** The Notice to Proceed for Job Orders that require emergency work shall be in accordance with Job Special Provision Emergency Bridge Repair.

## **N. COMPLETING THE WORK**

**1.0** The contractor shall perform any task in the fixed unit price list for the fixed unit price multiplied by the quantity, multiplied by the appropriate Adjustment Factor for tasks performed during Planned Work- Daytime Hours, Planned Work- Nighttime Hours, or for task performed during Emergency Work- Daytime Hours, Emergency Work-Nighttime Hours, Emergency Work-Weekend/Holiday Hours. The contractor shall perform the Detailed Scope of Work for the Job Order Price as calculated in accordance with the procedure for developing Job Orders set forth herein.

**2.0** When installed quantities differ from the estimated quantities in the issued Job Order, the as built quantities in the final Job Order will address the quantity variation(s) for final payment. When quantities are not specified in the Detailed Scope of Work, the Job Order Price will be deemed to be lump sum for such work.

**3.0** The contractor shall employ and supply a sufficient force of workers, materials and equipment and shall progress the work with such diligence so as to ensure completion of the Detailed Scope of Work within the Job Order completion Time or within such extended time for completion as may be granted by the engineer.

**4.0** In order to assist in reviewing the Job Order Price Proposal, the contractor shall as part of the Job Order Proposal prepare and submit to the engineer for approval, a progress schedule showing the order in which the contractor proposes to carry on the work, the date of which it will start the major items of work (including but not limited to excavation, drainage, paving, structures, mobilization, soil erosion and sediment control, etc.) and the critical features (including procurement of materials, plant and equipment) and the contemplated dates for completing the same.

**O. FINAL INSPECTION AND ACCEPTANCE OF THE WORK**

**Delete Secs 105.10.7 through 105.10.7.2 and substitute the following:**

**105.10.7 Final Inspection.** Upon completion of the required work for each Job Order, the contractor shall notify the engineer by phone, facsimile, or electronic mailing, and the engineer will perform an inspection. If the engineer determines all work required by the contract has been satisfactorily completed, the engineer will make the acceptance for maintenance and notify the contractor in writing of the date of acceptance for maintenance.

**105.10.7.1** Work determined to be unsatisfactory by the engineer and not accepted shall be corrected to acceptable standards at the contractor's sole cost. All items that are unsatisfactory shall be corrected within the specified working days for each emergency repair job order. If needed for correction of unsatisfactory work, the contractor will be given an extension of contract time in an amount equal to the number of working days remaining in the job order at the time the engineer was notified for inspection. No contract time extension will be made for notification made prior to completion of the work. Any time extension given will be considered a noncompensable delay. Upon completion of the corrections, the contractor shall notify the engineer for a reinspection.

**105.10.7.2** Following a Job Order final inspection, the contractor, subcontractors, and suppliers are relieved of any new or additional liability to third parties for personal injury, death, or property damages which may be alleged to result from the performance of the work required by that job order, unless additional work on the right of way is required by the engineer.

**105.10.7.3** Nothing in this section shall be deemed to excuse the contractor of liability or responsibility for any personal injury, death, or property damages which may arise from acts or the failure to act prior to the final inspection of the work required by the Job Order.

**P. UTILITIES JSP-93-26F**

**1.0** For informational purposes only, the following is a list of names, addresses, and telephone numbers of the known utility companies in the area of the construction work for this improvement:

<u>Utility Name</u>	<u>Known Required Adjustment</u>
LightCore a CenturyLink Company Mr. Bobby Kennedy 110 E. Hadley Republic, MO 65738 Phone: 417-860-4526 Email: <a href="mailto:bobby.kennedy@centurylink.com">bobby.kennedy@centurylink.com</a>	None (see 2.0 below)

**1.1** The existence and approximate location of utility facilities known to exist, as shown on the plans, are based upon the best information available to the Commission at this time. This information is provided by the Commission "as-is" and the Commission expressly disclaims any representation or warranty as to the completeness, accuracy, or suitability of the information for any use. Reliance upon this information is done at the risk and peril of the user, and the Commission shall not be liable for any damages that may arise from any error in the information. It is, therefore, the responsibility of the contractor to verify the above listing information indicating existence, location and status of any facility. Such verification includes direct contact with the listed utilities.

**2.0** Lightcore has critical infrastructure consisting of a fiber optic cable running parallel inside the I-44 right of way. The cable is not anticipated to be in conflict with any of the possible bridge repairs. Prior to performing any necessary excavation operations on this contract, the contractor shall call MO One Call and have Lightcore's facilities located.

**Q. LIQUIDATED DAMAGES SPECIFIED FOR FAILURE OR DELAY IN BEGINNING WORK AND/OR COMPLETING WORK ON TIME-EMERGENCY WORK ADJUSTMENT FACTOR JOB ORDERS ONLY**

**1.0 Description.** On a Job Order with an Emergency Work Adjustment Factor applied, if the contractor, or in case of default, the surety fails to begin the work within the required 24 hours of execution of the Job Order contract, the Commission, the traveling public, and state and local police and governmental authorities will be damaged in various ways, including but not limited to, increased construction administration cost, potential liability, traffic and traffic flow regulation cost, traffic congestion and motorist delay, with its resulting cost to the traveling public. These damages are not reasonably capable of being computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of **\$500.00 per hour** for each full hour that the emergency bridge repair work is not started within the required time period.

**2.0** The contractor will be charged with liquidated damages specified in the amount of **\$500.00 per hour** for each full hour that the emergency repair work is not completed beyond the mutually agreed upon schedule established in the Job Order, in excess of the limitation as specified elsewhere in this special provision. It shall be the responsibility of the engineer to determine the quantity of excess time.

**3.0** The said liquidated damages specified for emergency repair response will be assessed in addition to any other applicable liquidated damages specified elsewhere in the contract documents.

**R. LIQUIDATED DAMAGES SPECIFIED FOR NIGHTTIME LANE CLOSURES**

**1.0 Description.** The contractor shall be required to have all lanes open to unrestricted traffic and free of any equipment by the time specified in Job Order for each closure location. Should the contractor fail to have the roadway completely open, and free of any equipment by the time specified in Job Order, the Commission, the traveling public, state and local police and governmental authorities will be damaged in various ways, including but not limited to potential liability, traffic and traffic flow regulation cost, traffic congestion and motorist delay, with its resulting cost to the traveling public. These damages are not reasonably capable of being computed or quantified. Therefore, the contractor will be charged with liquidated damages

specified in the amount of **\$1,000 per 15 minutes** for each 15-minute increment that the roadway is not open and free of any equipment, in excess of the limitation as specified elsewhere in the special provision. It will be the responsibility of the engineer to determine the quantity of excess closure time.

**1.1** The said liquidated damages specified will be assessed in addition to any other liquidated damages charged under the Missouri Standard Specifications for Highway Construction, as indicated elsewhere in this contract.

**1.2** This deduction will continue until such time as the necessary work is completed and traffic is restored.

**2.0** A contingency plan mutually agreed upon by the contractor and the engineer shall be established at the joint meeting and documented in each Job Order in the event of a delay of the scheduled traffic opening time due to weather or other unforeseen circumstances.

## **S. LIQUIDATED DAMAGES FOR WINTER MONTHS JSP-04-17**

**1.0 Description.** Revise Sec 108.8.1.3 (a) and (b) and substitute the following for the project:

- (a) Liquidated damages will be assessed from December 15 to March 15
- (b) Liquidated damages will be assessed for Saturdays, Sundays and Holidays.

## **T. CONTRACT PAYMENTS**

**1.0** The engineer will make semi-monthly payment estimates in writing for the Job Orders completed and final inspected during the semi-monthly interval and the value thereof at the price established in the Job Order, including any necessary adjustments. The semi-monthly estimates will include deductions from the contractor's invoice for any liquidated damages applicable to any of the Job Orders.

## **U. WORK ZONE TRAFFIC MANAGEMENT PLAN**

**1.0 Description.** The contractor may be responsible for the work zone traffic management as mutually agreed upon by the contractor and engineer for each individual Job Order. Work zone traffic management shall be in accordance with applicable portions of Division 100 and Division 600 of the Standard Specifications, and specifically as follows.

### **2.0 Work Zone Scheduling.**

**2.1** For work at Planned locations, the contractor shall notify the engineer at least 48 hours prior to performing any work, and at least two (2) weeks before imposing any overdimension, overweight restrictions. The notification shall include all information needed to identify traffic impacts such as work location, anticipated work hours, traffic control plan type, required lane or shoulder closures, anticipated duration of the work, etc. The contractor shall designate a contact person who is available for the duration of the work to resolve any traffic impact issues resulting from the contractor's operations. The engineer will make appropriate notification to the public, MoDOT customer service, and MoDOT work crews of the contractor's operations. The contractor shall notify the engineer as soon as practical any postponement due to weather, material, or other circumstances and shall notify the engineer when the work has been rescheduled.

**2.2** In order to ensure minimal traffic interference, the contractor shall schedule lane closures for the absolute minimum amount of time required to complete the work. Lanes shall not be closed until material is available for continuous construction and the contractor is prepared to diligently pursue the work until the closed lane is reopened to traffic.

**2.3** Traffic shall be maintained through the work zone using the existing pavement. Provisions shall be made to allow the movement of emergency vehicles through the limits of construction at all times. During non-working hours the contractor shall have all lanes of traffic open for all routes, ramps, and side roads. All channelizers and other traffic control devices shall be removed from the roadway during non-working hours unless otherwise approved by the engineer.

**2.4** The contractor shall be responsible for maintaining the existing traffic flow through the job site during construction. If disruption of the traffic flow occurs and traffic is backed up in queues of 15 minute delays or longer, then the contractor shall review the construction operations which contributed directly to disruption of the traffic flow and make adjustments to the operations to prevent queues from occurring again.

**2.5** No direct payment will be made to the contractor to recover the cost of the communication equipment, labor, materials or time required to fulfill the above provisions.

### **3.0 Work Hour Restrictions.**

**3.1** During non-working hours the contractor shall have all lanes of traffic open for all routes, ramps, and side roads. Working hours for weekends and holidays shall be determined by the engineer.

**3.2** Due to the wide variance in traffic volumes throughout the contract area, it is not possible to give specific work hours for the term of the contract. Each Job Order will specify work hours or work hour restrictions based on the repair location, this may include peak hour restrictions. The following table provides general guidance as to the most restrictive schedule for when work on or adjacent to the roadway may be allowed.

<u>Traffic Control Plan Type</u>	<u>Work Hours (Monday thru Friday)</u>
Daytime Single Lane Closure	9:00 a.m. to 3:00 p.m.
Nlghtime Single Lane Closure	7:30 p.m. to 5:00 a.m.
Double Lane Closure	9:30 p.m. to 5:00 a.m.
Interior Lane Closure	9:30 p.m. to 5:00 a.m.
Ramp Closure	Hours and days as approved by the engineer
One Lane Two Way Operation with Flagger	Hours and days as approved by the engineer

Specific work hours for an individual work location shall be according to the mutually agreed upon schedule in the Job Order. All work shall be scheduled to avoid major sporting events, conventions, concerts, etc.

**4.0 Weekend Bridge Work.** Some bridges will need full weekend lane closures. The contractor is required to give at least two weeks notice prior to any weekend lane closures.

**5.0 Ramp Closure.** Ramp closures shall be minimized and shall be approved by the engineer a

minimum of five days prior to the closure. Only one ramp closure will be permitted in a particular interchange or complex at one time. Work on acceleration / deceleration lanes will not require ramp closure unless approved by the engineer. Detour traffic handling details will be as specified by the engineer. Major ramp closures may require detour signing with other ramp closures only requiring use of changeable message signs (CMS) for detours. If the engineer determines detour signing is required, all necessary detour trailblazing placards will be furnished, installed, and covered by others. The contractor shall furnish all CMS required by the engineer. The contractor shall be responsible for uncovering and covering the trailblazing placards as work progresses.

**6.0 Changeable Message Signs.** The contractor shall provide changeable message signs notifying motorists of future traffic disruption and possible traffic slow down one week before traffic is shifted to a detour. The changeable message sign installation shall be placed at a location as approved or directed by the engineer.

**7.0 Basis of Payment.** All items necessary to complete the traffic control will be paid for at the fixed unit price multiplied by the appropriate Adjustment Factor, as mutually agreed upon in the Job Order.

## V. TRAFFIC CONTROL PLAN TYPES

**1.0 Description.** The following traffic control plan types shall be used for the work. The contract provides an estimated number of traffic control items required for single lane closures, double lane closures, triple-lane closures, and ramp closures. The engineer may determine that the contractor shall perform work on more than one bridge within a lane closure when the bridges are within close proximity to each other.

### 2.0 Plan Types.

**2.1 Single Lane Closure.** A single lane closure shall be performed by furnishing, installing, and removing the following set of traffic control devices.

2 each	Bridge Work Ahead
2 each	Speed Limit 60 MPH
2 each	Work Zone (Plaque)
2 each	Right (Left) Lane Closed Ahead
1 each	Right (Left) Lane Closed
1 each	Merge Left (Right)
2 each	Speed Limit 70 (Normal Speed)
8 each	Advanced Warning Rail System
2 each	Flag Assembly
14 each	Directional Indicator Barricade
30 each	Channelizer (Trim Line)
1 each	Flashing Arrow Panel
1 each	Truck Mounted Attenuator (Includes Arrow Panel)
1 each	Changeable Message Sign (Contractor Furnished / Retained)

**2.2 Double Lane Closure.** The contractor shall obtain approval from the engineer prior to any double lane closure. A double lane closure shall be performed by furnishing, installing, and removing the following set of traffic control devices.

