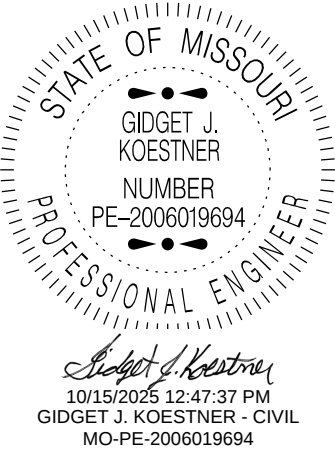


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(Job special provisions shall prevail over General Special Provisions whenever in conflict therewith).

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Job No. JST0138
Various Routes
Various Counties

	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: JST0138 VARIOUS COUNTIES, MO DATE PREPARED: 10/15/2025
	ADDENDUM:
Only the following items of the Job Special Provisions are authenticated by this seal: ALL	

JOB
SPECIAL PROVISIONS

A. General - State JSP-09-03L

1.0 Description. The Federal Government is not participating in the cost of construction of this project.

1.1 This contract requires payment of the prevailing hourly rate of wages for each craft or type of worker required to execute the contract as determined by the Missouri Department of Labor and Industrial Relations. The current State Wage Rates can be found on the Missouri Department of Transportation web page at www.modot.org under "Doing Business with MoDOT", "Contractor Resources" for the applicable bid opening. This supplemental bidding document has 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.

State Wage Rates

1.2 The following documents are available on the Missouri Department of Transportation web page at www.modot.org under "Doing Business with MoDOT"; "Standards and Specifications". The effective version shall be determined by the letting date of the project.

General Provisions & Supplemental Specifications

Supplemental Plans to July 2025 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- 13-01D

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 on all projects 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: January 5, 2026
Contract Completion Date: December 1, 2027

2.1 Calendar Days and Completion Dates. Completion of the project is required as specified herein. The count of calendar days will begin on the date the contractor starts any construction operations on the project.

Project	Calendar Days	Daily Road User Cost
JST0138	N/A	\$1800

3.0 Liquidated Damages for Contract Administrative Costs. Should the contractor fail to complete the work on or before the contract 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 **\$1500** 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 specified contract 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 contract 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. Project Contact for Bidder / Contractor Questions

1.0 Any project specific questions shall be directed to the following contact:

Gidget Koestner, Policy & Innovations Engineer
Telephone Number: (573) 751-6905
Email: Gidget.Koestner@modot.mo.gov

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

Jose Rodriguez, Resident Engineer
Telephone Number: (816) 387-2440
Email: Jose.Rodriguez@modot.mo.gov

3.0 All questions concerning the bid document preparation can be directed to the Central Office – Design as listed below:

Telephone Number: (573) 751-2876
Email: BCS@modot.mo.gov

D. Scope of Work

1.0 The scope of work for this project is to remove existing 4" ET Plus crashworthy end terminals (CETs) and replace with an approved Misc. Commission Furnished Type A Crashworthy End Terminal (MASH) or Misc. Type A Crashworthy End Terminal (NGT) (MASH), address height transitions necessary to accommodate a MASH compliant CET as directed, and provide additional guardrail if required.

2.0 The work will be performed at various locations along Commission maintained roadways as identified in JSP FF. Locations and Estimated Quantities and summarized in the following table:

JST0138 Estimated Quantities Summary							
County	W-Beam (Lin Ft)	MGS Height & Block Transition Section (Each)	MGS Guardrail (Lin Ft)	Type A Crashworthy End Terminal (MASH) (Each)	Type A Crashworthy End Terminal NGT (MASH) (Each)	Guardrail Removal (Lin Ft)	End Terminal Removal (Each)
Andrew	113	20	925.0	20	0	562	20
Atchison	0	1	75.0	1	0	0	1
Buchanan	100	37	525.0	37	2	714	39
Caldwell	38	16	463	16	2	38	18
Carroll	63	8	225	8	0	121	8
Chariton	0	3	0	3	0	113	3
Clinton	38	16	163	16	0	275	16
Daviess	87.5	19	525	19	0	301.5	19
Dekalb	50	29	1013	46	0	561	46
Gentry	62.5	46	550	46	1	852.5	47
Grundy	0	44	38	44	0	1600	44
Harrison	63	19	675	19	1	148	20
Holt	13	5	175	5	0	38	5
Linn	0	0	125	2	0	0	2
Livingston	25	14	225	14	0	403	14
Mercer	0	4	225	4	0	0	4
Nodaway	112.5	26	1337.5	26	1	279.5	27
Putnam	25	3	150	3	0	55	3
Sullivan	0	1	0	1	0	38	1
Worth	0	24	238	24	0	688	24

*Est Totals	788	335	7650	354	7	6784	361
* Final quantities to be determined by job order for each location.							

3.0 The contract includes pay items for removal of existing guardrail systems and end terminals, and installation of new guardrail, crashworthy end terminals, and related appurtenances complete in place.

3.1 Upgrading from a NCHRP-350 compliant CET to a MASH compliant CET will require a transition of height. This will be achieved by various means such as the use of height and block transition sections, bridge approach transitions sections, or Misc. Type A Crashworthy End Terminal (NGT) (MASH). The means of this height transition will be stipulated in the Job Order.

3.2 The work may involve adjusting the length of new guardrail systems and/or location of crashworthy terminals to properly shield the roadside obstacle for which the existing system and/or terminal was originally installed. The determination of when an existing guardrail system will be lengthened or when an existing system and/or terminal requires adjusting the location will be made by the engineer. The engineer will also designate which locations will require the use of Misc. Type A Crashworthy End Terminal (NGT) (MASH), and in which manner the height adjustment is addressed.

4.0 The engineer reserves the right to have others perform some or all of the work at individual locations based on the needs of the Commission. The number of locations may vary slightly from the locations listed in JSP FF. Locations and Estimated Quantities should any of the system sustain damage that requires/required removal/replacement or if other STIP improvements have been made prior to the work being completed with this contract.

5.0 Work may be required during daytime and/or nighttime hours.

E. Contractor Responsibilities for Third Party Administration Requirements

1.0 Misc. Commission Furnished Crashworthy End Terminals. Type A Crashworthy End Terminals (MASH) will be Commission Furnished by a Third Party to replace existing 4" ET Plus CETs. The brand / manufacturer of the furnished Type A Crashworthy End Terminals (MASH) is at the discretion of the Third Party.

1.1 The Misc. Commission Furnished Type A Crashworthy End Terminal (MASH) will be delivered to the contractor's staging area or equipment yard upon request of the contractor. The contractor will be required to request delivery of the commission furnished Type A Crashworthy End Terminal (MASH) from a Third Party supplier in full shipment loads. A contact and form of request for will be provided to the awarded contractor.

1.2 The contractor is responsible for the care of the Misc. Commission Furnished Type A Crashworthy End Terminal (MASH) once delivered to the staging area or equipment yard until approved for maintenance by the engineer. Damaged CETs will be replaced at the contractor's expense.

2.0 Contractor Responsibility. The contractor will be responsible for: removing the existing 4" ET Plus CET, ensuring grading limits meet standard specifications and plan requirements, and

ensuring newly installed guardrail, Misc. Commission Furnished Type A Crashworthy End Terminal (MASH) or Misc. Type A Crashworthy End Terminal (NGT) (MASH) heights meet the minimum MASH 2016 requirements of 31".

2.1 If adjoining guardrail does not meet the minimum MASH 2016 height of 31", removal of existing guardrail may be required and height transitions addressed per JSP D. Scope of Work.

2.2 Other than providing Misc. Commission Furnished Type A Crashworthy End Terminal (MASH), no other materials will be supplied for this contract. No material allowances will be supplied for this contract.

F. Job Order

1.0 This Job Order is a defined delivery with indefinite quantity contract. The contractor shall perform the work required to remove existing 4" ET Plus CETs and replace with Commission Furnished Type A Crashworthy End Terminal (MASH) or Type A Crashworthy End Terminal (NGT) (MASH) at multiple work locations as shown in JSP FF. Locations and Estimated Quantities. The contractor shall perform all tasks itemized in the Job Order to ensure Misc. Commission Furnished Type A Crashworthy End Terminal (MASH) are installed per manufacturer recommendations, Misc. Type A Crashworthy End Terminals (NGT) (MASH) are installed per JSP AA. Type A Crashworthy End Terminal - Next Generation Terminal (NGT) (MASH), and all installations meet Missouri Standard Plans and Specifications for Highway Construction unless otherwise noted in the contract.

2.0 The engineer may identify the required work at an individual work location in collaboration with the contractor at a Joint Scope Meeting, unless the engineer approves other arrangements. The contractor will provide the engineer with a draft Detailed Scope of Work which the engineer shall review. If not already designated in JSP FF. Locations and Estimated Quantities, the engineer will determine which locations will require additional guardrail lengths, use of Misc. Type A Crashworthy End Terminal (NGT) (MASH), and manner of height transition. The engineer will also assess the planned work time for special work zone considerations. Once the detailed Scope of Work is agreed upon, the contractor will submit a Draft Job Order for work to be completed within the coming pay period to the engineer. At any given time, the contractor may be performing more than one Job Order.

3.0 The contract includes a list of fixed cost pay items with fixed unit prices. Payment for the work will be determined by multiplying the fixed unit prices by the Adjustment Factor. The contractor shall bid the Adjustment Factor to be applied to the fixed unit prices. The total cost of an individual Job Order will be determined by multiplying the fixed unit price of each fixed cost pay item by the Adjustment Factor.

4.0 Definitions.

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

4.2 Job Order. A written order directing the work required at an individual work location in accordance with the Detailed Scope of Work within the Job Order Completion Time.

4.3 Job Order Completion Time. The time within which the contractor anticipates completing the Detailed Scope of Work for a particular Job Order.

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

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

G. Job Order Procedure

1.0 Detailed Scope of Work. The engineer will determine which locations will require additional guardrail lengths, use of Misc. Type A Crashworthy End Terminal (NGT) (MASH), and manner of height transition if not already noted in JSP FF. Locations and Estimated Quantities. The engineer is also required to assess work zone timeframes for conflicts and/or special events. The engineer enters work zone data, including lane closure locations and durations, 14 days prior to lane closures. In order to accommodate time for these evaluations and proper work zone data entries, the contractor should submit a detailed scope of work they tentatively plan to accomplish one month in advance and updated twice monthly unless otherwise approved by the engineer. The detailed scope of work should include items b, c, d, e, j, and k as listed in Section 2.2 Items f, g, h, and i may be added by the contractor for their intended plan but are the responsibility of the engineer. The detailed scope of work may be submitted on Draft Job Order forms, a spreadsheet, or other means approved by the engineer.

2.0 Draft Job Order. The contractor will prepare a Draft Job Order (DJO) and submit to the engineer by email. The DJO will be provided as an Excel spreadsheet and will include the basic information listed in Section 2.2. Unless otherwise agreed upon, the engineer shall review the DJO and respond by email within 2 days, as specified herein. If the contractor agrees to all terms, and accepts the Job Order as final, the contractor shall respond with concurrence and proceed with the work under those terms. If the contractor has any proposed changes, the contractor shall present those in the response. The engineer will consider any proposed changes and respond with a Final Job Order, as described in Section 3.0. If additional time is required for the engineer to review the contractor's proposed changes, or if time is needed to hold a Joint Scope Meeting prior to the work, the start date will be postponed.

2.1 Joint Scope Meeting. For job orders located in environmentally sensitive areas, or including additional guardrail for length of need, or locations requiring Misc. Type A Crashworthy End Terminal (NGT) (MASH), or when price agreement negotiations are necessary, or for any other reason deemed necessary by the engineer, a joint scope meeting may be required either in person at the job site, or through Microsoft Teams, to plan the work and complete all job order terms. Establishment of pricing for any non-fixed cost pay items shall be in accordance with Sec 109.4.2 or 109.4.3. If no agreement to pricing can be made, then the work will proceed with payment for non-fixed cost items under Sec 109.4.4. The contractor's attendance at the joint scope meeting is required and at no additional cost.

2.2 Draft Job Order Information. The Draft Job Order will provide the following information:

- (a) Job order number
- (b) County, route, and location
- (c) Date of issuance
- (d) Proposed start date
- (e) Intended completion date
- (f) Designation if work is restricted to the nighttime period only
- (g) Traffic control plan type
- (h) Additional traffic control devices (if needed)
- (i) Speed limit reduction and normal speed limit (if needed)
- (j) General description of repair
- (k) Estimated repair quantities

3.0 Final Job Order. Following any revisions to the DJO, as authorized by the engineer, the terms in the Job Order are considered binding. The final Job Order is a written notice from the engineer to the contractor directing the work to be performed at each work location. A job order is considered a contract document as defined in Sec 101.2. A job order may include multiple work locations, as defined elsewhere in these provisions, by inclusion of a table detailing items b – k listed above for each location.

