

STATE OF MISSOURI
HIGHWAYS and TRANSPORTATION
COMMISSION

JEFFERSON CITY, MISSOURI

CONSTRUCTING OR IMPROVING
CONTRACT I.D. 170519-H01

THIS JOB SHALL BE CONSTRUCTED UNDER
FEDERAL PROJECT NUMBER(S) : I-55-1(150)

Job J0I0956 Route 55 SCOTT County

BIDDER CHECKLIST
FINAL CHECKLIST BEFORE SUBMITTING BID

1. Submit completed Contractor Questionnaire and/or Contractor Prequalification Questionnaire with attachments not later than seven (7) days prior to the date and hour of the bid opening. See Secs 101-103 of the Missouri Standard Specifications for Highway Construction, and Rule 7 CSR 10-15.010, "Prequalifications to Bid of Certain Contractors". Questionnaire and Contact information are provided on MoDOT's website.
 2. All bids shall be submitted electronically using "Bid Express Secure Internet Bidding" at www.bidx.com. Any paper bid submitted will be considered irregular per section 102.8 of the Missouri Standard Specifications for Highway Construction.
 3. Please read all items in the bidding document carefully. The EBS files from MoDOT's website may be used for the itemized bid.
 4. If submitted in the name of a firm or corporation, the legal name of the firm or corporation should appear in the space designated, and be signed for by one or more persons legally qualified to execute papers in the name of said firm or corporation.
 5. The bidder shall submit a Bid Guaranty meeting the requirements of Sec 102 of the Missouri Standard Specifications for Highway Construction. If submitting a project specific or annual bid bond, bidders must use the MoDOT provided bid bond forms. The project specific bond form is included in the request for bid. The project specific and annual bid bond forms are also available on MoDOT's website. Annual bid bonds shall be executed by June 15th of each year.
 6. Submit the Subcontractor Disclosure Form in accordance with the bidding documents. For bids of more than \$2,000,000, each bidder shall submit with each bid a disclosure of the subcontracts that have a subcontract value that is equal or greater than twenty percent of the total project bid or subcontracts that are greater than or equal to \$2,000,000. If that information is not available at the time of bid the bidder shall submit the "Subcontractor Disclosure Form" pages with MoDOT on or before 4:00 p.m. of the third business day after the bid opening date.
 7. Submit the DBE Identification Submittal in accordance with the bidding documents for Federal Projects Only.
 8. Alternate Pavements; to exercise this option, separate pay items, descriptions and quantities are included in the itemized proposal for each of the two alternates. The bidder shall bid only one of the two alternates and leave the contract unit price column blank for any pay item listed for the other alternate.
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9. When submitting a bid, your bid will still come through with "red" folders. You should make sure that it is not the Schedule of Items folder or the Signature and Identity of Bidder folder. Click on the yellow checkmark (Check Bid) at the top and it will list any errors in the bid. To view itemized folders, click the Tree View. This will show the status of the individual folders.

Below is a list of common mistakes made by bidders leading to non-responsive bids. Please refer to the Standard Specifications for the appropriate procedures for completing and submitting a bid.

- a) Submitting a paper bid for a project
- b) Using a different bid bond form than the one provided
- c) Improper use of the Maximum Monetary Value Award Provision
-only used if bidding more than one project and should be in only one bid proposal
- d) Not obtaining a digital ID in advance of the letting
(obtaining a digital ID may take 5 business days)

All questions concerning the bid document preparation shall be directed to the Central Office - Design Division at (573) 751-2876. Project specific questions shall be directed to the project contact listed in the Job Special Provisions.

PRELIMINARY

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Bid Bond*

Subcontractor Disclosure Form*

DBE Identification Submittal (Applies to Federal Projects Only) *

*These forms are also available on MoDOT's Website, www.modot.org under General 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 05-19-17.

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 J0I0956 Route 55 SCOTT County. Grading, paving, bridge and drainage near Kelso, the total length of improvement being 4.551 miles.

Combination bids will be Not 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, 2016," and "Missouri Standard Plans for Highway Construction, 2016", 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.

(5a) ACCEPTANCE OF PROVISION FOR PRICE ADJUSTMENT FOR FUEL: Bidders have the option to accept the provision for Price Adjustment for Fuel in accordance with Sec. 109.14. The bidder must select "Yes" for those items of work in which they choose to accept the provision. No price adjustments will be made, due to fuel price changes, for bidders who do not accept this provision. This provision does not apply to Seal Coat.

EXCAVATION PRODUCTION
ASPHALT PAVING PRODUCTION AND HAULING
CONCRETE PAVING PRODUCTION AND HAULING
AGGREGATE BASE HAULING

(5b) ACCEPTANCE FOR PROVISION FOR ASPHALT CEMENT PRICE INDEX, SEAL COAT PRICE INDEX, UNDERSEAL PRICE INDEX, OR POLYMER MODIFIED EMULSION MEMBRANE PRICE INDEX:

Bidders have the option to accept the provision for Asphalt Cement Price Index, Seal Coat Price Index, Underseal Price Index, and/or Polymer Modified Emulsion Membrane Price Index in accordance with the General Provisions. The bidder must mark each box below if they choose to accept the provision. No price adjustments will be made, due to asphalt price changes, for bidders who do not accept this provision.

ASPHALT CEMENT
SEAL COAT
UNDERSEAL
POLYMER MODIFIED EMULSION MEMBRANE

(6) MAXIMUM MONETARY VALUE OF AWARDS ACCEPTED THIS BID OPENING: Bidders have the option to specify the maximum monetary value of awards that they will accept for the total of all bids they have submitted in the bid opening, Sec 102.7.2. If the bidder is submitting only one bid, or if the bidder does not want to specify a maximum monetary value for submitted bids, this section should not be completed. If a submitted bid upon correction exceeds the indicated maximum monetary amount, the bid may be

declared non-responsive. If a bidder's submitted bids show different values for the maximum monetary value, the lowest value will govern.

MAXIMUM MONETARY VALUE OF AWARDS ACCEPTED THIS BID OPENING

(Note: this amount should be entered in only one of the bids for this bid opening)

(7) COMBINATION BIDS: (Applies only if combination bids are specified. See cover and/or notice to contractor(s).) Combination bids will be in accordance with Sec 102.12. By selecting "ALL OR NONE", the bidder desires to combine all projects in accordance with Sec 102.12.2.1.

(8) BID GUARANTY: The bidder shall submit a Bid Guaranty meeting the requirements of Section 102 of the Missouri Standard Specifications for Highway Construction. MoDOT's bid bond and annual bid bond forms are available on MoDOT's website.

(9a) CERTIFICATIONS FOR FEDERAL JOBS: (Applies to Federal Projects only.) By signing and submitting this bid, the bidder makes the certifications appearing in Sec. 102.18.1 (regarding affirmative action and equal opportunity), Sec. 102.18.2 (regarding disbarment, eligibility, indictments, convictions, or civil judgments), Sec.102.18.3 (regarding anti-collusion), and Sec.102.18.4 (regarding lobbying activities). Any necessary documentation is to accompany the bid submission, as required by these sections. As provided in Sec.108.13, the Commission may terminate the contract for acts of misconduct, which includes but is not limited to fraud, dishonesty, and material misrepresentation or omission of fact within the bid submission.

(9b) CERTIFICATIONS FOR STATE JOBS: (Applies to State Projects only.) By signing and submitting this bid, the bidder makes the certifications appearing in Sec. 102.18.2 (regarding diseligibility, indictments, convictions, or civil judgments), Sec. 102.18.3 (regarding anti-collusion), and Sec. 102.18.5 (regarding Missouri Domestic Products Procurement Act). Any necessary documentation is to accompany the bid submission, as required by these sections. As provided in Sec. 108.13, the Commission may terminate the contract for acts of misconduct, which includes but is not limited to fraud, dishonesty, and material misrepresentation or omission of fact within the bid submission.

Any necessary documentation is to accompany the bid submission, as required by these sections. As provided in Sec. 108.13, the Commission may terminate the contract for acts of misconduct, which includes but is not limited to fraud, dishonesty, and material misrepresentation or omission of fact within the bid submission.

By selecting "No" the bidder REFUSES to make one or more certifications for the above items 9a or 9b. The bidder shall provide a statement of explanation for the refusal in the space below or by fax to the Design Division @ Fax no. 573-522-2281.

(10) ANTIDISCRIMINATION: The Commission hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, businesses owned and controlled by socially and economically disadvantaged individuals will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, religion, creed, sex, age, ancestry, or national origin in consideration for an award.

(11) PREFERENCE TO MISSOURI FIRMS IN AWARDING OF CONTRACTS: (Applies to State Projects only.) The bidder's attention is directed to Section 34.355 RSMo Supp 2000, et seq, which requires that preference be given in awarding contracts to firms, corporations, or individuals doing business as Missouri firms, corporations, or individuals, or which maintain Missouri offices or places of business, when the quality of performance promised is equal, or better, and the price quoted is the same, or less.

The law also requires that a contractor or bidder domiciled outside the state of Missouri shall be required, in order to be the successful bidder, to submit a bid which is the same percent less than the lowest bid submitted by a responsible contractor or bidder domiciled in Missouri as would be required for the Missouri domiciled contractor or bidder to succeed over the bidding contractor or bidder domiciled outside Missouri in a like contract or bid being let in his state. A contractor or bidder domiciled outside Missouri domiciliary shall also be required to submit an audited financial statement as would

be required of a Missouri domiciled contractor or bidder on a like contract or bid being let in the domiciliary state of that contractor or bidder.

For firms, corporations or individuals domiciled outside the state of Missouri, it is requested they submit the following information:

List the state of domicile

List address of all Missouri offices or places of business

I acknowledge that I have read, understand and completed the above Contract Provisions.

PRELIMINARY

(12) Signature and Identity of Bidder

BY SUBMITTING THIS BID ELECTRONICALLY, I HEREBY ACKNOWLEDGE THAT ALL REQUIREMENTS INCLUDED IN THE HARD COPY REQUEST FOR BID, AND AMENDMENTS ARE A PART OF THIS BID AND CONTRACT.

*** AN ELECTRONIC PROPOSAL SUBMITTED AND SIGNED WITH A DIGITAL ID, UNDER THE PROVISION OF THE MISSOURI DEPARTMENT OF TRANSPORTATION, WILL BE CONSIDERED VALID AND BINDING. ***

THE BIDDER CERTIFIES THAT THE BIDDER AND ITS OFFICIALS, AGENTS, AND EMPLOYEES HAVE NEITHER DIRECTLY NOR INDIRECTLY ENTERED INTO ANY AGREEMENT, PARTICIPATED IN ANY COLLUSION, OR OTHERWISE TAKEN ANY ACTION IN RESTRAINT OF FREE COMPETITIVE BIDDING IN CONNECTION WITH THIS BID, AND THAT THE BIDDER INTENDS TO PERFORM THE WORK WITH ITS OWN BONAFIDE EMPLOYEES AND SUBCONTRACTORS, AND DID NOT BID FOR THE BENEFIT OF ANOTHER CONTRACTOR.

THE BIDDER CERTIFIES THAT THE BIDDER'S COMPANY KNOWINGLY EMPLOYS ONLY INDIVIDUALS WHO ARE AUTHORIZED TO WORK IN THE UNITED STATES IN ACCORDANCE WITH THE APPLICABLE FEDERAL AND STATE LAWS AND ALL PROVISIONS OF MISSOURI EXECUTIVE ORDER NO. 07-13 FOR CONTRACTS WITH THE MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION, ACTING THROUGH THE MISSOURI DEPARTMENT OF TRANSPORTATION.

THE BIDDER ACKNOWLEDGES THAT THIS IS AN UNSWORN DECLARATION, EXECUTED UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE UNITED STATES AND/OR FALSE DECLARATION UNDER THE LAWS OF MISSOURI, AND ANY OTHER APPLICABLE STATE OR FEDERAL LAWS. THE FAILURE TO PROVIDE THIS CERTIFICATION IN THIS BID MAY MAKE THIS BID NON-RESPONSIVE, AND CAUSE IT TO BE REJECTED.

Select "No" ONLY if the bidder REFUSES to make this certification. The bidder may provide an explanation for the refusal with this submittal in the space below or by fax to the Design Division @ fax no. 573-522-2281.

USE OF ANOTHER PERSON'S DIGITAL ID IN THIS BIDDING PROCESS VIOLATES THE LAWS OF MISSOURI.

I acknowledge that I have read, understand and completed the above Electronic Bid Submission Certification.

DBE CERTIFICATION

(13) Trainees: (Applies to Federal Projects only) The number of trainee hours provided under this contract will be slots at 1000 hours per slot or hours.

(14) Bidder's Certification for DBE Program and Contract Goal (Applies to Federal Projects Only.)

(A) DBE Contract Goal: By submitting this bid, the bidder certifies that the bidder is familiar with the DBE Program Requirements in the General Provisions. The contract goal for the amount of work to be awarded is 0% of the total federal project price. The bidder shall also complete the DBE Identification Submittal form in accordance with the General Provisions. This form is available on MoDOT's Website, www.modot.org under General Information on the Bid Opening Info page of the Contractor Resources site.

(B) DBE Participation: The bidder certifies that it will utilize DBE's as follows: % OF TOTAL FEDERAL CONTRACT

NOTE: Bidder must fill in the above box. If no percentage is specified, the bidder certifies that it agrees to and will comply with the contract goal. If a percentage below the contract goal is specified, then the bidder must submit complete documentation of good faith efforts to met the DBE contract goal, immediately below.

The DBE Identification Submittal form will be submitted via

(C) Certification of Good Faith Efforts to Obtain DBE Participation: By submitting its signed bid, the bidder certifies under penalty of perjury and other provisions of law, that the bidder took each of the following steps to try to obtain sufficient DBE participation to achieve the Commission's proposed DBE Contract Goal:

(15) 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:

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Contract ID: 170519-H01
 Letting Date: 05-19-17
 Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
Section 0002 Roadway Items - J0I0956						
Alt Group						
0010	1041000 TEMPORARY SURFACING	6,442.000 CUYD				
0020	2013000 CLEARING AND GRUBBING	3.000 ACRE				
0030	2022010 REMOVAL OF IMPROVEMENTS	LUMP	LUMP			
0040	2031000 CLASS A EXCAVATION	116,464.000 CUYD				
0050	2035500 EMBANKMENT IN PLACE	263,020.000 CUYD				
0060	2036000 COMPACTING EMBANKMENT	103,884.000 CUYD				
0070	2039901 MISC. SURFACE ROUGHENING	LUMP	LUMP			

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			Dollars	Cts	Dollars	Cts
0080	2063000 CLASS 3 EXCAVATION	2,180.000 CUYD				
0090	2063300 CLASS 4 EXCAVATION	375.000 CUYD				
0100	2071000 LINEAR GRADING CLASS 1	16.200 STA				
0110	2072000 LINEAR GRADING CLASS 2	42.300 STA				
0120	2101006A SUBGRADE COMPACTION (6-INCH DEPTH)	100F 175.000				
0130	3040506 TYPE 5 AGGREGATE FOR BASE (6 IN. THICK)	SQYD 71,007.000				
0140	3049907 MISC. WEDGING	560.000 CUYD				
0150	3049910 MISC. TYPE 1 AGGREGATE BASE	495.000 TONS				

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			Dollars	Cts	Dollars	Cts
0160	3105002 GRAVEL (A) OR CRUSHED STONE (B)	19,222.000 TONS				
0170	3105003 GRAVEL (A) OR CRUSHED STONE (B)	4,167.000 SQYD				
0180	4010151 TYPE A3 SHOULDER	4,189.900 SQYD				
0190	4019905 MISC. OPTIONAL PAVEMENT DRIVEWAYS	2,933.300 SQYD				
0200	4019905 MISC. OPTIONAL SHOULDER	4,942.000 SQYD				
0210	4071005 TACK COAT	670.000 GAL				
0220	4134000 BITUMINOUS FOG SEAL	335.000 GAL				
0230	5029905 MISC. 8 IN. COMPACTED CONCRETE PAVEMENT (CCP)	26,547.700 SQYD				

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			Dollars	Cts	Dollars	Cts
0240	5029905 MISC. 6 IN. COMPACTED CONCRETE PAVEMENT (CCP)	8,220.000 SQYD				
0250	5041000 CONCRETE APPROACH PAVEMENT	826.200 SQYD				
0260	6039921 SEWER	LUMP	LUMP			
0270	6059901 MISC. WICK DRAIN DRAINAGE SYSTEM	LUMP	LUMP			
0280	6059903 MISC. WICK DRAINS	366,300.000 LF				
0290	6091041 CONCRETE GUTTER TYPE A	175.000 LF				
0300	6092032 CONCRETE CURB LOW PROFILE TYPE F	179.000 LF				
0310	6096010A FURNISHING TYPE 1 ROCK DITCH LINER	29.000 CUYD				

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			Dollars	Cts	Dollars	Cts
0320	6096020 FURNISHING TYPE 2 ROCK DITCH LINER	3,798.000 CUYD				
0330	6096041 PLACING TYPE 1 ROCK DITCH LINER	29.000 CUYD				
0340	6096042 PLACING TYPE 2 ROCK DITCH LINER	3,798.000 CUYD				
0350	6099901 MISC. ROCK STABILIZATIO N	LUMP	LUMP			
0360	6113020 FURNISHING TYPE 2 ROCK BLANKET	2,281.000 CUYD				
0370	6113040 PLACING TYPE 2 ROCK BLANKET	2,609.000 CUYD				
0380	6116010A SLOPE PROTECTION	25.000 SQYD				
0390	6122019 IMPACT ATTENUATOR (19 SAND BARRELS)	8.000 EA				

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Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
0400	6122020 REPLACEMENT SAND BARREL	EA 19.000				
0410	6122030 IMPACT ATTENUATOR (RELOCATION)	EA 5.000				
0420	6141021 GRATE AND BEARING PLATE (3 FT. X 2 FT. OR 914 MM X 610 MM)	EA 3.000				
0430	6141024 GRATE AND BEARING PLATE (5 FT. X 3 FT. OR 1524 MM X 914 MM)	EA 1.000				
0440	6161005 CONSTRUCTION SIGNS	SQFT 3,342.000				
0450	6161008 ADVANCED WARNING RAIL SYSTEM	EA 18.000				
0460	6161009 FLAG ASSEMBLY	EA 10.000				
0470	6161020 CHANNELIZER (DRUM-LIKE)	EA 10.000				

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			Dollars	Cts	Dollars	Cts
0480	6161025 CHANNELIZER (TRIM LINE)	EA 165.000				
0490	6161030 TYPE III MOVEABLE BARRICADE	EA 25.000				
0500	6161033 DIRECTIONAL INDICATOR BARRICADE	EA 42.000				
0510	6161040 FLASHING ARROW PANEL	EA 2.000				
0520	6161070 TUBULAR MARKER	EA 500.000				
0530	6161098A CHANGEABLE MESSAGE SIGN WITHOUT COMMUNICATION INTERFACE, CONTRACTOR FURNISHED, CONTRACTOR RETAINED	EA 5.000				
0540	6162000A WORK ZONE TRAFFIC SIGNAL SYSTEM	EA 2.000				

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			Dollars	Cts	Dollars	Cts
0550	6162003 LONG-TERM RUMBLE STRIPS	960.000 LF				
0560	6169901 MISC. DETOUR SIGNS	LUMP	LUMP			
0570	6169902 MISC. TYPE 4 OBJECT MARKER	8.000 EA				
0580	6172000 CONCRETE TRAFFIC BARRIER, TYPE B	120.000 LF				
0590	6173600D TEMPORARY TRAFFIC BARRIER, CONTRACTOR FURNISHED / RETAINED	951.000 LF				
0600	6175010A RELOCATING TEMPORARY TRAFFIC BARRIER	1,101.000 LF				
0610	6181000 MOBILIZATION	LUMP	LUMP			
0620	6189902 MISC. ADDITIONAL MOBILIZATION FOR SEEDING	1.000 EA	600.00000		600.00	

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Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
0630	6191000 PAVEMENT EDGE TREATMENT	6,883.000 LF				
0640	6205120 TYPE 2 PREFORMED MARKING TAPE (GROOVED), 24 IN., WHITE	34.000 LF				
0650	6205121 TYPE 2 PREFORMED MARKING TAPE (GROOVED), 24 IN., YELLOW	292.000 LF				
0660	6205130 TYPE 2 PREFORMED MARKING TAPE (GROOVED), LEFT/RIGHT ARROW	8.000 EA				
0670	6205301B PREFORMED REMOVABLE MARKING TAPE 4 IN., WHITE	3,925.000 LF				
0680	6205303B PREFORMED REMOVABLE MARKING TAPE 4 IN., YELLOW	500.000 LF				
0690	6205425 PREFORMED SHORT TERM MARKING TAPE 24 IN., WHITE	48.000 LF				

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Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
0700	6205902A 6 IN. WHITE HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE L BEADS	8,997.000 LF				
0710	6205903A 6 IN. YELLOW HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE L BEADS	3,472.000 LF				
0720	6205906A 12 IN. WHITE HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE L BEADS	1,366.000 LF				
0730	6206000C 4 IN. WHITE WATERBORNE PAVEMENT MARKING PAINT, TYPE P BEADS	44,326.000 LF				
0740	6206001C 4 IN. YELLOW WATERBORNE PAVEMENT MARKING PAINT, TYPE P BEADS	60,309.000 LF				
0750	6206108A 8 IN. WHITE WATERBORNE PAVEMENT MARKING PAINT, TYPE P BEADS	2,160.000 LF				

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Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
0760	6207001 PAVEMENT MARKING REMOVAL	40,931.000 LF				
0770	6209901 MISC. CULVERT SETTLEMENT TREATMENT	LUMP	LUMP			
0780	6240104A SEPARATION GEOTEXTILE	76,495.000 SQYD				
0790	6249905 MISC. BIAXIAL GEOGRID	14,416.000 SQYD				
0800	6274000 CONTRACTOR FURNISHED SURVEYING AND STAKING	LUMP	LUMP			
0810	7034001 CLASS B-1 CONCRETE	393.400 CUYD				
0820	7061030 REINFORCING STEEL (CULVERTS)	71,470.000 LB				

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			Dollars	Cts	Dollars	Cts
0830	7250312A 12 IN. PIPE GROUP B	550.000 LF				
0840	7250318A 18 IN. PIPE GROUP B	742.000 LF				
0850	7250324A 24 IN. PIPE GROUP B	110.000 LF				
0860	7250330A 30 IN. PIPE GROUP B	120.000 LF				
0870	7250336A 36 IN. PIPE GROUP B	200.000 LF				
0880	7261018 18 IN. PIPE GROUP A	499.000 LF				
0890	7261024 24 IN. PIPE GROUP A	261.000 LF				
0900	7261036 36 IN. PIPE GROUP A	278.000 LF				

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Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
0910	7261060 60 IN. PIPE GROUP A	131.000 LF				
0920	7261072 72 IN. PIPE GROUP A	275.000 LF				
0930	7261084 84 IN. PIPE GROUP A	233.000 LF				
0940	7311032 PRECAST CONCRETE DROP INLET 3 FT X 2 FT	9.000 FT				
0950	7311053 PRECAST CONCRETE DROP INLET 5 FT X 3 FT	13.000 FT				
0960	7320618A 18 IN. OR ALLOWED SUBSTITUTE GROUP A FLARED END SECTION	13.000 EA				
0970	7320624A 24 IN. OR ALLOWED SUBSTITUTE GROUP A FLARED END SECTION	4.000 EA				
0980	7320636A 36 IN. OR ALLOWED SUBSTITUTE GROUP A FLARED END SECTION	1.000 EA				

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 170519-H01
 Letting Date: 05-19-17
 Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
0990	7320660A 60 IN. OR ALLOWED SUBSTITUTE GROUP A FLARED END SECTION	EA 4.000				
1000	7320672A 72 IN. OR ALLOWED SUBSTITUTE GROUP A FLARED END SECTION	EA 6.000				
1010	7320684A 84 IN. OR ALLOWED SUBSTITUTE GROUP A FLARED END SECTION	EA 2.000				
1020	8051000A SEEDING - COOL SEASON MIXTURES	ACRE 44.600				
1030	8059919 MISC. FIBER REINFORCED MATRIX	ACRE 14.800				
1040	8061005 ROCK DITCH CHECK	LF 6,426.000				
1050	8061017 TEMPORARY SEEDING AND MULCHING	ACRE 10.000				
1060	8061019 SILT FENCE	LF 25,997.000				

State of MISSOURI
 Dept of Transportation
 Schedule of Items

Contract ID: 170519-H01
 Letting Date: 05-19-17
 Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
1070	8061050 TYPE C BERM	990.000 LF				
1080	8069928 MISC. WATER POLLUTION CONTROL MANAGER	146.000 WK				
Section 0002 Total						600.00
Section 0003 Alternate Pavement A - I-55 Ramps - Asphalt - J0I0						
Alt Group AA1						
1090	4019905 MISC. 11.5 IN. BITUMINOUS PAVEMET	10,653.300 SQYD				
1100	4019905 MISC. 14 IN. BITUMINOUS PAVEMENT	66.700 SQYD				
Section 0003 Total						0.00
Section 0004 Alternate Pavement B - I-55 Ramps - PCCP - J0I0956						
Alt Group AA2						
1110	5021109 CONCRETE PAVEMENT (9 IN. NON-REINF)	10,653.300 SQYD				

State of MISSOURI
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 Schedule of Items

Contract ID: 170519-H01
 Letting Date: 05-19-17
 Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Ct
1160	4019905 MISC. 11.5 INCHES, BITUMINOUS PAVEMENT	19,166.200 SQYD				
Section 0007 Total						0.00
Section 0008 Alternate Pavement F - East Outer Road - PCCP - JOI						
Alt Group CC2						
1170	5021109 CONCRETE PAVEMENT (9 IN. NON-REINF)	19,166.200 SQYD				
Section 0008 Total						0.00
Section 0009 Alternate Pavement G - West Outer Road - Ashpalt -						
JOI0956						
Alt Group DD1						
1180	4010102 9 INCHES, BITUMINOUS PAVEMENT	4,890.700 SQYD				
Section 0009 Total						0.00
Section 0010 Alternate Pavement F - West Outer Road - PCCP - JOI						
Alt Group DD2						
1190	5021108 CONCRETE PAVEMENT (8 IN. NON-REINF)	4,890.700 SQYD				

State of MISSOURI
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 Schedule of Items

Contract ID: 170519-H01
 Letting Date: 05-19-17
 Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount		
			Dollars	Cts	Dollars	Cts	
Section 0010 Total						0.00	
Section 0011 Guardrail/Guard Cable Items - J0I0956							
Alt Group							
1200	6061054 GUARDRAIL TYPE E, 6 FT POST, 6 FT.-3 IN. SPACING	113.000 LF					
1210	6061060 MGS GUARDRAIL	1,388.000 LF					
1220	6061068 MGS BRIDGE APPROACH TRANSITION SECTION (EXTENDED CURB)	18.000 EA					
1230	6061080 MGS END ANCHOR	2.000 EA					
1240	6062204A BRIDGE ANCHOR SECTION, 6.5 FT. POSTS (SAFETY BARRIER CURB) (NEW CONSTRUCTION ONLY)	18.000 EA					
1250	6063014 TYPE A CRASHWORTHY END TERMINAL (MASH)	20.000 EA					