2 each	Bridge Work Ahead
4 each	Speed Limit 60 MPH
6 each	Work Zone (Plaque)
2 each	Right (Left) Lane Closed Ahead
2 each	Right (Left) Two Lanes Closed Ahead
4 each	Right (Left) Lane Closed
2 each	Speed Limit 70 (Normal Speed)
2 each	Merge Left (Right)
8 each	Advanced Warning Rail System
2 each	Flag Assembly
28 each	Directional Indicator Barricade
100 each	Channelizer (Trim Line)
2 each	Flashing Arrow Panel
1 each	Truck Mounted Attenuator (Includes Arrow Panel)
1 each	Changeable Message Sign (Contractor Furnished / Retained)

**2.3 Interior Lane Closure.** The contractor shall obtain approval from the engineer prior to any interior lane closure. An interior lane closure shall be performed by furnishing, installing, and removing the following set of traffic control devices.

2 each	Bridge Work Ahead
2 each	Speed Limit 60 MPH
2 each	Work Zone (Plaque)
2 each	Left (Right) Lane Closed Ahead
6 each	Left (Right) Lane Closed
2 each	Speed Limit 70 (Normal Speed)
2 each	Reverse Curve (Left and Right)
9 each	Advanced Warning Rail System
2 each	Flag Assembly
14 each	Directional Indicator Barricade
100 each	Channelizer (Trim Line)
2 each	Flashing Arrow Panel
1 each	Truck Mounted Attenuator (Includes Arrow Panel)
1 each	Changeable Message Sign (Contractor Furnished / Retained)

**2.5 Ramp Closure.** The contractor shall obtain approval from the engineer a minimum of five days prior to any ramp closure. A ramp closure shall be performed by furnishing, installing, and removing the following set of traffic control devices. Uncovering and covering any detour trailblazing placards furnished and installed by others is included in the work.

3 each	Bridge Work Ahead
4 each	Road Closed
2 each	Advanced Warning Rail System
2 each	Flag Assembly
40 each	Channelizer (Trim Line)
1 each	Truck Mounted Attenuator (Includes Arrow Panel)
2 each	Changeable Message Sign (Contractor Furnished / Retained)
6 each	Type III Movable Barricade

**2.6 One-Lane Two-Way Operation with Flaggers.** A minimum of two flaggers will be required to direct traffic. Additional flaggers may be required when working at intersecting streets or ramps as directed by the engineer. No direct payment will be made for flaggers. "One-Lane Two-Way Operation with Flaggers", shall include furnishing, installing, and removing the following set of traffic control devices as shown on the plans:

2 each	Road Work Ahead
2 each	One Lane Road Ahead
2 each	Flagger (Symbol)

**3.0 Additional Traffic Control Devices.** The engineer may determine that signs, channelizers, and Type III Movable Barricades in addition to those devices shown in the plans are necessary to safely accommodate traffic. These additional devices may be needed for merging ramp traffic, detours, multiple bridges, or other special cases to supplement the specified lane closure devices. The contract provides a fixed cost for any additional traffic control items.

**4.0 Flaggers.** Flaggers may be required when working at intersecting streets or ramps as directed by the engineer. No direct payment will be made for flaggers.

**5.0 Method of Measurement and Basis of Payment.**

**5.1** Measurement of lane closures will be made per each set-up made within the term of the Job Order. A set-up is defined as each installation and removal of traffic control devices at a specific work site. If a set-up is switched to a different lane (i.e., from a left lane closure to a right lane closure), the contractor will be paid per each set-up. If the duration of a lane closure exceeds one week, the contractor will be paid an additional fixed unit cost for the Changeable Message Sign (Contractor Furnished/Retained) and the Flashing Arrow Panel (One Truck Mount for TMA) per week. If the engineer determines that a lane closure is needed both on the bridge and under the bridge to accommodate the work, each lane closure type will be paid for at the work site per the fixed unit price established for each type lane closure. Payment will not be made for any lane closure that does not result in productive deck repair work as determined by the engineer. Additional lane closures may be installed by the contractor at his expense. The accepted quantity of each lane closure will be paid for at the fixed unit price for:

Item 616-99.02	Single Lane Closure	Each
Item 616-99.02	Double Lane Closure	Each
Item 616-99.02	Interior Lane Closure	Each
Item 616-99.02	Ramp Closure	Each
Item 616-99.02	One-Lane Two-Way Operation with Flaggers	Each

multiplied by the appropriate Adjustment Factor, as mutually agreed upon in the Job Order.

**5.2** Measurement of additional traffic control devices will be made per each set-up made within the term of the Job Order. Measurement of sequential flashing lights will be paid per each light provided and paid only one (1) time per job order, regardless of the length of time it takes to complete the job order. Payment for the devices shall include furnishing, installing, and removing the additional devices at a specific work site. No payment will be made for additional devices used by the contractor without prior approval of the engineer. The accepted quantity of additional traffic control devices will be paid for in accordance with the fixed unit price list, multiplied by the appropriate Adjustment Factor, as mutually agreed upon in the Job Order.

**W. DELAY PROVISIONS**

**1.0** If the contractor is delayed in the commencement, prosecution or completion of the work by any act of the Commission, or by any cause beyond the contractor's control, then the contractor will be entitled to an extension of time. If the contractor is delayed or prevented from working on a particular date as a result of a delay, error or omission of the Commission, and the contractor incurs unavoidable labor costs as a direct result thereof because the contractor did not have enough time to cancel or divert its labor force, then the contractor will be reimbursed for such costs. For each worker so paid, the contractor will be reimbursed the amount paid the worker. Also, the contractor will be reimbursed for construction tasks required as a direct result of such delay, error or omission, such as closing off areas of work. No other costs shall be paid as a result of a delay or late cancellation.

**1.1** If the contractor fails to provide 48-hour notification prior to start of emergency work or 5-days notification for all other Job Orders this provision will not apply.

**X. ELIMINATED MATERIALS**

**1.0** Materials required by the Detailed Scope of Work and not incorporated into the work due to changes caused by field conditions or revisions to the design by the Commission after the material was ordered or purchased will be reimbursed at the material portion of the Pre-priced Task, or if there is no Pre-priced Task, then its material cost minus salvage value, or the material cost plus delivery costs.

**Y. SAMPLE JOB ORDERS**

**1.0 Description.** The following are example Job Orders intended to be illustrations that may be used as a guide for formulating the bid of the Adjustment Factor. For each example Job Order, the appropriate items that would be used and the quantities are computed based upon the sample work that would be completed in the Job Order. The contractor shall be reminded these are Job Order samples and the quantity totals in actual Job Orders, if issued, may be more or less than that depicted below or be totally different from the samples illustrated.

**1.1 Job Order Sample 1:** Bridge deck repair for Bridge No. A0978 on Interstate or Major Route requiring planned work- Nighttime Hours work.

Item Description	Fixed Unit Price	Quantity	Price
Repairing Concrete Deck (Half-Soling) (Under 200 SF)	\$56.00	150 SF	\$8,400.00
Full Depth Repair (Under 200 SF)	\$80.00	50 SF	\$4,000.00
Dense Concrete Overlay Repair (Under 200 SF)	\$25.60	180 SF	\$4,608.00
Double Lane Closure	\$1,300.00	1 Each	\$1,300.00
		<b>Subtotal:</b>	<b>\$18,308.00</b>
Planned Work- Nighttime Hours Factor	1.200		

Item Description	Fixed Unit Price	Quantity	Price
		<b>Subtotal:</b>	<b>\$21,969.60</b>
		<b>TOTAL:</b>	<b>\$21,969.60</b>

**1.2 Job Order Sample 2:** Emergency Work-Weekend/Holiday Hours for bridge deck repair in center lane westbound on James River Freeway No. A7538.

Item Description	Fixed Unit Price	Quantity	Price
Single Lane Closure	\$1,000.00	6 Each	\$6,000.00
Double Lane Closure	\$1,300.00	8 Each	\$10,400.00
Repairing Concrete Deck (Half-soling) (Over 600 SF)	\$30.00	2500 SF	\$75,000.00
Full Depth Repair (Under 200 SF)	\$80.00	100 SF	\$8,000.00
		<b>Subtotal:</b>	<b>\$99,400.00</b>
Emergency Work- Weekend/Holiday Hours Factor	1.218		
		<b>TOTAL:</b>	<b>\$121,069.20</b>

**Z EMERGENCY PROVISIONS AND INCIDENT MANAGEMENT**

**1.0** The contractor shall have communication equipment on the construction site or immediate access to other communication systems to request assistance from the police or other emergency agencies for incident management. In case of traffic accidents or the need for police to direct or restore traffic flow through the job site, the contractor shall notify police or other emergency agencies immediately as needed. The engineer shall also be notified when the contractor requests emergency assistance.

Brad Gripka, Resident Engineer, Springfield Project Office: (417) 895-6720

**2.0** In addition to the 911 emergency telephone number for ambulance, fire or police services, the following agencies may also be notified for accident or emergency situation within the project limits.

Missouri Highway Patrol	(417) 895-6868
MoDOT District Customer Service	(417) 895-7600
Newton County Sheriff	(417) 451-8300
Jasper County Sheriff	(417) 358-8177
Lawrence County Sheriff	(417) 466-2131
	636-583-2560
	636-797-5000

**2.1** This list is not all inclusive. Notification of the need for wrecker or tow truck services will remain the responsibility of the appropriate police agency.

**2.0** The contractor shall notify enforcement and emergency agencies before the start of construction to request their cooperation and to provide coordination of services when emergencies arise during the construction at the project site. When the contractor completes this notification with enforcement and emergency agencies, a report shall be furnished to the engineer on the status of incident management.

**3.0** No direct payment will be made to the contractor to recover the cost of the communication equipment, labor, materials or time required to fulfill the above provisions.

#### **AA. SUPPLEMENTAL REVISIONS JSP-09-01X**

#### **BB. PREVIOUS JOB ORDER INFORMATION**

**1.0 Previous Job orders.** No previous Job Order Information is available at this time as this is the first time such a contract has been bid in the Southwest District.

#### **CC. RAILROAD REQUIREMENTS**

**1.0** The right of way of various Railroads, herein called "Railroad", are located within the limits of this project. However, this project has been developed with the specific intention that no involvement with the Railroad's facilities, traffic or right of way is required for the performance of the contractual work herein. The work to be performed over the Railroad's right of way shall not interfere with the Railroad's operations or facilities. Under these circumstances, the requirements of Sec 104.12.3, Sec 104.12.8 through 104.12.10.5 (inclusive), and Sec 107.13.4 shall not apply.

**2.0** Should the contractor violate this condition of no railroad involvement, all terms and conditions of the interaction with the Railroad shall be solely between the Railroad and the contractor.

**3.0** Any work on a bridge over a railroad track(s) that has the potential to foul the railroad tracks should be brought to the attention of MoDOT's Resident Engineer prior to starting any work on that bridge.

#### **DD. CONSTRUCTION REQUIREMENTS**

**1.0 Description.** This provision contains general construction requirements for this project.

**2.0 Construction Requirements.** Plans for the existing structure(s) will be available to the successful bidder as directed by the engineer.

**2.1** In order to assure the least traffic interference, the work shall be scheduled so that a lane closure is for the absolute minimum amount of time required to complete the work. A lane shall not be closed until material is available for continuous construction and the contractor is prepared to diligently pursue the work until the closed lane is opened to traffic.

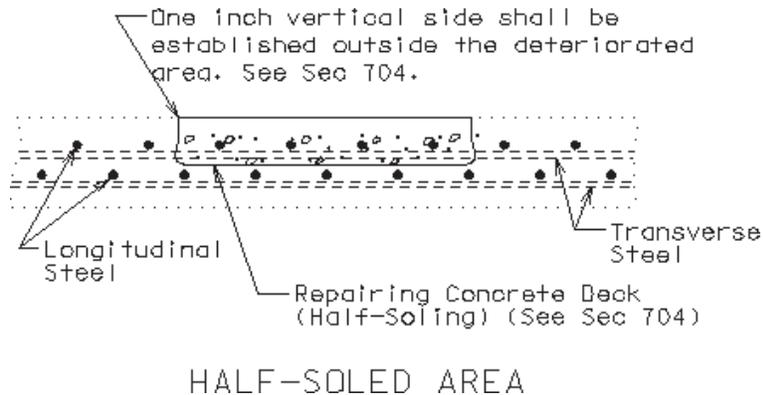
**2.2** Provisions shall be made to prevent any debris and materials from falling into the stream, lake or onto the roadway. Any debris and materials that falls below the bridge outside the limits mentioned previously and if determined necessary by the engineer, the debris shall be removed as approved by the engineer at the contractor's expense. Traffic under the bridge shall be maintained in accordance with the contract documents.

