



STATE OF MICHIGAN PROCUREMENT
Michigan Department of Transportation
425 W Ottawa St, Lansing, MI 48933
PO Box 30050, Lansing, MI 48909

CONTRACT CHANGE NOTICE

Change Notice Number **5**
to
Contract Number **240000000658**

CONTRACTOR	Severance Electric Co., Inc.	STATE	Program Manager	Stephanie Palmer	MDOT
	4140 Rollridge Avenue			517-937-5716	
	Kalamazoo, MI 49004			Palmers3@michigan.gov	
	Steve Severance		Contract Administrator	Anna Swanson	MDOT
	269-345-0134			517-230-2063	
	Steve@sevelectric.com			Swansona1@michigan.gov	
	CV0027570				

CONTRACT SUMMARY				
DESCRIPTION: University Region-Maintenance of Electronic Control Devices				
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW	
May 22, 2024	May 21, 2025	5; one-year	May 21, 2026	
PAYMENT TERMS		DELIVERY TIMEFRAME		
1%/5 days/Net 45				
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING	
☐ P-card ☐ Payment Request (PRC) ☐ Other			☐ Yes ☒ No	
MINIMUM DELIVERY REQUIREMENTS				
DESCRIPTION OF CHANGE NOTICE				
OPTION	LENGTH OF OPTION	EXTENSION	LENGTH OF EXTENSION	REVISED EXP. DATE
☒	1 year	☐		May 21, 2027
CURRENT VALUE		VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE	
\$1,295,080.00		\$797,000.00	\$2,092,080.00	
DESCRIPTION: Upon execution and State Administrative Board approval on April 14, 2026, this Contract is exercising the second option year and is increased by \$797,000.00. The revised contract expiration date is May 21, 2027. All other specifications, terms and conditions remain the same. Per contractor and agency agreement.				

SCHEDULE B - PRICING

Description	Quantity	Unit of Measure	Unit Cost	Extended Cost
Routine Signal Maintenance **Amount is to include replacement parts**	93 signals	Each	\$1500.00	\$139,500.00
Regular hours of work are defined as 6:00 am to 6:00 pm.				

Description	Quantity	Unit of Measure	Unit Cost	Extended Cost
Non-Routine Signal Maintenance Regular **regular work hours Mon. through Fri. 6 am to 6 pm**	2700	Hours	\$140.00	\$378,000.00
**Routine inspection and cleaning of freeway lighting, rest area lighting, and other facilities may also be required but will be paid for as non-routine maintenance. **				

Description	Quantity	Unit of Measure	Unit Cost	Extended Cost
Non-Routine Signal Maintenance Overtime **overtime work hours Mon. through Fri. from 6pm to 6 am and Saturday and Sunday**	150	Hours	\$210.00	\$31,500.00
PARTS AND MATERIAL (Direct Expenses).....				\$98,000.00
All parts and materials shall be documented as a direct expense and itemized on the invoice.				
All parts and materials must be F.O.B. Destination with transportation charges prepaid on the order.				
Pre-Approved Subcontractor Work				\$150,000.00
All pre-approved subcontractor work must be documented as subcontractor work and itemized on the invoice.				
Total Amount			\$797,000.00	



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CONTRACT CHANGE NOTICE

Change Notice Number **4**
to
Contract Number **240000000658**

CONTRACTOR	Severance Electric Co., Inc.	STATE	Program Manager	Stephanie Palmer	MDOT
	4140 Rollridge Avenue			517-937-5716	
	Kalamazoo, MI 49004		Contract Administrator	Palmers3@michigan.gov	
	Steve Severance			Anna Swanson	MDOT
	269-345-0134			517-230-2063	
	Steve@sevelectric.com			Swansona1@michigan.gov	
	CV0027570				