State of MISSOURI
Dept of Transportation
Schedule of Items

Contract ID: 170519-H01
Letting Date: 05-19-17
Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount		
			Dollars	Cts	Dollars	Cts	
1260	6064000 ONE-STRAND CABLE - ACCESS RESTRAINT	3,700.000 LF					
1270	6069903 MISC. HI-TENSION GUARDCABLE (DISASSEMBLE, STORE, AND REASSEMBLE)	11,600.000 LF					
	Section 0011 Total					0.00	
Section 0012 Lighting Items - J0I0956							
Alt Group							
1280	9011064 LIGHTING POLE, 45 FT. OR 13.5 M, TYPE AT DESIGN 3	6.000 EA					
1290	9011115 BRACKET ARM, 15 FT. OR 4.6 M	6.000 EA					
1300	9011320 LUMINAIRE, 400 WATT HIGH PRESSURE SODIUM	6.000 EA					
1310	9012230 BASE MOUNTED CONTROL STATION 240 VOLT - 4 CIRCUIT	1.000 EA					

State of MISSOURI
Dept of Transportation
Schedule of Items

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Letting Date: 05-19-17
Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
1320	9013003 CONDUIT, 3 IN. RIGID, IN TRENCH	LF 348.000				
1330	9014003 CONDUIT, 3 IN. RIGID, PUSHED	LF 274.000				
1340	9015010 TRENCHING TYPE I	LF 4,711.000				
1350	9016110 PULL BOX, PREFORMED CLASS 1	EA 22.000				
1360	9016112 PULL BOX, PREFORMED CLASS 3	EA 1.000				
1370	9017002 CABLE, 2 AWG 1 CONDUCTOR	LF 110.000				
1380	9017110 CABLE, 10 AWG 1 CONDUCTOR, POLE AND BRACKET	LF 700.000				
1390	9017407 CABLE-CONDUIT, 1 IN., 2 CONDUCTORS AND 1 BARE NEUTRAL, 8 AWG	LF 6,200.000				

State of MISSOURI
 Dept of Transportation
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Contract ID: 170519-H01
 Letting Date: 05-19-17
 Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount		
			Dollars	Cts	Dollars	Cts	
1400	9018245 POLE FOUNDATION (45 FT. OR 13.5 M MOUNTING HEIGHT)	EA 6.000					
1410	9018610 POWER SUPPLY ASSEMBLY, TYPE 1, 240/120 VOLT SERVICE, LIGHTING ONLY	EA 1.000					
1420	9019903 MISC. 2" RIGID CONDUIT BRIDGE	LF 162.000					
	Section 0012 Total					0.00	

Section 0013 Signing Items - J0I0956

Alt Group

1430	9031010 CONCRETE FOOTINGS, EMBEDDED	CUYD 42.000				
1440	9031210 STRUCTURAL STEEL POSTS	LB 17,790.000				
1450	9031220 PIPE POSTS	LB 5,000.000				

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 Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
1460	9031241 BREAKAWAY ASSEMBLY (PERFORATED SQUARE STEEL TUBE)	EA 2.000				
1470	9031270A 2 IN. PSST POST - 12 GA.	LF 494.000				
1480	9031271 POST ANCHOR FOR 2 IN. PSST - 12 GA.	LF 135.000				
1490	9031272 2.25 IN. PSST POST - 12 GA.	LF 32.000				
1500	9031280 2.5 IN. PSST POST - 12 GA.	LF 315.000				
1510	9031281 POST ANCHOR FOR 2.5 IN. PSST - 7 GA.	LF 66.000				
1520	9035004A SH-FLAT SHEET	SQFT 707.000				
1530	9035011A ST-STRUCTURAL	SQFT 2,194.000				

State of MISSOURI
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Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount		
			Dollars	Cts	Dollars	Cts	
1540	9035069A SHF-FLAT SHEET FLUORESCENT	242.000 SQFT					
	Section 0013 Total					0.00	
Section 0014 Bridge A8433 Items - J0I0956							
Alt Group							
1550	2061000 CLASS 1 EXCAVATION	120.000 CUYD					
1560	2160500 REMOVAL OF BRIDGES	LUMP	LUMP				
1570	5031010A BRIDGE APPROACH SLAB (MAJOR ROAD)	209.000 SQYD					
1580	7021214 GALVANIZED STRUCTURAL STEEL PILES (14 IN)	2,892.000 LF					
1590	7025002 PILE WAVE ANALYSIS	4.000 EA					
1600	7027000 PILE POINT REINFORCEMENT	40.000 EA					

State of MISSOURI
 Dept of Transportation
 Schedule of Items

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 Letting Date: 05-19-17
 Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
1610	7032003 CLASS B CONCRETE (SUBSTRUCTURE)	101.000 CUYD				
1620	7034215 SAFETY BARRIER CURB	364.000 LF				
1630	7034221 SLAB ON CONCRETE NU-GIRDER	870.000 SQYD				
1640	7056021 NU 35, PRESTRESSED CONCRETE NU-GIRDER	787.000 LF				
1650	7061060 REINFORCING STEEL (BRIDGES)	9,000.000 LB				
1660	7121000 FABRICATED STRUCTURAL CARBON STEEL (MISC)	1,090.000 LB				
1670	7123610 SLAB DRAIN	22.000 EA				
1680	7151001 VERTICAL DRAIN AT END BENTS	2.000 EA				

State of MISSOURI
Dept of Transportation
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Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount		
			Dollars	Cts	Dollars	Cts	
1690	7161000 PLAIN NEOPRENE BEARING PAD	EA 30.000					
	Section 0014 Total					0.00	
Section 0015 Bridge A8434 Items - J0I0956							
Alt Group							
1700	2061000 CLASS 1 EXCAVATION	CUYD 120.000					
1710	2160500 REMOVAL OF BRIDGES	LUMP	LUMP				
1720	5031010A BRIDGE APPROACH SLAB (MAJOR ROAD)	SQYD 209.000					
1730	7021214 GALVANIZED STRUCTURAL STEEL PILES (14 IN)	LF 2,892.000					
1740	7025002 PILE WAVE ANALYSIS	EA 4.000					
1750	7027000 PILE POINT REINFORCEMENT	EA 40.000					

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 Dept of Transportation
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Contract ID: 170519-H01
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 Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
1760	7032003 CLASS B CONCRETE (SUBSTRUCTURE)	101.000 CUYD				
1770	7034215 SAFETY BARRIER CURB	364.000 LF				
1780	7034221 SLAB ON CONCRETE NU-GIRDER	870.000 SQYD				
1790	7056021 NU 35, PRESTRESSED CONCRETE NU-GIRDER	787.000 LF				
1800	7061060 REINFORCING STEEL (BRIDGES)	9,000.000 LB				
1810	7071000 CONDUIT SYSTEM ON STRUCTURE	LUMP	LUMP			
1820	7121000 FABRICATED STRUCTURAL CARBON STEEL (MISC)	1,090.000 LB				
1830	7123610 SLAB DRAIN	22.000 EA				

State of MISSOURI
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 Schedule of Items

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 Letting Date: 05-19-17
 Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount		
			Dollars	Cts	Dollars	Cts	
1840	7151001 VERTICAL DRAIN AT END BENTS	EA 2.000					
1850	7161000 PLAIN NEOPRENE BEARING PAD	EA 30.000					
	Section 0015 Total					0.00	
Section 0016 Bridge A8435 Items - J0I0956							
Alt Group							
1860	2061000 CLASS 1 EXCAVATION	CUYD 60.000					
1870	2160500 REMOVAL OF BRIDGES	LUMP	LUMP				
1880	5031011A BRIDGE APPROACH SLAB (MINOR ROAD)	SQYD 149.000					
1890	7021314 GALVANIZED CAST-IN-PLACE CONCRETE PILES (14 IN)	LF 1,197.000					

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 Letting Date: 05-19-17
 Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
1900	7025001 DYNAMIC PILE TESTING	EA 4.000				
1910	7025004 DYNAMIC PILE RESTRIKE TESTING	EA 4.000				
1920	7034003 CLASS B-1 CONCRETE (SUBSTRUCTURE)	CUYD 33.000				
1930	7034208 CLASS B-2 CONCRETE (SUPERSTRUCTURE SOLID SLAB)	CUYD 255.100				
1940	7034215 SAFETY BARRIER CURB	LF 243.000				
1950	7061060 REINFORCING STEEL (BRIDGES)	LB 5,450.000				
1960	7101000 REINFORCING STEEL (EPOXY COATED)	LB 46,330.000				
1970	7151001 VERTICAL DRAIN AT END BENTS	EA 2.000				

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Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
Section 0016 Total						0.00
Section 0017 Bridge A8436 Items - J0I0956						
Alt Group						
1980	2061000 CLASS 1 EXCAVATION	430.000 CUYD				
1990	2065500 TEMPORARY SHORING	LUMP		LUMP		
2000	2160500 REMOVAL OF BRIDGES	LUMP		LUMP		
2010	5031011A BRIDGE APPROACH SLAB (MINOR ROAD)	219.000 SQYD				
2020	7021212 GALVANIZED STRUCTURAL STEEL PILES (12 IN)	5,568.000 LF				
2030	7027000 PILE POINT REINFORCEMENT	66.000 EA				
2040	7032003 CLASS B CONCRETE (SUBSTRUCTURE)	252.300 CUYD				

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 Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
2050	7034212 SLAB ON STEEL	1,367.000 SQYD				
2060	7034215 SAFETY BARRIER CURB	520.000 LF				
2070	7061060 REINFORCING STEEL (BRIDGES)	33,570.000 LB				
2080	7121121 FABRICATED STRUCTURAL LOW ALLOY STEEL (PLATE GIRDER) A709, GRADE 50	240,970.000 LB				
2090	7123610 SLAB DRAIN	16.000 EA				
2100	7125365A INTERMEDIATE FIELD COAT (SYSTEM G)	14,300.000 SQFT				
2110	7125370A FINISH FIELD COAT (SYSTEM G)	2,400.000 SQFT				
2120	7151001 VERTICAL DRAIN AT END BENTS	2.000 EA				

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Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount		
			Dollars	Cts	Dollars	Cts	
2130	7161000 PLAIN NEOPRENE BEARING PAD	EA 6.000					
2140	7161003 LAMINATED NEOPRENE BEARING PAD (TAPERED)	EA 6.000					
2150	7162000 LAMINATED NEOPRENE BEARING PAD ASSEMBLY	EA 18.000					
	Section 0017 Total					0.00	

Section 0018 Bridge A8437 Items - J0I0956

Alt Group

2160	5031011A BRIDGE APPROACH SLAB (MINOR ROAD)	SQYD 138.000				
2170	7021214 GALVANIZED STRUCTURAL STEEL PILES (14 IN)	LF 2,280.000				
2180	7025002 PILE WAVE ANALYSIS	EA 4.000				
2190	7026000 PRE-BORE FOR PILING	LF 348.000				

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Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
2200	7027000 PILE POINT REINFORCEMENT	EA 24.000				
2210	7032003 CLASS B CONCRETE (SUBSTRUCTURE)	CUYD 56.600				
2220	7034215 SAFETY BARRIER CURB	LF 379.000				
2230	7034221 SLAB ON CONCRETE NU-GIRDER	SQYD 626.000				
2240	7056021 NU 35, PRESTRESSED CONCRETE NU-GIRDER	LF 679.000				
2250	7061060 REINFORCING STEEL (BRIDGES)	LB 4,190.000				
2260	7121000 FABRICATED STRUCTURAL CARBON STEEL (MISC)	LB 1,750.000				
2270	7123610 SLAB DRAIN	EA 16.000				

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 Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cts	Dollars	Cts
2280	7151001 VERTICAL DRAIN AT END BENTS	EA 2.000				
2290	7161000 PLAIN NEOPRENE BEARING PAD	EA 24.000				
Section 0018 Total						0.00
Section 0019 Bridge A8438 Items - J0I0956						
Alt Group						
2300	2063300 CLASS 4 EXCAVATION	CUYD 1,020.000				
2310	2160500 REMOVAL OF BRIDGES	LUMP	LUMP			
2320	7034040 CLASS B-1 CONCRETE (CULVERTS-BRIDGE)	CUYD 350.900				
2330	7061020 REINFORCING STEEL (CULVERTS-BRIDGE)	LB 51,840.000				
Section 0019 Total						0.00

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Project(s):

Bidder: -

Line No.	Item Description	Approx. Quantity and Units	Unit Price		Bid Amount		
			Dollars	Cts	Dollars	Ct	
	Bid Total					600.00	

PRELIMINARY

Contract Id: 170519-H01
Vendor Name:

Vendor Number:

SUBCONTRACTOR DISCLOSURE

The bidder shall submit with this bid any subcontracts that meet the requirements of Sec 102. List below the name of each subcontractor that will be furnishing labor or labor and materials, the category of work that the subcontractor will be performing (e.g. asphalt, concrete, earthwork, bridges...), and the dollar value of the subcontract. Select "NONE" if there are no subcontractors that need to be disclosed.

If the information is not available at the time of bid the bidder shall submit the "Subcontractor Disclosure Form", located on MoDOT's website, on or before 4:00 p.m. of the third business day after the bid opening date, directly to the Design Division, Missouri Department of Transportation, 105 W. Capitol Avenue, P.O. Box 270, Jefferson City, Missouri 65102-0270. Telefax transmittal to MoDOT will be permitted at fax no. 573-522-2281 or e-mailed to subcontractor.disclosure@modot.mo.gov. The complete signed original documents do not need to be mailed to MoDOT, but the bidder shall have it available if requested by the Design Division or the engineer.

SUBCONTRACTOR NAME	DOLLAR VALUE OF SUBCONTRACT	CATEGORY OF WORK
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PRELIMINARY

BID BOND

KNOW ALL PERSONS BY THESE PRESENTS, that we as principal and and as surety, are held and firmly bound unto the state of Missouri (acting by and through the Missouri Highways and Transportation Commission) in the penal sum of 30.00 Dollars to be paid to the commission to be credited to the state road fund, the principal and surety binding themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

Sealed with our seals and dated this.

THE CONDITION OF THIS OBLIGATION is such that WHEREAS the principal is submitting herewith a bid to the commission on

route(s)
in County(ies)
project(s)

for construction or improvement of state highway as set out in said bid;

NOW THEREFORE, if the commission shall accept the bid of the principal and if the principal shall properly execute and deliver to the commission the contract, contract bond, and evidence of insurance coverage in compliance with the requirements of the bid, the specifications, and the provisions of section 227.100 RSMo, to the satisfaction of the commission, then this obligation shall be void and of no effect, otherwise to remain in full force and effect.

In the event the said principal shall, in the judgment of the commission, fail to comply with any requirement as set forth in the preceding paragraph, then the state of Missouri, acting by and through the commission, shall immediately and forthwith be entitled to recover the full penal sum above set out, together with court costs, attorney's fees, and any other expense of recovery.

The principal and surety hereby certify that the document is the original or a verbatim copy of the bid bond form furnished by the Commission, in accordance with Sec 102.9 of the Missouri Standard Specifications for Highway Construction.

This Bid contains 0 amendment files

PRELIMINARY



JOB SPECIAL PROVISIONS TABLE OF CONTENTS - ROADWAY

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

- A. General
- B. Contract Liquidated Damages
- C. Work Zone Traffic Management Plan
- D. Project Contact For Contractor Bidder Questions
- E. Utilities
- F. Emergency Provisions And Incident Management
- G. Fertilizing
- H. Seeding
- I. Optional Pavements Driveways
- J. Linear Grading
- K. Quality Management
- L. Surface Roughening of Slopes
- M. Compacted Concrete Pavement
- N. Supplemental Revisions
- O. Stormwater Compliance Requirements
- P. DBE Program Requirements
- Q. Restrictions for Migratory Birds
- R. Alternates for Pavements
- S. Vertical Wick Drains
- T. Sand Drainage Blanket
- U. Geotechnical
- V. Project Constraints
- W. 3 Strand High Tension Guard Cable
- X. Right of Way Clearance
- Y. Fiber Reinforced Matrix
- Z. Additional Mobilization for Seeding
- AA. Modified Subcontracting Requirements
- BB. MoDOT's Construction Workforce Program
- CC. Dewatering
- DD. Electronic Information for Bidder's Automation
- EE. Culvert at Sta. 43+70 (Route 61)
- FF. I-55 Guardrail Treatment
- GG. Sanitary Sewer Force Main

ADDITIONAL INFORMATION

Nationwide Permit No.14
Asbestos Survey Reports

Job No.: J010956

Route: I-55

County: Scott

	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 W. CAPITOL AVE. JEFFERSON CITY, MO 65102 Phone 1-888-275-6636
	If a seal is present on this sheet, JSP's have been electronically sealed and dated.
	JOB NUMBER: J010956 SCOTT COUNTY, MO DATE PREPARED: 02/14/2017
	ADDENDUM DATE:
Only the following items of the Job Special Provisions (Roadway) are authenticated by this seal: Sections A-GG.	

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 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 under "Business"; "Standards and Specifications". The effective version shall be determined by the letting date of the project.

General Provisions & Supplemental Specifications

Supplemental Plans to October 2016 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. CONTRACT LIQUIDATED DAMAGES JSP-13-01B

1.0 Description. Liquidated Damages for failure or delay in completing the work on time for this contract shall be in accordance with Sec 108.8. The liquidated damages include separate amounts for road user costs and contract administrative costs incurred by the Commission.

2.0 Period of Performance. Prosecution of work is expected to begin on the date specified below in accordance with Sec 108.2. Regardless of when the work is begun on this contract, all work shall be completed on or before the date specified below. Completion by this date shall be in accordance with the requirements of Sec 108.7.1.

Notice to Proceed: August 07, 2017
Completion Date: June 01, 2020

2.1 Calendar Days. The count of calendar days will begin on the date the contractor starts any construction operations on the project.

Job Number	Calendar Days	Daily Road User Cost
J010956	846	\$5400

3.0 Liquidated Damages for Contract Administrative Costs. Should the contractor fail to complete the work on or before the completion date specified in Section 2.0, or within the number of calendar days specified in Section 2.1, whichever occurs first, the contractor will be charged contract administrative liquidated damages in accordance with Sec 108.8 in the amount of **\$2000** per calendar day for each calendar day, or partial day thereof, that the work is not fully completed. For projects in combination, these damages will be charged in full for failure to complete one or more projects within the above specified completion date or calendar days.

4.0 Liquidated Damages for Road User Costs. Should the contractor fail to complete the work on or before the completion date specified in Section 2.0, or within the number of calendar days specified in Section 2.1, whichever occurs first, the contractor will be charged road user costs in accordance with Sec 108.8 in the amount specified in Section 2.1 for each calendar day, or partial day thereof, that the work is not fully completed. These damages are in addition to the contract administrative damages and any other damages as specified elsewhere in this contract.

C. WORK ZONE TRAFFIC MANAGEMENT PLAN

1.0 Description. 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.

1.1 Work Zone Specialist (WZS). The Traffic Management Plan shall name an individual, either employed by the contractor or hired by the contractor, to act as the Work Zone Specialist (WZS) throughout the entirety of the project. Any change in personnel for the WZS shall be submitted in written form to the engineer. This individual will be a trained Work Zone Specialist in accordance with Standard Specifications Section 616.3.3 and will be directly involved with daily traffic management and traffic management planning. It will be the responsibility of the WZS to coordinate daily traffic management with the engineer. The WZS shall maintain daily contact with the engineer either on-site or via telecommunication.

1.2 Maintaining Work Zones and Work Zone Reviews. The WZS shall maintain work zones on a daily basis to ensure safety to the traveling public and the workers; this includes long term work zones that have devices and/or roadway conditions that need to be maintained. If the engineer or a designated MoDOT employee (identified at the preconstruction meeting) notifies the WZS of any safety or traffic delay concerns in the work zone, the WZS shall promptly inspect and work to provide a solution to correct the situation. The WZS shall have personnel reviewing traffic control devices daily and any temporary lane drop traffic control devices for initial set up and during the operation. Missing, damaged or over-turned traffic control devices shall typically be corrected without the need for direction by the engineer. The WZS is responsible to assure all traffic control devices are maintained in accordance with EPG standards. The WZS is responsible to ensure the work zone is operated within

the hours specified by the engineer and will not deviate from the specified hours without prior approval of the engineer. The WZS is responsible to manage work zone delay in accordance with these project provisions. The WZS and engineer shall submit one joint weekly technical review of work zone operations identifying any concerns present and the corrective actions taken. Reviews may be subjected to unannounced inspections by the engineer to corroborate the validity of the ratings. The engineer and WZS will be notified of the results.

1.3 Work Zone Conflict Resolution. Any conflict resolution shall be in accordance with Standard Specifications Section 616.4. Failure to make corrections on time may result in the engineer suspending work. The suspension will be non-excusable and non-compensable regardless if road user costs are being charged for closures.

2.0 Traffic Management Schedule

2.1 Traffic management schedules shall be submitted to the Engineer for review prior to the start of work and prior to any revisions to the traffic management schedule. The traffic management schedule shall include the proposed traffic control measures, hours traffic control will be in place, and work hours.

2.2 The Contractor shall notify the Engineer prior to lane closures or shifting traffic onto detours.

2.3 The Engineer shall be notified as soon as practical of any postponement due to weather, material or other circumstances.

2.4 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 opened to traffic.

2.5 Traffic Congestion. The contractor shall, upon approval of the engineer, take proactive measures to reduce traffic congestion in the work zone. The contractor shall immediately implement appropriate mitigation strategies whenever traffic congestion reaches an excess of **15 minutes** to prevent congestion from escalating beyond this delay threshold. If disruption of the traffic flow occurs and traffic is backed up in queues equal to or greater than the delay time threshold listed above then the contractor shall immediately review the construction operations which contributed directly to disruption of the traffic flow and make adjustments to the operations to prevent the queues from reoccurring. Traffic delays may be monitored by physical presence on site or by utilizing real-time travel data through the work zone that generate text and/or email notifications where available. The engineer monitoring the work zone may also notify the contractor of delays that require prompt mitigation. The contractor may work with the engineer to determine what other alternative solutions or time periods would be acceptable. The contractor may refer to the Work Zone Analysis Spreadsheet found in the electronic deliverables under the MoDOT Online Plans Room for detailed information on traffic delays.

3.0 Work Hour Restrictions.

3.1 There are six major holiday periods shown below. All lanes shall be scheduled to be open to traffic during these holiday periods, from 12:00 noon on the last working day proceeding the holiday until 9:00 a.m. on the first working day subsequent to the holiday.

Memorial Day
Independence Day
Labor Day
Thanksgiving
Christmas
New Year's Day

3.2 The Contractor shall not perform any construction operation on the roadway, roadbed, or active lanes, including the hauling of material within the project limits, during restricted periods, holiday periods or other special events specified in the contract documents.

3.3 The Contractor shall do no work that effects normal traffic operations from December 15, 2018 to March 15, 2019; December 15, 2019 to March 15, 2020; December 15, 2020 to March 15, 2021. Normal traffic operations are considered to be what the traffic operations were before the project began.

4.0 Detours and Lane Closures.

4.1 The contractor shall provide changeable message signs notifying motorists of future traffic disruption and possible traffic delays one week before traffic is shifted to a detour or prior to lane closures. The changeable message sign shall be installed at a location as approved or directed by the engineer.

4.2 Once Ramps 1, 2, 3, and 4 are constructed to a standard deem acceptable to the engineer the contractor will be allowed to close I-55, and detour traffic around the bridge construction. The contractor will be allowed to close I-55 at night while executing approved (by engineer) construction activities to build bridge A8436. Closure of I-55 will be allowed from 7:00 p.m. to 7:00 a.m. on nights approved by engineer. North bound traffic will use ramps 3 and 1, southbound traffic will use ramps 2 and 4. If traffic is being detoured onto the ramps then Existing Route PP shall be closed to through traffic.

4.3 The detour shown in the plans for I-55 will be allowed from 9:00 p.m. to 5:30 a.m. on nights approved by engineer. Liquidated Damages of \$2000 will be charged per hour for all or a portion of every hour outside of the range of hours specified above.

5.0 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 provisions, unless specified elsewhere in the contract document.

D. PROJECT CONTACT FOR CONTRACTOR/BIDDER QUESTIONS

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

Eric Krapf
SE District
2675 North Main Street
Sikeston MO, 63801
Telephone Number: 573-472-5261
Email: Eric.Krapf@modot.mo.gov

All questions concerning the bid document preparation can be directed to the Central Office – Design at (573) 751-2876.

E. UTILITIES DSP-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>
POWER TRANSMISSION Ameren Transmission 1901 Chouteau Ave St. Louis, MO 63166 Contact: Mathew Adams Tel: 314-554-3811	None
POWER DISTRIBUTION AmerenUE 45 South Minnesota Cape Girardeau, MO 63703 Contact: Rob Wolf Tel: 573-651-5722	Yes
POWER DISTRIBUTION SEMO Electric Coop 1505 South Main Sikeston, MO 68301 Contact: Larry Kelly Tel: 573-471-5821	Yes
GAS DISTRIBUTION AmerenUE 45 South Minnesota Cape Girardeau, MO 63703 Contact: Josh Beussink Tel: 573-651-5640	Yes

COMMUNICATION Yes
AT&T
800 Broadway
Cape Girardeau, MO 63701
Contact: Tom Kilburn
Tel: 573-339-9467

COMMUNICATION None
Centurylink of Missouri
418 First Street
Marshfield, MO 65706
Contact: Bobby Kennedy
Tel: 417-860-4526

COMMUNICATION Yes
Charter Communications
3140 West Nash Road
Scott City, MO 63780
Contact: Sonny Ford
Tel: 573-335-7644

COMMUNICATION Yes
Sho-MeTechnologies
301 West Jackson
Marshfield, MO 65706
Contact: Brad Baker
Tel: 417-859-2615

CITY Yes
Scott City
215 Chester Ave
Scott City, MO 63780
Contact: Ron Eskew
Tel: 573-264-2157

CITY Yes
Kelso
426 N. Messmer St.
Kelso, MO 63758
Contact: Mayor Larry McClain
Tel: 573-264-2334

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.

F. 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 area engineer's office shall also be notified when the contractor requests emergency assistance.

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
573-840-9500

Scott City Fire Dept.
573-264-2126

North Scott County Ambulance
573-887-6311 (Main Office)
573-264-2121 (Dispatch)

Scott City Police Dept.
573-264-2121

Scott County Sheriff
573-545-3525
573-471-3530

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.

2.2 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 pay will be made to the contractor to recover the cost of the communication equipment, labor, materials or time required to fulfill the above provisions.

G. FERTILIZING

1.0 Description. In accordance with Section 801 of the Standard Specifications, the Contractor shall apply the following to all disturbed areas at the rates specified:

Cool Season

Nitrogen (N)	80 lbs. per acre
Phosphoric Acid (P ₂ O ₅)	240 lbs. per acre
Potash (K ₂ O)	80 lbs. per acre
Neutralizing Material	2000 lbs. per acre

H. SEEDING

1.0 Description. The seeding requirements for this project shall be in accordance with applicable portions of Sec 805, and specifically as follows.

Cool Season Mixture

<u>Seeding Mixture</u>	<u>Live Seed (lbs. per acre)</u>
Tall Fescue	160
Annual Ryegrass	10
Teff grass	10
Perennial Ryegrass	12
White Clover	12
Oats	10
Totals	214 lbs. per acre

2.0 Vegetative mulch shall be stabilized by mulch overspray or other methods as approved by the engineer.

3.0 All costs incurred will be paid for at the contract unit price for seeding. No direct pay will be given for any seed and mulch over ten percent or any additional work or inconvenience to the contractor in complying with this special provision.