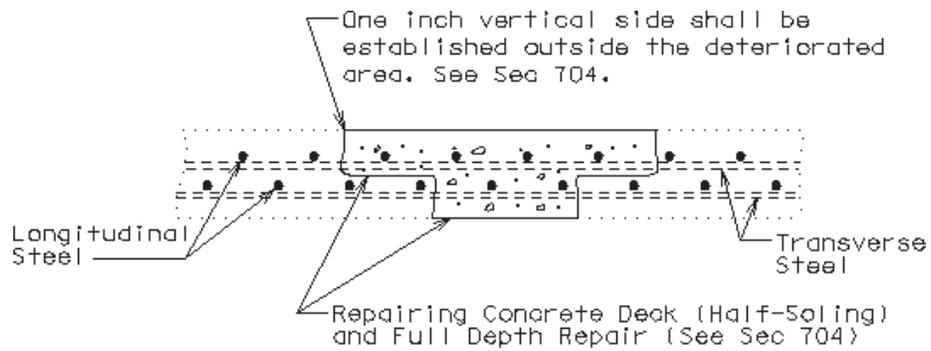
**2.3** Any damage sustained to the remaining structure as a result of the contractor's operations shall be repaired or the material replaced as approved by the engineer at the contractor's expense.

**2.4** Provisions shall be made to prevent damage to any existing utilities. Any damage sustained to the utilities as a result of the contractor's operations shall be the responsibility of the contractor. All costs of repair and disruption of service shall be as determined by the utility owners and as approved by the engineer.

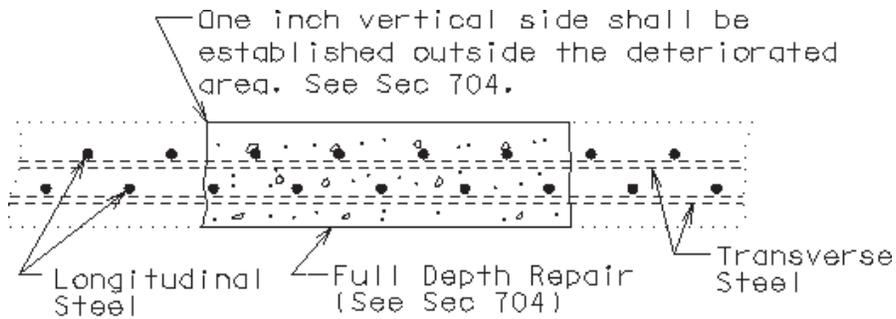
**3.0 Access to Adjacent Properties.** The contractor shall maintain access to all properties at all times except with the approval of the property owner. If entrances will be blocked, the contractor shall notify property owners in person or by telephone two weeks prior to closing the entrance. The contractor shall let property owners know what type of work to expect and let them know the duration. When access restrictions are needed for publicly owned entrances that provide access to a park, historic site, boat access, trail, fairground, wildlife or waterfowl refuge, etc. there may be additional restrictions. The Engineer shall contact MoDOT's Environmental and Historic Preservation Division to determine if additional restrictions or approvals are needed. No Direct Payment will be made for compliance with this provision.

#### 4.0 Bridge Deck Repairs.

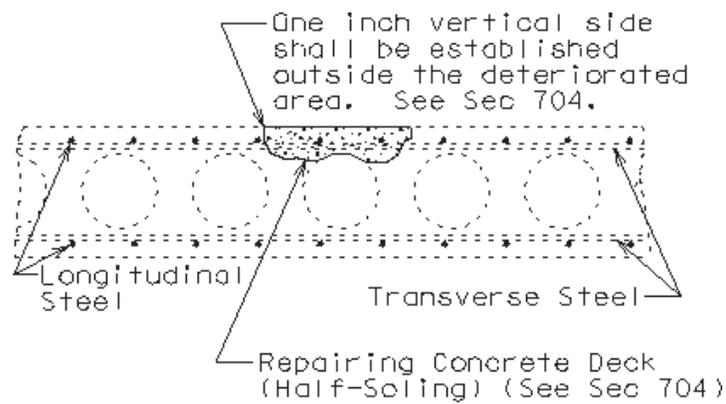




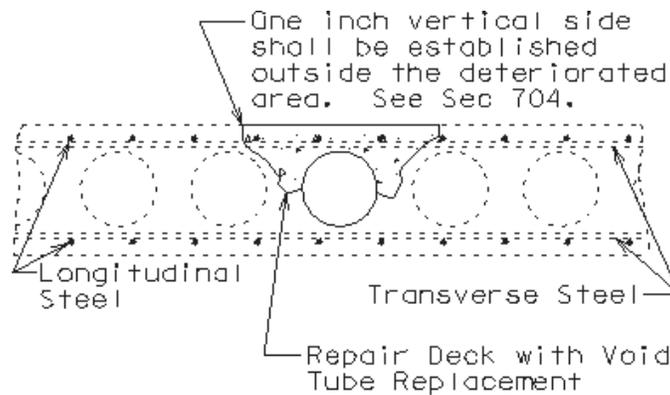
### FULL DEPTH REPAIR IN HALF-SOLED AREA



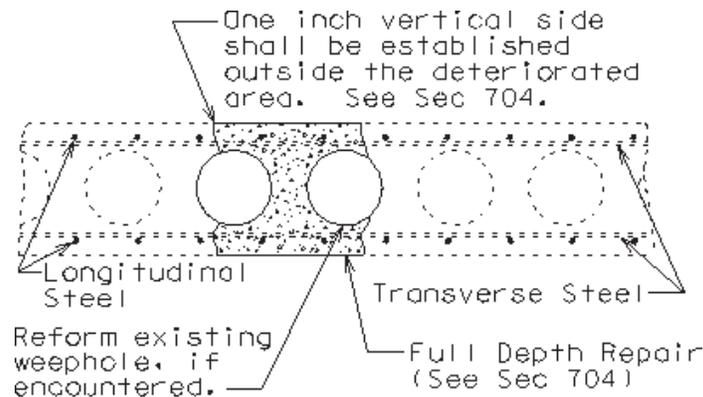
### FULL DEPTH REPAIR



### HALF-SOLED REPAIR



### DECK REPAIR WITH VOID TUBE REPLACEMENT



### FULL DEPTH REPAIR

**5.0 Method of Measurement.** No measurement will be made.

**6.0 Basis of Payment.** Payment for the above described work will be considered completely covered by the contract unit price for other items included in the contract.

## EE. CONCRETE MASONRY REPAIR

**Delete paragraphs 704.4.1.6.2 and substitute the following:**

**704.4.1.6.2 Deck Repairs.** The minimum depth of repair for repairing concrete deck (half-soling), approach slab repair or modified deck repair shall expose the upper layer of the top mat of reinforcing steel. All repair areas shall completely expose 100 percent of the reinforcing steel providing one inch (25 mm) clearance around all bars, regardless of observed bond or condition.

**Delete paragraph 704.5.1 and substitute the following:**

**704.5.1** Repairing concrete deck (half-soling), approach slab repair, deck repair with void tube replacement, full depth repair, modified deck repair, superstructure repair (unformed) and substructure repair (formed and unformed) will be measured to the nearest square foot (0.1 m<sup>2</sup>).

***Amend Sec 704 to include the following:***

**704.3.10 Approach Slab Repair.** This work shall consist of partial removal and replacement of approach slab concrete in the required areas.

**704.4.1.9 Zone Requirements.** Bridges with steel girder superstructures like plate girders and I-beams or wide flange girders may have unlimited repair quantities per span unless otherwise shown on the plans or as designated by the engineer. Bridges with concrete superstructures like voided slabs, solid slabs, deck girders, rigid frame and box girders always have special repair zones.

**704.4.1.9.1 Special Repair Zones.** Any half-soling required in the areas designated as special repair zones shall be completed in alphabetical sequence. The contractor shall make a request to the engineer for the special repair zones areas before commencing work on bridges that always have special repair zones. Any repair in the remainder of the bridge that is adjacent to Zone A and not designated as a special repair zone shall be completed prior to work in Zone A. Removal and repair shall be completed in one special repair zone and concrete shall have attained a compressive strength of 3200 psi (22 MPa) before work can be started in the next special repair zone. Before placing concrete in areas adjacent to areas of subsequent repair, the concrete shall be separated with a material such as polyethylene sheets to aid in removal of old concrete.

**704.4.1.9.2 Multiple Column Bents.** Zones with the same letter designation may be repaired at the same time.

**704.4.1.9.3 Single Column Bents.** Zones with the same letter designation may be repaired at the same time except for the zones directly adjacent to the centerline of bent. If either of the zones adjacent to centerline of bent has a single repair area of over 10 square feet (0.9 m<sup>2</sup>) or a total repair area of over 20 square feet (1.9 m<sup>2</sup>), that zone shall be repaired before removing concrete in the other zone of the same designation at that bent.

**704.4.1.9.4 Voided or Solid Slab Structures.** If any single repair area does not exceed 4 square feet (0.35 m<sup>2</sup>) in size and the total repair within a special repair zone does not exceed 12 square feet (1.1 m<sup>2</sup>), the special repair zone requirement does not apply for that zone. An exposed void in the deck of a voided slab bridge shall be patched as approved by the engineer

in a manner that shall maintain the void area completely free of concrete. Cost of patching an exposed void will be considered completely covered by the contract unit price of other items included in the contract.

**704.4.1.9.5 Box and Deck Girder Structures.** Total width of full depth repair shall not exceed 1/3 of the deck width at one time. For any area of deck repair that extends over a concrete girder and is more than 18 inches (460 mm) in length along the girder, the concrete removal shall stop at the centerline of girder and repair completed in this area. Prior to continuing work in this area, the concrete shall have attained a compressive strength of 3200 psi (22 MPa). No traffic shall be permitted over the girder that is undergoing repair. When the full depth repair extends over a diaphragm or girder and the deteriorated concrete extends into the diaphragm or girder, all deteriorated concrete shall be removed and replaced as full depth repair. Concrete in girders shall not be removed below the deck haunch of the girder without prior review and approval from the engineer.

**704.4.1.9.6 Box Girder Structures.** Interior falsework installed by the contractor resting on the bottom slab shall be removed where entry access is available. If any single repair area does not exceed 9 square feet (0.8 m<sup>2</sup>) in size and the total repair within a special repair zone does not exceed 27 square feet (2.5 m<sup>2</sup>), the special repair zone requirement does not apply for that zone. Half-soling repair in the special repair zone, on either side of the intermediate bents, shall be to a depth that will not expose half the diameter of the longitudinal reinforcing bar. Full depth repair shall be made when removal of deteriorated concrete exposes half or more of the diameter of the longitudinal reinforcing bar.

## **FF. RAPID SET CONCRETE PATCHING MATERIAL – HORIZONTAL REPAIRS JSP-02-10**

**1.0 Description.** This specification covers cementitious concrete, polymer-modified concrete and polymer concrete that are suitable for repairing concrete surfaces on bridges or roadways, particularly under fast setting or special conditions. The repairs would involve horizontal applications. The work shall consist of removing, furnishing, preparing, and placing materials at locations as shown on the plans or as directed by the engineer.

**2.0 Material.** All materials shall be in accordance with MoDOT specifications and as noted herein.

**2.1 Aggregate For Extending Commercial Mixture.** Coarse and fine aggregates shall be in accordance with [Sec 1005](#), except the requirements for gradation and percent passing the No. 200 sieve shall not apply. Coarse aggregate meeting Gradation E requirements shall be used for repairs greater than one inch (25 mm) in depth. Fine aggregate will be allowed for repairs less than one inch (25 mm). Aggregate specified, bagged, labeled and furnished by the rapid set concrete patching material manufacturer may also be used for mortar extension.

**2.2 Material Applications.** The contractor shall select and use the product most suitable for the work and field conditions in accordance with these specifications.

**2.3 Curing.** Rapid set concrete patching material shall be cured until the minimum compressive strength 3200 psi is attained using standard curing specifications, unless otherwise specified by the manufacturer.

## **2.4 Qualification and Project Acceptance.**

**2.4.1 Inspection.** All materials shall be subject to inspection and sampling by MoDOT at the source of manufacture, intermediate shipping terminal or destination. MoDOT will be allowed free access to all facilities and records as required to conduct inspection and sampling.

**2.4.2 Qualification.** Prior to use, rapid set concrete patching material shall be qualified. In order to become qualified, a material shall have completed testing through AASHTO's National Transportation Product Evaluation Program (NTPEP). The manufacturer shall contact the AASHTO/NTPEP coordinator to obtain the testing location for the rapid setting concrete patching material.

**2.4.2.1 Requested Information.** The manufacturer shall submit with samples of the materials, a written request to Construction and Materials with the following information:

- (a) Brand name of the product.
- (b) Certification that the material meets this specification.
- (c) NTPEP test results showing compliance with this special provision.
- (d) Specific mixing, handling and curing instructions.
- (e) Application type (i.e., bridge or roadway).

**2.4.2.2 Qualified List.** Upon approval by the engineer, the brand name and manufacturer will be placed on a qualified list of rapid set concrete patching materials. The listing of qualified materials is available from Construction and Materials or on MoDOT's web site. New certified test results and samples shall be submitted any time the manufacturing process or the material formulation is changed. The material will be subject to removal from the qualified list if there is evidence of unsatisfactory performance or a change in manufacturing process or formulation, or when random sampling and testing of material offered for use indicates nonconformity with any of the requirements herein specified.