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

3.3 Multiple Job Orders. The contractor may work on multiple job orders at the same time.

4.0 Completed Job Orders. Following completion of the Job Order work, the contractor shall promptly enter the following information into the Excel Job Order form and return the Job Order to the engineer by email:

- (a) Actual date that repairs were completed
- (b) Actual repair materials used to complete the work and any traffic control changes, as authorized by the engineer
- (c) Printed name of the contractor's authorized representative who is certifying that the work is complete and in compliance with the Job Order, Contract, and plans (when applicable)

4.1 The engineer will review the completed Job Order, make any necessary adjustments to update final quantities, including traffic control, and determine the final payment amount. If any additional time to complete the work is warranted for any reason, the engineer will note such time extension in the comments section. Upon acceptance of the work, as described in JSP N. Inspection and Acceptance of the Work, the engineer will serve notice of Acceptance for Maintenance by converting the final completed Job Order to PDF format, digitally signing, and sending a digital copy to the contractor by email. Payment will be made following acceptance.

Should any liquidated damages be assessed for failure to complete the work on time, a separate contract adjustment will be made.

H. Fixed Unit Price List - Guardrail Repair

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

2.0 Fixed Unit Price List for Job Orders.

MISC. TRAFFIC CONTROL ITEMS			
<u>Item Number</u>	<u>Description</u>	<u>Unit</u>	<u>Fixed Unit Price</u>
6169902	MISC. WORK BEYOND SHOULDER	EA	\$250.00
6169902	MISC. SHOULDER WORK - UNDIVIDED ROADWAYS	EA	\$250.00
6169902	MISC. RIGHT SHOULDER WORK - HIGH SPEED ROADWAY	EA	\$350.00
6169902	MISC. LEFT SHOULDER WORK - HIGH SPEED ROADWAY	EA	\$500.00
6169902	MISC. 1-LANE 2-WAY OPERATION W/ FLAGGERS	EA	\$800.00
6169902	MISC. SINGLE LANE CLOSURE	EA	\$900.00
6169902	MISC. PARTIAL RAMP CLOSURE	EA	\$400.00
6169902	MISC. COMPLETE RAMP CLOSURE	EA	\$600.00
6169902	MISC. ENTRANCE RAMP AREA, MAINLINE WORK	EA	\$400.00
6169902	MISC. ENTRANCE RAMP AREA, ACCEL LANE WORK	EA	\$400.00
6169902	MISC. EXIT RAMP AREA, MAINLINE/DECEL LANE WORK	EA	\$400.00
6169902	MISC. ADDITIONAL TRUCK MOUNTED ATTENUATOR (TMA)	EA	\$350.00
6169902	MISC. ADDITIONAL FLASHING ARROW PANEL	EA	\$100.00
6169902	MISC. ADDITIONAL DIRECTIONAL INDICATOR BARRICADE	EA	\$15.00
6169902	MISC. ADDITIONAL CHANNELIZER (TRIMLINE/)	EA	\$11.00
6169902	MISC. ADDITIONAL CMS (CONTRACTOR FURNISHED/RETAINED)	EA	\$1100.00
6169902	MISC. SEQUENTIAL FLASHING WARNING LIGHT	EA	\$50.00
6169904	MISC. ADDITIONAL CONSTRUCTION SIGNS	SF	\$4.00
6169902	MISC. TEMPORARY TRAFFIC CONTROL SINGLE LANE SHIFT – DIVIDED ROADWAY	EA	\$500.00
6169902	MISC. TEMPORARY TRAFFIC CONTROL SINGLE LANE SHIFT – UNDIVIDED ROADWAY	EA	\$500.00

NEW GUARDRAIL INSTALLATION ITEMS			
<u>Item Number</u>	<u>Description</u>	<u>Unit</u>	<u>Fixed Unit Price</u>
2029902	MISC. 4" ET PLUS CRASHWORTHY END TERMINAL REMOVAL	EA	\$250.00
2029903	MISC. REMOVE GUARDRAIL	LF	\$10.00
2149910	GRADING FOR CRASHWORTHY END TERMINAL	LS	\$3,500.00

2159910	MISC. SHAPING SLOPES CLASS III (MODIFIED MATERIAL REQUIREMENT	100 F	\$1200.00
6061060	MGS GUARDRAIL	LF	\$28.00
6061061	MGS GUARDRAIL, 8 FT., 6 FT. – 3 IN. SPACING	LF	\$32.00
6061063	MGS GUARDRAIL, 6 FT. POSTS, 3 FT. – 1.5 IN. SPACING	LF	\$41.00
6061065	MGS GUARDRAIL, 6 FT. POSTS, 1 FT. – 6.75 IN. SPACING	LF	\$64.00
6061067	MGS DOUBLE FACED GUARDRAIL	LF	\$46.00
6061068	MGS BRIDGE APPROACH TRANSITION SECTION (MAJOR ROUTE)	EA	\$3502.00
6061069	MGS BRIDGE APPROACH TRANSITION SECTION (MINOR ROUTE)	EA	\$3375.00
6061070	MGS VERTICAL CONCRETE BARRIER TRANSITION	EA	\$3375.00
6061074	MGS HEIGHT AND BLOCK TRANSITION SECTION	EA	\$647.00
6061075	MGS LONG SPAN GUARDRAIL SECTION	EA	\$3198.00
6061080	MGS END ANCHOR	EA	\$1390.00
6061081	MGS BRIDGE ANCHOR SECTION (THRIE-BEAM BRIDGE)	EA	\$2728.00
6069902	MISC. COMMISSION FURNISHED TYPE A CRASHWORTHY END TERMINAL (MASH)	EA	\$1700.00
6069902	MISC. TYPE A CRASHWORTHY END TERMINAL (NGT) (MASH)	EA	\$4200.00
6069902	MISC. 12.5' W-BEAM	LF	\$240.00

GUARDRAIL REPAIR ITEMS			
<u>Item Number</u>	<u>Description</u>	<u>Unit</u>	<u>Fixed Unit Price</u>
6069902	MISC. REALIGN & USE EXIST POST TYPE A, E OR MGS GR	EA	\$25.00
6069902	MISC. R&R WOOD/PLASTIC BLOCK 8X6X14 MGS	EA	\$21.00
6069902	MISC. R&R WOOD/PLASTIC BLOCK 12X6X14 MGS	EA	\$25.00

I. Adjustment Factor

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

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

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

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

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

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

2.0 Adjustment Factor. The Adjustment Factor includes daytime, nighttime, and/or weekend hours as identified by the engineer.

2.1 Daytime hours are defined as ½ hour after sunrise to ½ hour before sunset. If the contractor works outside of the defined daytime hours, the contractor shall provide lighting equipment at no additional cost to the Commission.

3.0 Nighttime Work. If the engineer determines traffic volumes are such that work cannot be performed during the daytime, without significant traffic impacts, the Job Order will specify nighttime repair operations.

J. Bidding the Adjustment Factor

1.0 The bidder shall complete the bid form by writing in the Adjustment Factor. The Adjustment Factor shall be specified to three decimal places. Note that this is a contract pay item for contractor payment, not work items.

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

1	.	1	9	8
---	---	---	---	---

OR

0	.	9	8	7
---	---	---	---	---

Note: The Adjustment Factors used are for example purposes only and are not an indication of factors being bid by the contractor.

K. Contract Award

1.0 Contract Award. The Commission will evaluate the bids with the intent of awarding the contract to the lowest responsible bidder based on the Adjustment Factor bid, with a contract award amount being \$3,599,999. This amount is based on the anticipated cost of removing and installing the replacement CETs, along with any and all work incidental thereto. The contract

amount is not limited to the awarded value and will be adjusted as deemed necessary to complete the scope of work.

2.0 Bid Evaluation. The determination of the low bid will be based on the Adjustment Factor. For the purpose of bid preparation, the estimated distribution of work is as follows:

- JST0138 Daytime Work: 100%
- JST0138 Nighttime Work: 0%
- JST0138 Weekend Work: 0%

L. Bonds

1.0 Bid Bond. The Bid Bond shall be in the amount of 5% of the Commission contract amount for this project as specified in Job Special Provision K. Contract Award.

2.0 Contract Bond. The Contract Bond shall be in the amount of 100% of the Commission contract amount for this project as specified in Job Special Provision K. Contract Award.

M. Completing the Work

1.0 The contractor shall perform any task in the fixed unit price list for the fixed unit price multiplied by the quantity, multiplied by the Adjustment Factor. The contractor shall perform the Detailed Scope of Work for the Job Order Price as calculated in accordance with the procedure for developing Job Orders set forth herein.

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

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

N. Inspection and Acceptance of the Work

1.0 Inspection. Upon completion of the required work for each Job Order, the contractor shall promptly notify the engineer as specified per Section 4.0 of JSP JOB ORDER PROCEDURE. Final inspections by the engineer may be random and may not be performed for all Job Orders. At the discretion of the engineer, in lieu of a Final Inspection, the engineer may declare Acceptance for Maintenance based on the certification of work by the contractor's authorized representative. If the engineer determines all work required by the contract has been satisfactorily completed, or the engineer accepts the contractor's certification, the engineer will make the acceptance for maintenance and notify the contractor in writing as specified per

Section 4.1 of JSP JOB ORDER PROCEDURE. Final Acceptance of all work in the Contract will occur as specified in Sec 105.15 and within 30 days of receipt of final documentation from the contractor.

1.1 Work determined to be unsatisfactory by the engineer, even if discovered following Acceptance for Maintenance, shall be corrected to acceptable standards at the contractor's sole cost. All items that are unsatisfactory shall be corrected within five (5) working days. Upon completion of the corrections, the contractor shall notify the engineer for a re-inspection.

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

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

O. Liquidated Damages for Winter Months JSP-04-17A

Delete Sec 108.8.1.3 (a)

Liquidated damages for failure to complete the work on time shall not be waived from December 15 to March 15, both dates inclusive.

P. Work Zone Traffic Management Plan

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

2.0 Traffic Management Schedule.

2.1 The contractor shall notify the engineer at least 7 days prior to performing any work at each work site. The notification shall include all information needed to identify traffic impacts such as work location, anticipated work hours, traffic control plan type, required lane or shoulder closures, anticipated duration of the work, etc. The engineer will make appropriate notification to the public, MoDOT customer service, and MoDOT work crews of the contractor's operations. The contractor shall notify the engineer at the actual time of closing any lane or shoulder and shall again notify the engineer when the lane or shoulder is reopened to traffic. The contractor shall notify the engineer as soon as practical of any postponement due to weather, material, or other circumstances and shall renotify the engineer when the work has been rescheduled.

2.2 In order to ensure minimal traffic interference, the contractor shall schedule lane closures for the absolute minimum amount of time required to complete the work. Lanes shall not be

closed until material is available for continuous work and the contractor is prepared to diligently pursue the work until the closed lane is reopened to traffic.

3.0 Maintenance of Traffic.

3.1 Traffic flow shall be maintained through the work zone using the existing pavement in accordance with the traffic control plans. No detours or lane shifts onto shoulders will be allowed unless otherwise approved by the engineer.

3.2 Provisions shall be made to allow the movement of emergency vehicles through the limits of the work at all times.

3.3 During non-working hours the contractor shall have all lanes of traffic open for all routes, ramps, and side roads. All channelizers and other traffic control devices shall be removed from the roadway during non-working hours unless otherwise approved by the engineer.

3.3.1 If work in one location will take more than one day, as approved in the job order, the contractor shall provide temporary protection and diligently pursue the work.

3.3.2 The contractor shall have all lanes of traffic open during non-working hours, or as otherwise noted in the Job Order restrictions. Should lane closures remain in place, during non-working hours at any specific location, the Commission, the traveling public, and state and local police and governmental authorities will be damaged in various ways, including but not limited to, increased construction administration cost, potential liability, traffic and traffic flow regulation cost, traffic congestion and motorist delays, with a resulting cost to the traveling public. These damages are not easily computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of **\$250 per day** for each day or partial day the lanes remain closed.

4.0 Traffic Congestion and Delay. The contractor shall, upon approval of the engineer, take proactive measures to reduce traffic congestion in the work zone. The contractor shall be responsible for maintaining the existing traffic flow through the job site during the work. If disruption of the traffic flow occurs and traffic is backed up in queues of 15 minute delays or longer, then the contractor shall review the construction operations which contributed directly to disruption of the traffic flow and make adjustments to the operations to prevent queues from occurring again.