I. OPTIONAL PAVEMENT DRIVEWAYS

1.0 Description. This work shall consist of a pavement composed of either Portland cement concrete or asphaltic concrete constructed on a prepared subgrade. This work shall be performed in accordance with the standard specifications and as shown on the plans or established by the engineer.

2.0 The quantities shown reflect the total square yards of pavement surface designated for each pavement type as computed and shown on the plans.

2.1 No additional payment will be made for asphaltic concrete mix quantities to construct the required 1:1 slope along the edge of the pavement, or for tack applied between lifts of asphalt.

2.2 No additional payment will be made for aggregate base quantities outside the limits of the final surface area as computed and shown on the plans. When A2 shoulders are specified, payment for aggregate base will be as shown on the plans.

2.3 The contractor shall comply with Sections 401 through 403 for the asphalt option and Sections 501 and 502 for the concrete option.

2.5. Pavement options composed of Portland cement concrete shall include a modified bridge approach slab as shown on the plans.

3.0 Method of Measurement. The quantities of concrete pavement will be measured in accordance with Section 502.14. The quantities of asphaltic concrete pavement will be measured in accordance with Section 403.22.

4.0 Basis of Payment. The accepted quantity of the chosen option will be paid for by the contract unit bid price for Item 401-99.05, Optional Pavement, per Square Yard.

J. LINEAR GRADING

1.0 Description. This work shall consist of constructing the required embankment from borrow excavation obtained from sources furnished by the contractor and approved by the engineer. This work shall be in accordance with Section 207 of the Standard Specifications except as follows.

2.0 Material. Contractor furnished borrow material shall be subject to approval by the engineer as provided in Sec 106. Approval will be based upon considerations of (1) various soil characteristics and dispersions of test values; (2) comparison with those typically used for design and (3) compliance with slope selection criteria outlined in the Engineering Policy Guide section 320.1.4.5.

Contractors are advised that proposed sites for contractor furnished material will be sampled and tested only after award of the contract and after proof of an agreement, between the property owner and the contractor authorizing use of any borrow site, has been provided to the engineer. The contractor shall be further advised that (1) preliminary subsurface investigations to determine depth to rock, general soil characteristics, etc., will be solely the responsibility of the bidder or contractor; (2) the engineer shall be notified in writing sufficiently in advance of the proposed use of a borrow site to allow six weeks for sampling under the direction of department's District Soils and Geology Technologist (DS>) and testing by the department; and (3) the contractor shall furnish equipment suitable for the purpose of soil sampling and shall make all necessary arrangements for performing the work at a time mutually agreeable to the contractor and the DS>.

Contractors are advised that a written certification shall be made by the successful bidder that the proposed borrow site is cleared of environmental concerns under all applicable federal and state laws and regulations. These include but are not limited to the following: Clean Water Act, the Endangered Species Act, the National Historic Preservation Act, the Farmland Protection Act, Resource Conservation and Recovery Act, Comprehensive Environmental Response, Compensation, and Liability Act and RSMo Chapter 194, Section 194.400 Unmarked Human Burial Sites. Certification shall be obtained in advance of the proposed use of a borrow site and furnished to the engineer. Certification shall include clearance letters and other evidence of coordination from the appropriate regulatory agencies, as attachments.

Borrow sites that are not contiguous to Missouri Department of Transportation right-of-way are regulated under the Department of Natural Resources' (DNR) stormwater permit program. Contractors shall obtain appropriate land disturbance permits from DNR in advance of excavation.

Guidelines for obtaining environmental clearances for contractor-furnished borrow sites may be obtained from Pete Berry ((417) 469-6242) in the District 10 office located at 2675 North Main, Sikeston, Missouri.

After borrow material has been removed, the borrow site shall be permanently seeded and mulched to control erosion and to the satisfaction of the property owner.

3.0 Construction Requirements. The material in the embankment shall be placed in accordance with this special provision and all applicable provisions of Sec 207 of the Standard Specifications and in conformity with the lines, grades, and typical cross sections shown on the plans.

4.0 Method of Measurement. Measurement shall be in accordance with Section 207 of the Standard Specifications.

5.0 Basis of Payment. Payment for the above described work will be considered completely covered by the contract unit price for 207-20.00, Linear Grading Class 2, per station.

K. QUALITY MANAGEMENT (Version – 07/2014)

1.0 Quality Management. The contractor shall provide Quality Management as specified herein to ensure the project work and materials meets or exceeds all contract requirements.

1.1 The contractor shall provide Quality Control (QC) of the work and material, as specified herein, to ensure all work and material is in compliance with contract requirements. QC staff shall perform and document all inspection and testing. The QC inspectors and testers may be employed by the contractor, sub-contractor, or a qualified professional service provided by the contractor.

1.2 The engineer will provide Quality Assurance (QA) inspection. The role of QA is to verify the performance of QC and provide confidence that the product will satisfy given requirements for quality.

1.3 The contractor shall designate a person to serve as the project Quality Manager (QM). The QM shall be knowledgeable of standard testing and inspection procedures for highway and bridge construction, including a thorough understanding of the Missouri Standard Specifications. The QM shall be responsible for the implementation and execution of the Quality Management Plan and shall oversee all QC responsibilities, including all sub-contract work. The QM shall be the primary point of contact for all quality related issues and responsibilities, and shall ensure qualified QC technicians and inspectors are assigned to all work activities. The QM should be separate from the manager of the work activities to effectively manage a QC program.

1.4 Any QC personnel determined in sole discretion of the engineer to be incompetent, derelict in their duties, or dishonest, shall at a minimum be removed from the project. Further investigation will follow with a stop work notification to be issued until the contractor submits a corrective action report that meets the approval of the engineer.

2.0 Quality Management Plan. The contractor shall develop, implement and maintain a Quality Management Plan (QMP) that will ensure the project quality meets or exceeds all contract requirements, and provides a record for acceptance of the work and material. A sample QMP, which shows minimum requirements, is provided on the MoDOT website at: <http://www.modot.org/quality>.

2.1 The QMP shall address all QC inspection and testing requirements of the work as described herein. A draft QMP shall be submitted to the Resident Engineer for review at least two weeks prior to the pre-construction conference. An approved QMP is required at least two weeks prior to the start of

work, unless otherwise allowed by the engineer. Physical work on the project shall not begin prior to approval of the QMP by the engineer.

2.2 The approved QMP shall be considered a contract document and any revisions to the QMP will require approval from the engineer.

2.3 The following items shall be included in the Quality Management Plan:

- a) Organizational structure of the contractor's project management, production staff, and QC staff, specific to this project.
- b) Name, qualifications and job duties of the Quality Manager.
- c) A list of all certified QC testers who will perform QC duties on the project, including sub-contract work, and the tests in which they are certified.
- d) A list of all QC inspectors who will perform QC inspection duties on the project, including sub-contract work, and the areas of inspection that they will be assigned.
- e) A procedure for verifying documentation is accurate and complete as outlined in Section 3.
- f) A procedure describing QC Inspections as outlined in Section 4.
- g) A procedure describing QC Testing, as outlined in Section 5, including a job specific Inspection and Test Plan (ITP).
- h) A procedure describing Material Receiving as outlined in Section 6.
- i) A list of Hold Points that are not included in the checklist forms, as outlined in Section 8.
- j) A procedure for documenting and resolving Non-Conforming work as outlined in Section 9.
- k) A procedure for tracking and documenting revisions to the QMP.
- l) A list of any approved changes to the Standard Specifications or ITP, including a reference to the corresponding change order.
- m) Format for the Weekly Schedule and Work Plans as outlined in Section 10, including a list of activities that will require pre-activity meetings.

3.0 Project Documentation. The contractor shall establish a Document Control Procedure for producing and uploading the required Quality Management documents to a MoDOT-provided server. The document management software used by MoDOT is Microsoft SharePoint®. Contractors do not need to purchase Microsoft SharePoint®, however, it is recommended that new users acquire some basic training to better understand how to use this software. MoDOT does not provide the software training, but there are several online vendors who do. Contractors are required to use Microsoft Excel® and Microsoft Word® with some documents.

3.1 The contractor shall utilize the file structure and file naming convention provided by MoDOT. A sample file structure is available on the MoDOT website.

3.2 Documents (standard forms, reports, and checklists) referenced throughout this provision are considered the minimum documentation required. They shall be obtained from MoDOT at the following web address: <http://www.modot.org/quality> . The documents provided by MoDOT are required to be used in the original format, unless otherwise approved by the engineer. Any alteration to these forms shall be approved by the engineer.

3.3 Timely submittal of the required documents to the MoDOT document storage location is essential to ensure payment can be processed for the completed work. Submittal of the documents is required within 12 hours of the work shift that the work was performed, or on a document-specific schedule approved by the engineer and included in the QMP.

3.4 The contractor shall establish a verification procedure that ensures all required documents are submitted to the engineer within the specified time, and prior to the end of each pay period for the work that was completed during that period. Payment will not be made for work that does not include all required documents. Minimum documents that might be required prior to payment include: Test Reports, Inspection Checklists, Materials Receiving Reports, and Daily Inspection Reports.

3.5 The contractor shall perform an audit at project closeout to ensure the final collection of documents is accurate and complete.

4.0 Quality Control Inspections. The QMP shall identify a procedure for performing QC inspections. QC inspections shall be performed for all project activities to ensure the work is in compliance with the contract, plans and specifications.

4.1 The QM shall identify the QC inspectors assigned to each work activity. The QC inspectors shall inspect the work to ensure the work is completed in accordance with the plans and specifications, and shall document the inspection by completing the required inspection checklists, forms, and reports provided by MoDOT. Depending on the type of work, the checklists may be necessary daily, or they may follow a progressive work process. The frequency of each checklist shall be stated in the QMP. The contractor may propose alternate versions of checklists that are more specific to the work.

4.2 A Daily Inspection Report (DIR) is required to document pertinent activity on the project each day. This report shall include a detailed diary that describes the work performed as well as observations made by the inspection staff regarding quality control. The report shall include other items such as weather conditions, location of work, installed quantities, tests performed, and a list of all subcontractors that performed work on that date. The report shall include the full name of the responsible person who filled out the report and shall be digitally signed by an authorized contractor representative.

4.3 External fabrication of materials does not require further QC inspection if the product is currently under MoDOT inspection or an approved QC/QA program. QC inspection and testing required in the production of concrete for the project shall be the responsibility of the contractor.

4.4 The contractor shall measure, and document on the DIR, the quantity for all items of work that require measurement. Any calculations necessary to support the measurement shall be included with the documentation. The engineer will verify the measurements prior to final payment.

5.0 Quality Control Testing. The QMP shall identify a procedure for QC testing. The contractor shall perform testing of the work at the frequency specified in the Inspection and Test Plan (ITP).

5.1 MoDOT will provide a standard ITP and the contractor shall modify it to include only the items of work in the contract, including adding any Job Special Provision items. The standard ITP is available on the MoDOT website at <http://www.modot.org/quality>. The contractor shall not change the specifications, testing procedures, or the testing frequencies, from the standard ITP without approval by the engineer and issuance of a change order.

5.2 Test results shall be recorded on the standard test reports provided by the engineer, or in a format approved by the engineer. Any test data shall be immediately provided to the engineer upon request at any time, including prior to the submission of the test report.

5.3 The contractor shall ensure that all personnel who perform sampling and/or testing are certified by the MoDOT Technician Certification Program or a certification program that has been approved by MoDOT for the sampling and testing they perform.

5.4 If necessary, an independent third party will be used to resolve any significant discrepancies between QC and QA test results. All dispute resolution testing shall be performed by a laboratory that is accredited in the AASHTO Accreditation Program in the area of the test performed. The contractor shall be responsible for the cost to employ the third party laboratory if the third party test verifies that the QA test was accurate. The Commission shall be responsible for the cost if the third party test verifies that the QC test was accurate.

6.0 Material Receiving. The QMP shall identify a procedure for performing material receiving. Standard material receiving forms will be provided by the engineer.

6.1 The procedure shall address inspections for all material delivered to the site (excluding testable material such as concrete, asphalt, aggregate, etc.) for general condition of the material at the time it is delivered. The material receiving procedure shall record markings and accompanying documentation indicating the material is MoDOT accepted material (MoDOT-OK Stamp, PAL tags, material certifications, etc.).

6.2 All required material documentation must be present at the time of delivery. If the material is not MoDOT accepted, the contractor shall notify the engineer immediately and shall not incorporate the material into the work.

7.0 Quality Assurance. The engineer will perform Quality Assurance inspection and testing (QA) to verify the performance of QC inspection and testing. The frequency of the QA testing will be as shown in the ITP, but may be more frequent at the discretion of the engineer. The engineer will record the results of the QA testing and inspection and will inform the contractor of any known discrepancies.

7.1 QA is responsible for verifying the accuracy of the final quantity of all pay items in the contract. This includes taking measurements on items that require measurement and other items that are found to have appreciable errors.

7.2 QA inspection and test results shall not be used as a substitute for QC inspection and testing.

7.3 QA will be available for Hold Point inspections at the times planned in the Weekly Schedule. The inspections may be re-scheduled as needed, but a minimum 24-hour advance notification from the contractor is required unless otherwise approved by the engineer.

8.0 Hold Points. Hold Points are events that require approval by the engineer prior to continuation of work. Hold Points occur at definable stages of work when the succeeding work depends on a QA review of the preceding work before work can continue.

8.1 A list of minimum Hold Points will be provided by the engineer and shall be included in the QMP. The engineer may make changes to the Hold Point list at any time.

8.2 Prior to all Hold Point inspections, QC shall provide the engineer with the Daily Inspection Reports, Inspection Checklists, Test Reports, and Material Receiving Reports for the work performed leading up to the Hold Point. If the engineer identifies any corrective actions needed during a Hold Point inspection, the corrections shall be completed prior to continuing work. The engineer may require a new Hold Point to be scheduled if the corrections require a follow-up inspection.

9.0 Non-Conformance Reporting. Non-conformance reports shall be issued by the contractor for work that does not meet the contract requirements. Non-conforming work includes work, testing, materials and processes that do not meet contract requirements. The contractor shall establish a procedure for identifying and resolving non-conforming work as well as tracking the status of the reports.

9.1 Contractor QC staff or production staff should identify non-conforming work and document the details on the Non-Conformance Report form provided by MoDOT. QA staff may also initiate a non-conformance report.

9.2 In-progress work that does not meet the contract requirements may not require a non-conformance report if production staff is aware of the issue and corrects the problem during production. QC or QA may issue a non-conformance report for in-progress work when documentation of the deficiency is considered beneficial to the project record.

9.3 The contractor shall propose a resolution to the non-conforming work. Acceptance of a resolution by the engineer is required before closure of the non-conformance report.

9.4 For recurring non-conformance work of the same or similar nature, a written Corrective Action Request will be issued by QC or QA. The contractor shall then establish a procedure for tracking the corrective action from issuance of the request to implementation of the solution. Approval from the engineer is required prior to implementation of the proposed corrective action. The contractor shall notify the engineer after the approved corrective action has been implemented.

10.0 Work Planning and Scheduling. The contractor shall include Quality Management in all aspects of the work planning and scheduling. This shall include providing a Weekly Schedule, a Work Plan for each work activity, and holding pre-activity meetings for each new activity.

10.1 A Weekly Schedule shall be provided to the engineer each week that outlines the planned project activities for the following two-week period. This schedule shall include all planned work, identification of all new activities, traffic control events, and requested Hold Point inspections for the period. Planned quantity of materials, along with delivery dates should also be included in the schedule.

10.2 A Work Plan shall be submitted to the engineer at least one week prior to the pre-activity meeting. The Work Plan shall include the following: a safety plan, list of materials to be used, work sequence, defined responsibilities for QC testing and inspection personnel, and stages of work that will require Hold Point inspections.

10.3 A pre-activity meeting is required prior to the start of each new activity. The purpose of this meeting is to discuss details of the Work Plan and schedule, including all safety precautions. Those present at the meeting shall include: the production supervisor for the activity, the Quality Manager, QC inspection and testing staff, and QA. The Quality Manager will review the defined responsibilities for QC testing and inspection personnel and will address any quality issues with the production staff. Attendees may join the meeting in person or by phone or video conference.

11.0 Basis of Payment. Payment for all costs associated with developing, implementing and maintaining the Quality Management Plan, providing Quality Control inspection and testing, and all other costs associated with this provision, will be considered included in the unit price of each contract item. No direct pay will be made for this provision.

L. SURFACE ROUGHENING OF SLOPES

1.0 Description. The contractor shall perform Surface Roughening during finish grading operations on all graded slopes of 4H:1V or steeper for the purpose of slowing the flow of stormwater down the slope in order to minimize soil erosion and rills. The final soil surface shall be grooved two (2) to four (4) inches in depth along the contours of the slope. Spacing between the contour grooves/ridges shall be no less than six (6) inches.

1.1 Surface Roughening will not be required on surfaces that are predominantly rock.

2.0 Construction Requirements. Surface Roughening may be accomplished by operating tracked equipment vertically up and down the slope during finish grading. Final tracking shall not be done horizontally along the slope contours, or diagonally across the slope, unless other methods are used subsequently to remove the tracks and to create Surface Roughening as defined elsewhere in this provision.

2.1 In lieu of vertical tracking, other equipment or methods may be used to furrow, scarify or disk the soil surface to create Surface Roughening as defined elsewhere in this provision.

3.0 Method of Measurement. No measurement will be made for Surface Roughening.

4.0 Basis of Payment. Payment for this work shall be completely covered under the lump sum payment for 203-99.01 Surface Roughening.

M. COMPACTED CONCRETE PAVEMENT

1.0 Description. Compacted Concrete Pavement (CCP) consists of aggregate, Portland cement or other supplementary cementitious materials (fly ash or slag cement), water, and an admixture that allows for mechanical and physical finishing of the surface, edges, and joints. CCP shall be

proportioned, mixed, placed, compacted, and cured in accordance with these specifications. CCP shall conform to the lines, grades, thickness, and typical cross section shown in the plans or otherwise established by the Engineer.

2.0 General. Sampling and testing shall be in accordance with Section 7 of this Job Special Provision and will govern the contractor's operations and the acceptance of completed work. Due to the research nature of this project, other extensive testing of materials and procedures may be required; however, the additional testing by the department or other research entities for research purposes will not be used for contract compliance.

2.1.1 The contractor shall submit a schedule of work to the engineer at least seven days prior to placing CCP. Any changes to the schedule, except weather related events, shall be provided to the engineer in writing at least three days prior to the change in work schedule occurring.

2.1.2 The contractor shall allow the department and other research entities access to all operations for data collection. Types of data collection during production include, but are not limited to the following:

- Sampling of CCP mixtures and components of the mixture
- Verifying additive rates at the plant
- Sampling of subgrade, base, or other underlying layers
- Pavement coring after CCP placement
- Falling Weight Deflectometer (FWD) testing before and after CCP placement

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

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

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

CCP Aggregate Gradation	
Sieve Size	Percent Passing by Weight
1 inch	100
$\frac{3}{4}$ inch	90 - 100
$\frac{1}{2}$ inch	70 - 100
$\frac{3}{8}$ inch	60 - 85
No. 4	40 - 70
No. 16	20 - 40
No. 100	4 - 18
No. 200	2 - 8

3.2 Required CCP Admixture. An approved admixture shall be required in the CCP mixture. The admixture shall work as a hydration stabilizer and retarder that enables the CCP mixture to maintain a consistent moisture content, aids in the placement process in achieving compaction, and extends haul time without significant moisture loss. The admixture shall also enable the surface of the CCP to be finished mechanically and physically by producing a finishing “paste” that can be generated without the application of water on the surface of the CCP. Only admixtures that are an integral part of the mix and introduced at the plant at the approved dosage rate are acceptable. Finishing agents that are applied to the surface of the CCP to achieve the specified finish are not acceptable. If requested by the Engineer, the contractor shall provide photos and references of projects previously constructed using the admixture to aid in the approval process.

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

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

- (a) Source, type and specific gravity of portland cement
- (b) Source, type (class, grade, etc.) and specific gravity of supplementary materials, if used
- (c) Source, name, type and amount of admixture
- (d) Source, type (formation, etc.), ledge number if applicable, of the aggregate
- (e) Specific gravity and absorption of each fraction in accordance with AASHTO T 85 for coarse aggregate and AASHTO T 84 for fine aggregate, including raw data
- (f) Unit weight of each fraction in accordance with AASHTO T 19
- (g) Batch weights of portland cement and supplemental cementitious materials
- (h) Batch weights of coarse, intermediate and fine aggregates
- (i) Batch weight of water in pounds per cubic yard (optimum moisture content)

(j) Maximum laboratory density

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

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

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

4.4 Design Strength. The mix design shall have a minimum compressive strength of 4,000 psi within 28 days when specimens prepared according to ASTM C 1176 or ASTM C 1435. Compressive strength test shall be performed in accordance with AASHTO T 22.

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

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

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

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

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

5.1 Mixing Plant: The mixing plant shall be within a sixty-minute haul time from the point of CCP placement unless otherwise approved by the Engineer. The mixing plant shall be capable of producing CCP to the proportions defined by the final approved mix design and within the specified tolerances.

The mixing plant shall be a central plant type with a twin-shaft mixer, capable of continuous mixing or volumetric mixing equipped with synchronized metering devices and feeders to maintain the correct proportions of aggregate, cement, pozzolan, admixtures, and water. Other plant requirements shall be in accordance with [Sec 501.6](#).

5.2 Paver: CCP shall be placed with a high-density asphalt-type paver subject to approval by the Engineer. The paver shall be equipped with compacting devices capable of producing CCP pavement with a minimum of 94 percent of the maximum density in accordance with AASHTO T 180, Method D prior to any additional compaction. The paver shall be of suitable weight and stability to spread and finish the CCP material, without segregation, to the required thickness, smoothness, surface texture, cross-section, and grade.

5.3 Compactors: Self-propelled steel drum vibratory rollers having a minimum static weight sufficient to achieve the density requirements may be used for primary compaction. For final compaction, a self-propelled steel drum roller, operated in a static mode, or a rubber-tired roller may be utilized to meet the density requirements of this specification.

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

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

6.0 Construction Requirements.

6.1 Preparation of Subgrade. Before the CCP processing begins, the subgrade and aggregate base course must be prepared in accordance with [Sec 203](#) and [Sec 304](#).

6.2 Aggregate Base Condition. The surface of the aggregate base shall be clean and free of foreign material and standing water prior to placement of the CCP. The aggregate base shall be uniformly moist at the time of CCP placement. CCP shall not be placed upon frozen aggregate base.

6.3 Mixing Time. Mixing time shall be adequate to ensure a thorough and complete mixing of all materials. Concrete shall be homogeneous with no aggregate segregation. .

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

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

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

6.6 Textured Surface. The CCP surface shall be smooth, uniform, and continuous without tears, ridges, or aggregate segregation once it leaves the paver. The finished surface of the CCP shall be mechanically trowelled to evenly distribute the natural CCP material in the mix. No additional watering of the surface shall be allowed. Once the troweling process is complete, the finished surface texture shall be given a uniformly roughened finish and shall be in compliance with [Sec 502.4.8.3](#). The final surface texture shall be uniform in appearance and reasonably free from encrusted matter. If the troweling, brooming, dragging, or other finishing method dislodges or loosens aggregate, all paving operations shall cease immediately until the problem is resolved to the satisfaction of the Engineer.

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

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

6.7.2 Curing Compound. A white pigmented curing compound applied at the rate of one gallon for each 150 square feet.

6.8 Smoothness. The smoothness of CCP mainline pavement shall be in accordance with [Sec 610](#).

6.9 Weather Conditions.

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

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

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

6.10.1 Inaccessible Areas. All areas inaccessible to either roller or paver shall be paved with cast-in-place concrete in accordance with [Sec 502](#).

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

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

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

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

6.13 Test Area.

6.13.1. The contractor shall construct a test area of at least 225 square yards meeting the requirements of this specification prior to full-scale commencement of the actual work. The purpose of this test area is to calibrate the CCP process. The contractor shall use the mixing plant, equipment, and methods to be used in the full-scale construction for construction of the test area.

6.13.2. The test area may be constructed off site or on site at a location approved by the engineer. If the test area is constructed on site and meets all the applicable requirements, it may be incorporated into the final work and measured and paid for at the appropriate unit rate. However, if the test area is not acceptable to the engineer, the contractor shall remove and reconstruct the test area at no additional cost to the Commission.

6.13.3. The contractor shall establish the optimum compaction effort of the paver and/or rollers to achieve final density requirements in accordance with AASHTO T 180, Method D. The contractor will also demonstrate smoothness, surface texture, consistent finish, and joint finishing techniques of the CCP

6.14 Opening to Traffic. The Contractor shall protect the CCP from traffic during the curing period. The CCP pavement may be opened to light traffic at 2,500 psi and opened to unrestricted traffic at 3,000 psi.

7.0 Sampling and Testing. Acceptance shall be in accordance with [Sec 502.10](#).

7.1 Contractor Quality Control. Contractor quality control shall be in accordance with [Sec 502.11](#), except for the following revisions.

7.1.1 Slump and Entrained Air. Measurement of slump ([Sec 502.11.2.2](#)), entrained air content ([Sec 502.11.2.3](#)), and all references to slump and entrained air content in other sections shall not apply.

7.1.2 Quality Control Testing. Quality control testing shall be in accordance with [Sec 502.11.2](#) with the addition of the required testing stated herein.

7.1.2.1 Density. The density shall not be less than 98 percent of the maximum laboratory density. The density shall be determined in accordance with AASHTO T 310, direct transmission. Tests shall be performed no later than 30 minutes after the completion of the rolling. Only wet density shall be used for evaluation. QC shall determine the density of the CCP mainline at a the same frequency as the compressive strength and thickness in accordance with [Sec 502.10](#). The contractor shall take corrective action and increase compaction effort when the density is below 98 percent but greater than 96 percent. Any material that falls below 96 percent after final compaction shall be deemed unacceptable and shall be addressed in accordance with [Sec 105.11](#).

7.2 Quality Assurance. Quality Assurance shall be in accordance with [Sec 502.12](#), except for the following revisions.

7.2.1 Slump and Entrained Air Content. Testing references of slump and entrained air content shall not apply.

7.2.2 Density. A QA density test will be at a minimum, of one test per lot.

8.0 Method of Measurement. Final measurement shall be in accordance with [Sec 502.14](#).

9.0 Basis of Payment. The basis of payment shall be in accordance with [Sec. 502.15](#).

N. SUPPLEMENTAL REVISIONS JSP-09-01W

Insert Sec 109.15, Sec 109.16 and Sec 109.17, subsequent section renumbered accordingly:

109.15 Seal Coat Price Index. Adjustments will be made to the payments due the contractor for Seal Coat placed in accordance with Sec 409 of the Standard Specifications. Adjustments will be calculated in accordance with Asphalt Cement Price Index of the General Provisions, except as defined herein.