**2.4.3 Provisional Approval.** Provisional approval may be granted provided the following requirements have been met:

- (a) New Products Evaluation Form
- (b) Certified test results from an independent laboratory showing compliance with this special provision.
- (c) Documentation prepared by MoDOT covering two years of field performance on MoDOT's system. MoDOT will need to approve the location of the test site. Documentation will contain the placement date, field observations (semi annual), description of field performance and photographs of in-place material.
- (d) During placement the manufacturer's representative shall be present on the project to provide technical expertise.

**2.4.3.1 Disqualification.** If during the two-year observation period the repair area(s) fails

provisional approval will not be granted. Repair area(s) experiencing any cracking, debonding or spalling will be considered a failure.

**2.4.3.2 Length of Provisional Approval.** Provisional approval will be granted for three years or until NTPEP testing is completed.

**2.5 Certification.** The contractor shall supply a manufacturer's certification to the engineer for each lot of material furnished. The certification shall include the name of the manufacturer, a manufacturer certification statement that the material supplied is the same as that qualified and listing the date of qualification.

**2.6 Acceptance.** Acceptance of the material will be based on the use of a qualified or provisionally approved material, the manufacturer's certification that the material supplied is the same as that approved and upon the results of such tests as may be performed by the engineer.

**3.0 Mixture.** Unless otherwise specified, rapid set concrete patching material shall be approved commercial mixtures meeting [Sections 3.1 – 3.1.3](#) or deck repair cementitious mortar meeting [Section 3.2](#). Rapid set concrete patching materials shall be specifically designed for the application needed.

**3.1 Commercial Mixtures.** Rapid set concrete patching material in its sacked form and mixtures when properly prepared in accordance with the manufacturer's specifications, shall meet the minimum test requirements given in Table 1. Mixtures may be supplied, as required, as a patching mortar or as a patching mortar with aggregate extension. If the material is to be supplied with extender aggregate, this shall also pass the required tests in Table 1 using the maximum allowed amount of extender aggregate.

**3.1.1 Mixture Requirements.** Rapid set concrete patching material shall be single packaged dry mix requiring the addition of water or other liquid component just prior to mixing. The material shall be capable of ½ inch (13 mm) to full depth repair and require no bonding agent. The material shall not contain soluble chlorides as an ingredient of manufacture. The material shall be placed in accordance to the manufacturer's recommendations.

**Table 1  
(English Unit)**

Physical Test Property	Specification	Requirement for cementitious concrete	Requirement for polymer-modified concrete	Requirement for polymer concrete
Bond Strength by Slant Shear <sup>1</sup>	ASTM C882/C928 <sup>3</sup>	min. 1000 psi @ 24hrs.& min. 1500 psi @ 7 days	n/a	min. 1000 psi @ 24hrs.& min. 1500 psi @ 7 days
Linear Coefficient of Thermal Expansion <sup>1, 2</sup> (for bagged mortar only, without Extension Aggregate)	ASTM C531	n/a	n/a	4 – 8 X 10 <sup>-6</sup> in/in/deg F

Physical Test Property	Specification	Requirement for cementitious concrete	Requirement for polymer-modified concrete	Requirement for polymer concrete
Resistance to Rapid Freezing & Thawing <sup>1</sup>	AASHTO T161 or ASTM C666	80% min. using Procedure B <sup>5</sup> (300 Cycles)	80% min. using Procedure B <sup>5</sup> (300 Cycles)	n/a
Compressive Strength <sup>1</sup>	AASHTO T22 or ASTM C39	3200 psi @ 3 hr & 4000 psi @ 7 days	3200 psi @ 3 hr & 4000 psi @ 7 days	n/a
Rapid Chloride Permeability <sup>1</sup>	AASHTO T277 or ASTM C1202	<u>Bridge Decks</u> 1000 coulombs @ 28 days_ <u>Roadway</u> 2000 coulombs @ 28 days	<u>Bridge Deck</u> 1000 coulombs @ 28 days_ <u>Roadway</u> 2000 coulombs @ 28 days	<u>Bridge Deck</u> 1000 coulombs @ 28 days_ <u>Roadway</u> 2000 coulombs @ 28 days
Length Change <sup>1, 4</sup>	AASHTO T 160 or ASTM C157	In water Storage (+0.15) In air storage (-0.15)	In water storage (+0.15) In air storage (-0.15)	n/a
Color		gray	gray	gray

<sup>1</sup>The commercial mix test values can be located in the AASHTO's National Transportation Product Evaluation Program (NTPEP) reports for Laboratory Evaluations of Rapid Set Concrete Patching Materials. Data for provisionally approved materials is located at the Construction and Materials Division.

<sup>2</sup>Not required for extended mixtures if the mortar passes this requirement.

<sup>3</sup> ASTM C882 shall be performed on non-water based materials. ASTM C928 shall be performed on water-based materials.

<sup>4</sup> As modified by ASTM C928.

<sup>5</sup> Procedure A may be used in lieu of Procedure B

**3.1.2 Construction Requirements.** The manufacturer shall provide with the bagged mixture, specifications for the mixing procedure, amount and kind of liquid to be added, and the amount of aggregate extension allowed, if any. All mixing, handling and curing practices recommended by the manufacturer shall be followed and will be considered a part of these specifications.

**3.1.3 Removal from Qualified List.** All mixtures shall be approved before use.c Reoccurring failures of any mixture for any reason will be cause for removal from the qualified list.

**3.2 Deck Repair Concrete.** A qualified rapid set concrete patching material indicated for horizontal use and intended for patching concrete bridge decks may be used when specified on the plans and as approved by the engineer. If this option is selected, the contractor shall provide a trial mix to determine the total cure time needed to achieve a compressive strength of 3200 psi (22 MPa). Compressive specimens shall be prepared in accordance with current MoDOT test methods and cured to simulate actual field conditions. Testing of compressive specimens shall be performed by methods and at facilities acceptable to the engineer. The repaired deck shall not be opened to traffic until at least 4 hours after the last placement of deck repair concrete, the established cure time has elapsed and until such concrete has achieved a compressive strength of 3200 psi (22 MPa). A new trial mix may be required if the engineer determines the field conditions vary substantially from trial mix conditions. The engineer will make field cylinders to verify the 3200 psi (22 MPa) minimum strength.

#### **4.0 Construction Requirements.**

**4.1 Mixing.** Rapid set concrete patching material shall be mixed and finished according to the manufacturer's recommendation.

**4.2 Preparation of Repair Area.** Deteriorated, damaged or defective concrete as shown on the plans, required by the specifications or as directed by the engineer, shall be removed. All exposed reinforcement shall be thoroughly cleaned as shown on the plans, required by the specifications or as directed by the engineer. Unless otherwise specified by the commercial mixture manufacturer, the existing surface shall be damp and all free water shall be removed prior to placement of the required material.

**4.3 Bonding Agent.** A bonding agent may be used if recommended by the rapid set concrete patching material manufacturer.

**5.0 Method of Measurement.** No measurement will be made for rapid set concrete patching material.

**6.0 Basis of Payment.** Rapid set concrete patching material will be paid for at the contract unit price for other items and will be considered full compensation for all labor, equipment and material to complete the described work.

#### **GG. DENSE CONCRETE OVERLAY REPAIR**

**1.0 Description.** This work shall consist of repairing designated areas of bridge decks with an existing dense concrete overlay (low slump, latex modified, or silica fume concrete). All work shall be in accordance with Sec 704 and the job special provision "Concrete Masonry Repair" except as herein modified.

#### **2.0 Construction Requirements.**

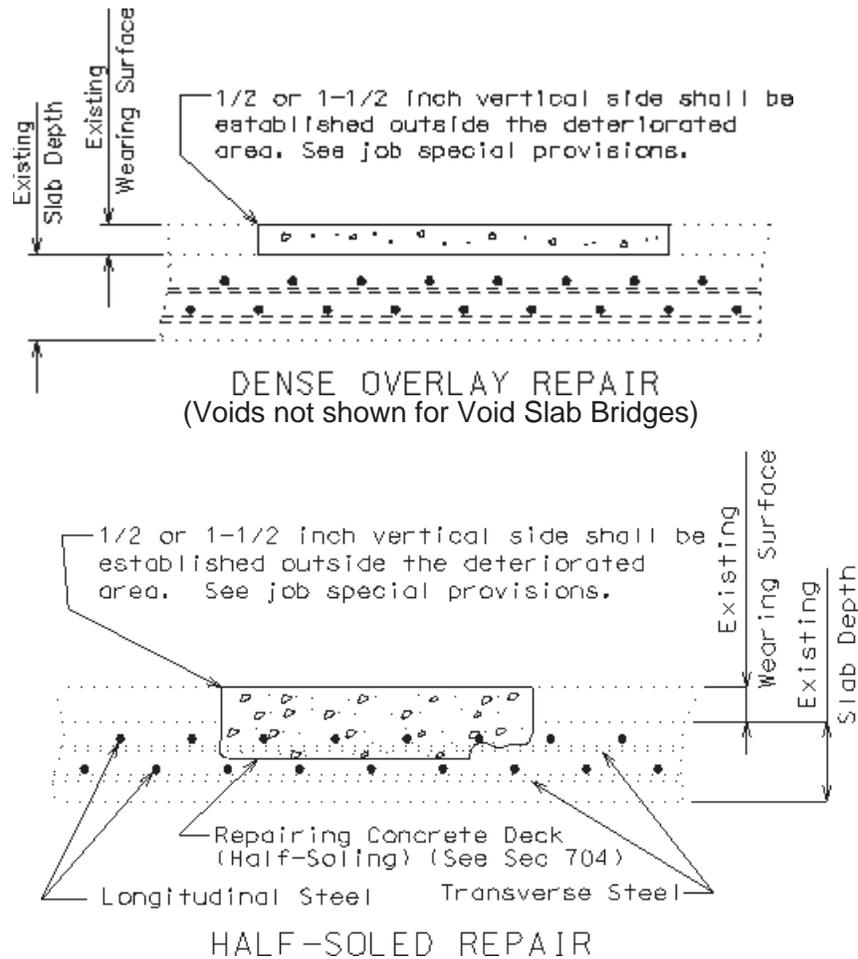
**2.1 Bridges without Cathodic Protection Systems.** A boundary perimeter with vertical sides shall be established outside the delaminated and deteriorated dense concrete overlay repair areas by saw cutting 1 ½ inch minimum in depth. The contractor shall use caution to not saw into the underlying bridge deck. The remaining overlay around the perimeter of the saw cut shall be chipped vertically and all overlay material within the perimeter removed. Upon removal of the deteriorated overlay, the engineer will sound the underlying bridge deck to determine areas of deteriorated concrete. The engineer may require removal of additional areas of dense overlay to determine the extent of deteriorated underlying bridge deck.

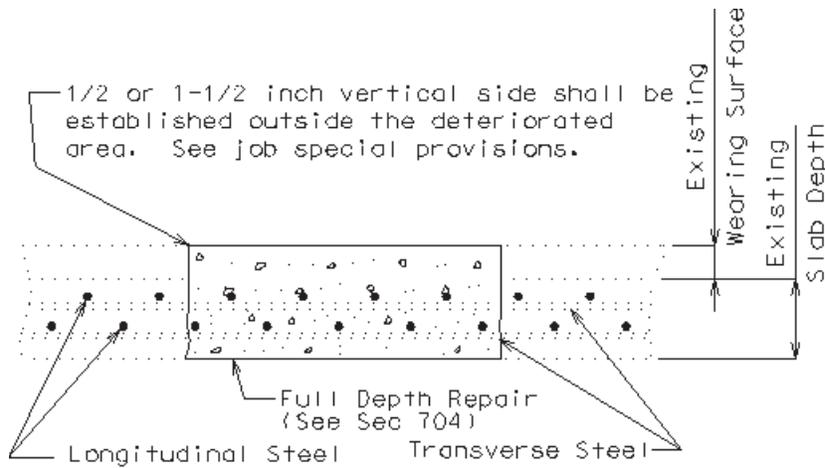
**2.2 Bridges with Cathodic Protection Systems.** Cathodic protection system shall be turned off before operations of repairing the dense overlay starts. A boundary perimeter with vertical sides shall be established outside the delaminated and deteriorated dense concrete overlay repair areas by saw cutting ½ inch minimum in depth and not cutting the cathodic protection system. The remaining overlay around the perimeter of the saw cut shall be chipped vertically and all overlay material within the perimeter removed. Upon removal of the deteriorated overlay, the engineer will sound the underlying bridge deck to determine areas of deteriorated concrete. The engineer may require removal of additional areas of dense overlay to determine the extent of deteriorated underlying bridge deck. The cathodic protection system shall be

repaired before the concrete for the dense overlay is poured. Cathodic protection system shall be turned on after the dense overlay repair areas are opened to traffic.