5.0 Traffic Safety.

5.1 Where traffic queues routinely extend to within 1000 feet (300 m) of the ROAD WORK AHEAD, or similar, sign on a divided highway or to within 500 feet (150 m) of the ROAD WORK AHEAD, or similar, sign on an undivided highway, the contractor shall extend the advance warning area, as approved by the engineer.

5.2 When a traffic queue extends to within 1000 feet (300 m) of the ROAD WORK AHEAD, or similar, sign on a divided highway or to within 500 feet (150 m) of the ROAD WORK AHEAD, or similar, sign on an undivided highway due to non-recurring congestion, the contractor shall deploy a means of providing advance warning of the traffic congestion, as approved by the engineer. The warning location shall be no less than 1000 feet (300 m) and no more than 0.5

mile (0.8 km) in advance of the end of the traffic queue on divided highways and no less than 500 feet (150 m) and no more than 0.5 mile (0.8 km) in advance of the end of the traffic queue on undivided highways.

6.0 Work Hour Restrictions.

6.1 All work shall be scheduled to avoid major sporting events, conventions, concerts, and similar special events as specified by the engineer. During the term of this contract, there are five major holiday periods: New Year's Day, Memorial Day, Labor Day, Thanksgiving, and Christmas. All lanes shall be scheduled to be open to traffic during these holiday periods, from 12:00 noon on the last working day preceding the holiday until 6:00 a.m. on the first working day subsequent to the holiday, unless otherwise designated by the engineer.

6.1.1 Independence Day. The lane restrictions specified in Section 6.1 shall also apply to Independence Day, except that the restricted periods shall be as follows:

When Independence Day falls on:	The Holiday is Observed on:	Halt Lane Closures beginning at:	Allow Lane Closures to resume at:
Sunday	Monday	Noon on Friday	6:00 a.m. on Tuesday
Monday	Monday	Noon on Friday	6:00 a.m. on Tuesday
Tuesday	Tuesday	Noon on Monday	6:00 a.m. on Wednesday
Wednesday	Wednesday	Noon on Tuesday	6:00 a.m. on Thursday
Thursday	Thursday	Noon on Wednesday	6:00 a.m. on Friday
Friday	Friday	Noon on Thursday	6:00 a.m. on Monday
Saturday	Friday	Noon on Thursday	6:00 a.m. on Monday

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

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

<u>Traffic Control Plan Type</u>	<u>Work Hours (Monday thru Friday)</u>
Single Lane Closure	7:30 p.m. to 4:30 a.m.
Ramp Closure	Hours and days as approved by the engineer
One Lane Two Way Operation with Flagger	Hours and days as approved by the engineer

Specific work hours for an individual work location shall be according to the mutually agreed upon schedule in the Job Order.

7.0 Work Within Another Work Zone. The engineer may determine it is in the best interest of the Commission and the traveling public to have the work designated in the job order performed within another contractor's work zone or within a MoDOT work zone. If the work is designated

to be performed within another work zone, the contractor shall coordinate and perform the work in accordance with Sec 105.6.

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

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

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

Q. Traffic Control Plan Types

1.0 Description. The engineer will designate in the job order the type of traffic control plan (TCP) necessary to perform the work. If the engineer determines more than one type of TCP is needed to perform the work, the additional plan or plans will be specified in the job order. The various types of TCP's and the traffic control devices required for each TCP are shown on the plans. The contractor shall furnish adequate channelizing devices as shown on the plans. **The contractor's attention is directed to the fact that trim line channelizers are required for all TCP's regardless of daytime or nighttime operations. Cones will not be allowed for use on this contract.**

2.0 Plan Types.

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

2 each	Road Work Ahead
2 each	Right (Left) Lane Closed Ahead
2 each	Reduced Speed Limit Ahead (Symbol)
1 each	Right (Left) Lane Closed
1 each	Merge with Right (Left) Arrow
2 each	Speed Limit XX MPH
2 each	Work Zone (Plaque)
14 each	Directional Indicator Barricade
30 each	Channelizer (Trim Line)

2 each	Flashing Arrow Panel (One Truck Mount for TMA)
1 each	Truck Mounted Attenuator
1 each	Changeable Message Sign (Contractor Furnished / Retained)

2.2 Ramp Closure. The contractor shall obtain approval from the engineer a minimum of five days prior to any ramp closure. A ramp closure shall be performed by furnishing, installing, and removing the following set of traffic control devices:

2 each	Road Work Ahead
2 each	Ramp Closed Ahead
2 each	Reduced Speed Limit Ahead (Symbol)
2 each	Detour Ahead
2 each	Speed Limit XX MPH
2 each	Work Zone (Plaque)
1 each	Road Closed
2 each	Speed Limit XX (Normal Speed)
14 each	Directional Indicator Barricade
40 each	Channelizer (Trim Line)
2 each	Flashing Arrow Panel (One Truck Mount for TMA)
1 each	Truck Mounted Attenuator
2 each	Changeable Message Sign (Contractor Furnished / Retained)

2.3 Partial Ramp Closure. A partial ramp closure shall be performed by furnishing, installing, and removing the following set of traffic control devices:

1 each	Ramp Work Ahead
1 each	Ramp Narrows
1 each	Speed Limit XX MPH
2 each	Work Zone (Plaque)
14 each	Directional Indicator Barricade
40 each	Channelizer (Trim Line)
1 each	Flashing Arrow Panel (One Truck Mount for TMA)
1 each	Truck Mounted Attenuator
1 each	Changeable Message Sign (Contractor Furnished / Retained)

2.4 Entrance Ramp Area Mainline Work. Entrance Ramp Area Mainline Work shall be performed by furnishing, installing, and removing the following set of traffic control devices:

3 each	Road Work Ahead
2 each	Right (Left) Lane Closed Ahead
1 each	Right (Left) Lane Closed
1 each	Merge
1 each	Ramp Narrows
14 each	Directional Indicator Barricade
50 each	Channelizer (Trim Line)
2 each	Flashing Arrow Panel (One Truck Mount for TMA)
1 each	Truck Mounted Attenuator
1 each	Changeable Message Sign (Contractor Furnished / Retained)

2.5 Entrance Ramp Area Acceleration Lane Work. Entrance Ramp Area Acceleration Work shall be performed by furnishing, installing, and removing the following set of traffic control devices:

3 each	Road Work Ahead
2 each	Right (Left) Lane Closed Ahead
1 each	Right (Left) Lane Closed
1 each	Merge
1 each	Ramp Narrows
1 each	Yield
1 each	Yield Ahead (Symbol)
1 each	Merge Traffic (Symbol)
14 each	Directional Indicator Barricade
50 each	Channelizer (Trim Line)
2 each	Flashing Arrow Panel (One Truck Mount for TMA)
1 each	Truck Mounted Attenuator
1 each	Changeable Message Sign (Contractor Furnished / Retained)

2.6 Exit Ramp Area Deceleration/Mainline Lane Work. Exit Ramp Area Deceleration/Mainline Work shall be performed by furnishing, installing, and removing the following set of traffic control devices:

2 each	Road Work Ahead
2 each	Right (Left) Lane Closed Ahead
1 each	Right (Left) Lane Closed
1 each	Merge
1 each	Ramp Narrows
1 each	Exit
14 each	Directional Indicator Barricade
50 each	Channelizer (Trim Line)
2 each	Flashing Arrow Panel (One Truck Mount for TMA)
1 each	Truck Mounted Attenuator
1 each	Changeable Message Sign (Contractor Furnished / Retained)

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

2 each	Road Work Ahead
2 each	One Lane Road Ahead
2 each	Be Prepared To Stop
2 each	Flagger (Symbol)

3.0 Additional Traffic Control Devices. The engineer may determine that signs and channelizers, in addition to those devices shown in the plans are necessary to safely accommodate traffic. These additional devices may be needed for merging ramp traffic, detours, or other special cases to supplement the specified lane closure devices. The contract

provides a fixed cost for any additional traffic control items.

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

5.0 Temporary Traffic Control Single Lane Shift – Divided Roadway. When a Single Lane Closure is used for work on a divided highway, and repairs are necessary in both the right and left lanes within the same log mile range and direction, payment for the Temporary Traffic Control Single Lane Shift – Divided Roadway shall be paid for at the fixed unit price.

6.0 Temporary Traffic Control Single Lane Shift – Undivided Roadway. When a Single Lane Closure is used for work on a two-lane undivided highway, and repairs are necessary in both lanes within the same log mile range, payment for the Temporary Traffic Control Single Lane Shift – Undivided Roadway shall be paid for at the fixed unit price.

7.0 Method of Measurement and Basis of Payment.

7.1 Measurement will be made per each set-up made within the term of the Job Order. A set-up is defined as each installation and removal of traffic control devices at a specific work site. The accepted quantity of each set-up will be paid for at the fixed unit price for:

Item 616-99.02	Single Lane Closure	Each
Item 616-99.02	Temporary Traffic Control Single Lane Shift	Each
Item 616-99.02	Ramp Closure	Each
Item 616-99.02	Partial Ramp Closure	Each
Item 616-99.02	Entrance Ramp Area, Mainline Work	Each
Item 616-99.02	Entrance Ramp Area, Accel Lane Work	Each
Item 616-99.02	Exit Ramp Area, Mainline/Decel Lane Work	Each
Item 616-99.02	One-Lane Two-Way Operation with Flaggers	Each

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

7.2 Measurement of additional traffic control devices will be made per each set-up made within the term of the Job Order. Payment for the devices shall include furnishing, installing, and removing the additional devices at a specific work site. No payment will be made for additional devices used by the contractor without prior approval of the engineer. The accepted quantity of additional traffic control devices will be paid for in accordance with the fixed unit price list, multiplied by the Adjustment Factor, as mutually agreed upon in the Job Order.

R. Work Plan and Schedule for Accomplishing Work

Delete Sec 108.4 through 108.4.4 and substitute the following:

108.4 Work Plan and Schedule. Prior to or at the preconstruction conference, the contractor shall provide a proposed work plan and typical schedule for accomplishing both normal and first priority work. The work plan shall include a written list of equipment and personnel that the contractor intends to use in executing the work.

108.4.1 The work plan will be reviewed by the engineer to determine in general if adequate personnel and equipment appear to be available to complete the work within the required number of calendar days. If the engineer determines the work plan is inadequate, the engineer and contractor shall meet for a joint review of the plan to correct and adjust the plan and schedule as necessary. A revised work plan and schedule shall be provided by the contractor prior to commencing the work.

108.4.2 If multiple job orders are issued with overlapping completion periods, the priority of the work will be jointly determined by the engineer and the contractor, with final approval of the work plan by the engineer. The work schedule and work priorities will be determined by the needs of the Commission and not the contractor's convenience of work location.

108.4.3 No direct payment will be made for furnishing the work plan or revisions.

108.4.4 The contractor shall determine the most feasible work plan and schedule consistent with the requirements of the contract. The engineer's approval of contractor's work plan is not intended to be acknowledgment or representation that it is reasonable or will accomplish the work within a particular time or at a particular cost.

S. 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. MoDOT customer service 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: Troop B Macon, MO (660-385-2132)		
Missouri Highway Patrol: Troop H Saint Joseph, MO (816-387-2345)		
County of Atchison	County of Andrew	County of Buchanan
Sheriff: 660-744-6271	Sheriff: 816-324-4114	Sheriff: 816-236-8800
County of Caldwell	County of Carroll	County of Chariton
Sheriff: 816-586-2681	Sheriff: 660-542-2828	Sheriff: 660-288-3277
County of Clinton	County of Daviess	County of Dekalb
Sheriff: 816-539-2156	Sheriff: 660-663-3300	Sheriff: 816-449-5802
County of Gentry	County of Grundy	County of Harrison
Sheriff: 660-726-3835	Sheriff: 660-359-2828	Sheriff: 660-425-3199
County of Holt	County of Linn	County of Livingston

Sheriff: 660-822-3002	Sheriff: 660-895-5312	Sheriff: 660-646-0515
County of Mercer	County of Nodaway	County of :Putnam
Sheriff: 660-748-3165	Sheriff: 660-582-7451	Sheriff: 660-947-3200
County of Sullivan	County of Worth	
Sheriff: 660-265-3313	Sheriff: 660-564-222	

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.

T. Utilities

1.0 It is the inherent risk of the work under this contract that the contractor may encounter utilities above and/or below the ground or in the vicinity of any given job order which may interfere with their operations. The contractor expressly acknowledges and assumes this risk even though the nature and extent are unknown to both the contractor and the Commission at the time of bidding and award of the contract. The effect in cost or time of the presence of utilities above, below or in the vicinity of the contractor's work under this contract shall not be compensable.