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

$$A = B \times (0.68 \times 8.58/2000) \times (D - E)$$

Where:

- A = adjustment for Seal Coat placed during the index period
- B = gallons of seal coat placed during the index period
- D = average index price at the beginning of the period
- E = average index price at the time of bid
- 0.68 = factor to reduce volume of emulsion to AC only
(use average specific gravity of 1.03 for seal coat)

109.15.2 Optional. This provision is optional. If the bidder wishes to be bound by this provision, the bidder shall execute the acceptance form in the Bid for the Asphalt Cement Price Index. Acceptance of this provision will apply to both the Asphalt Cement Price Index and Seal Coat Price Index. Failure by the bidder to execute the acceptance form will be interpreted to mean election to not participate in the Asphalt Cement Price Index or Seal Coat Price Index.

109.16 Asphalt Underseal Price Index. Adjustments will be made to the payments due the contractor for Asphalt underseal placed in accordance with Sec 625 of the Standard Specifications. Adjustments will be calculated in accordance with Asphalt Cement Price Index of the General Provisions, except as defined herein.

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

$$A = B \times (8.66/2000) \times (D - E)$$

Where: A = adjustment for asphalt underseal placed during the index period
B = gallons of asphalt underseal placed during the index period
D = average index price at the beginning of the period
E = average index price at the time of bid
(use average specific gravity of 1.04 for underseal)

109.16.2 Optional. This provision is optional. If the bidder wishes to be bound by this provision, the bidder shall execute the acceptance form in the Bid for the Seal Coat Price Index. Failure by the bidder to execute the acceptance form will be interpreted to mean election to not participate in the Seal Coat Price Index.

109.17 Polymer Modified Emulsion Membrane Price Index. Adjustments will be made to the payments due the contractor for Polymer Modified Emulsion Membrane placed in accordance with Sec 413.30. Adjustment will be calculated in accordance with the Supplemental Asphalt Price Adjustment except as defined herein.

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

$$A=B \times (0.9/2000) \times (D - E)$$

Where: A = adjustment for membrane placed during the index period
B = square yards of membrane placed during the index period
D = average index price at the beginning of the period
E = average index price at time of bid

109.17.2 Optional. This provision is optional. If the bidder wishes to be bound by the provision, the bidder shall execute the acceptance form in the Bid for Polymer Modified Emulsion Membrane Price Index. Failure by the bidder to execute the acceptance form will be interpreted to mean election not to participate in the Polymer Modified Emulsion Membrane Price Index.

Delete Sec 403.2.5.2 and substitute the following:

403.2.5.2 Fibers. A fiber additive shall be used as a stabilizer in SMA Mixtures. Fibers shall be uniformly distributed by the end of the plant mixing process. The dosage rate for fibers shall be no less than 0.3 percent by weight of the total mixture for cellulose and no less than 0.4 percent by weight for mineral fibers.

Amend Sec 620.10.3.1.1.1, and 620.10.3.1.1.2 to include the following:

620.10.3.1.1.1 Type 1 Preformed Marking Tape in Lieu of Type 2. Type 1 Preformed Pavement Marking Tape will be allowed in lieu of Type 2 Preformed Marking Tape (Grooved) at no additional cost to the Commission. This work shall be in accordance with Sec 620 and accompanying provisions except as modified herein.

620.10.3.1.1.2 Construction Requirements. Grooving will not be required when Type 1 Preformed Marking Tape is used.

Delete Sec 606.30.4 & 606.30.5 and substitute the following:

606.30.4 Method of Measurement. Measurement for crashworthy end terminals will be made for each unit assembled, installed and complete in place. Grading for crashworthy end terminals will be measured in accordance with [Sec 203](#) when roadway and drainage excavation is included in the contract, otherwise grading will be measured in accordance with Shaping Slopes, Class III or as directed on plans.

606.30.5 Basis of Payment. The accepted quantities of Type A, B C, D and E crashworthy end terminals, complete in place, will be paid for at the contract unit price. Payment will be considered full compensation for complete installation including any backup assemblies or other items necessary for proper installation of the end terminal or crash cushion as required. Grading for end terminals will be paid for at the contract unit price for roadway and drainage excavation if included in the contract; otherwise it will be paid for as Shaping Slopes, Class III. If the contractor elects to use a flared Type A crashworthy end terminal, additional embankment as shown on the plans shall be provided at the contractor's expense.

Insert Sec 620.80 by to including the following:

SECTION 620.80 CONTRAST PAVEMENT MARKINGS

620.80.1 Description. This work shall consist of furnishing and installing black contrasting pavement marking for intermittent markings (skips), dotted lines and solid intersection lane lines on new, and newly ground concrete surfaces. This work shall be in accordance with Sec 620 and accompanying provisions except as modified herein

620.80.2 Material. The black contrast marking shall be compatible with the white pavement marking material specified in the plans.

620.80.3 Construction Requirements.

620.80.3.1 The Contrast markings shall be accomplished by placing the black pavement marking according to manufacturer's recommendations.

620.80.3.2 The white marking shall be centered within the black marking such that there will be a 1.5 inch border of black on both sides of the white marking. Tolerances for the width and length of the black and white markings shall be in accordance with Sec 620.2.4.2.

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

Delete Sec 1048.10.1.1 and substitute the following:

1048.10.1.1 Application. Application shall be in accordance with the manufacturer's recommendations.

Delete Sec 1081.4.3.3.1 and substitute the following:

1081.4.3.3.1 Hazardous Waste Notification. The contractor shall submit a “Notification of Regulated Waste Activity” form to MDNR Hazardous Waste Program to obtain the EPA identification number. Requests shall be submitted as soon as hazardous waste is determined or at least 30 days prior to shipping hazardous waste. The cost of obtaining the EPA identification number will be considered as part of the surface preparation cost and the engineer will subtract the cost from the contract. Hazardous waste shall not be shipped offsite until the EPA identification number has been received. The contractor will file the quarterly and annual hazardous waste reports in accordance with 10 CSR 25-5.262(2)(D)1 and will deactivate the EPA identification number upon contract completion. The contractor shall submit copies of all hazardous waste manifests and quarterly/annual reports to MoDOT’s Environmental Section.

O. STORMWATER COMPLIANCE REQUIREMENTS JSP-15-04A

1.0 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.

1.1 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 Pollutant 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). 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.

<p>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.</p>	<p>\$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.</p>
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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. Payment for compliance with this provision will be made per week. All cost associated with the weekly on-site project reviews by the WPCM, compliance with this provision and the Consent Decree, including all other duties of the WPCM and delegate, and all expenses to attend training, will be considered fully covered under 806-99.28, Water Pollution Control Manager. 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.

9.1 Method of Measurement. Measurement of the number of full weeks (7 days) will begin on the date of the first MoDOT Inspection Report following initial land disturbance and will continue until the engineer declares final stabilization has been achieved, except that no measurement will be made for any period of time past the contract completion date, or adjusted completion date, when liquidated damages are being assessed for failure of the Contractor to complete the work on time.

P. DBE PROGRAM REQUIREMENTS NJSP-15-41A

1.0 Description: Insert the following additional program provisions in the Disadvantaged Business Enterprise (DBE) Program Requirements of the General Provisions and Supplemental Specifications to Missouri Standard Specifications for Highway Construction.

13.6 Factors Used to Determine if a DBE Regular Dealer of Liquid Asphalt is Performing a CUF.

The DBE must be responsible with respect to materials and supplies used on a contract perform all of the following, pursuant to 49 CFR § 26.55(c)(1) and 7 CSR 10-8.131:

- (a) Negotiating price.
- (b) Determining quality and quantity.
- (c) Ordering the material.
- (d) Paying for the material itself.
- (e) 30% of the work must be performed by the DBE's permanent employees (which does not include owner-operators or leased employees) or those hired by the DBE firm for the project from an independent source other than the prime contractor, such as a union hall. For at least 30% of the work the DBE's owned (not leased) equipment shall be used and the DBE must provide documentation that this owned equipment was used on the project as required by this provision.
- (f) For up to 70% of the remaining work the equipment used by the DBE must be by long term lease (at least one year) with another DBE or non-DBE but not the prime contractor. The DBE must have absolute priority over other businesses or entities to use the long term leased equipment and must display the name and identification number of the DBE.
- (g) The Contractor shall require DBE subcontractors to provide documentation in one of the following formats: bills of lading, hauling tickets, shippers manifest, and/or paid invoices. Regardless of the document format, the document(s) shall include the following information: name of the carrier, full name of the driver, driver ID number(s), truck and tanker ID or VIN number, and reflect the contract number, job number, county and route.

The contract number, job number, county and route can be reported through a consignee number or lift number, as long as the DBE Subcontractor has provided the consignee number, or lift number, along with project specific information which shall include contract number, job number, county and route.

The documentation must be submitted and generated by the DBE Subcontractor and be printed on letterhead or other similar documentation outlining the contact information for the DBE Subcontractor. In addition the documentation shall indicate the quantity and amount invoiced to the prime contractor (Such as an invoice). **“MoDOT's DBE Contractor/Subcontractor Project Trucker and Equipment List”** (Form 1) will be provided by MoDOT and shall be completed and submitted to MoDOT by the DBE Subcontractor or Liquid Asphalt Supplier before Asphalt Operations begin. The DBE Subcontractor shall report all trucks and tankers they currently own and all full time drivers that they employ, including all of the drivers numbers for each terminal the drivers pick up from. In addition the DBE Subcontractor shall include a list of “long term” leased equipment, along with drivers and drivers' numbers to the DBE Subcontractor Project Trucker and Equipment List. The DBE Subcontractor shall attach copies of all current long term lease agreements to the DBE Subcontractor Project Trucker and Equipment List.

- (h) DBE Trucking/Hauling regulations do not apply to regular dealers of liquid asphalt.

13.7 When a DBE Regular Dealer of Liquid Asphalt is Not Eligible for DBE Credit.

(a) "If its role is limited to that of an extra participant in a transaction, contract or project through which funds are passed in order to obtain the appearance of DBE participation." 49 CFR § 26.55(c)(2)

(b) If the type of transaction does not allow the DBE subcontractor to perform one of the four required functions, such as a prime contractor deciding the price of a commodity to be supplied by the DBE, that transaction is not eligible for DBE credit.

(c) Work that is performed with trucks that are not owned nor under a lease of at least one year by the DBE will not be eligible for DBE credit.

(d) A lack of documentation verifying that at least one DBE owned (not leased) tractor and tanker/trailer was used to haul liquid asphalt on the project will result in no DBE credit given on that project.

13.8 This form will be completed by the inspector from the project office during the time of the project. MoDOT will use the *MoDOT DBE Job-Site Review CUF Determination Form* to verify CUF was performed on the project, a copy of which is available on the MoDOT Contractor Resource website.

Q. 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.

2.1 MoDOT to Maintain Prior to the Notice to Proceed. The bridge, or bridges, associated with the work for this contract has been evaluated and, if found, inactive nests have been removed by MoDOT staff. MoDOT staff will maintain the structures to be free of nests until the Notice to Proceed date. At the notice to proceed, the contractor shall be responsible to maintain the structures to be free of nests until the work on the applicable bridge, or bridges, is complete.

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.

R. ALTERNATES FOR PAVEMENTS JSP-96-04G

1.0 Description. This work shall consist of a pavement composed of either portland cement concrete or asphaltic concrete, constructed on a prepared subgrade in accordance with the standard specifications and in conformity with the lines, grades, thickness and typical cross sections shown on the plans or established by the engineer.

1.1 Separate pay items, descriptions and quantities are included in the itemized proposal for each of the alternates. The bidder shall only bid one of the alternates and leave the contract unit price column blank for any pay item listed for any other alternate. If the bidder leaves any value in the unit price column for another alternate other than the one he is bidding, the bid will be rejected.

2.0 Mainline Pavements

2.0.1 A sum of \$217,400 will be added by the Commission to the total bid using an asphalt alternate for Alternate A pavement for bid comparison purposes to factor in life cycle cost analysis of the roadway. The additional amount added will not represent any additional payment to be made to the successful bidder and is used only for determining the low bid.

2.0.2 A sum of \$185,300 will be added by the Commission to the total bid using an asphalt alternate for the Alternate E pavement for bid comparison purposes to factor in life cycle cost analysis of the roadway. The additional amount added will not represent any additional payment to be made to the successful bidder and is used only for determining the low bid.

2.0.4 A sum of \$9,600 will be added by the Commission to the total bid using an asphalt alternate for the Alternate G pavement for bid comparison purposes to factor in life cycle cost analysis of the roadway. The additional amount added will not represent any additional payment to be made to the successful bidder and is used only for determining the low bid.

2.1 A2 Shoulders

2.1.1 A sum of \$22,000 will be added by the Commission to the total bid using an asphalt A2 Shoulder alternate for Alternate C pavement for bid comparison purposes to factor in life cycle cost analysis of the roadway. The additional amount added will not represent any additional payment to be made to the successful bidder and is used only for determining the low bid.

2.2 The quantities shown for each alternate reflect the total square yards of pavement surface designated for alternate pavement types as computed and shown on the plans. No additional payment will be made for asphaltic concrete mix quantities to construct the required 1:1 slope along the edge of the pavement, or for tack applied between lifts of asphalt.

2.3 The grading shown on the plans was designed for the thinner (concrete) pavement alternate.

2.4 Pavement alternates composed of Portland cement concrete shall have contrast pavements for intermittent markings (skips), dotted lines, and solid intersection lane lines. The pavement markings shall comply with Sec 620. No additional payment will be for the contrast pavement markings.

3.0 Method of Measurement. The quantities of concrete pavement will be measured in accordance with Sec 502.14. The quantities of asphaltic concrete pavement will be measured in accordance with Sec 403.22.

4.0 Basis of Payment. The accepted quantity of the chosen alternate and other associated items will be paid for at the unit price for each of the appropriate pay items included in the contract.

4.1 For projects with previously graded roadbeds, any additional quantities required to bring the roadway subgrade to the proper elevation will be considered completely covered by the pay item for Subgrading and Shouldering.

4.2 For projects with grading in the contract, there will be no adjustment of the earthwork quantities due to adjusting the roadway subgrade for alternate pavements.

S. VERTICAL WICK DRAINS

1.0 **Description.**

The work shall consist of installing pre-fabricated vertical wick drains at the locations and to such elevations as indicated on the plans or as directed by the engineer.

2.0 **General Requirements**

It shall be the responsibility of the contractor to furnish all necessary material, labor and equipment for the purpose of installing vertical wick drains according to the plans and provisions of the contract. The contractor shall drill at least two borings within the area designated on the plans to select the equipment, method, and materials suitable for the existing site conditions and capable of producing a satisfactory drain installation to the minimum depth. Drains that are defective, either in terms of material or as a result of unacceptable installation methods, will not be measured for payment.

3.0 **Installation**

At least 2 weeks prior to installation of the drains, the Contractor shall submit to the Engineer for review and approval a layout plan. The wick drain locations shall be located, numbered and staked by the contractor. The contractor shall take the necessary precautions to protect and preserve the stakes. The locations of the installed wick drains shall not vary by more than 6 inches from the locations indicated in the plans.

Prior to installation of the wick drains, the existing ground shall be graded to drain as shown in the plans and or as directed by the engineer. Care shall be taken when installing the wick drains to minimize disturbance of the prepared ground. Vertical wick drains shall be installed through the two-foot thick sand blanket and prior to the placement of the embankment. No embankment shall be placed prior to installation of the wick drains except what is necessary to shape the existing ground as shown in the plans.

The contractor shall demonstrate that his or her equipment, methods and materials produce a satisfactory installation in accordance with these specifications. For this purpose, the contractor shall install six trial drains at locations within the work area, as designated by the engineer. Six trial drains conforming to these specifications will be included in the total number of wick drains and payment will be included in the contract price for wick drain installation.

Any drains that deviate from the plan location by more than 6 inches, or that are damaged or improperly installed, will be rejected. Rejected drains may be removed or abandoned in place at the contractor's option. Replacement drains shall be offset approximately 18 inches from the location of the rejected drain as directed by the engineer.

Drains shall be installed vertically, within a tolerance of not more than 0.25 inches per foot. The equipment shall be carefully checked for plumbness and the contractor shall provide the engineer with a suitable means of verifying the plumbness of the mandrel and of determining the depth of the drain at any time.

Splices or connections in the vertical drain material will not be allowed. The prefabricated drain shall be cut such that at least a 6 inch length protrudes above the top of the sand drainage blanket, at each drain location.

The contractor shall be permitted to use augering or other methods to clear obstructions and to facilitate the installation of the drains through the working platform or a stiffer natural deposit above the compressible soil strata. The depth to which pre-augering is used shall be subject to the approval of the engineer, but should not extend more than 1 foot into underlying compressible soils.

Where obstructions are encountered within the compressible strata, which cannot be penetrated by augering, or spudding, the contractor shall abandon the hole. At the direction of the engineer, the contractor shall then install a new drain no more than 18 inches from the obstructed drain. A maximum of two attempts shall be made, as directed by the engineer, to install a new drain for each obstructed drain. If the drain still cannot be installed to the design tip elevation, the drain location shall be abandoned and the installation equipment should be moved to the next drain location. Drains shall be installed to the depth necessary to reach the layer of non-compressible soil.

Installation of the drains shall be coordinated with the installation of the settlement monitoring devices. Special care should be taken to install the drains in such a manner so as not to disturb instrumentation already in place. The replacement of any damaged devices as a result of the contractor's activities will be the responsibility of the contractor.

4.0 Equipment

Vertical drains shall be installed with equipment, which will cause a minimum amount of disturbance to the sand blanket or the subsoil during the installation. The prefabricated drains shall be installed by pushing or vibrating a mandrel or sleeve through the soils to the required depth. Jetting shall not be permitted for installation of the drain, except with the approval of the engineer, to lubricate the mandrel when working in highly plastic clays.

The mandrel shall protect the prefabricated drain material from tears, cuts and abrasions during installation and shall be withdrawn after the installation of the drain. The drain shall be provided with an

anchor plate or rod at the bottom to anchor the drain at the required depth at the time of mandrel removal. The projected cross-sectional area of the mandrel and anchor combination shall not be greater than 12 square inches.

At least 3 weeks prior to the installation of the wick drains, the contractor shall submit to the engineer for review the details, sequence and method of the installation. The submittal shall, as a minimum, contain the following specific information:

- Size, type, weight, maximum pushing force and configuration of the installation rig.
- Dimensions and length of mandrel
- Details of drain anchorage
- Detailed description of proposed installation procedures
- Proposed methods of overcoming obstructions

Acceptance of the contractor's methodology by the engineer will not relieve the contractor of his/her responsibility to install wick drains in accordance with the plans and specifications. If, at any time, the engineer considers that the method of installation does not produce a satisfactory drain, the contractor shall alter his method and/or equipment as necessary to comply with plans and specifications.

5.0 Materials

Wick drains shall be a prefabricated type constructed by fully wrapping a perforated high flow capacity polystyrene core with a non-woven synthetic geotextile filter fabric with an opening size of not greater than 210 microns. The geotextile wrap shall be tight around the core and shall be securely seamed in a manner that will not introduce any new materials nor present an obstruction that will impede flow in the channels of the core.

The contractor shall submit a five (5) foot sample of the vertical drain material to the engineer prior to usage and shall allow three weeks for evaluation of the material. The sample shall be stamped or labeled by the manufacturer as being representative of the drain material having the specified trade name. Approval of the sample material by the engineer shall be required prior to site delivery of the wick drain material. One single type of wick drain material shall be used on the project unless otherwise approved by the engineer.

The contractor shall state which wick drain product he/she intends to install at the time of the pre-construction conference. The drains shall be free of defects, rips, holes or flaws. During shipment, the drain shall be protected from damage, and during storage on-site, the storage area shall be such that the drain is protected from sunlight, mud, dirt, dust, debris and detrimental substances. Manufacturer certification shall be provided and show that the material meets the following minimum specifications.

<u>Test Item</u>	<u>Designation</u>	<u>Minimum Roll Value</u>
Grab Tensile Strength	ASTM D 4632	80 lb.
Trapezoidal Tear	ASTM D 4533	25 lb.
Puncture Strength	ASTM D 4833	50 lb.
Burst Strength	ASTM D 3786	130 psi.
Permittivity	ASTM D 4491	100 gal/min/ft ²

6.0 Method Of Measurement

The engineer will calculate the number of feet of Wick Drains (including trial wick drains) installed according to the contract documents. The calculations will be based on measurements taken from the top of the drain to the tip elevation of the drain.

In the case of obstructions, the Engineer will calculate the number of feet from measurements taken from the top of the drain to the elevation at which the obstruction was encountered.

7.0 Basis Of Payment

For the number of feet of Wick Drains measured as provided above, the Contractor will be paid per linear foot for wick drains and per square yard for separation geotextile. All labor, equipment and materials necessary to complete the installation of the wick drain drainage system, other than the vertical wick drains and separation geotextile, will be paid for as pay item No. 605-99.01, Wick Drain Drainage System, per feet,.

In instances where pre-auguring is permitted, the cost of pre-auguring and subsequent backfilling with sand shall be considered incidental to the price bid for Wick Drains.

The cost of borings drilled to select the equipment, method and materials suitable for the existing site conditions to produce a satisfactory drain installation shall be considered incidental to the price bid for Wick Drains.

No direct payment will be made for unacceptable drains, or for any delays or expenses incurred through changes of method or equipment where directed by the engineer, but the costs of such shall be included in the contract unit price for this work.

T. SAND DRAINAGE BLANKET

1.0 Description

The work shall consist of furnishing all necessary materials and equipment to construct a sand drainage blanket to form a horizontal drainage layer between the proposed embankment and what is considered the ground surface. Thickness of the sand blanket is to be 2 feet.

2.0 Material

The sand drainage blanket shall be constructed of a clean, free-draining, natural sand meeting the gradation requirements for fine aggregate in section 1005 of the Missouri Standard Specifications for Highway Construction. The sand shall be compacted such that it provides a stable working surface.

The horizontal sand drainage blanket shall cover the entire area enclosed by the wick drain boundary as indicated on the plans. The drainage blanket shall not be placed until the existing ground has been shaped and sloped to drain as shown on the plan sheet. Following the installation of the wick drains, the contractor shall install the pipe drainage system as indicated in the plans. Prior to installing the embankment, the sand blanket shall be covered with a geotextile fabric to prevent infiltration of the embankment into the sand blanket. Care shall be taken during placement of the embankment to

prevent damage to the drainage system. Any pipes that are damaged during placement of the embankment will be repaired at the contractor's expense. Markers shall be placed at each outlet pipe for protection and the outlets shall remain unobstructed at all times.

3.0 **Method of Measurement**

The sand blanket will be placed 2 feet thick across the full area of the wick drains as shown in the plans. Payment will be made as a lump sum.

4.0 **Basis of Payment**

The sand drainage blanket cost is included in the Pay Item No. 605-99.01, "Wick Drain Drainage System", per foot. This payment will include all costs associated with grading of the existing ground, placement of the sand, and placement of the drainage system.

U. **GEOTECHNICAL**

1.0 **Description**

The work will consist of constructing and installing settlement gauges at the locations indicated in the plans.

2.0 **General Requirements**

It shall be the responsibility of the contractor to furnish all necessary material, labor and equipment for the purpose of constructing and installing the settlement gauges in accordance with the standard specifications and standard drawings, Embankment Monitoring Section 204. The contractor will notify the engineer a minimum of 48 hours in advance of installation of the settlement gauges. In addition, the contractor will notify the engineer 24 hours in advance each time that the settlement gauge length will be modified during construction of the embankment and will coordinate with the engineer to get all required settlement data prior to proceeding with the embankment construction.

3.0 **Embankment Monitoring**

Soil Investigation has revealed that there are multiple areas throughout the project that will require monitoring before, during and after placement of the embankment. Settlement Gauges will be placed at the centerline of the roadway in the following locations:

East Outer Road- Stations 60+00, 62+80, 123+00

Route 61- Stations 39+00 and 42+00

West Outer Road- Stations 3+00 and 4+50

New County Road- Station 7+00

Ramp 1- Station 9+00

Ramp 2- Station 9+00

Ramp 3- Station 2+50

Ramp 4- Stations 2+50 and 5+00

Paving construction and surcharge removal will not be able to proceed in the areas as shown in the plans for the areas where wick drains are to be installed or in the area on the East Outer Road from station 49+00 to 69+00 until the settlement is complete. Settlement will also have to be complete for the construction of the bridge abutments to be permitted for Bridge A8437. Settlement will be considered complete when less than 0.125 of an inch of settlement is recorded for 2 consecutive 2-week periods. For the area requiring wick drains it is estimated that the settlement will require at least 2 months after completion of the embankment and surcharge. In the area on the East Outer Road from station 49+00 to 69+00 it is estimated that the settlement will require at least 24 months after completion of the embankment and surcharge. The settlement gauges shall be read and recorded every 2 weeks by the engineer after fill operations start and continue until the settlement is complete.

Settlement rates and times are based on information gathered during soil investigation. The actual rates and times may vary. No additional compensation will be made for work stoppages or delays related to additional time required to complete the settlement.

4.0 **Basis of Payment**

The measurement and payment of settlement gauges is included in the Pay Item No. 605-99.01, Wick Drain Drainage System, per foot.

V. **PROJECT CONSTRAINTS**

As a first order of work the contractor shall place fill to the elevation needed to construct the roadway from station 49+00 to 60+50 and from station 62+50 to station 69+00 including the 2 foot surcharge.

The second order of work shall be placement of any other fill to the elevation needed to construct roadway, including the 4 foot surcharge, in any other areas where settlement is a concern.

The contractor will not be allowed to close existing Route PP and existing County Road 311 at the same time as to provide easier traffic flow to and from Kelso/Scott City.

The contractor will be allowed to close Rose Con Road for 30 calendar days to build the box culvert. If the road is not open to traffic after the 30th day of closure the contractor will be charged \$2000 per calendar day till road is open to traffic.

The contractor will not be allowed to close both bridges on existing Route PP at the same time unless the contractor provides an acceptable way for property owners on the existing Outer Road to access their property. Acceptability of method of access shall be approved by engineer.

W. **3 STRAND HIGH TENSION GUARD CABLE**

1.0 Description. This work shall consist of all labor, equipment, storage facilities, and materials to remove, store and reinstall the 3 strand guard cable system including all hardware and appurtenances as shown on the plans or as directed by the engineer. This guard cable is located adjacent to the southbound lanes of I-55 in the locations shown on the plans. The contractor may not remove the guard cable until ready to switch traffic from the northbound to head-to-head on the southbound lanes or vice versa. The guard cable shall be removed immediately prior to head-to-head traffic on the

southbound lanes of I-55. Guardcable shall be re-erected if traffic is placed back to one way for both SB and NB lanes for more than two weeks. The guardcable shall be re-erected to the specifications needed to perform its intended safety operations. Any portion of the guard cable system damaged during this process shall be replaced at the contractor's expense.

1.1 The contractor shall be responsible for capping or covering the footings for the guard cable that will be within the limits of the temporary lane connections. The lane connections will be constructed over the existing footings and vegetative barrier. Upon removal of the lane connections any damaged footings or portions of the vegetative barrier shall be replaced at the contractors expense.

1.2 Any footings damaged by the contractor shall be replaced with an identical product to the existing footings. The manufacturers website is www.gibraltarx.com. The existing system is a Test Level 4 Gibraltar product approved for installation on a 4:1 slope. Any replaced footings shall be at the same spacing as existing.