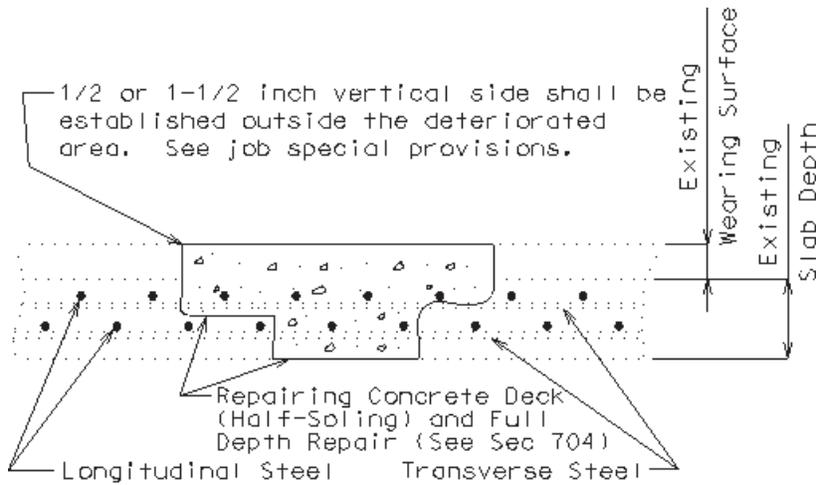
**2.2** Dense overlay repairs shall be performed the same as deck repairs except no exposed reinforcing steel is required. Deck repairs shall be in accordance with Sec 704. Concrete to replace the dense overlay repair with or without deck repairs shall be the same as that required for the deck repairs. Concrete for the dense concrete overlay repairs with deck repairs shall be placed monolithically up to the top surface of the dense overlay. Finishing and curing the repair area shall be in accordance with Sec 704.

**2.3 Dense Concrete Overlay Repair With or Without Underlying Bridge Deck Repair.**

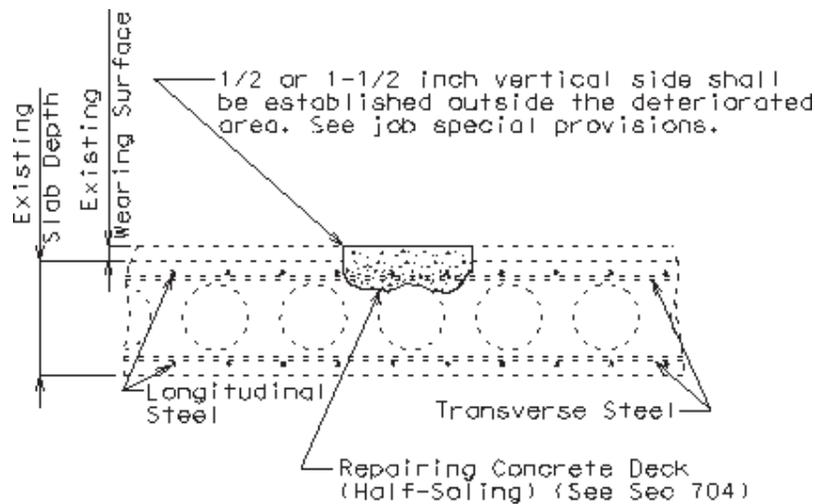




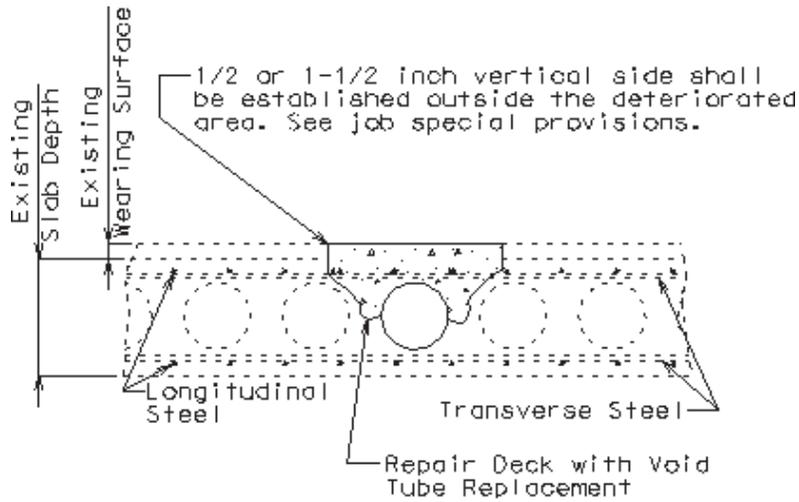
FULL DEPTH REPAIR



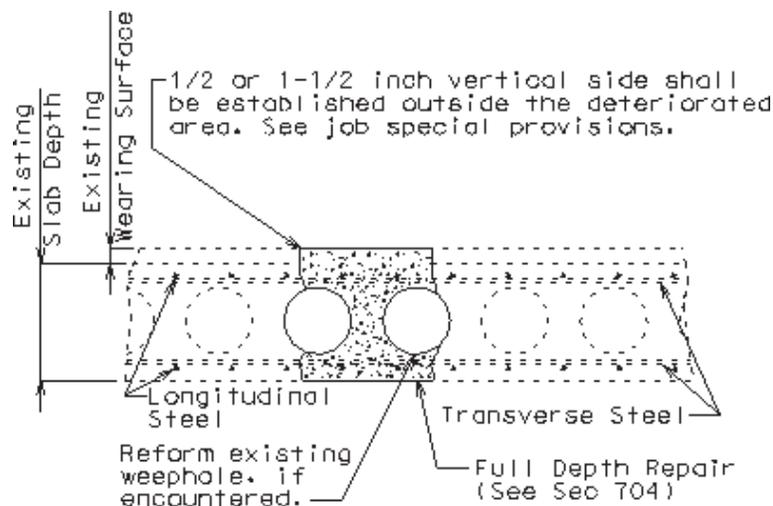
FULL DEPTH REPAIR WITH HALF-SOLED REPAIR



HALF-SOLED REPAIR



DECK REPAIR WITH VOID  
 TUBE REPLACEMENT



FULL DEPTH REPAIR

**3.0 Method of Measurement.** The depth of repair may vary but the contract unit price shall prevail regardless of the variation. No duplication of measurement will be made for full depth repair, repairing concrete deck (half-soling), deck repair with void tube replacement or dense concrete overlay repair. Areas of dense concrete overlay repair will be measured to the nearest square foot. Deck repairs will be measured and paid for in accordance with Sec 704.

**4.0 Basis of Payment.** The accepted quantity of dense concrete overlay repair will be paid for at the contract unit price for:

Item 704-99.04	Dense Concrete Overlay Repair	Square Foot
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## HH. ASPHALT WEARING SURFACE REPAIR

**1.0 Description.** This work shall consist of repairing designated areas of bridge deck with an existing asphaltic concrete. All work shall be in accordance with Sec 704 and the job special provision "Concrete Masonry Repair" except as herein modified.

### 2.0 Materials.

**2.1** All material shall be in accordance with Division 1000, Materials Details, and specifically as follows:

Item	Section
Asphaltic Concrete	401.5.3
Tack Coat	407

**2.2** Patching material for repairing asphaltic concrete overlays shall be an approved asphaltic concrete surface mix that meets or exceeds the requirements of Sec 401.5.3 and is sufficiently stable enough to withstand axle loads of interstate highway traffic.

### 3.0 Construction Requirements.

**3.1** A boundary perimeter with vertical sides shall be established outside the delaminated and deteriorated asphalt overlay area by saw cutting. The contractor shall use caution to not saw into the underlying bridge deck. All overlay material within the perimeter shall be removed. The contractor may, with approval of the engineer, remove the asphalt wearing surface by cold milling so long as satisfactory results are obtained and there is minimal disturbance to the underlying bridge deck. Upon removal of the deteriorated overlay, the engineer will sound the underlying bridge deck to determine areas of deteriorated concrete. The engineer may require removal of additional areas of asphalt overlay to determine the extent of deteriorated underlying bridge deck.

**3.2** Deck repairs shall be in accordance with Sec 704. Concrete for the deck repairs shall be placed up to the top of the driving surface unless otherwise directed by the engineer. Finishing and curing the repair area shall be in accordance with Sec 704.

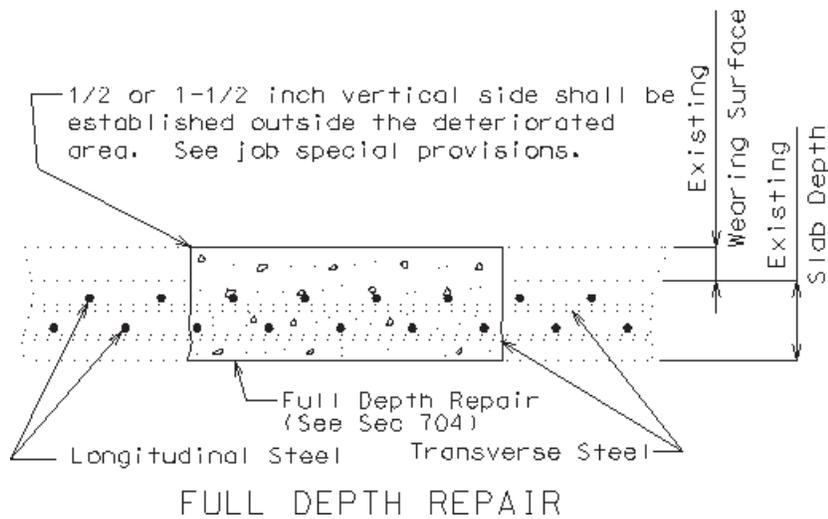
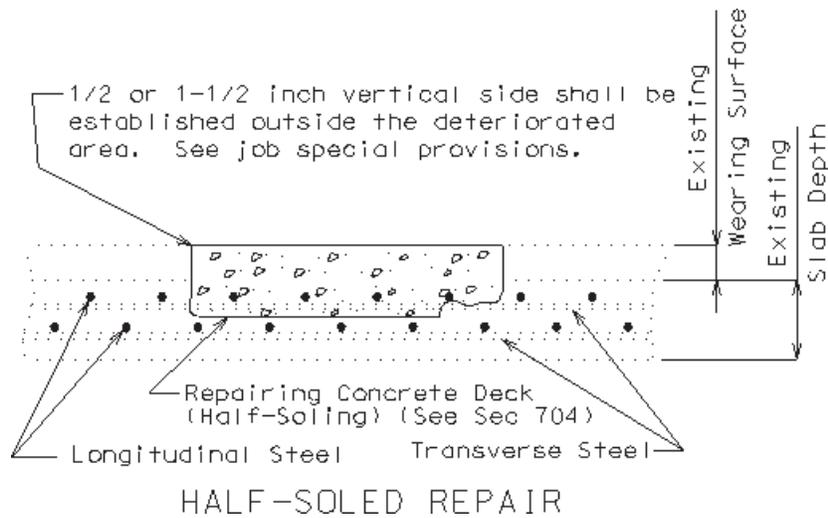
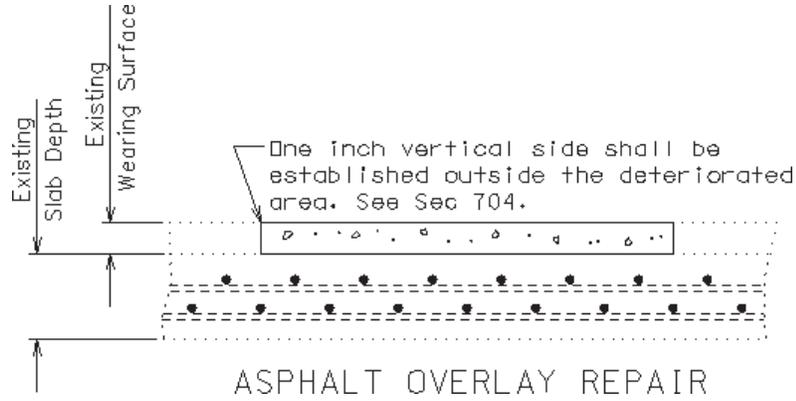
**3.3** The asphalt overlay repair area shall be prepared for patching by uniformly applying tack coat to the bottom and sides of the repair area in accordance with Sec 407. Asphaltic concrete patching material shall be placed in the repair area and thoroughly compacted with a minimum 1 1/4-ton roller. The finished repair shall be smooth and level with the existing asphalt wearing surface. The lane shall not be opened to traffic until the patch has sufficiently cooled. All asphaltic concrete overlay repairs shall be complete before traffic is restored to the lane.

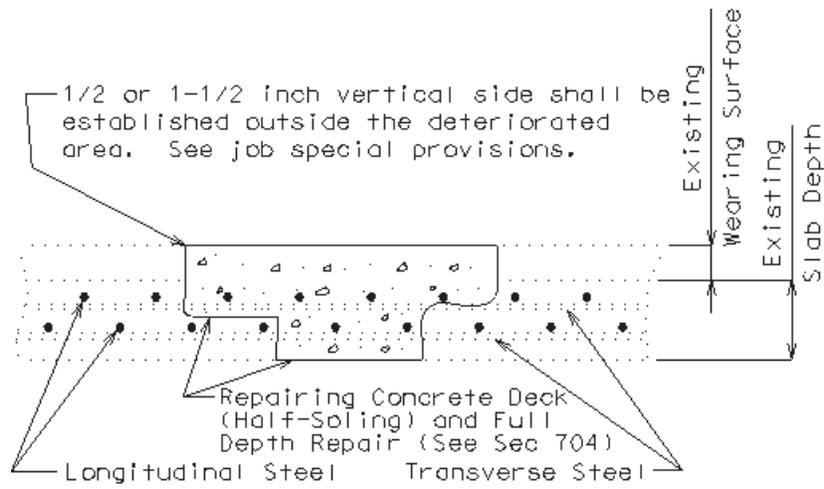
**3.4** Before opening to traffic, the contractor shall seal all edges of the repaired area with a rapid setting polymer modified liquid asphalt emulsion. The sealed edges shall be coated with a black colored sand to prevent tracking and to blend in with the existing asphalt surface. There will be no direct payment for furnishing or placing the asphalt emulsion or sand.