U. Delay Provisions

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

V. Mobilization

Delete Sec 618.2 and substitute the following:

618.2 No direct payment will be made for mobilization. All costs for mobilization shall be considered included in the cost of the individual contract pay items included in the contract.

W. Sample Job Order

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

1.1 Job Order Sample 1: Replace 4" ET Plus CET with Misc. Commission Furnished Type A Crashworthy End Terminal (MASH) on an interstate highway.

Item Description	Fixed Unit Price	Quantity	Price
Misc. Right Shoulder Work - High Speed Roadway	\$350.00	1	\$350.00
Misc. 4" ET Plus Crashworthy End Terminal Removal	\$250.00	1	\$250.00
Misc. Commission Furnished Type A Crashworthy End Terminal (MASH)	\$1700.00	1	\$1700.00
		Subtotal:	\$2300.00
Adjustment Factor	1.150		
		TOTAL:	\$2645.00

X. Supplemental Revisions JSP-18-01JJ

- Compliance with [2 CFR 200.216 – Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment](#).

The Missouri Highways and Transportation Commission shall not enter into a contract (or extend or renew a contract) using federal funds to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as substantial or as critical technology as part of any system where the video surveillance and telecommunications equipment was produced by Huawei Technologies Company, ZTE Corporation, Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).

- Stormwater Compliance Requirements

1.0 Description. This provision requires the contractor to provide a Water Pollution Control Manager (WPCM) for any project that includes land disturbance on the project site and the total area of land disturbance, both on the project site, and all Off-site support areas, is one (1) acre or more. Regardless of the area of Off-site disturbance, if no land disturbance occurs on the project site, these provisions do not apply. When a WPCM is required, all sections within this

provision shall be applicable, including assessment of specified Liquidated Damages for failure to correct Stormwater Deficiencies, as specified herein. This provision is in addition to any other stormwater, environmental, and land disturbance requirements specified elsewhere in the contract.

1.1 Definitions. The project site is defined as all areas designated on the plans, including temporary and permanent easements. The project site is equivalent to the “permitted site”, as defined in MoDOT’s State Operating Permit. An Off-site area is defined as any location off the project site the contractor utilizes for a dedicated project support function, such as, but not limited to, staging area, plant site, borrow area, or waste area.

1.2 Reporting of Off-Site Land Disturbance. If the project includes any planned land disturbance on the project site, prior to the start of work, the contractor shall submit a written report to the engineer that discloses all Off-site support areas where land disturbance is planned, the total acreage of anticipated land disturbance on those sites, and the land disturbance permit number(s). Upon request by the engineer, the contractor shall submit a copy of its land disturbance permit(s) for Off-site locations. Based on the total acreage of land disturbance, both on and Off-site, the engineer shall determine if these Stormwater Compliance Requirements shall apply. The Contractor shall immediately report any changes to the planned area of Off-site land disturbance. The Contractor is responsible for obtaining its own separate land disturbance permit for Off-site areas.

2.0 Water Pollution Control Manager (WPCM). The Contractor shall designate a competent person to serve as the Water Pollution Control Manager (WPCM) for projects meeting the description in Section 1.0. The Contractor shall ensure the WPCM completes all duties listed in Section 2.1.

2.1 Duties of the WPCM:

- (a) Be familiar with the stormwater requirements including the current MoDOT State Operating Permit for construction stormwater discharges/land disturbance activities; MoDOT’s statewide Stormwater Pollution Prevention Plan (SWPPP); the Corps of Engineers Section 404 Permit, when applicable; the project specific SWPPP, the Project’s Erosion & Sediment Control Plan; all applicable special provisions, specifications, and standard drawings; and this provision;
- (b) Successfully complete the MoDOT Stormwater Training Course within the last 4 years. The MoDOT Stormwater Training is a free online course available at MoDOT.org;
- (c) Attend the Pre-Activity Meeting for Grading and Land Disturbance and all subsequent Weekly Meetings in which grading activities are discussed;
- (d) Oversee and ensure all work is performed in accordance with the Project-specific SWPPP and all updates thereto, or as designated by the engineer;
- (e) Review the project site for compliance with the Project SWPPP, as needed, from the start of any grading operations until final stabilization is achieved, and take necessary actions to correct any known deficiencies to prevent pollution of the waters of the state or adjacent property owners prior to the engineer’s weekly inspections;

- (f) Review and acknowledge receipt of each MoDOT Inspection Report (Land Disturbance Inspection Record) for the Project within forty eight (48) hours of receiving the report and ensure that all Stormwater Deficiencies noted on the report are corrected as soon as possible, but no later than stated in Section 5.0.

3.0 Pre-Activity Meeting for Grading/Land Disturbance and Required Hold Point. A Pre-Activity meeting for grading/land disturbance shall be held prior to the start of any land disturbance operations. No land disturbance operations shall commence prior to the Pre-Activity meeting except work necessary to install perimeter controls and entrances. 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.

3.1 Hold Point. 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.

4.0 Inspection Reports. Weekly and post run-off inspections will be performed by the engineer and each Inspection Report (Land Disturbance Inspection Record) will be entered into a web-based Stormwater Compliance database. The WPCM will be granted access to this database and shall promptly review all reports, including any noted deficiencies, and shall acknowledge receipt of the report as required in Section 2.1 (f.).

5.0 Stormwater Deficiency Corrections. All stormwater deficiencies identified in the Inspection Report shall be corrected by the contractor within 7 days of the inspection date or any extended period 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.

5.1 Liquidated Damages. If the Contractor fails to complete the correction of all Stormwater Deficiencies listed on the MoDOT Inspection Report within the specified time limit, the Commission will be damaged in various ways, including but not limited to, potential liability, required mitigation, environmental clean-up, fines, and penalties. These damages are not reasonably capable of being computed or quantified. Therefore, the contractor will be charged with liquidated damages specified in the amount of \$2,000 per day for failure to correct one or more of the Stormwater Deficiencies listed on the Inspection Report within the specified time limit. In addition to the stipulated damages, the stoppage of work shall remain in effect until all corrections are complete.

6.0 Basis of Payment. No direct payment will be made for compliance with this provision.

- **Delete Sec 106.9 in its entirety and substitute the following:**

106.9 Buy America Requirements.

Buy America Requirements are waived if the total amount of Federal financial assistance applied to the project, through awards or subawards, is below \$500,000.

106.9.1 Buy America Requirements for Iron and Steel.

On all federal-aid projects, the contractor's attention is directed to Title 23 CFR 635.410 *Buy America Requirements*. Where steel or iron products are to be permanently incorporated into the contract work, steel and iron material shall be manufactured, from the initial melting stage through the application of coatings, in the USA except for "minimal use" as described herein. Furthermore, any coating process of the steel or iron shall be performed in the USA. Under a general waiver from FHWA the use of pig iron and processed, pelletized, and reduced iron ore manufactured outside of the USA will be permitted in the domestic manufacturing process for steel or iron material.

106.9.1.1 Buy America Requirements for Iron and Steel for Manufactured items.

A manufactured item will be considered iron and steel if it is "predominantly" iron or steel. Predominantly iron or steel means that the cost of iron or steel content of a product is more than 50 percent of the total cost of all its components.

106.9.2 Any sources other than the USA as defined will be considered foreign. The required domestic manufacturing process shall include formation of ingots and any subsequent process. Coatings shall include any surface finish that protects or adds value to the product.

106.9.3 "Minimal use" of foreign steel, iron or coating processes will be permitted, provided the cost of such products does not exceed 1/10 of one percent (0.1 percent) of the total contract cost or \$2,500.00, whichever is greater. If foreign steel, iron, or coating processes are used, invoices to document the cost of the foreign portion, as delivered to the project, shall be provided and the engineer's written approval obtained prior to placing the material in any work.

106.9.4 Buy America requirements include a step certification for all fabrication processes of all steel or iron materials that are accepted per Sec 1000. The AASHTO Product Evaluation and Audit Solutions compliance program verifies that all steel and iron products fabrication processes conform to 23 CFR 635.410 Buy America Requirements and is an acceptable standard per 23 CFR 635.410(d). AASHTO Product Evaluation and Audit Solutions compliant suppliers will not be required to submit step certification documentation with the shipment for some selected steel and iron materials. The AASHTO Product Evaluation and Audit Solutions compliant supplier shall maintain the step certification documentation on file and shall provide this documentation to the engineer upon request.

106.9.4.1 Items designated as Category 1 will consist of steel girders, piling, and reinforcing steel installed on site. Category 1 items require supporting documentation prior to incorporation into the project showing all steps of manufacturing, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America Requirements. This includes the Mill Test Report from the original producing steel mill and

certifications documenting the manufacturing process for all subsequent fabrication, including coatings. The certification shall include language that certifies the following. That all steel and iron materials permanently incorporated in this project was procured and processed domestically and all manufacturing processes, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410.

106.9.4.2 Items designated as Category 2 will include all other steel or iron products not in Category 1 and permanently incorporated in the project. Category 2 items shall consist of, but not be limited to items such as fencing, guardrail, signing, lighting and signal supports. The prime contractor is required to submit a material of origin form certification prior to incorporation into the project from the fabricator for each item that the product is domestic. The Certificate of Materials Origin form ([link to certificate form](#)) from the fabricator must show all steps of manufacturing, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America Requirements and be signed by a fabricator representative. The engineer reserves the right to request additional information and documentation to verify that all Buy America requirements have been satisfied. These documents shall be submitted upon request by the engineer and retained for a period of 3 years after the last reimbursement of the material.

106.9.4.3 Any minor miscellaneous steel or iron items that are not included in the materials specifications shall be certified by the prime contractor as being procured domestically. Examples of these items would be bolts for sign posts, anchorage inserts, etc. The certification shall read "I certify that all steel and iron materials permanently incorporated in this project during all manufacturing processes, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America Requirements procured and processed domestically in accordance with CFR Title 23 Section 635.410 Buy America Requirements. Any foreign steel used was submitted and accepted under minor usage". The certification shall be signed by an authorized representative of the prime contractor.

106.9.5 When permitted in the contract, alternate bids may be submitted for foreign steel and iron products. The award of the contract when alternate bids are permitted will be based on the lowest total bid of the contract based on furnishing domestic steel or iron products or 125 percent of the lowest total bid based on furnishing foreign steel or iron products. If foreign steel or iron products are awarded in the contract, domestic steel or iron products may be used; however, payment will be at the contract unit price for foreign steel or iron products.

106.9.6 Buy America Requirements for Construction Materials other than iron and steel materials. Construction materials means articles, materials, or supplies that consist of only one of the items listed. Minor additions of articles, materials, supplies, or binding agents to a construction material do not change the categorization of the construction material. Upon request by the engineer, the contractor shall submit a domestic certification for all construction materials listed that are incorporated into the project.

- (a) Non-ferrous metals
- (b) Plastic and Polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables)
- (c) Glass (including optic glass)
- (d) Fiber optic cable (including drop cable)
- (e) Optical fiber

- (f) Lumber
- (g) Engineered wood
- (h) Drywall

106.9.6.1 Minimal Use allowance for Construction Materials other than iron or steel.

“The total value of the non-compliant products is no more than the lesser of \$1,000,000 or 5% of total applicable costs for the project.” The contractor shall submit to the engineer any non-domestic materials and their total material cost to the engineer. The contractor and the engineer will both track these totals to assure that the minimal usage allowance is not exceeded.

106.9.7 Buy America Requirements for Manufactured Products.

Manufactured products means:

- (a) Articles, materials, or supplies that have been:
 - (i) Processed into a specific form and shape; or
 - (ii) Combined with other articles, materials, or supplies to create a product with different properties than the individual articles, materials, or supplies.
- (b) If an item is classified as an iron or steel product, a construction material, or a section 70917(c) material under § 184.4(e) and the definitions set forth in this section, then it is not a manufactured product. However, an article, material, or supply classified as a manufactured product under § 184.4(e) and paragraph (1) of this definition may include components that are construction materials, iron or steel products, or section 70917(c) materials.

106.9.7.1 Manufactured products are exempt from Buy America requirements. To qualify as a manufactured product, items that consist of two or more of the listed construction materials that have been combined together through a manufacturing process, and items that include at least one of the listed materials combined with a material that is not listed through a manufacturing process, should be treated as manufactured products, rather than as construction materials.

106.9.7.2 Manufactured items are covered under a general waiver to exclude them from Buy America Requirements. To qualify for the exemption the components must comprise of 55% of the value of materials in the item. The final assembly must also be performed domestically.

- Third-Party Test Waiver for Concrete Aggregate

1.0 Description. Third party tests may be allowed for determining the durability factor for concrete pavement and concrete masonry aggregate.