1.3 Vegetative Barrier. Any damaged vegetative barrier shall be replaced by the contractor at the contractors expense. This barrier consists of an asphalt pavement strip at a compacted thickness of 3 inches and a width that matches existing conditions. Placement shall be in accordance with section 400 of the standard specifications.

1.3.1 If vegetative barrier is damaged and replaced, prior to the paving operation the area shall be prepared and compacted with 3 passes of a 10 ton roller or by another method as approved by the engineer.

1.3.2 Soil sterilant shall be applied to the compacted surface as specified by the manufacturer's requirements and as approved by the engineer.

1.3.3 A commercial asphalt mix shall be allowed.

1.3.4 Slopes shall be blended into the existing slope beyond the limits of the vegetative barrier.

1.4 The contractor will be allowed to install end anchor sections outside of the limits of the cross overs if they choose not to remove, store, and reinstall the guardcable as shown in the plans. End anchor locations shall be approved by engineer. Once the end anchors are installed the guardcable shall be re-tensioned to the specifications needed to perform its intended safety operations for the duration of the project.

2.0 Construction Requirements.

2.1 Cable Tensioning. The cable height above ground after reinstallation shall match previous existing conditions. The cable shall be tensioned to the manufacturer's recommendations immediately after reinstallation. Tension shall be rechecked and adjusted, if necessary, three to five days after initial tensioning on cable system sections with lengths greater than 2500 feet (760 m). A tension log form shall be completed showing the time, date, location, ambient temperature and final tension reading, signed by the person performing the tensioning, and furnished to the engineer upon completion of the work. This form shall also include the system manufacturer's recommended tension chart.

3.0 Method of Measurement. Measurement of the guard cable removal, storage and reinstallation will be made to the nearest linear foot.

4.0 Basis of Payment. The accepted quantities of reinstalled guard cable system will be paid for at the contract unit price with Item No. 606-99.03 Remove and Reinstall HI-Tension G-Cable (per linear foot). No direct payment will be made for replacement footings, compaction, soil sterilant, vegetative barrier pavement or labor.

X. RIGHT OF WAY CLEARANCE

1.0 Description. The contractor's attention is drawn to the fact that several parcels are not clear for access and construction as of August 07, 2017. The following parcels listed below are not clear but include an estimated possession date. The contractor will be notified by the engineer of the actual notice to proceed date on each individual parcel.

1.1 The contractor is required to inform itself of the location of these parcels. No encroachment, storage of equipment and materials or construction on these parcels shall be permitted until notification by the engineer that the individual parcels have been acquired.

1.2 The contractor SHALL schedule its work utilizing the available right of way until these parcels are cleared for construction which is estimated to be as noted in this special provision. However, that date expressly IS NOT a warranty by or contractually binding on the Commission as the date the parcels will be clear for construction.

1.3 The contractor shall have no claim for damage for delay, disruption, interference or otherwise as a result of this specification, contractor's sole remedy being an extension of time upon proof of actual delay being reason of the unavailability of these parcels.

Parcel 4, Village of Kelso, Sta. 2+12 to Sta. 21+00 Lt. Anticipated date of possession is August 1, 2017.

Parcel 17, Wade C Robert Rev Trust, Sta. 60+00 to Sta. 108+00 Lt. Anticipated date of possession is August 1, 2017.

Parcel 20, Edward and Rita Landewee, Sta. 42+00 to Sta. 49+00 Lt. Anticipated date of possession is August 1, 2017.

Parcel 21, Gerald W and Jana Landewee, Sta. 38+00 to Sta. 42+00 Lt. Anticipated date of possession is August 1, 2017.

Parcel 22, Daniel D and Tracy Landewee, Sta. 32+50 to Sta. 38+00 Lt. Anticipated date of possession is August 1, 2017.

Parcel 23, Michael E and Andrea Landewee, Sta. 30+00 to Sta. 32+50 Lt. Anticipated date of possession is August 1, 2017.

Parcel 25, Edward and Rita Landewee, Sta. 24+00 to Sta. 26+50 Lt. Anticipated date of possession is August 1, 2017.

Y. FIBER REINFORCED MATRIX (FRM)

1.0 Description. Fiber Reinforced Matrix (FRM) is a hydraulically applied (spray-on) erosion control product that bonds to, blankets, and conforms to contours of bare soil. It is typically applied with a truck or trailer mounted sprayer or by walking the affected areas with a hose sprayer. FRM is composed of organic defibrated fibers, cross-linked insoluble hydro-colloidal tackifiers, and reinforcing natural and /or synthetic fibers.

2.0 Materials.

2.1 To ensure product quality and performance, the contractor shall provide FRM that meets the specifications as provided in the table below. Do not use materials listed for use as Hydraulic Mulch (HM), Stabilized Mulch Matrix (SMM), or Bonded Fiber Matrix (BFM).

2.2 Furnish a FRM that requires no curing period and when applied and forms an bond with the soil.

2.3 Use of materials that are composed of paper, cellulose fiber, or a mixture of paper, cellulose, and other materials are not allowed.

2.4 Seed, lime, and fertilizer may be added to the FRM mixture in accordance with the manufacturer's recommendation.

2.5 Provide FRM that is pre-packaged by the manufacturer and is labeled with the following information.

- Manufacturer's name, location, and contact information,
- FRM name and product ID,
- FRM physical composition.

2.6 Manufacturer's certification shall be provided stating that the provided FRM meets the requirements as listed in the table below.

Minimum FRM Performance and Physical Requirements Property		Required Value
Thermally Processed Fiber by Weight		75% ± 10%
100% bio-degradable Interlocking Fibers		5% ± 2%
Organic Tackifiers and Activators		10% ± 2%
Moisture Content		10% ± 3%
Organic Matter		90% minimum
Color		Colored to contrast application area, shall not stain concrete or painted surfaces.
FRM Property	Test Method	Required Value
Physical	Mass Per Unit Area	ASTM D6566*
	Thickness	ASTM D6525*
	Ground Cover	ASTM D6567*
	Wet Bond Strength	ASTM D6818*
		12.0 oz/yd ² minimum
		0.22 in. minimum
		99% minimum
		9 lb/ft

	Water Holding Capacity	ASTM D7367	1500% minimum
	Flexural Rigidity (wet)	ASTM D6575*	5 oz-yd maximum
Endurance	Functional Longevity	ASTM D5338	Minimum of 12 months
Performance	Cover Factor	MoDOT Approved Large Scale Testing	0.01 maximum
	% Effectiveness	MoDOT Approved Large Scale Testing	99% minimum
	Cure time	MoDOT Approved Large Scale Testing	98% Effective 2 hours after application
	Vegetation Establishment	ASTM D7322*	800% minimum
Environmental	Ecotoxicity	EPA 2021.0	96-hr LC50 > 100%
	Effluent Turbidity	MoDOT Approved Large Scale Testing	100 NTU Maximum
	Biodegradability	ASTM D5338	100% Minimum
* ASTM test methods developed for Rolled Erosion Control Products (RECPs) that have been modified to accommodate Hydraulic Erosion Control Products (HECPs).			

3.0 Construction Requirements.

3.1 Manufacturer’s representative shall be on site the during the first day off application to provide guidance in the proper application of the FRM.

3.2 FRM shall be applied to all finished slopes as soon as practical and within the requirements of MoDOT’s Storm Water Pollution Prevention Plan. FRM shall be applied in accordance with the manufacturer’s specifications to assure complete surface coverage of disturbed slopes. In order to provide complete coverage, the FRM shall be applied multiple, varying directions.

3.3 Application rates shall be in accordance with the following table.

Slope Condition	Application Rate (lbs/Acre)
< 3H:1V	3000
> 3H:1V and < 2H:1V	3500
>2H:1V and < 1H:1V	4000
>1H:1V	4500

4.0 Method of Measurement. Measurement of FRM will be of the covered area to the nearest 1/10 acre.

5.0 Basis of Payment. The accepted quantity of FRM will be paid for at the unit price bid for 805-99.19, Fiber Reinforced Matrix, per acre

Z. ADDITIONAL MOBILIZATION FOR SEEDING NJSP-16-03

1.0 Description. This provision provides compensation for additional mobilization for seeding, as specified herein.

2.0 Additional Mobilization for Seeding. Additional mobilization to perform temporary or permanent seeding, beyond the initial occurrence, may be necessary as specified in Sec 806.50.2 and as required per terms of the SWPPP. Mobilization of all equipment, workers and materials necessary to perform seeding and mulching shall be considered included in this work.

2.1 Measurement of the number of occurrences authorized by the engineer to mobilize equipment onto the project to perform temporary or permanent seeding will be made per each occurrence, except for the initial occurrence and as specified herein. No measurement will be made for mobilization necessary to perform repair work to previously seeded areas or for mobilization necessary due to removal of equipment prior to completion of seeding all areas available for seeding, as determined by the engineer.

3.0 Basis of Payment. The accepted occurrences of Additional Mobilization for Seeding will be paid for under 618-99.02, Additional Mobilization for Seeding, at a fixed unit price of \$600 per each occurrence. Payment for the initial occurrence to mobilize for seeding, and any additional mobilization costs in excess of the fixed price, shall be considered completely covered under other items.

AA. MODIFIED SUBCONTRACTING REQUIREMENTS

The limitation in Sec 108.1.1 of the Missouri Standard Specifications for Highway Construction that "the contractor's organization shall perform work amounting to not less than 40 percent of the total contract cost" is waived for this project. Instead, for the purposes of constructing this project only, the less restrictive terms of the Federal Highway Administration's rule at Title 23 Code of Federal Regulations (CFR) § 635.116(a) shall apply, so that the contractor must perform project work with its own organization equal to not less than 30 percent of the total original contract price. All other provisions in Sec 108.1.1 et seq. of the Missouri Standard Specifications for Highway Construction shall remain in full force and effect, and shall continue to govern the contractor and its subcontractors, in accordance with the provisions of Title 23 CFR § 635.116.

BB. MODOT'S CONSTRUCTION WORKFORCE PROGRAM NJSP-15-17A

1.0 Description.

1.1 Projects utilizing federal funds include contract provisions for minority and female workforce utilization in the various trade crafts used to complete construction contracts. These federal contract workforce goals are described in the section labeled "Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity". These goals are included in all MoDOT federal aid contracts and are under the authorization and enforcement of the U.S. Department of Labor (US DOL).

1.2 The Federal workforce requirement (Goals – TABLE 1) is authorized in 41 CFR Part 60-4 and Executive Order 11246 which set Equal Employment Opportunity goals with Affirmative Action requirements.

1.3 The required federal aid workforce provisions noted above, coupled with the following additional contract provisions, constitute MoDOT's Construction Workforce Program herein called Program.

1.4 This provision does not require pre-qualification nor is it a condition of award.

1.5 The Program does not eliminate or limit any actions the US DOL may take in relation to this contract's federal provisions.

1.6 The Program goals included in the contract are separate from any Disadvantaged Business Enterprise (DBE) or On-The-Job (OJT) training provision that may be included as contract provisions. DBE and OJT goals may or may not be included in a contract based on the individual size of contracts, type of contract work, anticipated length of contract, available and willing resources or other reasons.

1.7 Contractor, for the purpose of this provision, means the prime contractor and any and all subcontractors.

1.8 It is expected that the contractor recognizes the construction workforce goals for both minority and female workers in the project's county and make efforts to attain those goals, if possible, through the existing workforce makeup of the prime (including subcontractors) that will be on the project and/or through hiring opportunities that may arise for the project. However, it is not the intent of this provision to compel any contractor to displace existing workforce or move workers around to just meet the workforce goals.

1.9 If the contractor's existing Missouri construction workforce meets or exceeds the federal workforce goals established in Table 1, then the OJT goal (Training Provision) if included in the contract, does not be apply.

1.10 Contractor's Workforce Plan. The Contractor shall submit its Workforce Plan a minimum of 1 week before construction starts. One plan shall be submitted for the project that shall include the cumulative planned workforce of the prime and subcontractor(s). The contractor shall prepare the plan, for total minority and female utilization, regardless of the craft. The Engineer will provide the Contractor with comments regarding their Workforce Plan prior to the start of construction. Once work starts, all monthly reporting shall include the craft of each worker reported. If the contractor's plan includes project manager, direct project support roles, project testers or other project professionals, these designations should also be included in addition to the workers designated by craft such as laborer, operator, carpenter, ironworker and others.

1.11 The plan accepted by the engineer before the start of construction will be the effort expected of the prime contractor to maintain during the life of the project.

1.12 If the contractors planned project workforce plan (including OJT hours if included in the contract) is short of the goals included in Table 1, there is opportunity for the contractor to receive a reimbursement of \$10.00 / hour for any new project minority and female hires needed through the remainder of the project. The reimbursement is applicable to work that qualifies for prevailing wage under the federal Davis-Bacon Act, 40 U.S.C. §§ 3141–3148, in accordance with an approved workforce plan. Any reimbursement must be pre-approved by the Engineer. The reimbursement is provided as a remedy to the contractor and as an aid in the long-term growth of experienced persons in the building of roads and bridges in Missouri. The contractor shall manage the plan through the life of

the project as described in the plan or as modified, in coordination with the Engineer. The total amount available per project is not capped.

1.13 The Contractor's workforce plan may include existing construction support and professional services staff.

2.0 Forms and Documentation. The bidder must submit the following documents if awarded the contract:

Cumulative Workforce Utilization Reports. This report is contract specific. One report shall be submitted to the Engineer by the 15th of each month. The report will be used to report the total workforce compliance data for the prime contractor and all subcontractors retained by the contractor on the Commission's construction contract. The reporting shall include the workforce hours per each craft broken down by gender and ethnicity. Construction Support, testing and other professional services hours shall be included as these hours are part of the overall plan. The report will include the previous month's hours worked for the project. For projects less than 60 days in length, only one report with total hours worked by classification is required at substantial completion of construction.

3.0 Methods for Securing Workforce Participation and Good Faith Efforts.

3.1 By submitting a bid, the Bidder agrees, as a material term of the contract, to carry out MoDOT's Construction Workforce Program by making good-faith efforts to utilize minority and female workers on the contractor's job sites to the fullest extent consistent with submitting the lowest bid to MoDOT. The Bidder shall agree that the Program is incorporated into this document and agree to follow the Program. If a bidder is unable to meet the workforce goals at the time of bid, it shall be required to objectively demonstrate to MoDOT that the goals have been met or demonstrate a good faith effort has been made with the level of effort submitted prior to the start of construction.

3.2 The Engineer, through consultation with MoDOT's External Civil Rights (ECR's) Division, may determine that the contractor has demonstrated that good-faith efforts to secure minority and female participation have been made.

3.3 In evaluating good-faith efforts, the ECR's Division will take into consideration the affirmative actions listed in the Federal Provisions (including provisions of Executive Order 11246).

3.4 MoDOT's Program allows the contractor flexibility to implement a project specific workforce and improve the diversity of their existing workforce that can be utilized across various areas of the state to meet future MoDOT Program goals and Federal Provisions.

3.5 If the contractor's approved plan changes during the project and/or the available workforce changes from what is approved at any time, it is the contractor's responsibility to remedy, in coordination with MoDOT's ECR Division, the conditions as outlined and made available through this provision.

4.0 Compliance Determination. (Required with project closeout) All documentation and on-site information will be reviewed by MoDOT's ECR Division in making a determination of whether the contractor made sufficient good faith efforts to meet the compliance with MoDOT's Construction Workforce Program.

5.0 Liquidated Damages. If the contractor elects to not submit a workforce plan prior to work starting or fails to fulfill their workforce plan committed to prior to the start of construction, the contractor will be required to establish a good-faith effort determination, as to why either of these events occurred. MoDOT may sustain damages, the exact extent of which would be difficult or impossible to ascertain, as this impacts the cost of future road and bridge construction. Therefore, in order to liquidate those damages, MoDOT shall be entitled, at its sole discretion, to deduct and withhold the following amounts: **The sum of one thousand five hundred (\$1,500)**

6.0 Administrative Reconsideration. The contractor shall be offered the opportunity for administrative reconsideration upon written request related to findings and/or actions determined by MoDOT's ECR's Division. The Administrative Reconsideration Committee shall be composed of individuals not involved in the original MoDOT determination(s).

7.0 Available Pre-Apprentice Training Programs. The Commission has established a labor force recruiting program intended to assist contractors in identifying, interviewing and hiring qualified job applicants. MoDOT strongly encourages the hiring of individuals from the MoDOT funded pre-apprentice training programs.

8.0 Independent Third-Party Compliance Monitor (Monitor). MoDOT may utilize a monitor that will be responsible for tracking the project's workforce utilization for the information the contractor submits. The contractor and its subcontractors shall allow the monitor access to their reports, be available to answer the monitor's questions and allow the monitor to access to the site and to contractor and subcontractor employees. The monitor shall abide by the contractor's project site protocols.

9.0 Regional Diversity Council (Council). (Applicable to the Kansas City and St. Louis District regions only) The Council shall consist of local community leaders, leadership of local construction trades, MoDOT staff, Industry representation, and a representative(s) from the Federal Highway Administration. The Council will meet quarterly and evaluate the workforce activity per each project according to the following criteria:

- a. Review monthly workforce reports.
- b. Review progress toward the stated project workforce program.
- c. Review findings of Administrative Reconsideration hearings.
- d. Recommend *other* workforce actions to MoDOT.

10.0 Federal Workforce Goals.

Female Participation for Each Trade is 6.9% Statewide for Missouri.

Minority Participation for Each Trade is shown below in Table 1.

TABLE 1:

County	Goal (Percent)	County	Goal (Percent)
Adair	4	Linn	4
Andrew	3.2	Livingston	10
Atchison	10	McDonald	2.3
Audrain	4	Macon	4
Barry	2.3	Madison	11.4

Barton	2.3	Maries	11.4
Bates	10	Marion	3.1
Benton	10	Mercer	10
Bollinger	11.4	Miller	4
Boone	6.3	Mississippi	11.4
Buchanan	3.2	Moniteau	4
Butler	11.4	Monroe	4
Caldwell	10	Montgomery	11.4
Callaway	4	Morgan	4
Camden	4	New Madrid	26.5
Cape Girardeau	11.4	Newton	2.3
Carroll	10	Nodaway	10
Carter	11.4	Oregon	2.3
Cass	12.7	Osage	4
Cedar	2.3	Ozark	2.3
Chariton	4	Pemiscot	26.5
Christian	2	Perry	11.4
Clark	3.4	Pettis	10
Clay	12.7	Phelps	11.4
Clinton	10	Pike	3.1
Cole	4	Platte	12.7
Cooper	4	Polk	2.3
Crawford	11.4	Pulaski	2.3
Dade	2.3	Putnam	4
Dallas	2.3	Ralls	3.1
Daviess	10	Randolph	4
DeKalb	10	Ray	12.7
Dent	11.4	Reynolds	11.4
Douglas	2.3	Ripley	11.4
Dunklin	26.5	St. Charles	14.7
Franklin	14.7	St. Clair	2.3
Gasconade	11.4	St. Francois	11.4
Gentry	10	Ste. Genevieve	11.4
Greene	2	St. Louis City	14.7
Grundy	10	St. Louis County	14.7
Harrison	10	Saline	10
Henry	10	Schuyler	4
Hickory	2.3	Scotland	4
Holt	10	Scott	11.4
Howard	4	Shannon	2.3
Howell	2.3	Shelby	4
Iron	11.4	Stoddard	11.4
Jackson	12.7	Stone	2.3
Jasper	2.3	Sullivan	4
Jefferson	14.7	Taney	2.3
Johnson	10	Texas	2.3
Knox	4	Vernon	2.3
Laclede	2.3	Warren	11.4
Lafayette	10	Washington	11.4
Lawrence	2.3	Wayne	11.4

Lewis	3.1	Webster	2.3
Lincoln	11.4	Worth	10
		Wright	2.3

**STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION
CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)**

This contractor and subcontractor shall abide by the requirements of 41 CFR 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, sexual orientation, gender identity or national origin. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability or veteran status.

As used in these specifications:

"Minority" includes;

- (i) Black (all person having origins in any of the Black African racial groups not of Hispanic origin);
- (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
- (iii) Asian and pacific islander (all persons having origins in any of the original peoples of the Far East, southeast Asia, the Indian Subcontinent, or the Pacific Islands; and
- (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North American and maintaining identifiable tribal affiliations through membership and participation or community identification).

CC. DEWATERING

1.0 Description. This provision covers dewatering the site as necessary to provide a suitable condition for the construction of the culvert, as approved by the engineer. This work shall be done in accordance with Sec 206 and this specification.

2.0 Construction Requirements. Dewatering shall provide a dry work area suitable to construct the culvert within specifications, as approved by the engineer. Typical dewatering methods consist of, but are not limited to, construction of cofferdams, seal courses, over excavation, well point systems, dewatering and drainage diversion. Any dewatering method utilized shall conform to all environmental laws and regulations.

3.0 Method of Measurement. No measurement will be made.

4.0 Basis of Payment. Any labor, materials, or equipment need to carry out dewatering activities will be at no direct pay.

DD. ELECTRONIC INFORMATION FOR BIDDER'S AUTOMATION JSP-05-05A

1.0 Electronic Information. Electronic information, consisting of survey and design information including but not limited to 3-dimensional design models, cross-section models, alignment data, and plan view geometry, does not constitute part of the bid or contract documents. This electronic information will be distributed with the cross-sections or upon the contractor's request. This information, used for project design and quantity estimation purposes, is provided for the bidder's use in automation of bid estimating, contractor furnishing staking, automated machine guidance and other construction methods if provided in the contract. This information shall not be considered a representation of actual conditions to be encountered during construction. Furnishing this information does not relieve a bidder or contractor from the responsibility of making an investigation of conditions to be encountered including, but not limited to site visits, and basing the bid on information obtained from these investigations, and the professional interpretations and judgment of the bidder or contractor. The bidder or contractor shall assume the risk of error if the information is used for any purposes for which the information was not intended. The Commission makes no representation as to the accuracy or reliability of the information, since the information may not be representative of the sealed contract documents. Any assumption the bidder or contractor may make from this electronic information is at the bidder or contractor's risk; none are intended by the Missouri Highways and Transportation Commission. The bidder or contractor assumes the sole risk of liability or loss if the bidder or contractor does rely on this electronic information to its detriment, delay or loss.

The back slope on the left side of the East Outer Road from station 21+00 to station 22+60 is not represented in the proposed tin file.

EE. CULVERT AT STA. 43+70 (ROUTE 61)

1.0 Description. This provision covers work that will allow proper drainage operation of the culvert at this location. It is expected that this culvert will settle in the center between one and two feet. Once settlement has occurred the contractor is to place a 60" pipe linear through the settled pipe and then grout any voids between the outside of the 60" pipe linear and the inside of the 84" pipe.

2.0 Method of Measurement. No measurement will be made.

3.0 Basis of Payment. Any labor, materials, or equipment need to carry out the treatment described in section 1.0 will be paid for as culvert settlement treatment, item number 620-99.01, Culvert Settlement Treatment, per lump sum.

FF. I-55 GUARDRAIL TREATMENT

1.0 Description. This work shall consist of furnishing and installing Type 1 aggregate for widening behind I-55 guardrail and crashworthy end terminals, as shown on the plans and as directed by the Engineer. The use of any material other than Type 1 aggregate shall require approved of the Engineer.

2.0 Basis of Payment. The accepted quantities of Type 1 aggregate will be paid at the contract unit price for item 304-99.10, Type 1 Aggregate Base, per ton, and shall be considered full compensation for all labor, equipment, and material required to complete the described work.

GG. SANITARY SEWER FORCE MAIN

1.0 Description. The scope of this work shall consist of furnishing all pipe, fittings, structures, equipment and tools required for the complete installation and testing of relocated section of force main as shown on plans and/or specified herein. Work is to be in accordance with the best present-day installation and construction practices. No materials shall be incorporated into work until mill and/or factory test certifications, have been furnished which show that materials comply with specifications.

2.0 Materials

2.1 Sanitary Sewer Force Main (3 inch dia.) - Plastic pipe and fittings shall be laid and joined in accordance with these specifications and the manufacturers' recommendations. PVC pipe shall have a Pressure Rating (PR) and Standard Thermoplastic Pipe Dimension Ratio (SDR) as defined by ASTM D 2241 and shown below:

PR 250 = SDR-17 = CL 250 (3 inch)

No PVC pipe with a wall thickness less than 0.09 inches will be allowed.

2.2 PVC Pipe. The PVC pipe shall be manufactured of Type 1, Grade 1, 200 PSI design stress for water at 73.4°F. and designated as PVC 1120 and shall conform to ASTM D 1784 compound specifications. Pipe shall bear the NSF seal of approval and shall conform with the requirements of ASTM D 2241. The pipe shall be precision extruded from new PVC material and shall be homogeneous throughout and free from cracks, holes, foreign inclusions or other defects. The pipe shall be extruded in strict accordance with the raw material manufacturers' recommendations and specifications. Force main pipe shall be solvent weld coupled end pipe.

2.3 PVC pipe shall be supplied in standard laying lengths of 20 or 40 feet. However, 40 foot lengths of pipe will be approved upon adequate demonstration by the Contractor that they have equipment capable of fully supporting the pipe while being transported and distributed over the project. The Engineer reserves the right to reject pipe with cracks, holes or foreign inclusions, or other potential defects.

2.4 The manufacturer shall deliver the pipe to the job site by means which will adequately support it and not subject it to undue stresses. The load shall be so supported that the bottom rows of pipe are not damaged by crushing. The pipe shall be carefully unloaded and stored on the project or a site prepared and furnished by the Contractor.

2.5 Coupled end pipe shall meet previous manufacturing requirements and shall be shipped with one coupling factory applied. Couplings shall be from extruded or molded stock. The couplings furnished shall provide a minimum contact length of one diameter of the pipe each side of the center. The entrance to the coupling shall be beveled to prevent wiping off of the solvents on the male end. Uncoupled ends shall have a ring painted around the end in such a manner as to allow field checking of the setting depth of pipe in the socket.

2.6 PVC pipe shall be marked with the following: pipe size, material code designation, standard dimension ratio (SDR), pressure rating, manufacturer's name or trade mark, NSF seal, and appropriate ASTM designation numbers.

3.0 Pipe joints.

3.1 PVC Pipe 3 Inch Diameter: Joints shall be solvent welded. Solvents for PVC welding shall be purchased from the pipe manufacturer. PVC welding solvent shall be compounded to conform to the socket fit and the weather conditions at the time of installation. At no time shall solvent weld be made when the temperature conditions do not meet the manufacturer's recommendations.

3.2 Joint Protection and Inspection: Carefully protect joints from injury while handling and storing pipe. Use no deformed, gouged or otherwise impaired joints. Clean bell and spigot surface of dirt and foreign matter before jointing pipe. Make joints in strict accordance with manufacturer's recommendations.

4.0 Valves.

4.1 Gate Valves: Gate valves shall be resilient-seated, manufactured in accordance with AWWA C509. Shall have a non-rising stem; "O" ring stem seal, 2 inches operating nut, iron body and bronze mounted. Designed for 150-psi water working pressure and open counter-clockwise. Valve ends shall be mechanical joint unless otherwise specified.

5.0 Meter Boxes.

5.1 Use meter boxes for buried air release valve and 2 inline cleanouts unless shown otherwise on the plans.

5.2 Meter box shall be a 24 inch diameter PCP pipe, cut 5 feet in length. The pipe will be slotted at the bottom to pass a 3 inch force main. The meter box lid shall be a Ford No. 24 or equal.