CONTRACT SUMMARY				
DESCRIPTION: University Region-Maintenance of Electronic Control Devices				
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW	
May 22, 2024	May 21, 2025	5; one-year	May 21, 2026	
PAYMENT TERMS		DELIVERY TIMEFRAME		
Net 45				
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING	
☐ P-card ☐ Payment Request (PRC) ☐ Other			☐ Yes ☒ No	
MINIMUM DELIVERY REQUIREMENTS				
DESCRIPTION OF CHANGE NOTICE				
OPTION	LENGTH OF OPTION	EXTENSION	LENGTH OF EXTENSION	REVISED EXP. DATE
☐		☐		No Change
CURRENT VALUE		VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE	
\$1,067,080.00		\$228,000.00	\$1,295,080.00	
DESCRIPTION: Upon execution the Contract is amended to add \$200,000.00 for pre-approved Subcontractor Work and \$28,000.00 for Non-Routine Signal Maintenance Regular. Additionally, the following amendment is incorporated into the agreement: Statement of Work Section 3.2. Disclosure of Subcontractors is being amended to allow subcontractor utilization for the performance of the Contract. Subcontracting allowance must be consistent with Section 11, Subcontracting, of the Standard Contract Terms, which states the following: Contractor must notify the State at least 90 calendar days before the proposed delegation and provide the State any information it requests to determine whether the delegation is in its best interest. If approved, the Contractor must: (a) be the sole point of contract regarding all contractual matters, including payment and charges for all Contract Activities; (b) make all payments to the subcontractor; and (c) incorporate the terms and conditions contained in this Contract in any subcontract with a subcontractor. Contractor remains responsible for the completion of the Contract Activities, compliance with the terms of this Contract, and acts and omissions of the subcontractor. The State, in its sole discretion, may require the replacement of any subcontractor. All other specifications, terms and conditions remain the same. Per contractor and agency agreement.				

SCHEDULE A – STATEMENT OF WORK AMENDED

3.2. Disclosure of Subcontractors

Subcontractors may be utilized for the performance of this Contract. Use of Subcontractors must be consistent with Section 11, Subcontracting, of the Standard Contract Terms.

SCHEDULE B – PRICING CHANGE NOTICE 4

Description	Quantity	Unit of Measure	Unit Cost	Extended Cost
Non-Routine Signal Maintenance Regular **regular work hours Mon. through Fri. 6 am to 6 pm**	200	Hours	\$140.00	\$28,000.00
**Routine inspection and cleaning of freeway lighting, rest area lighting, and other facilities may also be required but will be paid for as non-routine maintenance. **				
Total Change Amount			\$28,000.00	

Pre-Approved Subcontractor Work	\$200,000.00
All pre-approved subcontractor work must be documented as subcontractor work and itemized on the invoice.	
Total Change Amount	\$228,000.00



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CONTRACT CHANGE NOTICE

Change Notice Number 3
to
Contract Number 240000000658

CONTRACTOR	Severance Electric Co., Inc.	STATE	Program Manager	Stephaine Palmer	MDOT
	4140 Rollridge Avenue			517-937-5716	
	Kalamazoo, MI 49004			Palmers3@michigan.gov	
	Steve Severance		Contract Administrator	Anna Swanson	MDOT
	269-345-0134			517-230-2063	
	Steve@sevelectric.com			Swansona1@michigan.gov	
	CV0027570				

CONTRACT SUMMARY				
DESCRIPTION: University Region-Maintenance of Electronic Control Devices				
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW	
May 22, 2024	May 21, 2025	5: one-year	May 21, 2025	
PAYMENT TERMS		DELIVERY TIMEFRAME		
Net 45				
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING	
☐ P-card ☐ Payment Request (PRC) ☐ Other			☐ Yes ☒ No	
MINIMUM DELIVERY REQUIREMENTS				
DESCRIPTION OF CHANGE NOTICE				
OPTION	LENGTH OF OPTION	EXTENSION	LENGTH OF EXTENSION	REVISED EXP. DATE
☒	1 year	☐		May 21, 2026
CURRENT VALUE		VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE	
\$649,580.00		\$417,500.00	\$1,067,080.00	
DESCRIPTION: Upon execution this Contract is exercising the first option year and is increased by \$417,500.00. The revised contract expiration date is May 21, 2026. All other terms, conditions, specifications and pricing remain the same. Per contractor and agency agreement, and State Administrative Board approval on May 6, 2025.				

SCHEDULE B - PRICING

Description	Quantity	Unit of Measure	Unit Cost	Extended Cost
Routine Signal Maintenance **Bid amount is to include replacement parts**	93 signals	Each	\$1500.00	\$139,500.00
Regular hours of work are defined as 6:00 am to 6:00 pm. All bids must be F.O.B. Destination with transportation charges prepaid on the order. Other F.O.B. terms will not be accepted and shall disqualify a Bidder from further consideration.				
Total Bid Amount			\$139,500.00	

Description	Quantity	Unit of Measure	Unit Cost	Extended Cost
Non-Routine Signal Maintenance Regular **regular work hours Mon. through Fri. 6 am to 6 pm**	1000	Hours	\$140.00	\$140,000.00
**Routine inspection and cleaning of freeway lighting, rest area lighting, and other facilities may also be required but will be paid for as non-routine maintenance. ** All bids must be F.O.B. Destination with transportation charges prepaid on the order. Other F.O.B. terms will not be accepted and shall disqualify a Bidder from further consideration.				
Total Bid Amount			\$140,000.00	