**3.5 Asphalt Overlay Repair With or Without Underlying Bridge Deck Repair.** If an asphalt wearing surface has been placed on top of a dense concrete overlay, the dense concrete overlay and bridge deck repair shall be performed the same as shown in job special provision "Dense Concrete Overlay Repair". If the dense concrete overlay needs repaired but the bridge

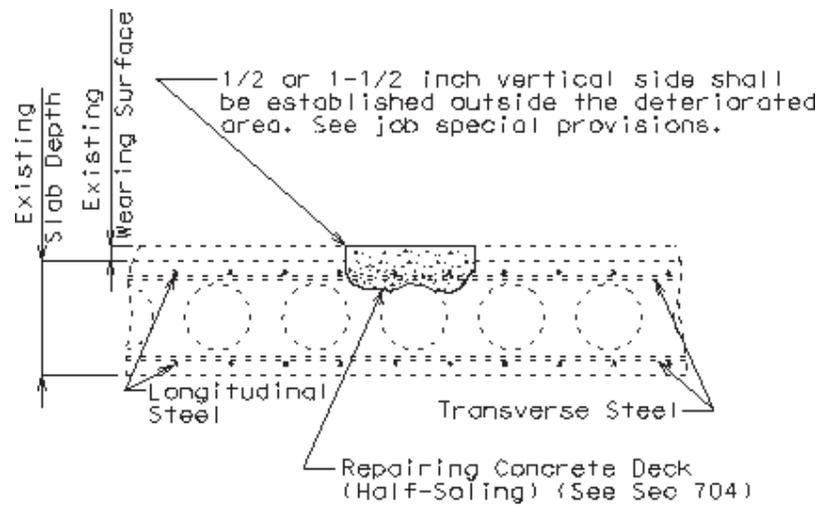
deck does not require repair, the dense concrete overlay shall be repaired monolithically with the asphalt wearing surface.

(Voids not shown for Void Slab Bridges)

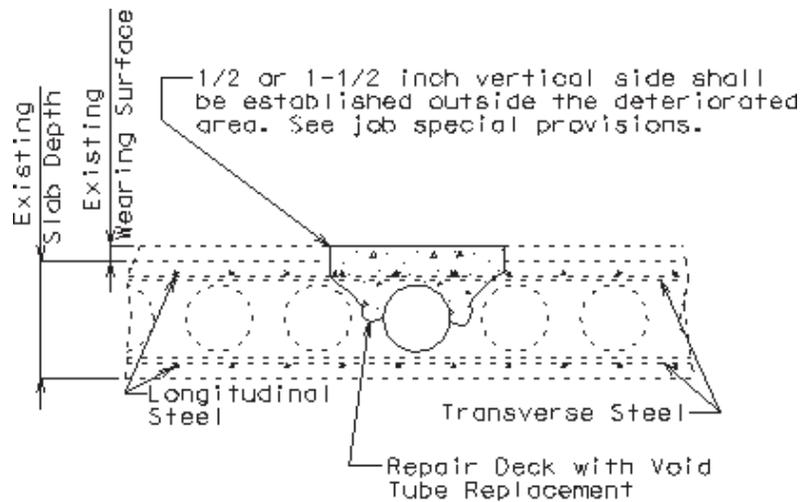




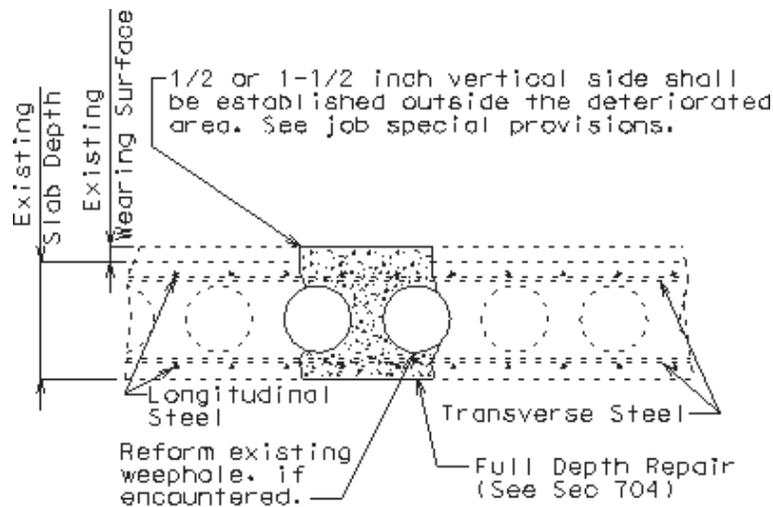
### FULL DEPTH REPAIR WITH HALF-SOLED REPAIR



### HALF-SOLED REPAIR



DECK REPAIR WITH VOID  
 TUBE REPLACEMENT



FULL DEPTH REPAIR

**4.0 Method of Measurement.** The depth of repair may vary but the contract unit price shall prevail regardless of the variation. No duplication of measurement will be made for full depth repair, repairing concrete deck (half-soling), deck repair with void tube replacement or asphaltic concrete overlay repair. Areas of asphaltic concrete overlay repair will be measured to the nearest square foot. Deck repairs will be measured and paid for in accordance with Sec 704.

**5.0 Basis of Payment.** Accepted quantity of asphaltic concrete overlay repair will be paid for at the contract unit price for:

Item 401-99.04	Asphaltic Concrete Overlay Repair	Square Feet
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## **II. EPOXY POLYMER CONCRETE RESURFACING OVER AND NEAR STREAMS AND WETLANDS**

**1.0 Description.** In general, because of the process for epoxy polymer application, that being the use of an epoxy spray for adhesion or fluid epoxy polymer mix, care must be taken to avoid overspray or runoff that will enter bodies of water. For use on bridges, all drains must be adequately blocked until the mixture is set up permanently. This includes the cleanup process for loose material/aggregate. No spray, runoff, or materials shall be allowed to enter the drains or the stream or wetland.

### **JJ. REMOVAL OF BRIDGE DEBRIS**

**1.0 Description.** Environmental surveys of the Missouri and Mississippi Rivers for pallid sturgeon and Meramec River for mussels and endangered fish species were not conducted at the project location because debris is not anticipated to fall into the water. If debris including, but not limited to, sand from sandblasting, water from hydroblasting, paint chips, runoff from painting/sealing processes, etc. falls into the water, the project will be required to shut down while biologists determine if there are any threatened or endangered species at the site and while MoDOT's environmental section reassesses impacts to those species.

**1.1** The contractor shall make provisions to prevent debris and materials from falling below the bridges. If this does occur and if deemed necessary by the engineer, it shall be removed as directed by the engineer at the contractor's expense.

**1.2** The contractor shall prevent any debris and materials from falling into the river, stream, lake, or wetland below the bridges.

**1.3** Any damage sustained by the remaining structures as a result of the contractor's operations shall be repaired or the material replaced as determined by the engineer at the contractor's expense.

**1.4** If the contractor's operation requires work below the deck, directly above the river, stream, lake or wetland below the bridge, the contractor shall notify the engineer who will then contact MoDOT's Environmental Section for further review.

**2.0 Basis of Payment.** No direct payment will be made for any expense incurred by the contractor by reason of compliance with the specific requirements of the provision, including any delay, inconvenience, or extra work except for those items for which payment is included in the contract.

### **KK. EPOXY POLYMER CONCRETE OVERLAY REPAIR**

**1.0 Description.** This work shall consist of repairing designated areas of bridge decks with an existing epoxy polymer concrete overlay. All work shall be in accordance with Sec 623, Sec 704 and the job special provisions "Concrete Masonry Repair" except as herein modified.

#### **2.0 Construction Requirements.**

**2.1 Epoxy Polymer Overlay Thickness.** The total thickness of the overlay repair will vary and shall match the existing overlay thickness but shall not be greater than ½ inch.

#### **2.2 Concrete Deck.**

**2.2.1** A boundary perimeter with vertical sides shall be established outside the delaminated and deteriorated epoxy polymer concrete overlay repair areas by saw cutting. The contractor shall use caution to not saw into the underlying bridge deck. All overlay material within the perimeter shall be removed. Upon removal of the deteriorated overlay, the engineer will sound the underlying bridge deck to determine areas of deteriorated concrete. The engineer may require removal of additional areas of epoxy polymer overlay to determine the extent of deteriorated underlying bridge deck.

**2.2.2** Deck repairs shall be in accordance with Sec 704. Concrete for the deck repairs shall be placed up to the top surface of the original deck unless otherwise directed by the engineer.

**2.2.3** Epoxy polymer concrete overlay shall be installed in accordance with Sec 623.

**3.0 Method of Measurement.** The thickness of repair may vary but the contract unit price shall prevail regardless, unless the total thickness is greater than ½ inch. Areas of epoxy polymer concrete overlay repair will be measured to the nearest square foot (0.1 m<sup>2</sup>) and be tabulated separately for repairs on concrete deck. Deck repairs will be measured and paid for separately in accordance with Sec 704.

**4.0 Basis of Payment.** The accepted quantity of epoxy polymer concrete overlay repair, concrete deck, will be paid for at the contract unit price for:

Item 704-99.04 Epoxy Polymer Overlay Repair, Concrete Deck Square Foot

## **LL. STORMWATER COMPLIANCE REQUIREMENTS NJSP-15-38**

**1.0** The land disturbance necessary to complete this project is not anticipated to exceed one (1) acre. Should the contractor disturb more than one (1) acre to complete the work, or for any other reason, all terms of this Job Special Provision will apply.

**1.1 Description.** The Contractor shall comply with the terms of the United States of America v. Missouri Highways and Transportation Commission Consent Decree (Consent Decree) that are identified as the responsibility of the Contractor or subcontractor, and with the terms of this provision. Viewing of the Consent Decree is available on the MoDOT Land Disturbance webpage under Contractor Resources, or by going to the web address [www.modot.org/LD](http://www.modot.org/LD).

**1.2 Applicability.** The Consent Decree and this provision apply to any project that includes land disturbance of areas totaling greater than one (1) acre on the project site. The project site consists of all areas designated on the plans, including temporary and permanent easements. The Consent Decree and this provision do not apply to Contractor staging, plant, or borrow areas that are not located on MoDOT right of way (Off-site). The Contractor is responsible for obtaining its own separate land disturbance permit for Off-site areas. This provision is in addition to any other stormwater, environmental, and land disturbance requirements specified elsewhere in the contract.

**2.0 Stormwater Training for Contractor Employees.** The Contractor's on-site project manager, designated Water Pollution Control Manager (WPCM), as defined in Section 3.0, and WPCM delegate, shall complete MoDOT Stormwater Training prior to serving in those roles. If someone other than the Contractor's project manager is given the authority to manage the grading or erosion control operations, the project manager(s) for those operations shall also

complete MoDOT Stormwater Training. MoDOT Stormwater Training is also required for any other person who the Contractor gives authority to take measures to prevent or minimize the consequences of non-compliance with the Stormwater requirements, as defined in Section 3.1(a) of this provision.

**2.1** The Commission will provide MoDOT Stormwater Training to the Contractor employees specified in Section 2.0 at a location and time determined by MoDOT. There will be no fee for attending the training; however, the Contractor shall be responsible for all other cost related to the training, such as travel expenses, if necessary, and wages for its employees. The time to complete the training is anticipated to be no more than 6 hours. As long as the Consent Decree is in effect, MoDOT will provide periodic trainings at various locations around the state, as needed, to ensure contractors and bidders have the opportunity to maintain the number of WPCMs they need to comply with this provision.

**2.2** Those who require MoDOT Stormwater Training per Section 2.0 shall complete the training prior to beginning any land disturbance work. Thereafter, training shall occur at least once every two (2) years. The training is not project-specific. Any Contractor employee who receives the training will be qualified to perform the WPCM duties on any MoDOT project for a period of two (2) years

**2.3** MoDOT will document the names and dates that contractor employees attend MoDOT Stormwater Training and will retain those records for the period of time specified in the Consent Decree. Duplicate record keeping by the contractor is not required.

**3.0 Water Pollution Control Manager (WPCM).** Prior to the Pre-Activity meeting for Grading/ Land Disturbance, the Contractor shall designate a Water Pollution Control Manager (WPCM) to fulfill the duties and responsibilities listed in Section 3.1 until final stabilization occurs. The Contractor's on-site project manager may also serve as the WPCM or that role may be assigned to another manager employed by the contractor or a subcontractor. The Contractor shall also maintain a WPCM delegate to temporarily fulfill the WPCM duties in the absence of the primary WPCM (e.g. illness, vacation, other leave).