6.0 Air Release Valves.

Air Release Valve shall be a 2 inch diameter threaded A.R.I. D-025 or equal.

7.0 Concrete Thrust Blocks.

7.1 Concrete Thrust Blocks: Required where piping changes direction or dead ends. No bolts, joints or drain holes shall come into contact with the concrete thrust block. If necessary, a sheet of 4 mil plastic shall be used to protect these areas before the concrete is placed. Thrust blocks shall be poured in place concrete. Precast concrete thrust blocks shall not be used.

8.0 Utility markings.

8.1 Underground-Type Plastic Line Markers: Manufacturer's standard permanent, bright colored, continuous-printed plastic tape, intended for direct-burial service; not less than 3 inches wide. Provide green tape with black printing reading "CAUTION SEWER LINE BURIED BELOW." Marker tape shall be placed in the sanitary sewer pressure main excavation 1 foot above the crown of the pipe.

8.2 Underground Locator Wire: A 12 GA. Tracer wire is to be buried in the trench along with the marking tape. The tracer wire is to be looped inside meter box locations.

8.3 Surface Markers: Subject to compliance with requirements, manufactures offering identification markers, which may be incorporated in the work, include, Carsonite Utility Posts & Markers, PRO-MARK Utility Supply Inc., PRO-KOTE, or approved equal. Surface markers shall be installed at locations and indicated on the plans.

9.0 Steel Casing

9.1 Steel Casing: Steel casings for bored, jacked or open trench construction shall be steel pipe conforming to ASTM A 139. Steel shall be Grade B under railroads and Grade A on all other uses. Steel pipe shall be have welded joints in accordance with AWWA C 206. There will be two locations requiring the use of steel casing. The first will be at the creek crossing, Sta.7+00 of the East Outer Road and the second at Sta.1+50 under existing Rose-Con Road.

9.2 Casing Spacers: Casing spacers shall be used with all casing. Casing spacers shall have a minimum of 4 runners and shall hold the carrier pipe in the center of the casing. Casing spacers shall have lined stainless steel sleeve and UHMW plastic runners, and shall be Cascade Waterworks Mfg. "Model CCS" or Advance Products & Systems, Inc. "Model SSI", or equal.

9.3 Casing End Seals: Ends shall be sealed with synthetic rubber, wrap-around end seals with stainless steel bands, Cascade Waterworks Mfg. "Model CCES" or Advance Products & Systems, Inc. "Model AW", or equal.

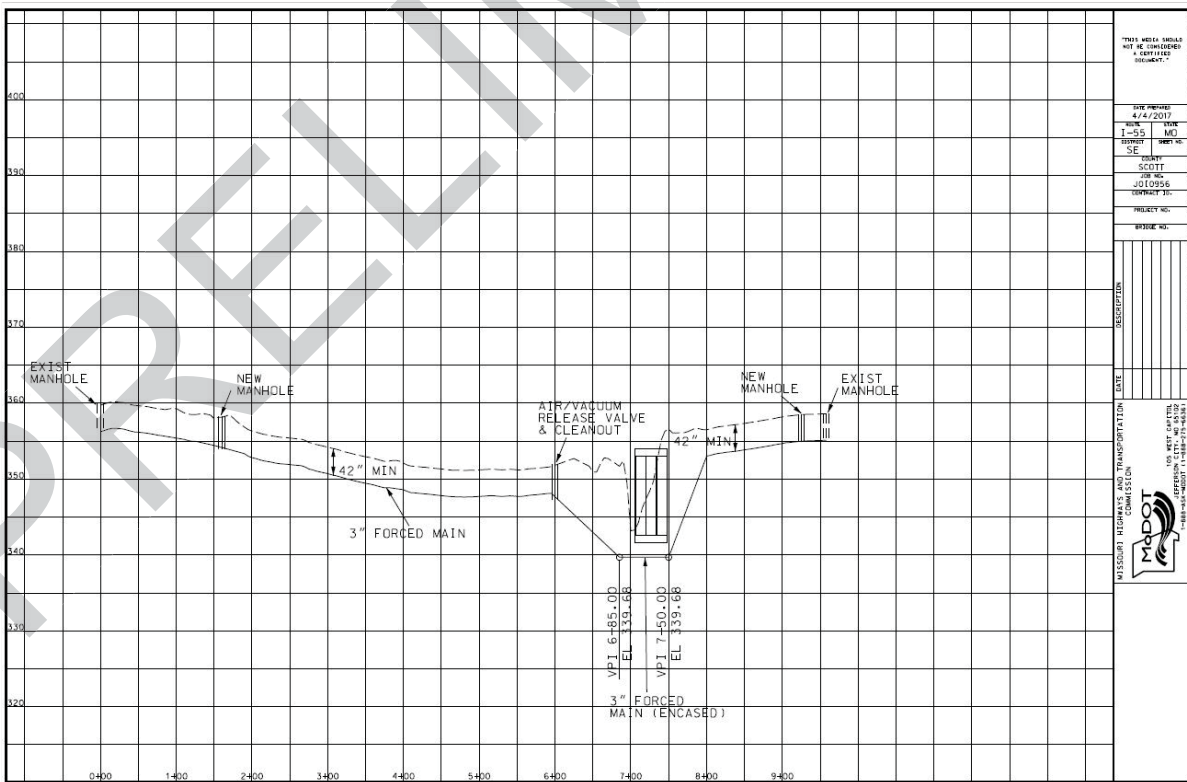
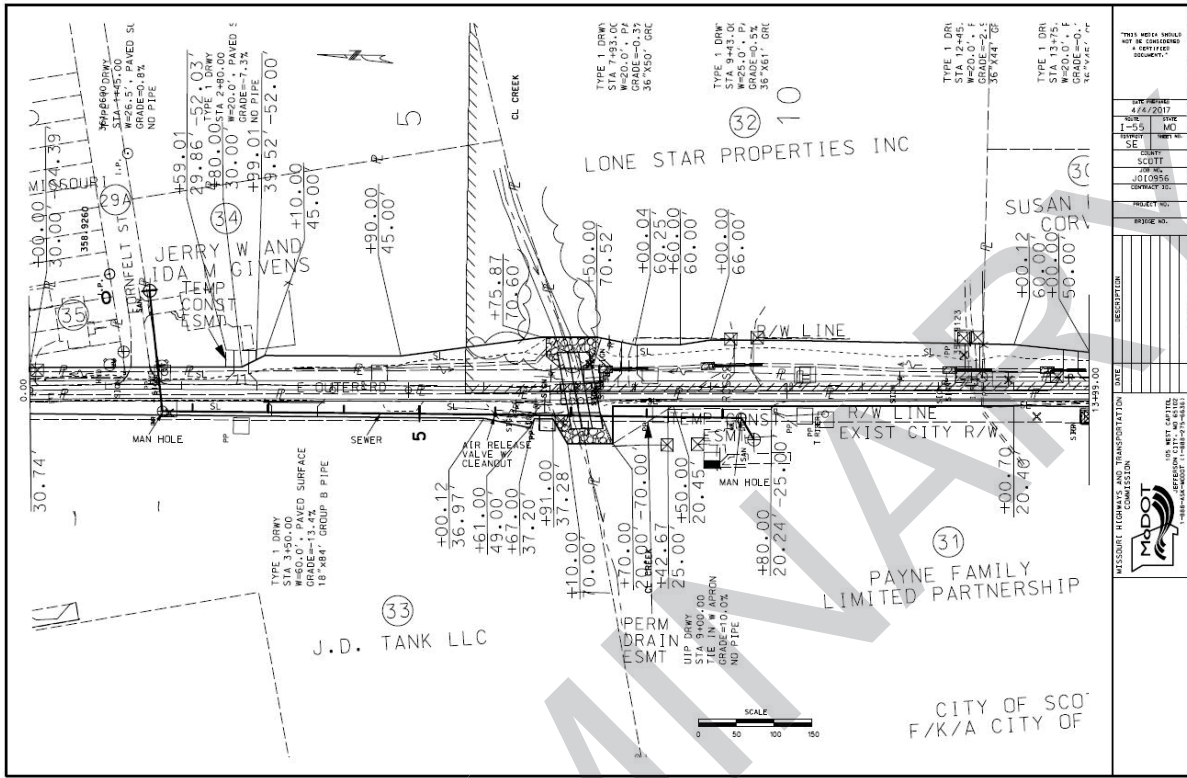
10.0 Estimated Quantities

<u>ITEM</u>	<u>QUANTITY/UNIT</u>
3"dia I.P.X 2" THREADED MJ TEE (USED WITH AIR RELEASE)	1/ea
3"dia C.I. X14" THREADED NIPPLE	2/ea
3"dia C.I. MJ WYE	4/ea
3"dia C.I. MJ 45 DEGREE ELBOW	4/ea
3"dia C.I. MJ PLUGS (END CAPS)	4/ea
2"dia THREADED AIR RELEASE VALVE (A.R.I. D-025 OR EQUAL)	1/ea
2"dia THREADED GATE VALVE	1/ea
24"dia X 5' LONG PVC PIPE SLOTTED TO PASS A 3" C.I.P.(USE AS VAULT)	3/ea
METER BOX LID (FORD NO. 24 OR EQUAL)(MARKED "SEWER")	3/ea
2"dia X 3" LONG BRASS NIPPLE (USED WITH AIR RELEASE)	4/ea
3" I.P. SIZE FORCE MAIN PVC PIPE	1000/ft
3" I.P. SIZE PVC PIPE 45 DEGREE SWEEP (USED AT CREEK CROSSING)	
4/ea	
3" I.P. MECHANICAL COUPLING	6/ea
STEEL CASING TO ACCOMIDATE 3" I.P. SIZE FORCE MAIN	115/ft
UTILITY SURFACE MARKERS	3/ea

5.0 Basis of Payment. Payment for items covered by this specification include all materials, including anchor blocks, pvc pipe, bends, tees, wyes, meter box and incidental grading and equipment necessary for installation of force main. Payment will be made as follows:

Item No.	Type Description
603-99.21	Sewer, Lump sum 1

PRELIMINARY





DEPARTMENT OF THE ARMY
MEMPHIS DISTRICT CORPS OF ENGINEERS
167 NORTH MAIN STREET B-202
MEMPHIS, TENNESSEE 38103-1894

March 03, 2017

Mr. Buck Brooks
105 West Capital Avenue
P.O. Box 270
Jefferson City, Missouri 65102

Dear Mr. Brooks:

This is in response to your request to construct 13 crossings of waters associated with the construction of an outer road and interchange connecting Kelso and Scott City in Scott County, Missouri (as shown on the attached map). The project as proposed meets the criteria of Nationwide Permit 14 (NWP) (Linear Transportation Projects), pursuant to the Federal Register, Volume 77, Number 34, dated February 21, 2012.

The attached general, regional and State of Missouri conditions must be met. Note specifically General Conditions 12, 18 and 20 concerning erosion control, endangered species and historic properties. If all conditions cannot be met, an individual permit may be required.

The Missouri Department of Natural Resources has certified that this NWP will not violate existing state water quality standards provided you comply with the conditions included in their attached certification document. All conditions included in the water quality certification become conditions of the NWP authorization. Please review all conditions associated with the NWP. If you have any questions concerning state water quality standards or compliance issues with the associated certification conditions, please contact the Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102-0176. You may also contact the office at (573) 526-3589 or by email at wpsc401cert@dnr.mo.gov.

This permit conveys no property rights, either in real estate or material or any exclusive privileges. Furthermore, no injury to property or invasion of rights or any infringement of federal, state or local laws or regulations is authorized.

This verification is valid until the NWPs are modified, reissued or revoked. All of the existing NWPs are scheduled to be modified, reissued or revoked prior to March 18, 2017. It is incumbent upon you to remain informed of changes to the NWPs. We will issue a public notice when the NWPs are reissued. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant NWP is modified or revoked, you will have 12 months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of the NWP.

The decision regarding this action is based on information found in the administrative record, which documents the district's decision-making process, the basis for the decision and the final decision. Additionally, the attached certification form must be signed and returned to the Corps of Engineers within 30 days after project completion.

Copies of this letter have been furnished via email to EPA Region 7 and Missouri Department of Natural Resources/Missouri Water Pollution Control Program.

The Memphis District, Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, we invite you to complete a Customer Service Survey found at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. Your comments, positive or negative, will not affect any current or future dealings with the Corps of Engineers.

Your cooperation in the regulatory program is appreciated. If you have questions, please contact Damon McDermott at (901) 544-0732 and refer to File No. MVM-2017-025.

Sincerely,



Roger S. Allan
Chief, Western Section
Regulatory Branch

Enclosures

PRELIMINARY

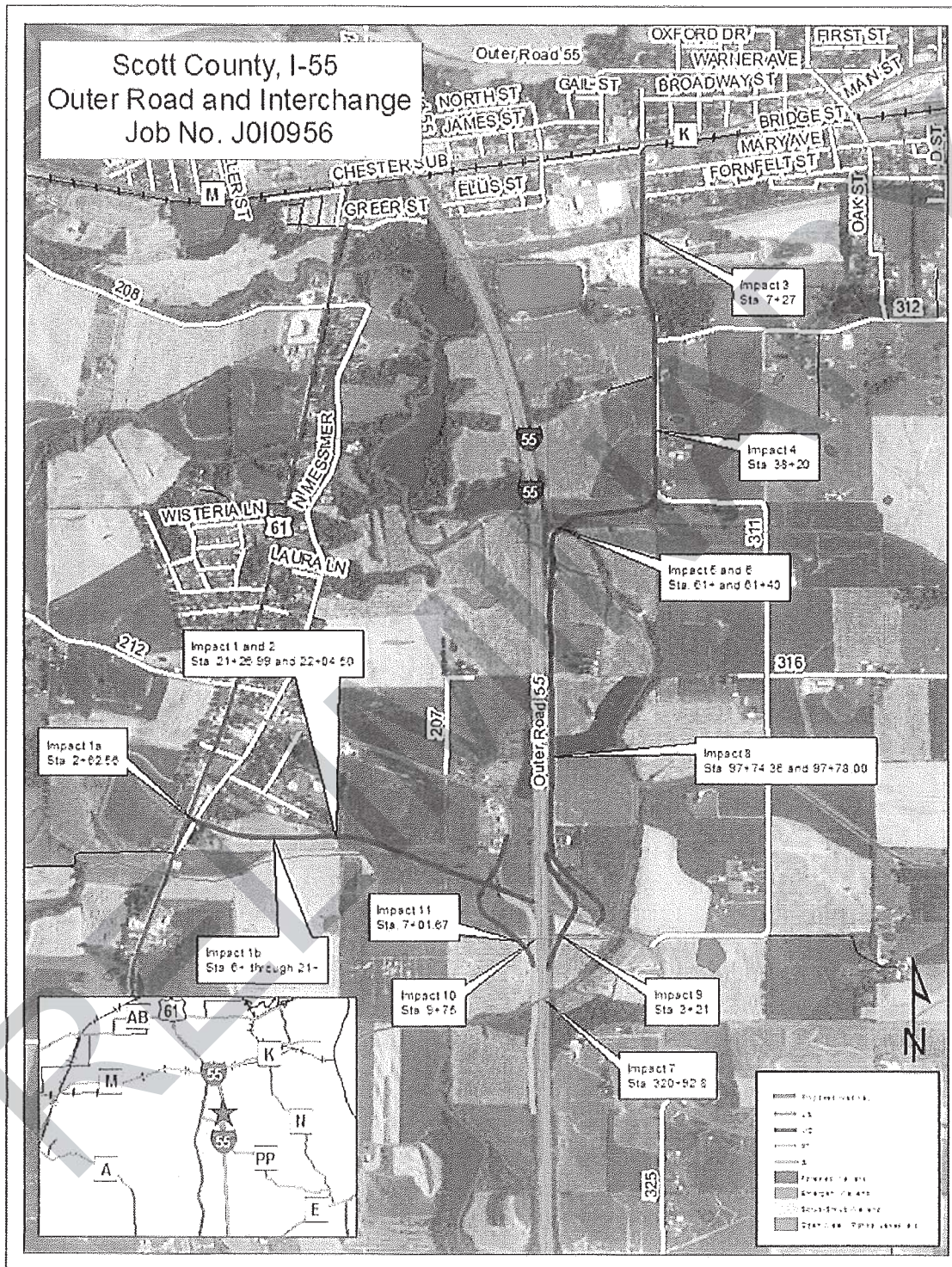


Exhibit 7: Aerial showing location of impacts.

14. Linear Transportation Projects. Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds 1/10-acre; or (2) there is a discharge in a special aquatic site, including wetlands. (See general condition 31.) (Sections 10 and 404)

Note: Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under Section 404(f) of the Clean Water Act (see 33 CFR 323.4).



**US Army Corps
of Engineers®**

Memphis District

Nationwide Permit Conditions

The following General Conditions must be followed in order for any authorization by NWP to be valid:

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.
(b) Any safety lights and signals prescribed by the US Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the US.
(c) The permittee understands and agrees that, if future operations by the US require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the US. No claim shall be made against the US on account of any such removal or alteration.
2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.
3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.
4. Migratory Bird Breeding Areas. Activities in waters of the US that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.
5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.
6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).
7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.
8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.
9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).
10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.
11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.
12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high

tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the US during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, US Forest Service, US Fish and Wildlife Service).

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification (PCN) to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the PCN must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete PCN. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from Corps.

(d) As a result of formal or informal consultation with the USFWS or NMFS the district engineer may add species-specific requirements to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the USFWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the US to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS and NMFS at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.noaa.gov/fisheries.html>, respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any "take" permits required under the USFWS's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the USFWS to determine if such "take" permits are required for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA is complete.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA Section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who,

with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the US are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters. (b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the US to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment.

(2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or USEPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the US authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the US for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature: "When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

- (a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;
- (b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions, if credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(i)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and
- (c) The signature of the permittee certifying the completion of the work and mitigation.

(3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14) must be approved by the district engineer before the permittee begins work in waters of the US, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the US, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the US are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has

31. Pre-Construction Notification (PCN). (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a PCN as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

- (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or
 - (2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f) and/or Section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).
- (b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

- (1) Name, address and telephone numbers of the prospective permittee;
- (2) Location of the proposed project;
- (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the US expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);
- (4) The PCN must include a delineation of wetlands, other special aquatic sites, and waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the US. The 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;
- (5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of PCN Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP activities that require PCN notification and result in the loss of greater than 1/2-acre of waters of the US, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require PCN notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require PCN notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (USFWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the PCN notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each PCN notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of PCN notifications to expedite agency coordination.

Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.

F. Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term "discharge" means any discharge of dredged or fill material.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s).

Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of

the impact to jurisdictional waters for determining whether a project may qualify for an NWP, it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain in aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term "single and complete project" is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of "independent utility"). Single and complete non-linear projects may not be "piecemealed" to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line, which is defined at 33 CFR 328.3(d).

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances

have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a jurisdictional water of the United States. If a jurisdictional wetland is adjacent – meaning bordering, contiguous, or neighboring – to a waterbody determined to be a water of the United States under 33 CFR 328.3(a)(1)-(6), that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of "waterbodies" include streams, rivers, lakes, ponds, and wetlands.

MISSOURI NATIONWIDE PERMIT REGIONAL CONDITIONS

For All Nationwide Permits:

1. **Stream Crossings.** In addition to requirements of General Condition (2) and General Condition (9) of the Nationwide Permits, the following guidelines for stream crossings apply for regulated activities in waters of the United States. The guidelines are available at:
<http://www.nwk.usace.army.mil/Portals/29/docs/regulatory/nationwidepermits/2012/MORC1Streams.pdf>.
2. **Seasonal Restrictions for Activities Proposed in Spawning Areas.** In addition to the requirements of General Condition (3) of the Nationwide Permits, the following specific seasonal restrictions apply for regulated activities in waters of the United States. Between the closed dates listed in the Missouri Combined Stream Spawning List, the permittee must not excavate from or discharge into the listed waters. The list of waters with seasonal restrictions is available on request from the Corps or at:
<http://www.nwk.usace.army.mil/Portals/29/docs/regulatory/nationwidepermits/2012/SpawningList.pdf>
3. **Invasive and Exotic Species.** Plant species listed at
<http://www.nwk.usace.army.mil/Portals/29/docs/regulatory/nationwidepermits/2012/MOInvasivePlants.pdf> shall not be used for revegetation unless this requirement is waived by the district engineer based on a case specific analysis of the revegetation plan. Best management practices should be used to reduce the risk of transferring invasive plant and animal species to or from the project site. Best management practices can be found at: <http://www.invasivespeciesinfo.gov/toolkit/prevention.shtml>. Known zebra mussel waters within Missouri can be found at: <http://nas.er.usgs.gov/queries/zmbyst.asp>.
4. **Suitable Material.** In addition to the specific examples in General Condition (6) of the Nationwide Permits, the following materials are not suitable for fill activities in waters of the United States: vehicle bodies, construction or demolition debris, garbage, tires, treated lumber (chromated copper arsenate (CCA), creosote, and pentachlorophenol), liquid concrete not poured into forms, grouted riprap, bagged cement, and sewage or organic waste.

Broken concrete used as bank stabilization must be reasonably well graded, consisting of pieces varying in size from 20 pounds up to and including at least 150 pound pieces to withstand expected high flows. Applicants must break all large slabs to conform to the well graded requirement. Generally, the maximum weight of any piece should not be more than 500 pounds. Gravel and dirt should not exceed 15% of the total fill volume when using broken concrete as fill. All protruding reinforcement rods, trash, asphalt, and other extraneous materials must be removed from the broken concrete prior to placement in waters of the United States.
5. **Priority Watersheds.** The applicant must provide preconstruction notification to the District Engineer for any regulated activity in a priority watershed. The list of priority watersheds requiring notification is available on request from the Corps or at
<http://www.nwk.usace.army.mil/Portals/29/docs/regulatory/nationwidepermits/2012/PriorityWatersheds.pdf>
6. **Special Aquatic Resources.** The applicant must provide preconstruction notification to the District Engineer for any regulated activity which may impact a jurisdictional fen, seep or bog of any size.
7. **Sensitive Aquatic Species.** The applicant must provide preconstruction notification to the District Engineer for any regulated activity in waters listed at:
<http://www.nwk.usace.army.mil/Portals/29/docs/regulatory/nationwidepermits/2012/MORC7AquaticSpecies.pdf>

The submitted preconstruction notification will be coordinated in accordance with General Condition 31(d) with the U.S. Fish and Wildlife Service as determined appropriate by the Corps.

For Specific Nationwide Permits:

1 **NWP 12 – Utility Line Activities.** The applicant must provide preconstruction notification to the District Engineer prior to commencing the activity if the discharge is in a special aquatic site or when new utility line construction activities have multiple crossings of the same stream and/or parallel a stream. The preconstruction notification must include a revegetation plan for impacted wetlands and riparian areas in accordance with Regional Condition 3. Where preconstruction notification is required for utility line activities within streams, the submittal must include site-specific plans for the stabilization of disturbed channel bed and bank areas.

2 **NWP 23 - Approved Categorical Exclusions.** The applicant must provide preconstruction notification to the District Engineer for all regulated Nationwide Permit 23 activities in waters of the United States. In addition to information required by General Condition 31, the applicant must identify the approved categorical exclusion that applies and provide documentation that the project fits the categorical exclusion.

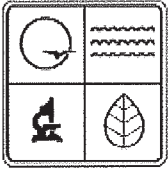
3 **NWP 27 – Stream and Wetland Restoration Activities.** The applicant must provide preconstruction notification to the District Engineer prior to commencing the activity if the discharge is associated with impacts to forested wetlands.

4 **NWP 44 – Mining Activities.** Nationwide Permit 44 cannot be used to authorize in-stream mining projects, including in-stream sand and gravel mining operations.

5 **Requirements for Waiver of 300 Linear Foot Limit Associated with NWPs 21, 29, 39, 40, 42, 43, 44, 50, 51, 52.** The applicant must request the waiver in writing and provide documentation and environmentally based reasons to support the waiver request in accordance with the requirements of General Condition (31)(e) for making waiver determinations.

13. Lake of the Ozarks: The applicant must provide a preconstruction notification to the District Engineer for any regulated activity associated with Nationwide Permits 3, 7, 12, 14, 15, 18, 22, 27, 33, and 45 within Lake of the Ozarks. A copy of this notification must also concurrently be sent to Ameren Missouri. Nationwide Permits 2, 13, 16, 19, 25, 29, 31, 35, 36, 39, 41, and 44 are revoked in the Lake of the Ozarks. NWPs 1, 9, 10, 11 and 28 are only valid when both Ameren Missouri and the Missouri State Water Patrol have approved the activity. The Corps and Ameren Missouri, regardless of the request to use any Nationwide Permit, may verify the activity under the provisions of Regional General Permit 38M
<http://www.nwk.usace.army.mil/Portals/29/docs/regulatory/permits/GP-38M.pdf> Additional information on Ameren Missouri and Lake of the Ozarks permit requirements can be found at the following webpage:
<http://www.ameren.com/sites/ae/lakeoftheoarks/Pages/Home.aspx>

Note: Preconstruction Notification to the District Engineer must be in accordance with General Condition (31) of the Nationwide Permits.



Missouri Department of Natural Resources

CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION 2012 GENERAL AND SPECIFIC CONDITIONS

Water Protection Program

Division of Environmental Quality Director: Leanne Tippet Mosby

05/2014

PUB02235

Consistent with Section 401 of the Clean Water Act these pre-certified conditions are designed to ensure that activities carried out under Nationwide Permits issued by the U.S. Army Corps of Engineers do not violate Missouri Water Quality Standards at 10 CSR 20-7.031, resulting in permanent damage to habitat, increased turbidity, reduced bank and channel stability or impacts to the biological and chemical integrity of the waters. Where applicable, these conditions are in addition to, not a replacement for, any federal requirements or conditions.

These conditions apply to projects authorized by Nationwide Permits 3, 4, 5, 6, 7, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 25, 27, 29, 30, 31, 33, 36, 39, 40, 41, 42, 43, 45 and 46 where the applicant has chosen to accept these conditions instead of pursuing an individual water quality certification. Alternatively, an applicant may apply for individual Clean Water Act Section 401 Water Quality Certification. Project authorized by Nationwide Permits 17, 32, 34, 37, 38, 44, 48, 49, 50, 51 and 52 require individual certification by the Missouri Department of Natural Resources.