2.0 Material. All aggregate for concrete shall be in accordance with Sec 1005.

2.1 MoDOT personnel shall be present at the time of sampling at the quarry. The aggregate sample shall be placed in an approved tamper-evident container (provided by the quarry) for shipment to the third-party testing facility.

2.2 AASHTO T 161 Method B Resistance of Concrete to Rapid Freezing and Thawing, shall be used to determine the aggregate durability factor. All concrete beams for testing shall be 3-inch

wide by 4-inch deep by 16-inch long or 3.5-inch wide by 4.5-inch deep by 16-inch long. All beams for testing shall receive a 35-day wet cure fully immersed in saturated lime water prior to initiating the testing process.

2.3 Concrete test beams shall be made using a MoDOT approved concrete pavement mix design.

3.0 Testing Facility Requirements. All third-party test facilities shall meet the requirements outlined in this provision.

3.1 The testing facility shall be AASHTO accredited.

3.1.1 For tests ran after January 1, 2025, accreditation documentation shall be on file with the Construction and Materials Division prior to any tests being performed.

3.1.2 Construction and Materials Division may consider tests completed prior to January 1, 2025, to be acceptable if all sections of this provision are met, with the exception of 3.1.1. Accreditation documentation shall be provided with the test results for tests completed prior to January 1, 2025. No tests completed prior to September 1, 2024, will be accepted.

3.2 The testing facility shall provide their testing process, list of equipment, equipment calibration documentation, and testing certifications or qualifications of technicians performing the AASHTO T 161 Procedure B tests. The testing facility shall provide details on their freezing and thawing apparatus including the time and temperature profile of their freeze-thaw chamber. The profile shall include the temperature set points throughout the entirety of the freeze-thaw cycle. The profile shall show the cycle time at which the apparatus drains/fills with water and the cycle time at which the apparatus begins cooling the specimens.

3.3 Results, no more than five years old, from the third-party test facility shall compare within ± 2.0 percent of an independent test from another AASHTO accredited test facility or with MoDOT test records, in order to be approved for use (e.g. test facility results in a durability factor of 79, MoDOT's recent durability test factor is 81; this compared within +2 percent). The independent testing facility shall be in accordance with this provision. The comparison test can be from a different sample of the same ledge combination.

3.4 When there is a dispute between the third party durability test results and MoDOT durability test results, the MoDOT durability test result shall govern.

3.5 Test results shall be submitted to MoDOT's Construction and Materials division electronically for final approval. Test results shall include raw data for all measurements of relative dynamic modulus of elasticity and percent length change for each individual concrete specimen. Raw data shall include initial measurements made at zero cycles and every subsequent measurement of concrete specimens. Raw data shall include the cycle count and date each measurement was taken. Test results shall also include properties of the concrete mixture as required by AASHTO T 161. This shall include the gradation of the coarse aggregate sample. If AASHTO T 152 is used to measure fresh air content, then the aggregate correction factor for the mix determined in accordance with AASHTO T 152 shall also be included.

4.0 Method of Measurement. There is no method of measurement for this provision. The testing requirements and number of specimens shall be in accordance with AASHTO T 161 Procedure B.

5.0 Basis of Payment. No direct payment will be made to the contractor or quarry to recover the cost of aggregate samples, sample shipments, testing equipment, labor to prepare samples or test samples, or developing the durability report.

- **Delete paragraph 15.0 of the General Provision Disadvantaged Business Enterprise (DBE) Program Requirements and substitute the following:**

15.0 Bidder's List Quote Summary. MoDOT is a recipient of federal funds and is required by 49 CFR 26.11 to provide data about its DBE program. All bidders who seek to work on federally assisted contracts must submit data about all DBE and non-DBEs in accordance with Sec 102.7.9. MoDOT will not compare the submitted Bidder's List Quote Summary to any other documents or submittals, pre or post award. All information will be used by MoDOT in accordance with 49 CFR 26.11 for reporting to USDOT and to aid in overall DBE goal setting.

- **Add Sec 102.7.9 to include the following:**

102.7.9 Bidder's List Quote Summary. Each bidder shall submit with each bid a summary of all subcontractors, material suppliers, and service providers (e.g. hauling) considered on federally funded projects pursuant to 49 CFR 26.11. The bidder will provide the firm's name, the corresponding North American Industry Classification System (NAICS) code(s) the firm(s) were considered for, and whether or not they were used in the bid. The information submitted should be the most complete information available at the time of bid. The information shall be disclosed on the Bidder's List Quote Summary form provided in the bidding documents and submitted in accordance with Sec 102.10. Failure to disclose this information may result in a bid being declared irregular.

Y. Guardrail and End Terminal Placement

1.0 Description. This work shall consist of all labor, equipment, and materials to remove existing 4" ET Plus crashworthy end terminals (CETs) and replace with an approved Misc. Commission Furnished Type A Crashworthy End Terminal (MASH) or Misc. Type A Crashworthy End Terminal (NGT) (MASH), address necessary height adjustment as directed, and provide additional guardrail if required, as identified in JSP FF. Locations and Estimated Quantities or as directed by the engineer. All work shall comply with Secs 202 and 606 except as herein modified.

2.0 Materials. All guardrail materials shall conform to Division 1000, Materials Details, and specifically Sec 1040. All materials shall be new unless otherwise approved by the engineer or otherwise allowed by these specifications.

2.1 Materials and components for Misc Type A Commission Furnished Crashworthy End Terminals (MASH) and Misc. Type A Crashworthy End Terminals (NGT) (MASH) shall conform

to the manufacturer's latest approved design. All replacement components shall be from the original equipment manufacturer unless approved by the engineer. The contractor shall provide manufacturer certification that the replacement components furnished, when properly installed by the contractor, will reestablish or exceed the original capabilities of the end terminal.

2.2 All materials intended for use in this contract shall be stored in a dedicated location on the contractor's property and shall be inspected and approved by the engineer prior to use.

3.0 Construction Requirements.

3.1 Installation of New Guardrail System and/or Crashworthy End Terminal. If the job order designates a contract pay item for new guard rail, bridge approach transition section, height and block transition section, end anchor, crashworthy end terminal, or other appurtenance the contractor shall furnish and place the designated item complete in place. The new system and/or terminal shall be installed at the location designated by the engineer.

3.2 Realigning Posts. Posts which are out of alignment but otherwise undamaged will be designated for realignment. The contractor shall realign and plumb the designated posts. After realignment, any voids around the post shall be securely backfilled with a cohesive soil, or a sand meeting the gradation requirements of Sec 1005.3.5, and thoroughly tamped.

3.3 Reflective Sheeting on End Terminals. On new crashworthy end terminals located 12 feet or less from the edge of the traveled way, the contractor shall furnish and install black/yellow reflective sheeting or other marking as directed by the engineer. The reflective sheeting size, shape, method of attachment and placement shall be approved by the engineer prior to installation. Reflective sheeting installed on new end terminals is included in the cost of the end terminal.

3.4 Guardrail Block. Current Commission standards require the use of 8" x 6" x 14" or 21" wood or plastic guardrail blocks for new guardrail installations. Former standards allowed use of 6" x 6" x 14" or 21" blocks. For those locations requiring replacement of only the block and not the post, minor adjustments to the alignment of the existing guardrail posts or guardrail panels may be required to accommodate the 8" block.

3.5 Additional Work. If additional major components or pay items beyond those specified in the job order are needed to properly perform the work, the contractor shall contact the engineer for authorization to proceed with the additional work. Any work performed without authorization of the engineer will be at the contractor's expense.

4.0 Method of Measurement.

4.1 Measurement of existing guardrail, end anchor, bridge anchor, and turndown terminal removal will be made to the nearest foot from center of first post to center of last post.

4.2 Measurement of existing 4" ET Plus crashworthy end terminal removal will be made per each.

4.4 Measurement of realigned posts will be made per each.

4.5 Measurement of replacement reflective sheeting on end terminals will be made per each. No measurement or payment will be made for reflective sheeting installed on new end terminals.

5.0 Basis of Payment.

5.1 The accepted quantity of removed guardrail, end anchor, bridge anchor, or turndown terminal will be paid for at the contract unit price for:

Item 202-99.03	Remove Guardrail	Linear Foot
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5.1.1 Payment will be considered full compensation for all labor and equipment necessary to completely remove the guardrail system.

5.2 The accepted quantity of removed 4" ET Plus crashworthy end terminals will be paid for at the contract unit price for:

Item 202-99.02	Remove 4" ET Plus Crashworthy End Terminal	Each
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5.2.1 Payment will be considered full compensation for all labor and equipment necessary to completely remove the terminal system.

5.4 The accepted quantity of realigned posts will be paid for at the contract unit price for:

Item 606-99.02	Realign and Use Existing Post, Type A, E, or MGS Guardrail	Each
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5.4.1 Payment will be considered full compensation for all labor, equipment, and material, including any required backfill, necessary to realign and plumb an existing post.

Z. Definition of Special "99 Number" Pay Items

1.0 The contract contains a large number of special "99-number" pay items. The Commission's automated bidding system is limited by the number of characters allowed for each special item description. The following table defines the abbreviated item descriptions. This table also further defines the work required for each of the pay items.

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>
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Traffic Control Items

616-99.02	ADDITIONAL TRUCK MOUNTED ATTENUATOR Provide additional truck mounted attenuator for use in addition to other
616-99.04	ADDITIONAL CONSTRUCTION SIGNS

- Provide additional construction signs for use in addition to other devices specified in the traffic control plan.
- 616-99.02 ADDITIONAL FLASHING ARROW PANEL
Provide additional flashing arrow panel for use in addition to other devices specified in the traffic control plan.
- 616-99.02 ADDITIONAL CHANNELIZER (TRIMLINE)
Provide additional channelizers for use in addition to other devices specified in the traffic control plan.
- 616-99.02 ADDITIONAL CHANGEABLE MESSAGE SIGN (CMS CONTRACTOR FURNISHED/RETAINED)
Provide additional changeable message sign for use in addition to other devices specified in the traffic control plan.
- 616-99.02 ADDITIONAL DIRECTIONAL INDICATOR BARRICADE
Provide additional directional indicator barricades (DIBS) for use in addition to other devices specified in the traffic control plan.
- 616-99.02 WORK BEYOND SHOULDER
Provide traffic control for work off roadway shoulder, but within clear zone. Not to be used when vehicles are parked on shoulder.
- 616-99.02 SHOULDER WORK – UNDIVIDED ROADWAYS
Provide traffic control for work on shoulder or vehicles parked on shoulder.
- 616-99.02 LEFT SHOULDER WORK – HIGH SPEED ROADWAY
Provide traffic control for work on left shoulder or vehicles parked on left shoulder of a high speed roadway as designated by the engineer.
- 616-99.02 RIGHT SHOULDER WORK – HIGH SPEED ROADWAY
Provide traffic control for work on right shoulder or vehicles parked on right shoulder of a high speed roadway as designated by the engineer.
- 616-99.02 1-LANE 2-WAY OPERATION W/FLAGGERS
Provide traffic control for one lane, two way operations on non-divided two lane pavement, using two flaggers.
- 616-99.02 SINGLE LANE CLOSURE
Provide traffic control closing one lane, left or right, on a divided highway.
- 616-99.02 PARTIAL RAMP CLOSURE
Provide traffic control for partial ramp closure.
- 616-99.02 COMPLETE RAMP CLOSURE
Provide traffic control for complete ramp closure.

- 616-99.02 ENTRANCE RAMP AREA, MAINLINE WORK
Provide traffic control within an entrance ramp area closing one lane on a divided highway; work is along mainline.
- 616-99.02 ENTRANCE RAMP AREA, ACCEL LANE WORK
Provide traffic control within an entrance ramp area closing one lane on a divided highway. Work is along acceleration lane.
- 616-99.02 EXIT RAMP AREA, MAINLINE/DECEL LANE WORK
Provide traffic control within an exit ramp area closing one lane on a divided highway. Work is along mainline or deceleration lane.
- 616-99.02 SEQUENTIAL FLASHING WARNING LIGHT
Provide traffic control with sequential flashing warning light.