**3.1 Duties of the WPCM:**

- (a) Be familiar with Stormwater Requirements including the National Pollutant Discharge Elimination System (NPDES), the current MoDOT State Operating Permit for construction stormwater discharges/ land disturbance activities, the Project-specific Stormwater Pollution Prevention Plan (Project SWPPP), the Corps of Engineers Section 404 Permit, when applicable, the Consent Decree, and this provision. The Project SWPPP includes: a title page with project-specific information, the general SWPPP posted on the MoDOT land disturbance website, the Project Erosion & Sediment Control Plan, all applicable special provisions, and all applicable specifications and standard drawings;
- (b) Complete the stormwater training set forth in Section 2.0;
- (c) Attend the Pre-Activity for Grading/ Land Disturbance Meeting or, if hired after the meeting has occurred, be familiar with the conference decisions;

- (d) Review and sign the Project-specific SWPPP and all updates thereto within time periods set out in the Consent Decree;
- (e) Visit and review the project site for compliance with Stormwater Requirements at least once per week from the start of any grading operations until final stabilization is achieved and permit is closed;
- (f) Be authorized by the Contractor to supervise all work performed by the Contractor and subcontractors that involves compliance with Stormwater Requirements, including the authority to order work be stopped on a Project, implement MoDOT-directed changes in work related to Stormwater Requirements, and order the taking of, measures to cease, correct, prevent, or minimize the consequences of non-compliance with Stormwater Requirements;
- (g) Review and certify electronically each MoDOT inspection report for the Project within three (3) days of receiving each report to ensure it conforms with report requirements in the National Pollution Discharge Elimination System Stormwater (NPDES SW) Permit, Project SWPPP and the Consent Decree and ensure that all Stormwater Deficiencies noted on the report are corrected within the time required;
- (h) Recommend in writing within three (3) days of discovering any changes in site conditions and Best Management Practices (BMPs) that require an update to the Project-specific SWPPP; and
- (i) Be the point of contact relating to Stormwater Requirements and the Consent Decree between the Contractor, Subcontractors and MoDOT.

**4.0 Pre-Activity Meeting for Grading/Land Disturbance and Required Hold Point.** At each Project, a Pre-Activity Meeting for Grading/Land Disturbance shall be held prior to the start of any land disturbance and shall include a physical visit and review of the project site. Discussion items at the pre-activity meeting shall include a review of the project SWPPP, the planned order of grading operations, proposed areas of initial disturbance, identification of all necessary BMPs that shall be installed prior to commencement of grading operations, and any issues relating to compliance with the Stormwater requirements that could arise in the course of construction activity at the project.

**4.1** Contractor employees who shall attend the Pre-Activity Meeting for Grading/Land Disturbance include the WPCM for the Project and the person(s) designated the authority to manage the grading and erosion control operations.

**4.2** Following the pre-activity meeting for Grading/land disturbance, and subsequent installation of the initial BMPs identified at the pre-activity meeting, a Hold Point shall occur prior to the start of any land disturbance operations to allow the engineer and WPCM the time needed to perform an on-site review of the installation of the BMPs to ensure compliance with the SWPPP is met. Land disturbance operations shall not begin until authorization is given by the engineer.

**5.0 Compliance with the NPDES SW Permit and Project SWPPP.** On all projects, the Contractor shall comply with all applicable Stormwater Requirements which are defined as, but are not limited to:

- (a) Consulting with the engineer on recommended design revisions to the Project SWPPP to accommodate the Contractor's staging plan, implementation, managing, and

maintaining BMPs or other control measures to prevent or minimize sediment and other pollutants in stormwater runoff in accordance with contract specifications or any relevant manufacturer specifications and good engineering practices, including but not limited to the manuals (*Note: two manuals cited in the MoDOT permit are "Developing your stormwater pollution prevention plan: A guide for construction activities" and "Protecting Water Quality: A Field Guide to erosion, sediment and stormwater best management practices for development sites in Missouri"*) and any other applicable standards for sedimentation basins, stabilization, rock dams, brush checks, construction entrances, and other BMPs;

- (b) Installing all BMPs at the locations and relative times specified in the Project SWPPP; and
- (c) Complying with the Missouri Water Quality Standards and with effluent limitations in Section E.1 of the NPDES SW Permit. Measurement of effluent is not required except as specified in E.2.

**5.1 Stormwater Deficiency Corrections.** Per terms of the Consent Decree, Stormwater Deficiencies identified on the MoDOT Land Disturbance Inspection Report shall be corrected within 7 days of the inspection date to avoid stipulated penalties, except that more time might be granted by the engineer when weather or field conditions prohibit the corrective work. If the Contractor does not initiate corrective measures within 5 calendar days of the inspection date or any extended period granted by the engineer, all work shall cease on the project except for work to correct these deficiencies, unless otherwise allowed by the engineer. All impact costs related to this halting of work, including, but not limited to stand-by time for equipment, shall be borne by the Contractor. Work shall not resume until the engineer approves the corrective work.

**6.0 Inspection Protocol.** The Contractor and all subcontractors shall review and adhere to MoDOT's written Stormwater Inspection Protocol, found on the MoDOT Land Disturbance webpage ([www.modot.org/LD](http://www.modot.org/LD)). The Inspection Protocol is applicable to all Projects under the consent decree. The MoDOT Resident Engineer will serve the role of Stormwater Resident Engineer, or a delegate will be named in their absence.

**6.1 Inspection Reports.** MoDOT will provide one or more Environmental Construction Inspectors (ECI) to perform the weekly and post run-off inspections and other duties described in paragraph 17 of the Consent Decree. The ECI will enter the inspection reports into a web-based Stormwater Compliance database. The WPCM will have access to this database to view all report information, including any noted deficiencies, and to certify the report as required in Section 3.1 (g.). Automated email reminders of pending reports that need to be certified and for deficiencies that need to be corrected will be sent to the WPCM. The Contractor may designate other employees or subcontractor employees to have viewing access to this database and to receive the email reminders. Completion of MoDOT Stormwater Training is necessary in order to receive the email reminders. The WPCM and other users shall be equipped with an electronic device (desktop computer, laptop, tablet, smartphone, etc.) with a browser and internet access to connect to the database. The contractor shall be responsible for providing the electronic devices.

**7.0 Stipulated Penalties.** If the Contractor fails to comply fully and timely with the requirements of the Consent Decree, stipulated penalties will be assessed to the Commission. For matters under the Contractor's responsibility and control the following stipulated penalties will be

assessed to the Contractor and MoDOT will withhold payment pursuant to the following:

Violation	Stipulated Penalty Amount
Failure to Designate or Maintain WPCM at each Project in Accordance with Section 3.0.	\$750 for the initial violation (each person not designated) and then \$750 for each fourteen (14) day period that person is not designated.
Failure to complete MoDOT Stormwater Training by an Individual Required to be Trained in Accordance with Section 2.0, such as the WPCM or Project Manager.	\$750 per person for each missed training. This \$750.00 per person violation shall continue to accrue for each fourteen (14) day period that the person fails to timely receive the applicable training
Failure of WPCM to Review and Certify an Inspection Report in Accordance with Inspection Protocol as set forth in Section 6.	\$250 per inspection report not reviewed or signed.
Failure to Comply with Any NPDES SW Permit or SWPPP Requirement.	\$1000 per violation for the first ten (10) days of the violation; \$2500 per violation for days 11-20; \$3500 per violation for days 21 and beyond.
Failure to Correct a Stormwater Deficiency Identified in a MoDOT Inspection Report, or Otherwise Discovered by the WPCM, within the Time Required by the NPDES SW Permit or SWPPP.	\$1000 per deficiency for the first ten (10) days after correction was required; \$2500 per deficiency for days 11-20 after correction was required; \$3500 per deficiency for days 21 and beyond after correction was required.

**8.0 Information Collection and Retention.** The EPA, its representatives and its agents shall have the right of entry into any facility covered by this Consent Decree, at all reasonable times, upon presentation of credential, to:

- (a) monitor the progress of activities required under the Consent Decree;
- (b) verify any data or information submitted to the United States in accordance with the terms of the Consent Decree;
- (c) obtain samples and, upon request, splits of any samples taken by MoDOT or its representatives, contractors, or consultants;
- (d) obtain documentary evidence, including photographs and similar data; and
- (e) assess MoDOT's compliance with the Consent Decree.

**8.1** Until three (3) years after the termination of the Consent Decree, Contractors and the agents of the Contractors shall preserve all non-identical copies of all documents, records, or other information (including documents, records, or other information in electronic form) in its or its Contractors' or agents' possession or control, or that come into the Contractor's or agent's possession or control, and that relate to MoDOT's performance of its obligations under the Consent Decree or to the Contractor's performance of its obligations under the Consent Decree. This information-retention requirement shall apply regardless of any contrary corporate or institutional policies or procedures.

**9.0 Basis of Payment.** Should the contractor disturb more than one (1) acre due to its method

of operations, or for any other reason, no direct payment will be made for compliance with this provision, including the cost to provide a WPCM. Should the engineer direct the contractor to exceed one (1) acre of land disturbance, payment will be made only for the actual cost of the weekly duties of the WPCM. Separate payment will be made for erosion and sediment control devices, and for permanent and temporary seeding and mulching, when payment for those items are provided elsewhere in the contract.

## **MM. RESTRICTIONS FOR MIGRATORY BIRDS**

**1.0 Description.** Swallows or other bird species protected by the Migratory Bird Treaty Act may be nesting under the bridge or bridges that will be repaired under this contract.

**2.0 Restrictions.** To comply with the Migratory Bird Treaty Act, nests of protected species cannot be disturbed when active (eggs or young are present). Generally, nests are active between April 1 and July 31, but active nests can be present outside of these dates.

**3.0 Avoidance Measures.** The contractor shall not disturb active nests or destroy adults, eggs or young. In an effort to comply with the Migratory Bird Treaty Act, the contractor operations will be limited to the options established in the following sections.

**3.1 Inactive or Partially Constructed Nests.** If nests are present and MoDOT determines that the nests are inactive or partially constructed, the contractor may remove the nests provided that the colony's inactive or partially constructed nests are completely removed by March 15 and the contractor maintains a nest free condition until the bridge work is complete. Dry removal methods shall be used when practicable. If dry removal is not practicable, hydro cleaning may be used if approved by the Engineer and only if water is free of blasting grit, chemicals, or detergents, and applied using pressure less than 5,000 PSI. Clean water such as that from municipal water treatment plants or wells shall be used. Use of source water from Waters of the State (i.e., streams or lakes), is allowable, if the appropriate methods to prevent the possible spread of invasive aquatic species are implemented.

**3.2 Water and Water Tanks Used for Hydro cleaning.** Aquatic invasives such as zebra mussels and some algae species have infested several bodies of water in the United States and can be transported by vessels (barges, boats, tugs, tankers, etc.) and equipment that have been used in areas that contain these invasive species. If equipment is not properly inspected and treated to prevent the spread of invasives, these species can be introduced into areas not currently known to have a population. These invasive species are detrimental to existing ecosystems and can outcompete native species. To assist in preventing the introduction and spread of aquatic invasive species through MoDOT projects in Missouri streams and lakes, the following precautions shall be followed.

**3.2.1 Use of Water from Streams, Lakes or Ponds.** Contractors shall not use water for nest removal from streams, lakes, or ponds, unless they have implemented appropriate methods to prevent the possible spread of invasive aquatic species. Water sources from municipal water treatment plants or wells may be used without following these measures provided the water hauling equipment has not previously contained waters from streams, lakes, or ponds. If the water hauling equipment has previously contained waters from other streams or lakes, the following measures must be implemented prior to use.

**3.2.1.1 Tank Washing.** Prior to the use or re-use of water hauling equipment following any use

with water from streams, lakes or ponds, all equipment shall be washed and rinsed thoroughly with hard spray (power wash) or HOT (104° F) water, e.g. at a truck wash facility.

**3.2.1.2 Tank Drying or Treating.** Tanks shall be dried or treated in one of the following manners.

**3.2.1.2.1** The equipment shall be dried thoroughly, 5-7 days, in the sun before using in or transporting between streams, lakes, and ponds.

**3.2.1.2.2** All interior tank surfaces shall be treated with 140° F water for a minimum of 10 seconds contact on all surfaces.

**3.2.3.2.3** All interior tank surfaces shall be treated with a 10% bleach solution to kill any aquatic nuisance species. When chlorine treatment is used, all chlorine runoff from equipment washing must be collected and properly treated and/or disposed of.

**3.2.3** Prior to use of a water holding tank, contractors shall provide the MoDOT inspector written documentation of the tank's geographic origin (including the water body it was last used in), as well as defining the specified treatment method used to adequately ensure protection against invasive species. The written documentation will include a statement indicating that the contractor is aware of these provisions and will also treat the equipment appropriately after completion of the project.

**3.3 Active Nests.** The contractor may work on the bridge if active nests are present, as long as the work does not impact or disturb the birds and nests. At a minimum, work shall not be performed within 10 feet of an active nest; however, the contractor is responsible for ensuring that their activities do not impact the nests, eggs, or young.

**4.0 Additional Responsibilities.** If active bird nests remain after all reasonable avoidance measures have been taken, or if bird nests are observed during project construction, the contractor shall notify the Resident Engineer and contact MoDOT Environmental (573-526-4778) to determine if there are other allowable options.

## **NN. WORK IN THE FLOODPLAIN**

**1.0 Description.** Substructure work located within the regulatory floodway at or below base flood elevation may require additional permitting.

**2.0 Requirements.** No substructure work shall take place in any area that could potentially be considered a regulated floodway or below the base flood elevation. The Engineer shall verify questionable areas with MoDOT's Environmental Division prior to proceeding with a work order.

**1.0 Basis of Payment.** No direct pay will be made to the contractor to recover the cost of the equipment, labor, materials or time required to fulfill the above provisions.