GENERAL CONDITIONS

1. Nationwide Permits shall not allow the filling of jurisdictional springs.
2. Acquisition of a Nationwide Permit(s) and the attendant certification(s) shall not be construed or interpreted to imply the requirements for other permits are replaced or superseded, including Clean Water Act Section 402 National Pollutant Discharge Elimination System (NPDES) Permits for land disturbance or return water from material deposition. Permits or any other requirements shall remain in effect. Applicants with questions are encouraged to contact a Missouri Department of Natural Resources' regional office in the project area. A regional office map with contact information can be located at www.dnr.mo.gov/regions/regions.htm.
3. Care shall be taken to keep machinery out of the waterway as much as possible. Fuel, oil and other petroleum products, equipment, construction materials and any solid waste shall not be stored below the ordinary high water mark at any time or in the adjacent floodway beyond normal working hours. All precautions shall be taken to avoid the release of wastes or fuel to streams and other adjacent waters as a result of this operation.
4. Petroleum products spilled into any water or on the banks where the material may enter waters of the state shall be immediately cleaned up and disposed of properly. Any such spills of petroleum shall be reported as soon as possible, but no later than 24 hours after discovery to the Missouri Department of Natural Resources' [Environmental Emergency Response](#) number at 573-634-2436.
5. Only clean, nonpolluting fill shall be used. The following materials are not suitable for bank stabilization and shall not be used due to their potential to cause violations of the general criteria of the Water Quality Standards (10 CSR 20-7.031 (3)(A)-(H)):
 - a. Earthen fill, gravel, broken concrete where the material does not meet the specifications stated in the Missouri Nationwide Permit Regional Conditions (www.nwk.usace.army.mil/Portals/29/docs/regulatory/MOReqCon.pdf) and fragmented asphalt, since these materials are usually not substantial enough to withstand erosive flows.
 - b. Concrete with exposed rebar.
 - c. Tires, vehicles or vehicle bodies, construction or demolition debris are solid waste and are excluded from placement in the waters of the state.
 - d. Liquid concrete, including grouted riprap, if not placed as part of an engineered structure.
 - e. Any material containing chemical pollutants (including but not limited to creosote or pentachlorophenol).
6. Clearing of vegetation and trees shall be the minimum necessary to accomplish the activity. A vegetated corridor shall be maintained from the high bank on either side of the jurisdictional channel to protect water quality and to provide for long-term stability of the stream channel, unless physical barriers prevent such a corridor. For purposes of this Nationwide Permit, lack of ownership or control of any portion of this corridor may be considered a legitimate and discretionary cause to waive this requirement on that portion.
7. This certification is not valid for any Section 404 Permit issued on a water that is:
 - a. Listed as impaired by inorganic sediment, aquatic habitat alteration or unknown impairment as listed in the most current water quality report (Section 305(b) Report) at <http://www.dnr.mo.gov/env/wpp/waterquality/305b>. For convenience, a table of these

impaired waters is provided at the following website:

www.nwk.usace.army.mil/Portals/29/docs/regulatory/nationwidepermits/2012/MOWQC_Con7.pdf;

- b. Located in or occur within two miles upstream of a designated outstanding state or national resource water as found in 10 CSR 20-7.031, Tables D and E at www.sos.mo.gov/adrules/csr/current/10csr/10c20-7a.pdf; or
- c. Located in a designated metropolitan no-discharge stream as found in 10 CSR 20-7.031, Table F at www.sos.mo.gov/adrules/csr/current/10csr/10c20-7a.pdf.

The department's geospatial data is available upon request, and all published data is available on the Missouri Spatial Data Information Services website at msdis.missouri.edu/. Additional information to identify the project location may be obtained from the program at 573-751-1300.

8. Streambed gradient shall not be permanently altered during project construction.
9. Nationwide Permits issued by the U.S. Army Corps of Engineers for which the 300 linear foot threshold for stream impacts is waived by the district engineer shall require individual certification by the state. This is applicable to all Nationwide Permits where the permit has a 300 linear foot threshold including Nationwide Permits 21, 29, 39, 40, 42, 43, 44, 50, 51 and 52.
10. No project under a Nationwide Permit shall accelerate bed or bank erosion.
11. Representatives from the department shall be allowed on the project property to inspect the authorized activity at any time deemed necessary to ensure compliance with conditions.
12. You must submit a copy of the signed "Compliance Certification" referenced in Nationwide Permit general condition No. 30 as proof of project completion when the original is submitted to the Corps. This document is to be sent to the Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102-0176 or electronically to wpsc401cert@dnr.mo.gov.
13. After avoidance and minimization for the project, unavoidable stream impacts shall be mitigated appropriately. Mitigation for loss of aquatic resources shall be in conformance with the currently approved "Missouri Stream Mitigation Method" and the "State of Missouri Wetland Assessment Method" as well as other mitigation guidance located online at www.nwk.usace.army.mil/Missions/RegulatoryBranch/StateofMissouri.
14. Best management practices shall be used during all phases of the project to limit the amount of discharge of water contaminants to waters of the state. The project shall not involve more than normal stormwater or incidental loading of sediment caused by construction disturbances.
15. Pursuant to Chapter 644.038, RSMo, the department certifies all Nationwide Permits for impacts in all waters of the state without the above-stated or any other conditions for the construction of highways and bridges approved by the Missouri Highway and Transportation Commission. The memorandum of understanding of 2009 and any subsequent modifications between the two agencies outline the requirements by which the Missouri Department of Transportation will design and construct projects in order to protect the water quality of waters of the state.

SPECIFIC CONDITIONS

16. Nationwide Permit 3 *Maintenance*
 - a. Silt, sediment and debris removal shall be limited to a maximum of 100 linear feet upstream and 100 linear feet downstream of structures.
 - b. During dewatering, water shall not be returned directly to the waterway but shall be pumped upland and filtered through an appropriate treatment device as prescribed in any existing separate permit authorizing the discharge of return water. If, however, instream flow is 1 cubic foot per second (cfs) or greater and the return rate is set at 1 cfs or less, return may be made directly to the stream.
17. Nationwide Permit 4 *Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities*

Any inorganic or extraneous debris such as may be found on Christmas trees shall be removed to qualify as clean, nonpolluting fill.
18. Nationwide Permit 6 *Survey Activities*

Water, fines and excavated materials displaced by activities such as borings, shall not be returned directly to the waterway, but shall be pumped upland and filtered through an appropriate treatment device as prescribed in any existing separate permit authorizing the discharge of return water.
19. Nationwide Permit 7 *Outfall Structures and Associated Intake Structures*

Water quality certification does not replace or negate the need to obtain any required state permits under the Missouri Clean Water Law (Chapter 644, RSMo) for construction of wastewater treatment facility components including outfall structures; permits to release wastewater effluents; or for the construction of components related to public water supplies including intake structures as may be required by the Missouri Safe Drinking Water Law (Chapter 640, RSMo).
20. Nationwide Permit 12 *Utility Line Activities*
 - a. Material resulting from activity may not be temporarily sidcast into waters of the state for more than one month.
 - b. Directional boring under the streambed to avoid impacts to waters of the state is recommended.

- c. For utility crossings that must disturb the streambed, work shall be conducted in such a manner as to seal off the work area from flow and minimize sediment transport.
 - d. Utility line crossings shall be placed as close to perpendicular as possible, and be limited to a maximum crossing length of no more than one and one-half times the width of the stream.
21. Nationwide Permit 13 Bank Stabilization
- a. Channelization of streams is not allowed under this Nationwide Permit. Bank stabilization activities along one bank of a stream are permitted, including bank sloping and riprapping.
 - b. The redirection of flow by excavation of the opposite bank of a stabilization project or a stream channel bed is considered a channel modification and is prohibited.
 - c. Nationwide Permits issued by the Corps for which the 500 linear feet threshold for stream impacts is waived by the district engineer shall require individual certification.
 - d. Invite the Corps and the department as well as the other state and federal resource agencies to examine innovative approaches.
22. Nationwide Permit 14 Linear Transportation Projects
- a. The permittee must propose and employ measures to mitigate the removal of impounded gravel in the unstable area upstream of the low water crossing to prevent it from being transported downstream and/or constructing a notched weir to slow the release of impounded gravel from upstream of the low water crossing.
 - b. Where this Nationwide Permit is used to authorize bridge and culvert structures, stream channel work is limited to a maximum of 100 feet upstream and a maximum of 100 feet downstream of the bridge or culvert. For purposes of this condition, a channel modification is any activity that alters the width, depth, length and/or sinuosity of a waterway.
23. Nationwide Permit 16 Return Water from Upland Contained Disposal Areas
These activities could have specific tasks or processes involved which may require the acquisition of separate general or site specific permits. All applicants shall contact the Water Protection Program at 573-751-1300 to determine any specific requirements which may or may not require an individual certification.
24. Nationwide Permit 17 Hydropower Projects
This Nationwide Permit requires an individual certification by the department. In addition to applying for an individual certification the applicant must confer with the department, the Missouri Department of Conservation and the U.S. Fish and Wildlife Service regarding potential impacts to mussel beds and other critical habitats and species.
25. Nationwide Permit 19 Minor Dredging
These activities could have specific tasks or processes involved which may require the acquisition of separate general or site specific permits. All applicants shall contact the Water Protection Program at 573-751-1300 to determine any specific requirements which may or may not require an individual certification.
26. Nationwide Permit 20 Response Operations for Oil and Hazardous Substances
- a. These activities could have specific tasks or processes involved which may require the acquisition of separate general or site specific permits. All applicants shall contact the Water Protection Program at 573-751-1300 to determine any specific requirements which may or may not require an individual certification.
 - b. Oil and hazardous substance releases are to be reported to the Missouri Department of Natural Resources' Environmental Emergency Response number at 573-634-2436. Continue to report updates with regard to the containment and clean-up of releases.
27. Nationwide Permit 22 Removal of Vessels
Use of this Nationwide Permit in Missouri is limited to removal actions only and shall not be used for any disposal of vessel.
28. Nationwide Permit 33 Temporary Construction, Access and Dewatering
- a. The use of this Nationwide Permit shall be limited to impacts of six months or less in duration.
 - b. Any removal of accumulated gravel upstream of a bridge or crossing shall be limited to the quantity necessary to relieve any obstruction or to protect downstream habitat.
29. Nationwide Permit 36 Boat Ramps
- a. No project shall be constructed in, or immediately upstream of, any known mussel beds. The Missouri Department of Conservation shall be consulted at 573-882-9880 to determine if any known beds are present.
 - b. Any waste concrete or concrete rinsate shall be disposed of in a manner that does not result in any discharge to the jurisdictional waterways.
30. Nationwide Permit 41 Reshaping Existing Drainage Ditches
Material from the reshaping activities shall not be sidecast into any jurisdictional waters for more than one month.
31. Nationwide Permit 42 Recreational Facilities
The vegetated corridor to be maintained from the high bank on either side of the jurisdictional channel may be used in part for the construction of public recreational trails, including those constructed to standards set by the Americans with Disabilities Act (ADA).
32. Nationwide Permit 43 Stormwater Management Facilities

No new or expanded stormwater management facilities may be constructed under this Nationwide Permit unless the water storage facilities are located off-channel.

Applications for certification should be sent to the Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102-0176, or electronically to wpsc401cert@dnr.mo.gov. A complete application consists of the application submitted to the U.S. Army Corps of Engineers as well as additional information necessary for a complete review of the project. This may include but is not limited to topographical maps, locational maps, engineering plans, project diagrams and where applicable mitigation plans (10 CSR 20-6.060(5)).

An issued certification becomes part of the 404 Permit and; therefore, expires with the 404 Permit unless explicitly stated in the certification. Not all permit modifications require the certification to be modified or reissued. An example would be when a permit expiration date is extended or the permit is reissued and there are no changes to the original project, the certification may remain valid for that project.

The department encourages, but does not require, the permittee to consider environmentally-friendly design techniques to include stormwater management strategies that maintain or restore the original site hydrology through infiltration, evaporation or reuse of stormwater. Designs might include creating vegetated swales or rain gardens, or using porous pavement. More information can be found at these websites: www.epa.gov/owow/NPS/lid/ and www.lid-stormwater.net/lid_techniques.htm.

For more information

Missouri Department of Natural Resources
Water Protection Program
P.O. Box 176
Jefferson City, MO 65102-0176
800-361-4827 or 573-751-1300
<http://www.dnr.mo.gov/env/wpp>

PRELIMINARY

CERTIFICATE OF COMPLIANCE

File: MVM-2017-025 (RDM)

Name of Permittee: Missouri Department of Transportation

Date of Issuance: March 03, 2017

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

**Regulatory Branch
Corps of Engineers Memphis District
167 N Main Street Room B202
Memphis, TN 38103-1894**

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of the said permit and required mitigation (if needed) was completed in accordance with the permit conditions.

Signature of Permittee



MEMORANDUM

Missouri Department of Transportation Construction and Materials Central Laboratory

TO: Michael Harris-SE/de

COPY:

FROM: Diane Roegge *DR*
Environmental Chemist

DATE: January 29, 2014

SUBJECT: Materials
Asbestos Inspection & Heavy Metal Paint Survey
Route I-55
Job No. J0I0956
Bridges 0400000, A-0912, N-0691, and R-0138
Scott County

We are providing you with the results of the requested inspection on the above referenced properties. The inspection report contains an asbestos and a heavy metals survey, unless otherwise requested. The asbestos inspection included sample collection of suspect asbestos-containing material and National Voluntary Laboratory Accreditation Program (NVLAP) accredited testing to confirm the presence of asbestos. This asbestos and heavy metal paint report includes four different report forms. Form T746 lists all of the samples taken during the asbestos inspection. Form T747 shows only those samples that tested positive for Category I nonfriable asbestos-containing materials that may remain in the structure during demolition, if kept adequately wet to avoid visible air emissions. Form T748 shows only those samples that tested positive for asbestos and require removal prior to demolition. Form C760 lists all paint samples taken during the heavy metal paint survey and their metal content.

In accordance with the National Emissions Standard for Hazardous Air Pollutants (NESHAP), as well as city and county asbestos abatement regulations - Registration, Notification, and Performance Requirements, regulated asbestos-containing material (RACM) namely, Friable and Category II nonfriable, have a high probability of becoming friable under normal demolition forces. Practices and procedures for removal prior to demolition, disposal, and clearances should be in accordance with referenced regulations. Missouri Department of Transportation policy is to perform asbestos abatements in accordance with NESHAP.

In accordance with Missouri Department of Natural Resources' Technical Bulletin "Managing Construction and Demolition Waste" dated January 31, 2003, a heavy metal paint survey has been performed on the above referenced properties. We are providing you with the results of this survey. This survey includes locating painted concrete, block and/or brick surfaces, sampling/testing the painted surface(s) to determine if hazardous heavy metals are present. Non-hazardous painted concrete, blocks, or bricks may be used as clean fill materials, if properly

TO: Harris-SE/de
Page 2
January 29, 2014

handled. You must contact the Central Office Design Division for proper handling of the reported painted surfaces.

Although our survey included observing and sampling behind walls, above ceilings, beneath floors, etc., it is possible that potentially hidden asbestos-containing materials may exist within the structures. To our knowledge, we have located all suspect asbestos-containing and all painted concrete, block and brick surfaces. If suspect asbestos-containing materials or if painted concrete, block and/or brick surfaces are observed in addition to those reflected in this inspection report, then please advise us immediately so that we may schedule a follow-up inspection.

Should you have any questions regarding these reports, please contact me at (573) 526-4359.

db/dr

[http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared documents/asbestos/districts/southeast \(se\)/jxi's/j0i0956/dr1401293.docx](http://sharepoint/systemdelivery/cm/chemicallab/environmental/shared/documents/asbestos/districts/southeast(se)/jxi's/j0i0956/dr1401293.docx)

Attachments

PRELIMINARY

MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS

Asbestos Survey Report

Nonfriable Asbestos-Containing Materials

(Abatement not required if not made friable during demolition.)

ROUTE: _____
MODOT JOB NO.: _____
DISTRICT: _____
COUNTY: _____
DATE OF TESTS: _____
PARCEL NO.: _____

I-55
J010956
SE
Scott
N/A
Bridge 0400000

TESTED BY: _____
CERTIFICATION #: _____
CERTIFICATION #: _____
SITE ADDRESS: _____
TYPE(S) OF STRUCTURE(S): _____

Frank Reichart and Diane Roegge
7118122712MOIR11239, F.R.
7118122712MOIR7165, D.R.
County Road 311, Over Ramsey Branch, 0.25 mile South of SR K
Bridge

Sample ID	Type of Material	Location of Material	Friability Category	Field Measure	Asbestos Type	Percent
		None Located	I NF			

All necessary work to handle this material is the contractor's responsibility.
I NF = Category I Nonfriable

MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS
Asbestos Survey Report
All Suspect ACM

ROUTE: _____
MODOT JOB NO.: _____
DISTRICT: _____
COUNTY: _____
DATE OF SURVEY: _____
PARCEL NO.: _____

I-55
J010956
SE
Scott
January 21, 2014
Bridge 0400000

SURVEYED BY:
CERTIFICATION #:
CERTIFICATION #:
SITE ADDRESS:
TYPE(S) OF STRUCTURE(S):

Frank Reichart and Diane Roegge
7118122712MOIR11239, F.R.
7118122712MOIR7165, D.R.
County Road 311, Over Ramsey Branch, 0.25 mile South of SR K
Bridge

Sample ID	Type of Materials	Location of Material	Friability Category	Field Measure
	No samples taken. No suspect ACM located.			
	Bridge Paint is not a suspect ACM per MSDS's on file.			

N-ACM = Non-Asbestos Containing Material I NF = Category I Nonfriable II NF = Category II Nonfriable F = Friable
NAFD = No Asbestos Fiber Detected * = Tested By Point Count Procedure

MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS

Asbestos Survey Report
All materials requiring removal or special handling.

ROUTE: _____
MODOT JOB NO.: _____
DISTRICT: _____
COUNTY: _____
DATE OF TESTS: _____
PARCEL NO.: _____

I-55
J010956
SE
Scott
N/A
Bridge 0400000

TESTED BY: _____
CERTIFICATION #: _____
CERTIFICATION #: _____
SITE ADDRESS: _____
TYPE(S) OF STRUCTURE(S): _____

FR
Frank Reichart and Diane Roegge
7118122712MOIR11239, F.R.
7118122712MOIR7165, D.R.
County Road 311, Over Ramsey Branch, 0.25 mile South of SR K
Bridge

Bid Item No.	Sample ID	Type of Material	Location of Material	Friability Category	Field Measure	Asbestos Type	Percent
			None Located	F			
			None Located	II NF			

I NF = Category I Nonfriable II NF = Category II Nonfriable F = Friable * = Tested By Point Count Procedure

MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS
Metals Survey Report of Painted Concrete, Block, Brick Surfaces for Clean Fill Purposes

ROUTE: I-55	TESTED BY: N/A
MODOT JOB NO.: J010956	DATE OF TESTS: N/A
DISTRICT: SE	PARCEL NO.: Bridge 0400000
COUNTY: Scott	SITE ADDRESS: County Road 311, Over Ramsey Branch, 0.25 mile South of SR K
SURVEYED BY: Frank Reichart	TYPE(S) OF STRUCTURE(S): Bridge
DATE OF SURVEY: January 21, 2014	

Sample ID	Color/Location of Material/Substrate	Metals (ppm)								
		As	Cr	Pb	Cd	Se	Ba	Hg	Ag	
	No samples taken. No painted surfaces located.									

All results are by XRF unless otherwise indicated: a = USEPA SW-846 Method 3050
b = USEPA SW-846 Method 7471

MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS
Asbestos Survey Report
All Suspect ACM

ROUTE: _____
 MODOT JOB NO.: _____
 DISTRICT: _____
 COUNTY: _____
 DATE OF SURVEY: _____
 PARCEL NO.: _____

I-55
 J010956
 SE
 Scott
 January 21, 2014
 Bridge A-0912 (Twin)

SURVEYED BY: _____
 CERTIFICATION #: _____
 CERTIFICATION #: _____
 SITE ADDRESS: _____
 TYPE(S) OF STRUCTURE(S): _____

Frank Reichardt
 Diane Roegge
 7118122712MOIR 11239, F.R.
 7118122712MOIR 7165, D.R.
 Over Ramsey Creek, 0.25 mile South of SR PP


Sample ID	Type of Materials	Location of Material	Friability Category	Field Measure
	No samples taken. No suspect ACM located.			
	Bridge Paint is not a suspect ACM per MSDS's on file.			

N-ACM = Non-Asbestos Containing Material I NF = Category I Nonfriable F = Friable
 NAFD = No Asbestos Fiber Detected * = Tested By Point Count Procedure II NF = Category II Nonfriable

MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS

Asbestos Survey Report

Nonfriable Asbestos-Containing Materials
(Abatement not required if not made friable during demolition.)

TESTED BY:  Frank Reichart and Diane Roegge
 CERTIFICATION #: 7118122712MOIR11239, F.R.
 CERTIFICATION #: 7118122712MOIR7165, D.R.
 SITE ADDRESS: Over Ramsey Creek, 0.25 mile South of SR PP
 TYPE(S) OF STRUCTURE(S): Bridge

ROUTE: I-55
 MODOT JOB NO.: J010956
 DISTRICT: SE
 COUNTY: Scott
 DATE OF TESTS: N/A
 PARCEL NO.: Bridge A-0912 (Twin)

Sample ID	Type of Material	Location of Material	Friability Category	Field Measure	Asbestos Type	Percent
		None Located	INF			

All necessary work to handle this material is the contractor's responsibility.
 INF = Category I Nonfriable

**MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS**

Asbestos Survey Report

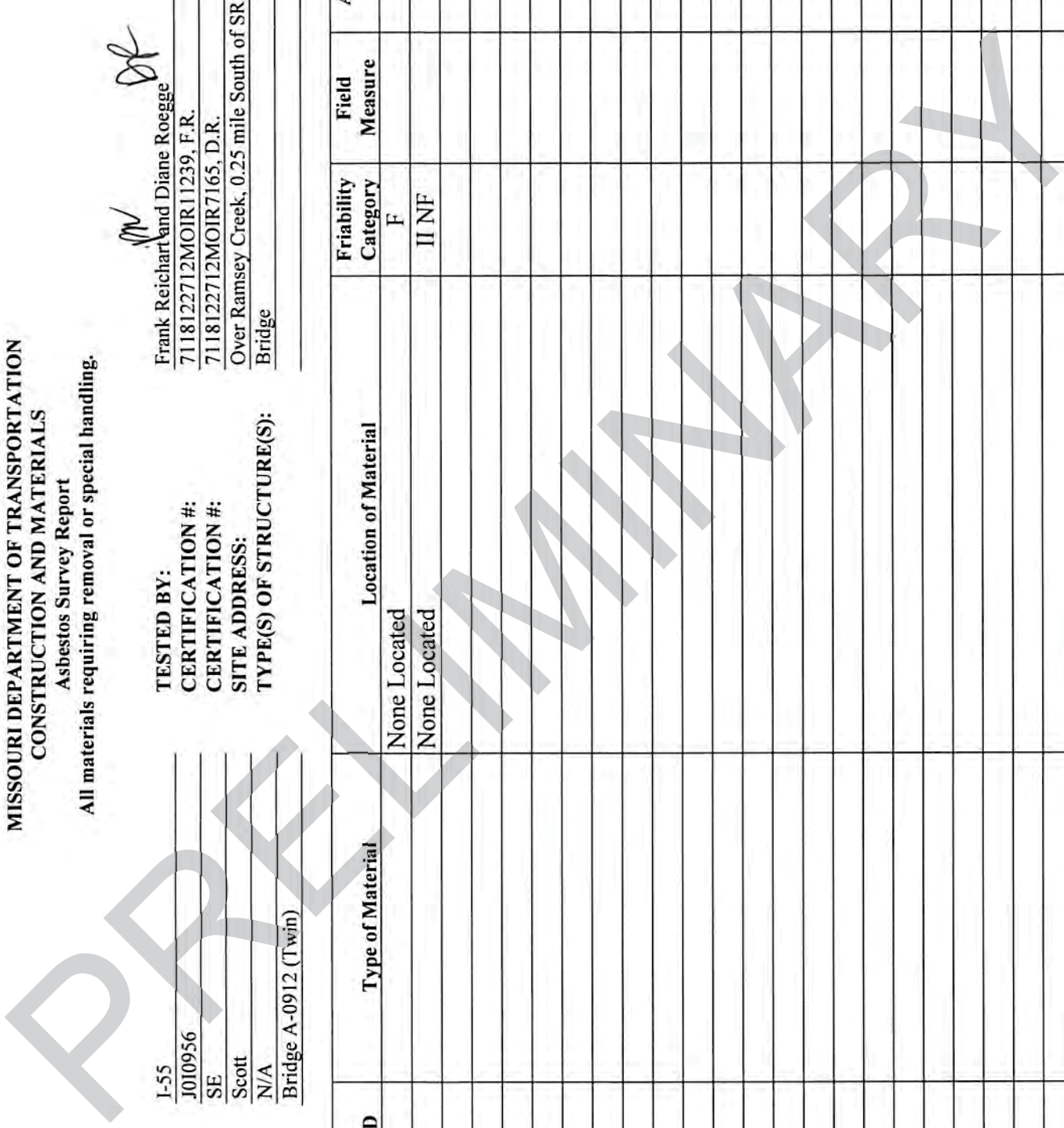
All materials requiring removal or special handling.

FR *DR*

ROUTE: J-55
 MODOT JOB NO.: J010956
 DISTRICT: SE
 COUNTY: Scott
 DATE OF TESTS: N/A
 PARCEL NO.: Bridge A-0912 (Twin)

TESTED BY: Frank Reichart and Diane Roegge
 CERTIFICATION #: 7118122712MOIR11239, F.R.
 CERTIFICATION #: 7118122712MOIR7165, D.R.
 SITE ADDRESS: Over Ramsey Creek, 0.25 mile South of SR PP
 TYPE(S) OF STRUCTURE(S): Bridge

Bid Item No.	Sample ID	Type of Material	Location of Material	Friability Category	Field Measure	Asbestos Type	Percent
			None Located	F			
			None Located	II NF			



IN F = Category I Nonfriable II NF = Category II Nonfriable F = Friable * = Tested By Point Count Procedure

**MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS**
Metals Survey Report of Painted Concrete, Block, Brick Surfaces for Clean Fill Purposes

ROUTE: I-55
MODOT JOB NO.: J010956
DISTRICT: SE
COUNTY: Scott
SURVEYED BY: Frank Reichart
DATE OF SURVEY: January 21, 2014

TESTED BY: N/A
DATE OF TESTS: N/A
PARCEL NO.: Bridge A-0912 (Twin)
SITE ADDRESS: Over Ramsey Creek, 0.25 mile South of SR PP
TYPE(S) OF STRUCTURE(S): Bridge

Sample ID	Color/Location of Material/Substrate	Metals (ppm)								
		As	Cr	Pb	Cd	Se	Ba	Hg	Ag	
	No samples taken. No painted surfaces located.									

All results are by XRF unless otherwise indicated: a = USEPA SW-846 Method 3050
b = USEPA SW-846 Method 7471

MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS
Asbestos Survey Report
All Suspect ACM

ROUTE: _____
MODOT JOB NO.: _____
DISTRICT: _____
COUNTY: _____
DATE OF SURVEY: _____
PARCEL NO.: _____

I-55
J010956
SE
Scott
January 21, 2014
Bridge N-0691

SURVEYED BY: Frank Reichart and Diane Roegge
CERTIFICATION #: 7118122712MOIR11239, F.R.
CERTIFICATION #: 7118122712MOIR7165, D.R.
SITE ADDRESS: SR PP, Over Ramsey Creek
TYPE(S) OF STRUCTURE(S): Bridge



Sample ID	Type of Materials	Location of Material	Friability Category	Field Measure
14MFJR 001	Asphalt Joint Material	4-Wing Wall Joints , 2-Deck and 4-Curb Joints	N-ACM	
	Bridge Paint is not a suspect ACM per MSDS's on file.			