New Guardrail Installation Items

- 202-99.02 4" ET PLUS CRASHWORTHY END TERMINAL REMOVAL
Remove existing complete 4" ET Plus crashworthy end terminal.
- 202-99.03 REMOVED GUARDRAIL
Remove existing complete guardrail. Item also includes existing bridge anchor transition sections.
- 214-99.10 GRADING FOR CRASHWORTHY END TERMINAL
Furnish and place rocky fill material for end terminal installation.
- 606-10.60 GUARDRAIL, MGS
Furnish and install Midwest Guardrail System guardrail.
- 606-10.61 GUARDRAIL, MGS, 8 FT., 6 FT. – 3 IN. SPACING
Furnish and install Midwest Guardrail System guardrail with 8' post with 6'-3" spacing.
- 606-10.63 MGS GUARDRAIL, 6 FT. POSTS, 3 FT. – 1.5 IN. SPACING
Furnish and install Midwest Guardrail System guardrail with 6' post having 3'-1 1/2" spacing.
- 606-10.65 MGS GUARDRAIL, 6 FT. POSTS, 1 FT. – 6.75 IN. SPACING
Furnish and install Midwest Guardrail System guardrail with 6' post having 1'-6.75" spacing.
- 606-10.67 MGS DOUBLE FACED GUARDRAIL
Furnish and install Midwest Guardrail System double-faced guardrail.
- 606-10.68 MGS BRIDGE APPROACH TRANSITION SECTION (MAJOR ROUTE)
Furnish and install Midwest Guardrail System bridge approach transition section on a Major Route.

- 606-10.69 MGS BRIDGE APPROACH TRANSITION SECTION (MINOR ROUTE)
Furnish and install Midwest Guardrail System bridge approach transition section on a Minor Route.
- 606-10.70 MGS VERTICAL CONCRETE BARRIER TRANSITION
Furnish and install Midwest Guardrail System vertical concrete barrier transition.
- 606-10.74 MGS HEIGHT AND BLOCK TRANSITION SECTION
Furnish and install Midwest Guardrail System height and block transition section.
- 606-10.75 MGS LONG SPAN GUARDRAIL SECTION
Furnish and install Midwest Guardrail System long span guardrail section.
- 606-10.80 MGS END ANCHOR
Furnish and install Midwest Guardrail System end anchor.
- 606-10.81 MGS BRIDGE ANCHOR SECTION (THRIE-BEAM BRIDGE)
Furnish and install Midwest Guardrail System Thrie Beam bridge anchor section.
- 606-22.00A BRIDGE ANCHOR SECTION, 6.5 FT. POSTS (SAFETY BARRIER CURB)(ROADWAY AND REHABILITATION WORK ONLY)
Furnish and install bridge anchor section with 6' 6" posts for only roadway and rehabilitation work.
- 606-22.00A BRIDGE ANCHOR SECTION, 7.5 FT. POSTS (SAFETY BARRIER CURB)(ROADWAY AND REHABILITATION WORK ONLY)
Furnish and install bridge anchor section with 7' 6" posts for only roadway and rehabilitation work.
- 606-99.02 MGS TRANSITION SECTION, 6 FT. POSTS
Furnish and install Midwest Guardrail System transition section with 6' posts.
- 606-99.02 MISC. COMMISSION FURNISHED TYPE A CRASHWORTHY END TERMINAL (MASH)
Install Commission furnished Type A crashworthy end terminal (MASH).
- 606-99.02 MISC. TYPE A CRASHWORTHY END TERMINAL (NGT) (MASH)
Furnish and install Type A crashworthy end terminal (NGT) (MASH).
- 606-99.02 12.5' W-BEAM (MGS)
Furnish and install Midwest Guardrail System 12.5' W-Beam.

Guardrail Repair Items

- 606-99.02 REALIGN & USE EXIST POST TY A OR E OR MGS GR
Realign and reuse existing guardrail post for Type A or E or MGS guardrail.
- 606-99.02 R&R WOOD/PLASTIC BLOCK 8X6X14 MGS
Remove and replace wood or plastic post block, 8" x 6" x 14" for Midwest Guardrail System guardrail.
- 606-99.02 R&R WOOD/PLASTIC BLOCK 12X6X14 MGS
Remove and replace wood or plastic post block, 12" x 6" x 14" for Midwest Guardrail System guardrail.

AA. Type A Crashworthy End Terminal - Next Generation Terminal (NGT) (MASH)

1.0 Description. In locations where it is determined by the engineer that there is insufficient space for a height transition to be made outside of the crashworthy end terminal, due to various reasons, a Type A Crashworthy End Terminal - Next Generation Terminal (NGT) (MASH) will be placed.

2.0 Installation. The Misc. Type A Crashworthy End Terminal (NGT) (MASH) shall be installed in such a manner to achieve the height transition along the length of the end terminal. The head of the crashworthy end terminal shall be at the MASH compliant height and transition along the length of the system to connect to the existing guardrail in place.

BB. Guardrail Compliance Requirements

1.0 Effective July 1, 2016 all new end terminals and end terminal repairs on routes shall be MASH Crashworthy End Terminals.

All new guardrail installations shall use Midwest Guardrail System (MGS) in lieu of Type A Guardrail.

CC. Grading for Crashworthy End Terminal

1.0 Description. This work shall consist of all grading necessary to meet or exceed the Alternate Grading limits for MASH crashworthy End Terminals as shown on Standard Drawing 606.81, including furnishing and placing the fill material and mobilization of equipment. The graded area for the end terminal shall be sloped no greater than 10:1 away from the edge of pavement or shoulder. Grading shall include constructing a 2:1 or flatter slope from the grading limits shown on the standard drawing to the existing slope.

1.1 Grading for Crashworthy End Terminal (GCET) will not be used for locations where the engineer estimates more than 15 cubic yards of material per end terminal will be required or where constructing a 2:1 or flatter slope from the grading area to the existing slope is deemed to be infeasible. When either of the aforementioned conditions applies, the work is considered

beyond the scope of this contract unless both parties agree to a negotiated settlement to proceed with performing the work. The engineer may also decline to utilize GCET for any other reasons.

1.2 Completion of the GCET work may be done concurrently with the repair of the end terminal or may be postponed by the contractor for a maximum of 30 calendar days from the notice to proceed date specified on the job order. Failure to complete the grading work within the limit specified herein will result in liquidated damages as specified elsewhere in this contract.

2.0 Materials. The fill material used by the contractor shall be rocky in nature, such as crushed stone, base rock, or other granular type material approved by the engineer. Limestone screenings, sand and other fine materials that are highly erodible shall not be used for fill material. Large rock, not to exceed a maximum nominal size of 8", may be used, but shall be gap-graded to minimize voids. When the size of the rock used exceeds 3" in diameter, all voids in the rock fill shall be filled with granular material of 1" size or less.

2.1 Material shall not be obtained from Commission right of way. Material obtained from a contractor-furnished borrow shall be in accordance with 203.3.

3.0 Construction. The rocky fill material shall be placed in accordance with this provision and as stated herein. Existing vegetative material shall be removed prior to adding fill material. Compactive effort and construction methods shall be performed to the extent that the final 10:1 platform has sufficient stability to support a standard unloaded dump truck without sliding of the material or rutting of the platform in excess of 1" in depth. Proof rolling by the contractor with an unloaded dump truck may be required upon request by the engineer at no additional cost to the Commission. Benching of the existing slope may be required to ensure the material has a stable foundation to comply with this provision. The final surface of the graded area shall be uniform and true to grade.

4.0 Method of measurement. No final measurement will be made for the volume of material used for GCET. A preliminary estimate of the amount of fill will be made by the engineer for the purpose of determining if GCET shall be specified. The job order issued by the engineer will indicate the need for GCET when, in the opinion of the engineer, the existing terrain at the end terminal does not meet or exceed the alternate grading limits for MASH crashworthy end terminals as shown on Standard Drawing 606.81 and the engineer estimates the grading work needed to meet the standard will not exceed 15 CY of material.

5.0 Basis of Payment. A lump sum payment will be made for each end terminal that requires GCET, as determined by the engineer. Payment for this work shall be completely covered by the fixed unit price for GRADING FOR CRASHWORTHY END TERMINAL multiplied by the Adjustment Factor.

5.1 Payment for traffic control will not be duplicated when the contractor performs the GCET work separate from the repair of the end terminal.

DD. Shaping Slopes Class III (Modified Material Requirements)

Delete Sec 215.1.3 and 215.1.3.1 and substitute the following:

215.1.3 Shaping Slopes, Class III, shall consist of providing rock fill material and shaping slopes to construct additional shoulder width for the installation of guardrail and Type A crashworthy end terminals in accordance with Missouri Standard Plans for Highway Construction. The rock fill material used shall meet the requirements specified in Sec 215.1.3.1. The shoulder surface shall be finished smooth such that it is traversable and without significant voids or depressions.

215.1.3.1 Material Requirements. Rock fill material used for Shaping Slopes, Class III, shall consist of a durable crushed stone, shot rock or broken concrete, with a predominant size of 3 inches and a maximum size of 6 inches. Acceptance by the engineer will be made by visual inspection.

215.4 Basis of Payment. The accepted quantity will be paid at the contract unit bid price for 215-99.10 Misc. Shaping Slopes Class III – Modified Material Requirement, per 100F.

EE. Environmentally Sensitive Locations

1.0 There are various environmentally sensitive locations within this contract. The contractor shall ensure there are no impacts to streams and no disturbance within the toe of slope as noted for the locations listed. Disturbance shall be kept to the minimum amount feasible for the completion of work. If there is exposed soil from contractor operations that may contribute to run-off, the placement of erosion control items will be required.

Environmentally Sensitive Locations - JST0138			
County	Log Mile	Route	Notes
Caldwell	31.098	RT A N	No disturbance in streams permitted.
Caldwell	2.524	RT A N	No disturbance in streams permitted.
Caldwell	31.178	RT A S	No disturbance in streams permitted. No disturbance within toe of slope permitted.
Carroll	2.657	MO 139 N	No disturbance in streams permitted.
Carroll	106.035	MO 139 S	No disturbance in streams permitted. No disturbance within toe of slope permitted.
Carroll	2.469	MO 139 N	No disturbance in streams permitted. No disturbance within toe of slope permitted.
Chariton	84.040	MO 11 S	No disturbance in streams permitted.
Chariton	84.300	MO 11 S	No disturbance in streams permitted.
Clinton	7.261	RT H W	No disturbance in streams permitted. No disturbance within toe of slope permitted.
Clinton	1.887	RT H E	No disturbance in streams permitted. No disturbance within toe of slope permitted.
Clinton	7.361	RT H W	No disturbance in streams permitted. No disturbance within toe of slope permitted.
Clinton	1.791	RT H E	No disturbance in streams permitted. No disturbance within toe of slope permitted.
Clinton	80.764	US 69 S	No disturbance in streams permitted.
Clinton	40.943	US 69 N	No disturbance in streams permitted.
Clinton	80.844	US 69 S	No disturbance in streams permitted.
Dekalb	168.406	MO 6 E	No disturbance in streams permitted. No disturbance within toe of slope permitted.
Dekalb	40.135	MO 6 E	No disturbance in streams permitted. No disturbance within toe of slope permitted.
Dekalb	168.551	MO 6 W	No disturbance in streams permitted. No disturbance within toe of slope permitted.

Dekalb	1.956	RT C N	No disturbance in streams permitted. No disturbance within toe of slope permitted.
Dekalb	8.172	RT C S	No disturbance in streams permitted. No disturbance within toe of slope permitted.
Dekalb	8.075	RT C S	No disturbance in streams permitted. No disturbance within toe of slope permitted.
Gentry	21.076	RT H N	No disturbance in streams permitted.
Gentry	33.617	RT H N	No disturbance in streams permitted. No disturbance within toe of slope permitted.
Harrison	14.042	RT W S	No disturbance in streams permitted.
Harrison	110.415	US 136 E	No disturbance in streams permitted.
Harrison	110.376	US 136 E	No disturbance in streams permitted.
Harrison	147.084	US 136 W	No disturbance in streams permitted.
Livingston	47.284	US 65 S	No disturbance in streams permitted. No disturbance within toe of slope permitted.
Livingston	265.802	US 65 N	No disturbance in streams permitted. No disturbance within toe of slope permitted.
Livingston	47.407	US 65 S	No disturbance in streams permitted. No disturbance within toe of slope permitted.

2.0 Any grading as noted in JSP CC. Grading for Crashworthy End Terminal and JSP DD. Shaping Slopes Class III (Modified Material Requirements) in environmentally sensitive locations shall require the use of aggregate.

3.0 Basis of Payment. No direct payment will be made for compliance with this provision.

Continued on Next Page.