Description	Quantity	Unit of Measure	Unit Cost	Extended Cost
Non-Routine Signal Maintenance Overtime **overtime work hours Mon. through Fri. from 6pm to 6 am and Saturday and Sunday**	300	Hours	\$210.00	\$63,000.00
PARTS AND MATERIAL (Direct Expenses).....				\$75,000.00
All parts and materials shall be documented as a direct expense and itemized on the invoice. All bids must be F.O.B. Destination with transportation charges prepaid on the order. Other F.O.B. terms will not be accepted and shall disqualify a Bidder from further consideration.				
Total Bid Amount			\$417,500.00	



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CONTRACT CHANGE NOTICE

Change Notice Number 2
to
Contract Number 240000000658

CONTRACTOR	Severance Electric Co. Inc	STATE	Program Manager	Stephanie Palmer	MDOT
	4140 Rollridge Avenue			517-937-5716	
	Kalamazoo, MI 49004			Palmers3@michigan.gov	
	Steve Severance		Contract Administrator	Anna Swanson	MDOT
	269-345-0134			517-230-2063	
	Steve@sevelectric.com			Swansona1@michigan.gov	
	CV0027570				

CONTRACT SUMMARY				
DESCRIPTION: University Region-Maintenance of Electronic Control Devices				
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW	
May 22, 2024	May 21, 2025	5; one-year	May 21, 2025	
PAYMENT TERMS		DELIVERY TIMEFRAME		
Net 45		N/A		
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING	
☐ P-card ☐ Payment Request (PRC) ☐ Other			☐ Yes ☒ No	
MINIMUM DELIVERY REQUIREMENTS				
N/A				
DESCRIPTION OF CHANGE NOTICE				
OPTION	LENGTH OF OPTION	EXTENSION	LENGTH OF EXTENSION	REVISED EXP. DATE
☐		☐		No Change
CURRENT VALUE		VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE	
\$559,500.00		\$90,080.00	\$649,580.00	
DESCRIPTION: Upon execution and State Ad Board approval on December 17, 2024, the contract is amended to add \$90,080.00. An additional \$80,000.00 for parts and material (direct expenses) and \$10,080.00 for non-routine signal maintenance-overtime. The original contract was awarded based on low bid, with original contract value determined by estimated need.				
All other terms, conditions, and specifications remain the same. Per Contractor and Agency agreement.				



STATE OF MICHIGAN PROCUREMENT

Department of Transportation
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CONTRACT CHANGE NOTICE

Change Notice Number **01**
to
Contract Number **240000000658**

CONTRACTOR	Severance Electric Co. Inc.
	4140 Rollridge Avenue
	Kalamazoo, MI 49004
	Steve Severance
	269-345-0134
	Steve@sevelectric.com

STATE	Program Manager	Stephanie Palmer	MDOT
		517-937-5716	
		Palmers3@michigan.gov	
	Contract Administrator	Anna Swanson	MDOT
		517-230-2063	
		Swansona1@michigan.gov	

CONTRACT SUMMARY				
DESCRIPTION: University Region-Maintenance of Electronic Control Devices				
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW	
May 22, 2024	May 21, 2025	5, one-year	May 21, 2025	
PAYMENT TERMS		DELIVERY TIMEFRAME		
Net 45		N/A		
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING	
☐ P-card ☐ Payment Request (PRC) ☐ Other			☐ Yes ☒ No	
MINIMUM DELIVERY REQUIREMENTS				
N/A				
DESCRIPTION OF CHANGE NOTICE				
OPTION	LENGTH OF OPTION	EXTENSION	LENGTH OF EXTENSION	REVISED EXP. DATE
☐				No change
CURRENT VALUE	VALUE OF CHANGE NOTICE		ESTIMATED AGGREGATE CONTRACT VALUE	
\$399,500.00	\$160,000.00		\$559,500.00	
DESCRIPTION: Effective September 13, 2024, the contract is amended to add \$124,168 for 8 battery packs at \$15,521 each, and an additional \$35,832 for routine and non-routine parts and materials, for a total of \$160,000. The original contract was awarded based on low bid, with the original contract value determined by estimated need.				
All other terms, conditions, and specifications remain the same. Per Contractor and Agency agreement.				