N-ACM = Non-Asbestos Containing Material I NF = Category I Nonfriable II NF = Category II Nonfriable F = Friable
NAFD = No Asbestos Fiber Detected * = Tested By Point Count Procedure

MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS

Asbestos Survey Report
Nonfriable Asbestos-Containing Materials
(Abatement not required if not made friable during demolition.)

ROUTE: I-55
MODOT JOB NO.: J010956
DISTRICT: SE
COUNTY: Scott
DATE OF TESTS: January 29, 2014
PARCEL NO.: Bridge N-0691

TESTED BY: Frank Reichart and Diane Roegge
CERTIFICATION #: 7118122712MOIR11239, F.R.
CERTIFICATION #: 7118122712MOIR7165, D.R.
SITE ADDRESS: SR PP, Over Ramsey Creek
TYPE(S) OF STRUCTURE(S): Bridge

Sample ID	Type of Material	Location of Material	Friability Category	Field Measure	Asbestos Type	Percent
		None Located	INF			

All necessary work to handle this material is the contractor's responsibility.

INF = Category I Nonfriable

MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS

Asbestos Survey Report

All materials requiring removal or special handling.

ROUTE: _____
MODOT JOB NO.: _____
DISTRICT: _____
COUNTY: _____
DATE OF TESTS: _____
PARCEL NO.: _____

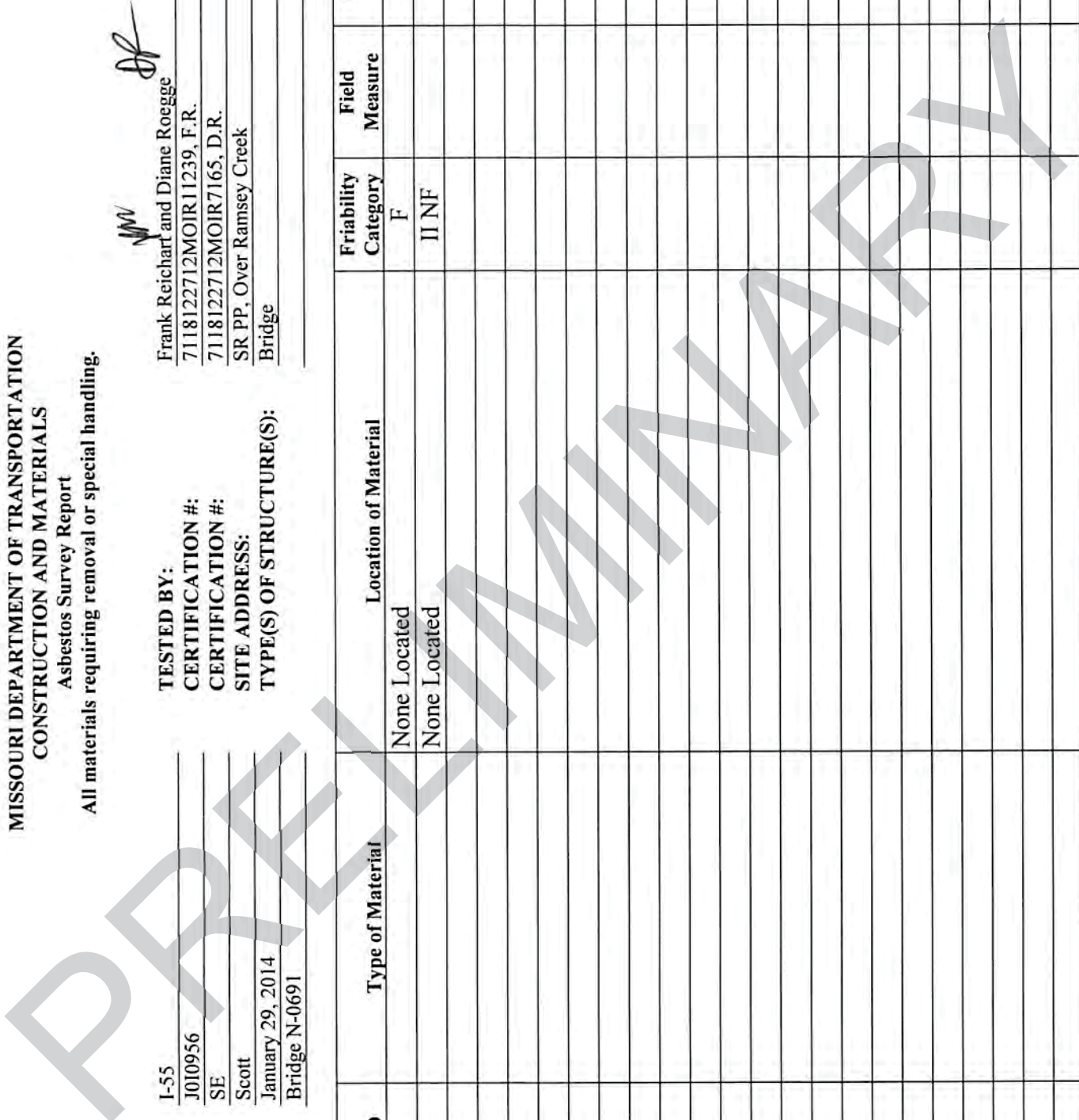
I-55
J010956
SE
Scott
January 29, 2014
Bridge N-0691

TESTED BY:
CERTIFICATION #:
CERTIFICATION #:
SITE ADDRESS:
TYPE(S) OF STRUCTURE(S):

Frank Reichart and Diane Roegge
7118122712MOIR11239, F.R.
7118122712MOIR7165, D.R.
SR PP, Over Ramsey Creek
Bridge

FR
DR

Bid Item No.	Sample ID	Type of Material	Location of Material	Friability Category	Field Measure	Asbestos Type	Percent
			None Located	F			
			None Located	II NF			



**MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS**
Metals Survey Report of Painted Concrete, Block, Brick Surfaces for Clean Fill Purposes

ROUTE: I-55
MODOT JOB NO.: J010956
DISTRICT: SE
COUNTY: Scott
SURVEYED BY: Frank Reichart
DATE OF SURVEY: January 21, 2014

TESTED BY: N/A
DATE OF TESTS: N/A
PARCEL NO.: Bridge N-0691
SITE ADDRESS: SR PP, Over Ramsey Creek
TYPE(S) OF STRUCTURE(S): Bridge

Sample ID	Color/Location of Material/Substrate	Metals (ppm)								
		As	Cr	Pb	Cd	Se	Ba	Hg	Ag	
	No samples taken. No painted surfaces located.									

All results are by XRF unless otherwise indicated: a = USEPA SW-846 Method 3050
b = USEPA SW-846 Method 7471

MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS
Asbestos Survey Report
All Suspect ACM

ROUTE: I-55
 MODOT JOB NO.: J010956
 DISTRICT: SE
 COUNTY: Scott
 DATE OF SURVEY: August 20, 2013
 PARCEL NO.: Bridge R-0138

SURVEYED BY: Frank Reichart and Diane Roegge
 CERTIFICATION #: 7118122712MOIR11239, F.R.
 CERTIFICATION #: 7118122712MOIR7165, D.R.
 SITE ADDRESS: SR PP, Over I-55
 TYPE(S) OF STRUCTURE(S): Bridge

FR

Sample ID	Type of Materials	Location of Material	Friability Category	Field Measure
13MFJR 380	Asphalt Felt Material	4-Curb Plates	N-ACM	
	Bridge Paint is not a suspect ACM per MSDS's on file.			

N-ACM = Non-Asbestos Containing Material I NF = Category I Nonfriable
 NAFD = No Asbestos Fiber Detected * = Tested By Point Count Procedure

II NF = Category II Nonfriable F = Friable

**MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS**

Asbestos Survey Report
Nonfriable Asbestos-Containing Materials
(Abatement not required if not made friable during demolition.)

ROUTE:
MODOT JOB NO.:
DISTRICT:
COUNTY:
DATE OF TESTS:
PARCEL NO.:

I-55
J010956
SE
Scott
August 22, 2013
Bridge R-0138

TESTED BY:
CERTIFICATION #:
CERTIFICATION #:
SITE ADDRESS:
TYPE(S) OF STRUCTURE(S):

Frank Reichart and Diane Roegge
7118122712MOIR11239, F.R.
7118122712MOIR7165, D.R.
SR PP, Over I-55
Bridge

FR

Sample ID	Type of Material	Location of Material	Friability Category	Field Measure	Asbestos Type	Percent
		None Located	INF			

All necessary work to handle this material is the contractor's responsibility.

INF = Category I Nonfriable

**MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS**

Asbestos Survey Report

All materials requiring removal or special handling.

ROUTE: I-55
MODOT JOB NO.: J010956
DISTRICT: SE
COUNTY: Scott
DATE OF TESTS: August 22, 2013
PARCEL NO.: Bridge R-0138

TESTED BY: *FR*
CERTIFICATION #: Frank Reichart and Diane Roegg
CERTIFICATION #: 7118122712MOIR11239, F.R.
SITE ADDRESS: 7118122712MOIR7165, D.R.
TYPE(S) OF STRUCTURE(S): SR PP, Over I-55
Bridge

Bid Item No.	Sample ID	Type of Material	Location of Material	Friability Category	Field Measure	Asbestos Type	Percent
			None Located	F			
			None Located	II NF			

IN F = Category I Nonfriable II NF = Category II Nonfriable F = Friable * = Tested By Point Count Procedure

**MISSOURI DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIALS**
Metals Survey Report of Painted Concrete, Block, Brick Surfaces for Clean Fill Purposes

ROUTE:	I-55	TESTED BY:	N/A
MODOT JOB NO.:	J010956	DATE OF TESTS:	N/A
DISTRICT:	SE	PARCEL NO.:	Bridge R-0138
COUNTY:	Scott	SITE ADDRESS:	SR PP, Over I-55
SURVEYED BY:	Frank Reichart	TYPE(S) OF STRUCTURE(S):	Bridge
DATE OF SURVEY:	August 20, 2013		

Sample ID	Color/Location of Material/Substrate	Metals (ppm)											
		As	Cr	Pb	Cd	Se	Ba	Hg	Ag				
	No samples taken. No painted surfaces located.												

All results are by XRF unless otherwise indicated: a = USEPA SW-846 Method 3050
b = USEPA SW-846 Method 7471

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- B. Dynamic Pile Testing
- C. Galvanized Structural Steel Pile and Bracing
- D. Pile Wave Analysis

	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 W. CAPITOL AVE. JEFFERSON CITY, MO 65101 Phone (888) 275-6636
	George Butler Associates, Inc. 9801 Renner Boulevard Lenexa, Kansas 66219-9745 Certificate of Authority # 000133 Consultant Phone # 913-492-0400
	If a seal is present on this sheet, JSP's has been electronically sealed and dated.
	JOB NO. J010956 Scott County, MO Date Prepared: 11/30/2016
	Only the following items of the Job Special Provisions (Bridge) are authenticated by this seal: A - D

PRELIMINARY

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JOB SPECIAL PROVISIONS (BRIDGE)

A. CONSTRUCTION REQUIREMENTS

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

2.0 Construction Requirements. Plans for the existing structure(s) are included in the contract with the bridge plans for informational purposes only.

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 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.

2.4 A washer shall be required under head and nut when any reaming is performed for bolt installation.

3.0 Method of Measurement. No measurement will be made.

4.0 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.

B. DYNAMIC PILE TESTING

1.0 General.

1.1 Scope of Work. Scope of work shall include furnishing all labor, equipment and analysis associated with dynamic testing of driven piles as specified in this special provision.

1.2 Performance and Design Requirements. Performance and design conditions for dynamic testing of driven piles shall be in accordance with [section 4.0](#) of this special provision.

1.3 Approved Manufacturers. For the following hardware and software components, only the listed manufacturer is recognized as providing the level of quality required. If the contractor wants to propose a non-listed manufacturer that is considered to provide an equivalent level of quality, this manufacturer shall be identified and supporting documentation provided. Acceptance of the manufacturer as a substitute will be at the discretion of the engineer.

Component	Product	Manufacturer
Pile Driving Modeling - Wave Equation Software	GRLWEAP	Pile Dynamics, Inc.

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Component	Product	Manufacturer
Pile Driving Monitoring - Hardware & Software	Pile Driving Analyzer - Model PAK	Pile Dynamics, Inc.
Pile Driving Analysis – Signal Matching Software	CAPWAP	Pile Dynamics, Inc.

1.4 Test Requirements. Dynamic pile testing shall be conducted in accordance with the standard test method indicated below.

Standard Test Method	Designation	Conducted By
High-Strain Dynamic Testing of Piles	ASTM D 4945	Contractor

1.5 Qualifications. The contractor shall perform dynamic pile testing utilizing the services of an independent dynamic pile testing consultant and qualified personnel. An engineer with a minimum of 3 years dynamic pile testing and analysis experience or who has achieved Basic or better certification under the High-Strain Dynamic Pile Testing Examination and Certification process of the Pile Driving Contractors Association and Foundation QA shall perform pile driving monitoring. An engineer with a minimum of 5 years dynamic pile testing and analysis experience or who has achieved Advanced or better certification under the High-Strain Dynamic Pile Testing Examination and Certification process of the Pile Driving Contractors Association and Foundation QA shall perform pile driving modeling and pile driving analyses.

2.0 Execution.

2.1 Pile Driving Modeling. The contractor shall perform preconstruction wave equation analyses and prepare a summary report of the results. The wave equation analyses shall be used to assess the ability of all proposed pile driving systems to install piles to the required capacity and the desired penetration depth within allowable driving stresses. The report shall include a drivability graph relating pile capacity, blow count and driving stresses to depth. The report shall include a bearing graph relating the pile capacity to the pile driving resistance. The bearing graph shall indicate blow count versus capacity and stroke. The report shall also contain a constant capacity analysis or inspectors chart to assist the engineer in determining the required driving resistance at other field observed strokes. The contractor shall perform wave equation analyses in accordance with [section 4.0](#) of this special provision. Acceptability of the wave equation report and the adequacy of analyses will be determined by the engineer.

2.1.1 Approval by the engineer of the proposed pile driving system will be based upon the wave equation analyses indicating that the proposed system can develop the specified pile capacity at a pile driving rate of 2 to 10 blows per inch at the end of driving, and within allowable driving stresses per *AASHTO LRFD Bridge Construction Specifications*, Section 4.4.1. The contractor shall provide preliminary pile driving criteria based on wave equation analyses and any anticipated capacity changes after driving, set-up or relaxation, subject to revision based upon dynamic pile testing field measurements

2.1.2 If any changes or modifications are made to the approved pile driving system, additional wave equation analyses in accordance with [section 2.1](#) of this special provision shall be required.

2.2 High-Strain Dynamic Pile Testing.

2.2.1 The contractor shall perform dynamic pile testing at the locations and frequency required in accordance with [section 4.0](#) of this special provision.

2.2.2 Dynamic pile testing involves monitoring the response of a pile subjected to heavy impact applied by the pile hammer at the pile head. The testing shall provide information on the driving stresses, pile capacity, structural integrity and hammer efficiency.

2.2.3 The contractor shall engage an independent dynamic pile testing consultant and qualified personnel in accordance with [section 1.5](#) of this special provision. Prior to testing, the engineer will review and approve the proposed independent dynamic pile testing consultant, the experience and qualifications of assigned personnel, details of the method of testing, a list of equipment, and the method of analysis of test results. The contractor shall provide all available details of the subsurface conditions, pile dimensions and properties, and pile driving systems to the independent dynamic pile testing consultant.

2.2.4 All field testing and measurements shall be made in the presence of the engineer.

2.3 Field Testing.

2.3.1 Equipment. Dynamic pile testing field measurements shall be carried out using approved equipment, software and recording equipment. The data collected at the end of initial driving and the beginning of restrike shall be analyzed using approved signal matching techniques and software.

2.3.2 Monitoring during driving. During pile driving, piles shall be instrumented and monitored with testing equipment satisfying the requirements of [section 1.3](#) of this special provision.

2.3.2.1 The contractor shall install two sets of strain transducers and accelerometers near the top of each pile to be tested, and shall use a compatible measuring and recording system to record the data during driving.

2.3.2.2 The equipment required to be attached to the pile shall be appropriately positioned and fixed to the approval of the engineer.

2.3.2.3 The hammer and all site equipment used shall be capable of delivering an impact force sufficient to mobilize the specified pile capacity indicated in [section 4.0](#) of this special provision without damaging the pile.

2.3.2.4 The testing equipment shall monitor pile stresses during driving to prevent pile damage and ensure pile integrity and capacity. If the testing equipment indicates overstressing or damage to the pile, the contractor shall immediately discontinue driving and notify the engineer.

2.3.2.5 If the testing equipment determines that pile stresses during driving exceed acceptable levels, a new pile driving system, modifications to existing system or new pile installation procedures shall be proposed by the contractor. Approval by the engineer of any proposed changes to the pile driving system or pile installation procedures will be based upon the results of additional wave equation analyses in accordance with [section 2.1.2](#) of this special provision.

2.3.3 Preparation of the Pile Head. The preparation of the pile head for the application of dynamic test load shall involve, where appropriate, trimming the head, cleaning, and building up the pile using materials that shall, at the time of testing, safely withstand the impact stresses. The impact surface shall be flat and at right angles to the pile axis.

2.3.4 Dynamic Measurement and Analysis. Monitoring of pile driving shall begin when pile driving begins. The data shall be recorded and processed immediately in the field by the pile driving monitoring equipment and software. Unless monitoring indicates that additional driving will damage the pile, pile driving and monitoring shall continue until both the specified pile tip elevation and the specified pile capacity are reached. For each pile tested, pile driving analysis using signal matching techniques shall be performed for a selected blow at the end of driving to determine the relative capacities from end bearing and skin friction along the pile.

2.3.4.1 Restrike tests shall be performed at the frequency indicated in [section 4.0](#) of this special provision. The time interval between end of initial driving and beginning of restrike shall be in accordance with [section 4.0](#) of this special provision. During restrike, the pile shall be instrumented and monitored similar to during initial driving. For each restrike test, pile driving analysis using signal matching techniques shall be performed for a selected blow from the beginning of restrike to determine the relative capacities from end bearing and skin friction along the pile.

2.3.4.2 The restrike test shall be performed with a warmed up hammer and shall consist of striking the pile for 20 blows or until the pile penetrates an additional 3 inches whichever occurs first unless testing equipment indicates overstressing or damage to the pile. If such overstressing or damage to the pile is indicated, the contractor shall immediately discontinue driving and notify the engineer. In the event initial restrike testing indicates a pile capacity below the specified capacity additional driving may be required as directed by the engineer.

2.3.4.3 The engineer may request use of pile driving monitoring equipment and software on additional piles if inconclusive results are obtained or unusual driving conditions are encountered.

2.3.4.4 Pile bearing capacity and integrity shall be evaluated based on the standard procedure used in practice.

2.3.4.5 Tabular records of the dynamic pile testing field measurements obtained at the end of initial driving and at the beginning of restrike shall be immediately provided to the engineer by the contractor.

2.3.5 Results.

2.3.5.1 Preliminary Reports. The contractor shall prepare a preliminary report for each pile tested for review by the engineer. Each report shall contain tabular as well as graphical presentation of the dynamic test results versus depth. Each report shall also indicate the pile driving criteria for the additional piles to be installed at the substructure unit of the pile tested. Each preliminary report shall include the following:

- (a) The maximum force applied to the pile head.
- (b) The maximum pile head velocity.
- (c) The maximum energy imparted to the pile.
- (d) The assumed soil damping factor and wave speed.
- (e) Static capacity estimate.

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- (f) The maximum compressive and tensile forces in the pile .
- (g) Pile integrity.
- (h) Blows per inch.
- (i) Stroke.
- (j) Summary results of pile driving analysis from selected blow analyzed using signal matching techniques and software.

2.3.5.2 Summary Report. The contractor shall prepare a summary report of all piles tested for review by the engineer. The report shall include the results of hammer performance, pile driving stresses, and pile capacity during initial driving and restrike for all piles tested. The report shall also include the following:

- (a) Date of testing and date of pile installation.
- (b) Pile identification number and location.
- (c) All information given in preliminary reports as follows:
 - (1) Length of pile below commencing surface.
 - (2) Total length of pile, including projection above commencing surface at time of test.
 - (3) Length of pile from instrumentation position to tip.
- (d) Hammer type, drop, and other relevant details.
- (e) Blow selected for signal matching analysis.
- (f) Maximum compressive and tensile stresses, stroke, and capacity versus penetration depth.
- (g) Temporary compression.
- (h) Pile integrity and location of damage, if any.
- (i) Force/velocity versus time trace.
- (j) Force/velocity match curve.
- (k) Resistance distribution along the pile.
- (l) Detailed graphical and tabular results from blow analyzed using signal matching techniques and software.

3.0 Schedule of Contract Submittals.

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Item Number	Submittal Item	Type	Calendar Days	Event/Date	Liquidated Damages Apply
1	Proposed independent dynamic pile testing consultant, and a listing of assigned personnel and their experience and qualifications.	DOCS	45 Before	Start of Pile Driving Monitoring	No
2	Details of the components, method of testing, pile driving equipment and materials to be used, and the results of wave equations analyses.	DOCS	15 Before	Start of Pile Driving Monitoring	No
3	Two copies of each Preliminary Report as defined in section 2.3.5.1 of this special provision	DOCS	3 After	Completion of Each Field Test	No
4	Four copies of the Summary Report as defined in section 2.3.5.2 of this special provision	DOCS	7 After	Completion of All Field Tests	No

4.0 High-Strain Dynamic Pile Testing Specification.

Item	Requirement
Wave Equation Analysis	Minimum of 1 and sufficient additional analyses as needed to define performance for all combinations of piles, driving systems and subsurface conditions anticipated.
Dynamic Testing Pile Capacity	Nominal Axial Pile Compressive Resistance or 2.25 times the Design Bearing shown on the plans or as required by engineer
End of Initial Driving Test Frequency	As shown in the contract plans
Restrike Test Frequency	As shown in the contract plans
Time Interval between End of Initial Driving and Restrike	Minimum of 2 Days for Silty Sands Minimum of 3-5 Days for Sandy Silts Minimum of 7-14 Days for Silts and Clays Or as required by the engineer (*)
Pile Driving Analyses using Signal Matching Techniques	For each End of Initial Driving Test and each Restrike Test

(*) Specifying too short of a restrike time for friction piles in fine grained soils may result in pile length overruns. Testing personnel shall have attained an appropriate level of expertise on the PDCA endorsed Examination for providers of dynamic testing services.

5.0 Method of Measurement. Dynamic pile testing and dynamic pile restrike testing will be measured per each.

6.0 Basis of Payment. Payment for the above described work, including all material, equipment, tools, labor and any other incidental work necessary to complete this item, will be

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considered completely covered by the contract unit price for “Dynamic Pile Testing” and “Dynamic Pile Restrike Testing”.

C. GALVANIZED STRUCTURAL STEEL PILE AND BRACING

1.0 Description. This job special provision contains general requirements for furnishing, coating and placing galvanized steel piles and bracing as shown on the plans and shall be in addition to the requirements of Sec 702.

2.0 Material. Structural steel piles and bracing shall be galvanized in accordance with ASTM A123 and Sec 1080. Repairs to the galvanized coating and field galvanizing shall be in accordance with ASTM A780. Zinc rich paints will not be allowed. Repairs and field galvanizing will not be required where the pile will be encased in concrete or below the limits specified in section 3.0 of this job special provision. Protective Coatings specified in Sec 702 will not be required for galvanized piles or bracing.

3.0 Construction Requirements.

3.1 Galvanizing material shall be omitted or removed for a minimum of 2 inch on either side of weld locations. The method used to omit or remove the galvanizing material shall be masking, grinding or other methods as approved by the engineer. If a weld location falls within an area where galvanizing is required, clean the weld area making sure to remove all welding slag. Then field galvanize the weld area in accordance with ASTM A780. Zinc rich paints will not be allowed.

3.2 At the contractor’s option, the entire pile length may be galvanized.

3.3 All pile below the pile concrete encasement shall be galvanized down to a minimum depth of 20 feet below the finished ground line.

4.0 Method of Measurement. Galvanized Structural Steel Pile in place will be the actual length to the nearest linear foot for that portion of the pile that remains permanently in the structure. See Sec 702 Basis of Payment for any additional length authorized by the engineer resulting from pile splices. No separate measurement will be made for pile that is not galvanized. Measurement of bracing as Fabricated Structural Carbon Steel (Misc.) will be based on the plan quantities.

5.0 Basis of Payment. The accepted quantity of galvanized and non galvanized pile in place will be paid for at the contract unit price for Galvanized Structural Steel Pile. No direct payment will be made for incidental items necessary to complete the work unless specifically provided as a pay item in the contract. Galvanized pile bracing in place will be paid for at the contract unit price for Fabricated Structural Carbon Steel (Misc.).

D. PILE WAVE ANALYSIS

1.0 General.

1.1 Scope of Work. Scope of work shall include furnishing a wave equation analysis of piles (WEAP) as specified in this special provision.

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1.2 Performance and Design Requirements. Performance and design conditions for WEAP shall be in accordance with [section 4.0](#) of this special provision.

1.3 Qualifications. The contractor shall perform wave equation analysis utilizing the services of an independent dynamic pile testing consultant and qualified personnel. An engineer with a minimum of 5 years WEAP experience shall perform the analysis.

2.0 Execution.

2.1 Pile Driving Modeling. The contractor shall perform preconstruction wave equation analyses and prepare a summary report of the results. The wave equation analyses shall be used to assess the ability of all proposed pile driving systems to install piles to the required capacity and the desired penetration depth within allowable driving stresses. The report shall include a drivability graph relating pile capacity, blow count and driving stresses to depth. The report shall include a bearing graph relating the pile capacity to the pile driving resistance. The bearing graph shall indicate blow count versus capacity and stroke. The report shall also contain a constant capacity analysis or inspector's chart to assist the engineer in determining the required driving resistance at other field observed strokes. The contractor shall perform wave equation analyses in accordance with [section 4.0](#) of this special provision. Acceptability of the wave equation report and the adequacy of analyses will be determined by the engineer.

2.1.1 WEAP shall provide driving criteria for driving piling to rock. WEAP shall give pile solution for driving piling through hard material to rock, or through soft material to rock.

2.1.2 Approval by the engineer of the proposed pile driving system will be based upon the wave equation analyses indicating that the proposed system can develop the specified pile capacity at a pile driving rate of 2 to 10 blows per inch at the end of driving, and within allowable driving stresses per *AASHTO LRFD Bridge Construction Specifications*, Section 4.4.1. The contractor shall provide preliminary pile driving criteria based on wave equation analyses and any anticipated capacity changes after driving, set-up or relaxation, subject to revision based upon field measurements.

2.1.3 If any changes or modifications are made to the approved pile driving system, additional wave equation analyses in accordance with [section 2.1](#) of this special provision shall be required.

3.0 Schedule of Contract Submittals.

3.1 Proposed independent dynamic pile testing consultant, and a list of assigned personnel and their experience and qualifications shall be submitted to the engineer. All documents shall be submitted 45 calendar days before pile driving starts.

4.0 Wave Equation Analysis. A minimum of one and sufficient additional analyses as needed are required to define performance for all combinations of piles, driving systems and subsurface conditions anticipated.

5.0 Method of Measurement. Pile wave analysis will be measured per each bent.

6.0 Basis of Payment. Payment for the above described work will be considered completely covered by the contract unit price for "Pile Wave Analysis".