## **OO. AIRPORT REQUIREMENTS JSP-15-09**

**1.0 Description.** The project is located near a public use airport or heliport or is more than 200 feet above existing ground level, which requires adherence to Federal Aviation Regulation Part 77 (FAA Reg Part 77). "Near" to a public use airport or heliport is defined as follows:

- 20,000 feet (4 miles) from an airport with a runway length of at least 3,200 feet
- 10,000 feet (2 miles) from an airport with runway length less than 3,200 feet
- 5,000 feet (1 mile) from a public use heliport

**2.0** The maximum height of the improvement and the equipment operating while performing the improvements was assumed to be 17.0 feet above the current travelway during the process of evaluating the project for compliance with FAA Reg Part 77.

**2.1** If the contractor's height of equipment or if the improvement itself is beyond the assumed height as indicated in Sec 2.0, the contractor will work with the resident engineer to fill out the Form 7460-1, or revise the original Form 7460-1 based upon the proposed height and resubmit, if necessary, for a determination by FAA on compliance with FAA Reg Part 77. Further information can be found in MoDOT's Engineering Policy Guide 235.8 Airports. If the Form 7460-1 must be filed, the associated work shall not be performed prior to the FAA determination, which could take up to 45 days.

**2.2** If the contractor's height of equipment and the improvement itself is below the assumed height as indicated in Sec 2.0, no further action is necessary to fulfill the requirements set forth in FAA Reg Part 77.

**3.0 Basis of Payment.** There will be no direct payment for any work associated with this provision. Contract time extension will be given for the time necessary to obtain or revise the FAA permit. Any delays or costs incurred in obtaining the revised permit will be noncompensable.

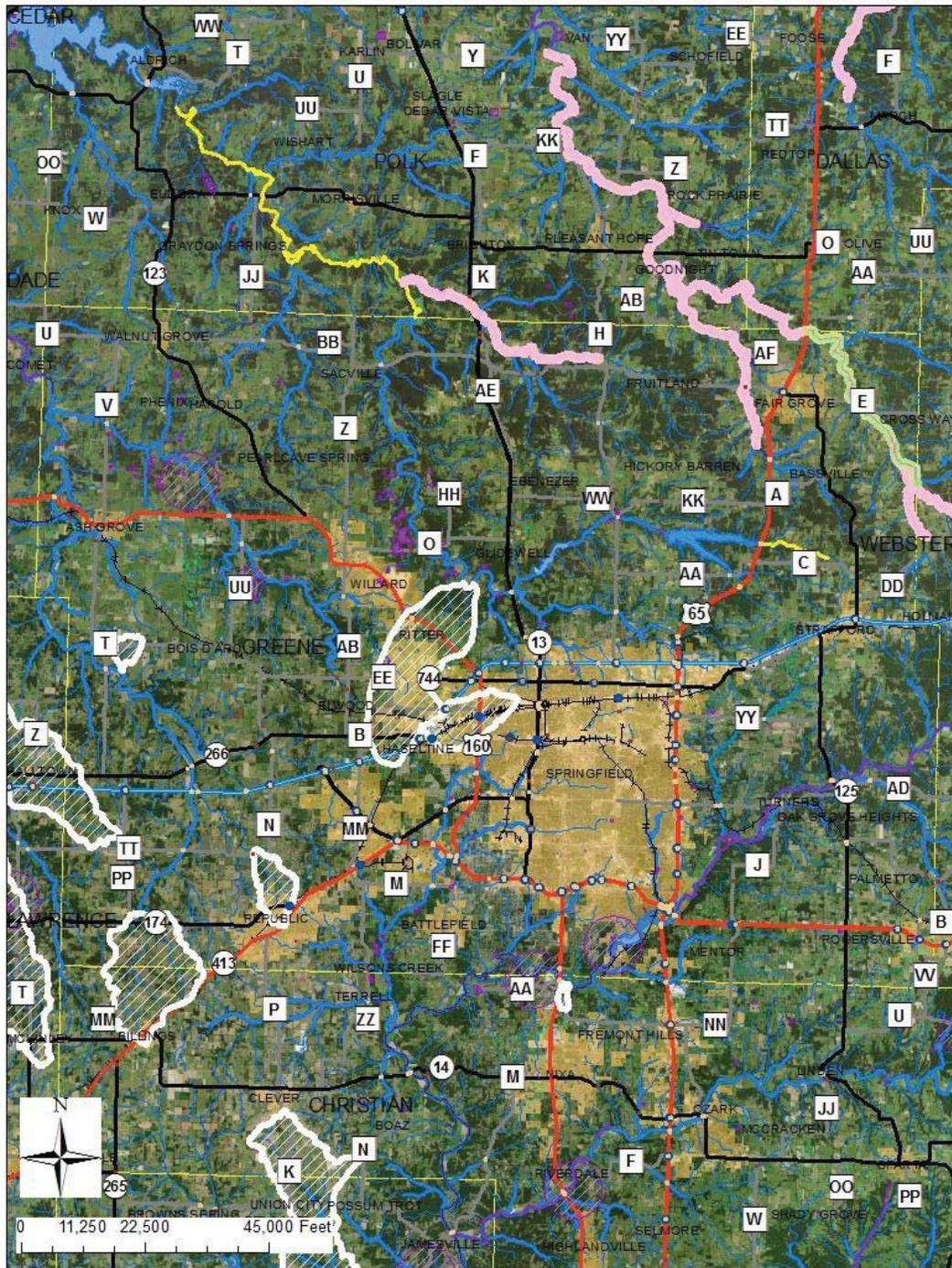
## **PP. BATS ON BRIDGES**

**1.0 Description.** There may be bats roosting on bridges along the project corridor. These bats may be federally protected species. If any bats are seen roosting on any bridges that are going to be impacted, MoDOT Environmental staff shall be contacted immediately.

**2.0 Basis of Payment.** No direct payment will be made to the Contractor to recover the cost of labor, materials, or equipment required to comply with the above requirements.

## **QQ. PROTECTION MEASURES FOR OZARK CAVEFISH RECHARGE AREAS**

**1.0 Description.** Portions of this project are in designated Ozark cavefish recharge areas. To ensure the protection of this endangered species, as well as other sensitive species that may be present in the areas, the following restrictions should be applied for work taking place within the recharge areas (hatched in white in the images below).



**2.0 Restrictions.** Personnel shall take the following precautions when working within the designated recharge areas to eliminate/minimize the potential for contamination of the groundwater system.

**2.1 Spill Prevention.** MoDOT personnel shall not refuel, conduct material transfers, or perform maintenance on equipment while the equipment is located within or over any visible stream channels (wet or dry) or sinkholes. Equipment shall not be parked in these areas. Use best management practices while fueling and maintaining equipment to prevent spills and to catch

any material that is accidentally spilled. MoDOT has an approved State Operating Permit and a Pollution Prevention Plan developed in coordination with, and approved by, the Missouri Department of Natural Resources. MoDOT will assure strict adherence to this Permit and Plan throughout the course of the project. Any violation of the Plan will result in temporary suspension of work until corrective measures are implemented to comply with this provision. Personnel shall keep equipment properly maintained to avoid spills and leaks. Personnel shall inspect equipment before it is brought to the job site, and must replace or repair any faulty equipment.

**2.2 Spill Containment.** A spill is defined as fuel, lubricants, paints, solvents, etc. reaching the ground where the fluid could be absorbed into the ground or run-off into an absorbent ground area. Initial reporting of any spill shall be made to MoDOT Environmental Section. See attachment "Hazardous Waste and Endangered Species Contacts" for the list of contacts and phone numbers. If no MoDOT contact is available at the provided numbers, contact the Missouri Department of Natural Resources (573- 634-2436) AND the United States Fish and Wildlife Service contaminants specialists Dave Mosby (573-234-2132 extension 113, cell 573-999-2747) or John Weber (573-234- 2132 extension 177, cell 573-673-2564). These numbers shall be readily available on the job site at all times. Personnel or their Supervisors shall be responsible for immediate reporting in the event of a spill.

Personnel shall maintain absorbent material and other containment measures capable of containing any spill of less than 50 gallons. Such measures could consist of earthen berms, spill absorbing materials, and any other approved methods used for spill control. Personnel shall also have a mobile spill kit on-site throughout the course of the project.

All empty containers of lubricants, fuels, and solvents shall be properly disposed.

**2.3 Erosion Control.** Erosion control measures shall be implemented in order to reduce suspended solids, turbidity and downstream sedimentation that may enter the ecosystem of any cave, surface water, or ground water sink. MoDOT will ensure strict adherence to the design, placement and maintenance of such temporary and permanent erosion control measures as stated in Division 800, Section 806 et seq., Missouri Standard Specifications for Highway Construction.

Pollution refers to sedimentation and contamination. As described above, MoDOT has a State Operating Permit and a Pollution Prevention Plan that were developed in coordination with, and approved by, the Missouri Department of Natural Resources. Section III of the Plan prohibits MoDOT from polluting any waters of the state. The Pollution Prevention Plan shall be implemented throughout the duration of the project.

**2.4 Weather Requirements.** To eliminate/minimize the potential for contamination of the groundwater system, no operations shall be performed within designated recharge areas if it is raining or if the National Weather Service forecast is predicting any form of precipitation within ten (10) hours after the proposed completion time of the operation. Section [620?] of the Engineering Policy Guide also provides minimum temperature requirements for [striping] applications, insuring effective application of various [striping] materials.

**3.0 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 the above special provisions except as specified elsewhere in the contract document.

## **RR. PROTECTION MEASURES FOR STREAMS**

**1.0 Description.** There are many stream crossings along the project length. To avoid any negative impacts to the creeks and watershed, and to any sensitive and/or protected species that may be present, water quality shall be protected from construction activities.

**2.0 Restrictions.** Personnel shall take all precautions to prevent debris or construction materials/waste from entering any waterway in the project limits.

**2.1 Debris Prevention.** Work shall not be allowed below the ordinary high-water elevation. Personnel shall not drive or place any equipment in any waterway.

**2.2 Pollution and Debris Control.** Material, water or residue shall not be allowed to enter the stream or floodplain. This shall include, but is not limited to, hydro-blasting, cold milling, sandblasting, scraping, paving or over-coating. Construction debris, as well as petroleum products, paint, other chemicals, will be prevented from entering the water or otherwise contaminating the streamside environment. Reports of any accidental releases of petroleum products, or other contaminants that could harm fish and other aquatic life, will be reported immediately to the MoDOT Environmental Section. See attachment "Hazardous Waste and Endangered Species Contacts" for the list of contacts and phone numbers. If no MoDOT contact is available at the provided numbers, contact the Missouri Department of Natural Resources (573-634-2436) AND the United States Fish and Wildlife Service contaminants specialists Dave Mosby (573- 234-2132 extension 113, cell 573-999-2747) or John Weber (573-234-2132 extension 177, cell 573-673-2564). These numbers shall be readily available on the job site at all times. Personnel or their Supervisors shall be responsible for immediate reporting in the event of a spill.

**2.3 Erosion and Sediment Control.** Erosion control measures shall be implemented in order to reduce suspended solids, turbidity and downstream sedimentation that may enter the ecosystem of any surface water. MoDOT will ensure strict adherence to the design, placement and maintenance of such temporary and permanent erosion control measures as stated in Division 800, Section 806 et seq., Missouri Standard Specifications for Highway Construction.

Pollution refers to sedimentation and contamination. MoDOT has a State Operating Permit and a Pollution Prevention Plan that were developed in coordination with, and approved by, the Missouri Department of Natural Resources. Section III of the Plan prohibits MoDOT from polluting any waters of the state. The Pollution Prevention Plan shall be implemented throughout the duration of the project.

**2.4 Staging.** The contractor will not be allowed to perform any construction operations from or enter any of the creeks with any equipment whatsoever, at any time for the duration of this project.

**3.0 Basis of Payment.** No direct payment will be made to the Contractor to recover the cost of labor, materials, or equipment required to comply with the above requirements.

**SS. SLURRY AND RESIDUE PRODUCED DURING SURFACE TREATMENT OF PCCP AND BRIDGE DECKS JSP-06-05**

**1.1 Description.** This work covers the requirements for controlling residue or slurry produced by milling, grinding, planing, grooving or other methods of surface treatments on new or existing PCCP and bridge decks in addition to Section 622.

**2.0 Construction Requirements.** The following shall be considered the minimum requirements for performing this work within the project limits.

**2.1** The contractor shall submit to the Engineer for approval in writing prior to the pre-construction meeting, the best management practices (BMP's) to be used to protect the environment, including the method of disposal of the residue whether on right of way or off-site.

**2.2** Prior to starting work, slurry or residue "no discharge zones" will be identified by the Engineer with respect to the contractor's approved BMP and residue disposal plan.

**2.3** Operations may be suspended by the Engineer during periods of rainfall or during freezing temperatures.

**2.4** When slurry is dispersed on the right of way, BMP's shall be installed to keep slurry residue from entering drainage structures, from entering any waterways and from leaving the right of way.

**3.0 Basis of Payment.** No direct payment for slurry or residue control requirements for BMP's will be made. Compliance with this specification along with the cost of all materials, labor and equipment necessary for the surface treatment work shall be included in and completely covered by the unit price bid for each of the items of work for surface treatment included in contract.