1.0 Locations and estimated quantities are subject to change due to field conditions.

JST0138 Estimated Quantities									
County	Log Mile	Route	W-Beam (Lin Ft)	MGS Height & Block Transition (Each)	MGS Guardrail (Lin Ft)	Type A Crashworthy End Terminal (MASH) (Each)	Type A Crashworthy End Terminal NGT (MASH) (Each)	Guardrail Removal (Lin Ft)	End Terminal Removal (Each)
Andrew	67.797	US 169 N	12.5	1	62.5	1		80.0	1
Andrew	59.111	US 169 N	12.5	1	37.5	1		80.0	1
Andrew	59.041	US 169 S	12.5	1	37.5	1		85.0	1
Andrew	67.865	US 169 S	12.5	1	62.5	1		71.0	1
Andrew	5.954	RT W N		1	37.5	1			1
Andrew	0.286	RT W N		1	62.5	1			1
Andrew	6.047	RT W S		1		1		37.5	1
Andrew	8.920	MO 48 E	12.5	1	87.5	1		10.0	1
Andrew	11.165	MO 48 W	12.5	1	87.5	1		10.0	1
Andrew	4.828	RT DD S	12.5	1	87.5	1		10.0	1
Andrew	2.734	RT DD N	12.5	1	87.5	1		10.0	1
Andrew	0.295	RP IS229N TO IS29S S		1	50.0	1			1
Andrew	0.339	RP IS229N TO IS29S S		1	87.5	1			1
Andrew	80.062	CST GLENDALE RD W		1		1		25.0	1
Andrew	80.065	CST GLENDALE RD E		1		1		37.5	1
Andrew	80.063	CST GLENDALE RD E		1		1		37.5	1
Andrew	8.500	RT T W		1	75.0	1			1
Andrew	73.524	US 71 S		1		1		25.0	1
Andrew	3.725	RT A E	12.5	1	62.5	1		6.3	1
Andrew	14.697	RP IS29S TO IS229N N		1		1		37.5	1
Atchison	2.921	RT EE N		1	75.0	1			1
Buchanan	0.293	MO 273 S		1		1		37.5	1
Buchanan	23.437	MO 273 N		1		1		37.5	1
Buchanan	0.342	RT H W		1		1		37.5	1
Buchanan	15.183	RT H W		1		1		37.5	1
Buchanan	72.332	MO 116 E		1		1			1
Buchanan	3.801	MO 116 E		1	50.0	1			1
Buchanan	69.086	MO 116 W		1	37.5	1			1
Buchanan	55.987	MO 116 W	12.5	1	75.0	1		0.0	1
Buchanan	16.963	MO 116 W	12.5	1		1		8.0	1
Buchanan	16.925	MO 116 E	12.5	1	62.5	1		8.0	1
Buchanan	56.241	MO 116 W	12.5	1	75.0	1		0.0	1
Buchanan	16.711	MO 116 W	12.5	1		1		0.0	1
Buchanan	56.287	MO 116 E	12.5	1		1		8.0	1
Buchanan	16.664	MO 116 E	12.5	1	50.0	1		8.0	1
Buchanan	3.009	RT A N		1		1		37.5	1
Buchanan	3.508	RT A N		1		1		37.5	1
Buchanan	3.371	RT A S		1		1		37.5	1
Buchanan	6.930	RT A N		1		1		12.5	1
Buchanan	1.060	RT A S					1		1
Buchanan	2.264	RT H W		1		1		37.5	1
Buchanan	23.176	MO 116 E		1	12.5	1			1
Buchanan	49.767	MO 116 E		1		1		12.5	1
Buchanan	23.506	MO 116 W					1		1
Buchanan	49.438	MO 116 W		1	12.5	1			1
Buchanan	48.881	MO 116 E		1		1		25.0	1
Buchanan	24.216	MO 116 W		1		1		12.5	1
Buchanan	48.733	MO 116 W		1		1		12.5	1
Buchanan	5.397	RT FF S		1		1		12.5	1
Buchanan	0.287	RT O E		1		1		37.5	1
Buchanan	3.971	RT AC S		1		1		37.5	1
Buchanan	0.400	RT AC N		1		1		25.0	1
Buchanan	4.109	RT AC S		1	75.0	1			1
Buchanan	0.260	RT AC N		1		1			1
Buchanan	0.374	RT YY W		1		1		37.5	1

JST0138 Estimated Quantities									
County	Log Mile	Route	W-Beam (Lin Ft)	MGS Height & Block Transition (Each)	MGS Guardrail (Lin Ft)	Type A Crashworthy End Terminal (MASH) (Each)	Type A Crashworthy End Terminal NGT (MASH) (Each)	Guardrail Removal (Lin Ft)	End Terminal Removal (Each)
Buchanan	0.283	RT YY W		1		1		37.5	1
Buchanan	7.118	US 36 E		1		1		37.5	1
Buchanan	9.135	US 36 E		1		1		37.5	1
Buchanan	13.790	US 36 E		1		1		37.5	1
Buchanan	4.014	RT P W	12.5	1	75.0	1		7.0	1
Caldwell	70.516	MO 116 W		1	50.0	1			1
Caldwell	5.892	RT KK W		1	62.5	1			1
Caldwell	21.312	RT A N					1		1
Caldwell	12.257	RT A S					1		1
Caldwell	12.149	RT A N		1	25.0	1			1
Caldwell	12.095	RT A S		1	62.5	1			1
Caldwell	24.762	RT A N		1	50.0	1			1
Caldwell	8.856	RT A N		1		1		12.5	1
Caldwell	24.816	RT A S		1		1		12.5	1
Caldwell	8.801	RT A S		1	50.0	1			1
Caldwell	31.098	RT A N		1	12.5	1			1
Caldwell	2.524	RT A N		1		1			1
Caldwell	31.178	RT A S		1		1			1
Caldwell	31.841	RT A N	12.5	1	62.5	1		0.0	1
Caldwell	1.782	RT A N	12.5	1	12.5	1		0.0	1
Caldwell	1.741	RT A S	12.5	1	62.5	1		0.0	1
Caldwell	0.852	RT N E		1	12.5	1			1
Caldwell	4.116	RT N E		1		1		12.5	1
Carroll	0.298	RT J W	12.5	1		1		9.0	1
Carroll	9.647	RT J E	12.5	1		1		0.0	1
Carroll	131.189	LEWIS & CLARK TRL W		1		1		12.5	1
Carroll	90.048	LEWIS & CLARK TRL W		1		1		37.5	1
Carroll	131.254	LEWIS & CLARK TRL E		1		1		37.5	1
Carroll	2.657	MO 139 N	12.5	1	75.0	1		8.0	1
Carroll	106.035	MO 139 S	12.5	1	75.0	1		8.0	1
Carroll	2.469	MO 139 N	12.5	1	75.0	1		8.0	1
Chariton	84.040	MO 11 S		1		1		37.5	1
Chariton	84.300	MO 11 S		1		1		37.5	1
Chariton	10.687	MO 129 S		1		1		37.5	1
Clinton	4.289	RT PP W		1		1		37.5	1
Clinton	3.286	RT V W		1		1		37.5	1
Clinton	1.669	RT V E		1		1		37.5	1
Clinton	3.150	RT V W		1		1		37.5	1
Clinton	3.213	RT PP W		1		1			1
Clinton	80.764	US 69 S		1		1		12.5	1
Clinton	40.943	US 69 N		1		1			1
Clinton	80.844	US 69 S		1		1			1
Clinton	7.261	RT H W		1		1		37.5	1
Clinton	1.887	RT H E		1		1			1
Clinton	7.361	RT H W		1		1		12.5	1
Clinton	1.791	RT H E		1		1		37.5	1
Clinton	70.243	US 69 S		1		1		12.5	1
Clinton	0.952	MO 121 S	12.5	1	75.0	1		7.0	1
Clinton	0.305	MO 121 N	12.5	1	12.5	1		0.0	1
Clinton	0.988	MO 121 S	12.5	1	75.0	1		5.0	1
Daviess	43.728	MO 6 E		1		1		25.0	1
Daviess	43.757	MO 6 W		1	25.0	1			1
Daviess	165.007	MO 6 W		1		1		37.5	1
Daviess	43.537	MO 6 W		1		1		37.5	1
Daviess	165.078	MO 6 E		1		1		37.5	1

JST0138 Estimated Quantities									
County	Log Mile	Route	W-Beam (Lin Ft)	MGS Height & Block Transition (Each)	MGS Guardrail (Lin Ft)	Type A Crashworthy End Terminal (MASH) (Each)	Type A Crashworthy End Terminal NGT (MASH) (Each)	Guardrail Removal (Lin Ft)	End Terminal Removal (Each)
Daviess	43.409	MO 6 E		1		1		37.5	1
Daviess	9.787	MO 13 S	12.5	1	62.5	1		43.0	1
Daviess	9.824	MO 13 N	12.5	1		1		10.0	1
Daviess	280.774	MO 13 N	12.5	1	50.0	1		8.0	1
Daviess	2.387	RT V W		1	75.0	1			1
Daviess	5.724	RT V E		1	62.5	1			1
Daviess	15.795	RT B W		1		1			1
Daviess	1.477	RT B E		1		1			1
Daviess	5.124	RT C C S	12.5	1	75.0	1		8.0	1
Daviess	5.500	RT J N	12.5	1	87.5	1		5.0	1
Daviess	4.895	RT J S	12.5	1	87.5	1		8.0	1
Daviess	7.517	RT J N	12.5	1		1		7.0	1
Daviess	59.784	MO 6 E		1		1		12.5	1
Daviess	148.751	MO 6 W		1		1		25.0	1
Dekalb	0.739	LP 35 S		1		1		37.5	1
Dekalb	0.736	LP 35 S		1	12.5	1			1
Dekalb	168.406	MO 6 E			25.0	1			1
Dekalb	40.135	MO 6 E				1		12.5	1
Dekalb	168.551	MO 6 W				1		12.5	1
Dekalb	171.482	MO 6 W			100.0	1			1
Dekalb	37.072	MO 6 W			25.0	1			1
Dekalb	37.015	MO 6 E			100.0	1			1
Dekalb	36.860	MO 6 W			25.0	1			1
Dekalb	171.784	MO 6 E			25.0	1			1
Dekalb	36.770	MO 6 E			100.0	1			1
Dekalb	175.468	MO 6 W				1		12.5	1
Dekalb	33.085	MO 6 W			25.0	1			1
Dekalb	33.013	MO 6 E			87.5	1			1
Dekalb	175.539	MO 6 E			50.0	1			1
Dekalb	178.314	MO 6 W		1		1		12.5	1
Dekalb	30.242	MO 6 W		1		1			1
Dekalb	178.359	MO 6 E		1		1		37.5	1
Dekalb	184.206	MO 6 W				1		12.5	1
Dekalb	24.346	MO 6 W				1		12.5	1
Dekalb	184.303	MO 6 E				1		12.5	1
Dekalb	24.249	MO 6 E				1		12.5	1
Dekalb	1.681	RT Z S		1		1			1
Dekalb	2.863	RT V W		1		1		37.5	1
Dekalb	5.907	RT V E		1		1			1
Dekalb	2.958	RT V W		1		1		37.5	1
Dekalb	5.817	RT V E		1		1		37.5	1
Dekalb	4.846	RT O E		1		1		37.5	1
Dekalb	6.061	RT O W		1		1		12.5	1
Dekalb	5.980	RT O W		1		1		25.0	1
Dekalb	3.878	MO 33 N		1		1		37.5	1
Dekalb	0.982	MO 33 S		1		1			1
Dekalb	48.469	MO 33 S		1	25.0	1			1
Dekalb	1.056	MO 33 N		1	25.0	1			1
Dekalb	48.395	MO 33 N		1	12.5	1			1
Dekalb	2.783	MO 33 N		1		1		37.5	1
Dekalb	4.282	MO 33 S		1		1		25.0	1
Dekalb	1.956	RT C N		1	37.5	1			1
Dekalb	8.172	RT C S		1		1		12.5	1
Dekalb	8.075	RT C S		1		1		37.5	1
Dekalb	1.709	RT E E S		1	87.5	1			1

JST0138 Estimated Quantities									
County	Log Mile	Route	W-Beam (Lin Ft)	MGS Height & Block Transition (Each)	MGS Guardrail (Lin Ft)	Type A Crashworthy End Terminal (MASH) (Each)	Type A Crashworthy End Terminal NGT (MASH) (Each)	Guardrail Removal (Lin Ft)	End Terminal Removal (Each)
Dekalb	8.935	RT EE N		1		1		12.5	1
Dekalb	5.022	RT A N	12.5	1	100.0	1		8.0	1
Dekalb	21.261	RT A N	12.5	1	37.5	1		8.0	1
Dekalb	5.070	RT A S	12.5	1	12.5	1		10.0	1
Dekalb	21.212	RT A S	12.5	1	100.0	1		10.0	1
Gentry	3.012	MO 85 S	12.5	1		1		10.0	1
Gentry	0.998	MO 85 N	12.5	1		1		10.0	1
Gentry	2.968	MO 85 N	12.5	1		1		10.0	1
Gentry	1.045	MO 85 S		1	75.0	1		0.0	1
Gentry	17.655	MO 48 E		1	50.0	1			1
Gentry	2.423	MO 48 W					1		1
Gentry	73.973	US 136 E		1		1		37.5	1
Gentry	13.294	US 169 S		1	87.5	1			1
Gentry	13.342	US 169 N		1	25.0	1			1
Gentry	13.495	US 169 S		1		1		12.5	1
Gentry	113.411	US 169 S		1		1		37.5	1
Gentry	13.657	US 169 N		1		1		37.5	1
Gentry	113.250	US 169 N		1		1		37.5	1
Gentry	13.834	US 169 S		1		1		37.5	1
Gentry	13.901	US 169 N		1		1		37.5	1
Gentry	14.631	US 169 S		1		1			1
Gentry	112.287	US 169 S		1		1		37.5	1
Gentry	112.229	US 169 N		1		1		37.5	1
Gentry	14.741	US 169 N		1		1		37.5	1
Gentry	111.738	US 169 S		1		1		37.5	1
Gentry	111.680	US 169 N		1		1			1
Gentry	15.236	US 169 N		1		1			1
Gentry	15.617	US 169 S		1		1		37.5	1
Gentry	111.274	US 169 S		1		1		12.5	1
Gentry	111.207	US 169 N		1	25.0	1			1
Gentry	15.715	US 169 N		1		1		37.5	1
Gentry	15.922	US 169 N		1	12.5	1			1
Gentry	20.514	US 169 S		1	62.5	1			1
Gentry	106.336	US 169 S		1		1		37.5	1
Gentry	20.629	US 169 N		1		1		37.5	1
Gentry	106.226	US 169 N		1	50.0	1			1
Gentry	20.902	US 169 S		1		1		37.5	1
Gentry	105.961	US 169 S		1	25.0	1			1
Gentry	21.002	US 169 N		1		1		12.5	1
Gentry	105.895	US 169 N		1		1		25.0	1
Gentry	21.140	US 169 S		1		1		37.5	1
Gentry	21.202	US 169 N		1	25.0	1			1
Gentry	21.717	US 169 S		1		1		37.5	1
Gentry	21.856	US 169 N		1		1		37.5	1
Gentry	33.617	RT H N	12.5	1	75.0	1		0.0	1
Gentry	4.355	RT H S		1		1		12.5	1
Gentry	21.076	RT H N		1		1		25.0	1
Gentry	0.954	MO 85 N	12.5	1		1		10.0	1
Gentry	2.968	MO 85 N		1	12.5	1		0.0	1
Gentry	0.982	MO 85 N		1	25.0	1		12.5	1
Gentry	1.548	RT DDE		1		1		25.0	1
Gentry	0.204	RT DDE		1		1			1
Grundy	0.255	RP MO6 TO US65 S		1		1		37.5	1
Grundy	276.047	US 65 N		1		1		37.5	1
Grundy	37.176	US 65 S		1		1		37.5	1

JST0138 Estimated Quantities									
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Grundy	275.919	US 65 N		1		1		37.5	1
Grundy	43.566	US 65 S		1		1		37.5	1
Grundy	43.707	US 65 S		1		1		25.0	1
Grundy	269.379	US 65 N		1		1		37.5	1
Grundy	138.623	MO 6 W		1		1		37.5	1
Grundy	70.065	MO 6 E		1		1		37.5	1
Grundy	138.485	MO 6 W		1		1		37.5	1
Grundy	70.124	MO 6 E		1		1		37.5	1
Grundy	70.200	MO 6 E		1		1		37.5	1
Grundy	137.714	MO 6 W		1		1		37.5	1
Grundy	70.825	MO 6 E		1		1		37.5	1
Grundy	71.469	MO 6 E		1		1		37.5	1
Grundy	137.076	MO 6 W		1		1		37.5	1
Grundy	71.630	MO 6 E		1		1		37.5	1
Grundy	136.865	MO 6 W		1		1		37.5	1
Grundy	71.789	MO 6 E		1		1		37.5	1
Grundy	136.751	MO 6 W		1		1		37.5	1
Grundy	136.395	MO 6 W		1		1		37.5	1
Grundy	72.247	MO 6 E		1		1		37.5	1
Grundy	72.778	MO 6 E		1		1		37.5	1
Grundy	72.965	MO 6 E		1		1		37.5	1
Grundy	135.289	MO 6 W		1		1		37.5	1
Grundy	73.402	MO 6 E		1		1		37.5	1
Grundy	134.795	MO 6 W		1		1		37.5	1
Grundy	73.884	MO 6 E		1		1		37.5	1
Grundy	134.667	MO 6 W		1		1		37.5	1
Grundy	74.185	MO 6 E		1		1		37.5	1
Grundy	134.382	MO 6 W		1		1		37.5	1
Grundy	74.335	MO 6 E		1		1		37.5	1
Grundy	134.187	MO 6 W		1		1		37.5	1
Grundy	74.509	MO 6 E		1		1		37.5	1
Grundy	134.025	MO 6 W		1	37.5	1			1
Grundy	132.737	MO 6 W		1		1		37.5	1
Grundy	76.041	MO 6 E		1		1		37.5	1
Grundy	76.125	MO 6 E		1		1		37.5	1
Grundy	76.131	MO 6 E		1		1		37.5	1
Grundy	132.437	MO 6 W		1		1		37.5	1
Grundy	132.432	MO 6 W		1		1		37.5	1
Grundy	76.153	MO 6 E		1		1		37.5	1
Grundy	132.236	MO 6 W		1		1		37.5	1
Grundy	77.107	MO 6 E		1		1		37.5	1
Harrison	2.334	MO 13 S		1	75.0	1			1
Harrison	288.264	MO 13 S		1	25.0	1			1
Harrison	2.736	MO 13 S		1	87.5	1			1
Harrison	287.816	MO 13 N		1	75.0	1			1
Harrison	3.251	MO 13 S		1		1		37.5	1
Harrison	287.342	MO 13 N		1	12.5	1			1
Harrison	3.340	MO 13 S		1		1			1
Harrison	8.478	MO 13 S		1	12.5	1			1
Harrison	282.054	MO 13 N		1	62.5	1			1
Harrison	30.113	US 69 N	12.5	1	75.0	1		8.0	1
Harrison	14.042	RT W S		1	75.0	1			1
Harrison	110.415	US 136 E	12.5	1	37.5	1		5.0	1
Harrison	110.376	US 136 E	12.5	1	12.5	1		5.0	1
Harrison	147.084	US 136 W	12.5	1	50.0	1		5.0	1

JST0138 Estimated Quantities									
County	Log Mile	Route	W-Beam (Lin Ft)	MGS Height & Block Transition (Each)	MGS Guardrail (Lin Ft)	Type A Crashworthy End Terminal (MASH) (Each)	Type A Crashworthy End Terminal NGT (MASH) (Each)	Guardrail Removal (Lin Ft)	End Terminal Removal (Each)
Harrison	97.991	US 136 E		1		1		37.5	1
Harrison	98.063	US 136 W					1		1
Harrison	30.392	US 69 N	12.5	1	25.0	1		0.0	1
Harrison	12.779	RT M W		1	50.0	1			1
Harrison	12.714	RT M W		1		1		37.5	1
Harrison	15.638	RT M E		1		1		12.5	1
Holt	3.183	US 159 S		1		1		37.5	1
Holt	6.812	MO 111 N	12.5	1	0.0	1		0.0	1
Holt	19.939	MO 113 S		1	50.0	1			1
Holt	11.526	MO 113 N		1	50.0	1			1
Holt	14.641	MO 113 S		1	75.0	1			1
Linn	6.281	RT W W W			75.0	1			1
Linn	1.260	RT W W E			50.0	1			1
Livingston	24.333	RT D N	12.5	1	87.5	1		10.0	1
Livingston	8.254	RT D S	12.5	1	75.0	1		43.0	1
Livingston	47.284	US 65 S		1		1		37.5	1
Livingston	265.802	US 65 N		1		1		37.5	1
Livingston	47.407	US 65 S		1		1		37.5	1
Livingston	49.664	US 65 S		1		1		37.5	1
Livingston	263.452	US 65 N		1		1		37.5	1
Livingston	49.748	US 65 S		1		1		25.0	1
Livingston	263.341	US 65 N		1		1		37.5	1
Livingston	50.969	US 65 S		1		1		37.5	1
Livingston	262.118	US 65 N		1	25.0	1			1
Livingston	51.077	US 65 S		1		1		25.0	1
Livingston	262.009	US 65 N		1		1		37.5	1
Livingston	9.241	RT K S		1	37.5	1		0.0	1
Mercer	30.970	RT E W		1	75.0	1			1
Mercer	1.402	RT E E		1	75.0	1			1
Mercer	31.041	RT E W		1	25.0	1			1
Mercer	1.332	RT E E		1	50.0	1			1
Nodaway	1.881	RT C W		1	75.0	1			1
Nodaway	18.881	RT C E		1	12.5	1			1
Nodaway	12.962	MO 113 S	12.5	1	50.0	1		42.0	1
Nodaway	13.205	MO 113 N	12.5	1	62.5	1		5.0	1
Nodaway	13.105	MO 113 S					1	0.0	1
Nodaway	13.281	MO 113 S	12.5	1	75.0	1		0.0	1
Nodaway	12.938	MO 113 N	12.5	1	87.5	1		8.0	1
Nodaway	13.334	MO 113 S	12.5	1	87.5	1		8.0	1
Nodaway	2.991	RT A E		1	62.5	1			1
Nodaway	13.314	RT Y N		1	62.5	1			1
Nodaway	2.432	RT Y S		1		1		12.5	1
Nodaway	13.377	RT Y N		1	37.5	1			1
Nodaway	2.370	RT Y S		1	75.0	1			1
Nodaway	1.673	RT J J W		1		1		12.5	1
Nodaway	11.268	RT J J E		1	50.0	1			1
Nodaway	1.757	RT J J E		1	87.5	1			1
Nodaway	11.184	RT J J E		1		1		12.5	1
Nodaway	2.584	RT B E		1	75.0	1			1
Nodaway	8.934	RT B W		1	75.0	1			1
Nodaway	11.014	RT B E		1		1		37.5	1
Nodaway	0.559	RT B W		1		1		37.5	1
Nodaway	11.102	RT B E		1		1		37.5	1
Nodaway	0.471	RT B W		1		1		37.5	1
Nodaway	188.330	US 136 E	12.5	1	100.0	1		8.0	1

JST0138 Estimated Quantities									
County	Log Mile	Route	W-Beam (Lin Ft)	MGS Height & Block Transition (Each)	MGS Guardrail (Lin Ft)	Type A Crashworthy End Terminal (MASH) (Each)	Type A Crashworthy End Terminal NGT (MASH) (Each)	Guardrail Removal (Lin Ft)	End Terminal Removal (Each)
Nodaway	188.278	US 136 W	12.5	1	100.0	1		8.0	1
Nodaway	69.184	US 136 E	12.5	1	87.5	1		8.0	1
Nodaway	2.148	RT F N	12.5	1	75.0	1		5.0	1
Putnam	74.434	US 136 W		1		1		37.5	1
Putnam	91.244	MO 139 N	12.5	1	75.0	1		8.0	1
Putnam	17.270	MO 139 S	12.5	1	75.0	1		9.0	1
Sullivan	321.909	MO 5 N		1		1		37.5	1
Worth	120.886	US 169 S		1		1		37.5	1
Worth	120.809	US 169 N		1		1		37.5	1
Worth	120.317	US 169 S		1		1		37.5	1
Worth	120.184	US 169 N		1		1		37.5	1
Worth	6.711	US 169 N		1		1		37.5	1
Worth	119.977	US 169 S		1		1		37.5	1
Worth	6.945	US 169 S		1		1		37.5	1
Worth	7.031	US 169 N		1		1		37.5	1
Worth	119.881	US 169 N		1		1		37.5	1
Worth	9.107	US 169 S		1		1		12.5	1
Worth	117.800	US 169 S		1		1		37.5	1
Worth	9.174	US 169 N		1		1		37.5	1
Worth	117.723	US 169 N		1		1		37.5	1
Worth	9.859	US 169 S		1		1		37.5	1
Worth	117.023	US 169 S		1	125.0	1			1
Worth	9.940	US 169 N		1		1		37.5	1
Worth	115.424	US 169 N		1	50.0	1			1
Worth	115.367	US 169 N		1	62.5	1			1
Worth	11.542	US 169 S		1		1		37.5	1
Worth	11.976	US 169 S		1		1		37.5	1
Worth	12.080	US 169 S		1		1		37.5	1
Worth	3.987	RT T N		1		1		25.0	1
Worth	4.077	RT T N		1		1		12.5	1
Worth	2.242	RT T S		1		1			1
*Estimated Totals			788	335	7650	354	7	6784	361
* Final quantities to be determined by job order for each location.									