STATE OF MICHIGAN PROCUREMENT

Michigan Department of Transportation

425 W. Ottawa St, Lansing, MI 48933

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NOTICE OF CONTRACT

NOTICE OF CONTRACT NO. **240000000658**

between

THE STATE OF MICHIGAN

and

CONTRACTOR	Severance Electric Co., Inc
	4140 Rollridge
	Kalamazoo, MI 49004
	Steve Severance
	269-345-0134
	steve@sevelectric.com
	CV0027570

STATE	Program Manager	Stephanie Palmer	MDOT
		517-937-5716	
		Palmers3@michigan.gov	
	Contract Administrator	Anna Swanson	MDOT
		517-230-2063	
		Swansona1@michigan.gov	

CONTRACT SUMMARY			
DESCRIPTION: University Region Maintenance of Electronic Control Devices			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
May 22, 2024	May 21, 2025	5; one-year	
PAYMENT TERMS		DELIVERY TIMEFRAME	
Net 45			
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING
☐ P-card ☐ Payment Request (PRC) ☐ Other			☐ Yes ☒ No
MINIMUM DELIVERY REQUIREMENTS			
MISCELLANEOUS INFORMATION			
This Contract Agreement is awarded on the basis of the State's inquiry bearing the solicitation number 240000001702 and State Administrative Board approval on May 7, 2024.			
ESTIMATED CONTRACT VALUE AT TIME OF EXECUTION			\$399,500.00

STANDARD CONTRACT TERMS

This STANDARD CONTRACT ("**Contract**") is agreed to between the State of Michigan (the "**State**") and Severance Electric Co., Inc. ("**Contractor**"), a Michigan Corporation. This Contract is effective on May 22, 2024 ("**Effective Date**"), and unless terminated, will expire on May 21, 2025 (the "**Term**").

The contract will be a one-year contract with five (5), one-year extensions. Renewal is at the sole discretion of the State and will automatically extend the Term of this Contract. The State will document its exercise of renewal options via Contract Change Notice.

The parties agree as follows:

- 1. Duties of Contractor.** Contractor must perform the services and provide the deliverables (the "**Contract Activities**") described in a Statement of Work, the initial Statement of Work is attached as Schedule A – Statement of Work. An obligation to provide delivery of any commodity is considered a service and is a Contract Activity.

Contractor must furnish all labor, equipment, materials, and supplies necessary for the performance of the Contract Activities unless otherwise specified in a Statement of Work.

Contractor must: (a) perform the Contract Activities in a timely, professional, safe, and workmanlike manner consistent with standards in the trade, profession, or industry; (b) meet or exceed the performance and operational standards, and specifications of the Contract; (c) provide all Contract Activities in good quality, with no material defects; (d) not interfere with the State's operations; (e) obtain and maintain all necessary licenses, permits or other authorizations necessary for the performance of the Contract; (f) cooperate with the State, including the State's quality assurance personnel, and any third party to achieve the objectives of the Contract; (g) return to the State any State-furnished equipment or other resources in the same condition as when provided when no longer required for the Contract; (h) assign to the State any claims resulting from state or federal antitrust violations to the extent that those violations concern materials or services supplied by third parties toward fulfillment of the Contract; (i) comply with all State physical and IT security policies and standards which will be made available upon request; and (j) provide the State priority in performance of the Contract except as mandated by federal disaster response requirements. Any breach under this paragraph is considered a material breach.

Contractor must also be clearly identifiable while on State property by wearing identification issued by the State, and clearly identify themselves whenever making contact with the State.

- 2. Notices.** All notices and other communications required or permitted under this Contract must be in writing and will be considered given and received: (a) when verified by written receipt if sent by courier; (b) when actually received if

sent by mail without verification of receipt; or (c) when verified by automated receipt or electronic logs if sent by facsimile or email.

If to State:	If to Contractor:
Anna Swanson 425 West Ottawa Street Lansing, MI 48933 Swansona1@michigan.gov 517-230-2063	Steve Severance (Severance Electric) 4140 Rollridge Kalamazoo, MI 49004 steve@sevelectric.com 269-345-0134

3. **Contract Administrator.** The Contract Administrator, or the individual duly authorized for each party, is the only person authorized to modify any terms of this Contract, and approve and execute any change under this Contract (each a “**Contract Administrator**”):

State:	Contractor:
Anna Swanson 425 West Ottawa Street Lansing, MI 48933 Swansona1@michigan.gov 517-230-2063	Steve Severance (Severance Electric) 4140 Rollridge Kalamazoo, MI 49004 steve@sevelectric.com 269-345-0134

4. **Program Manager.** The Program Manager for each party will monitor and coordinate the day-to-day activities of the Contract (each a “**Program Manager**”):

State:	Contractor:
Stephanie Palmer 4701 W. Michigan Ave Jackson, MI 49201 Palmers3@michigan.gov 517-937-5716	Scott Severance (Severance Electric) 4140 Rollridge Kalamazoo, MI 49004 scott@sevelectric.com 269-345-0134 (M.269-207-2503)

5. **Performance Guarantee.** Contractor must at all times have financial resources sufficient, in the opinion of the State, to ensure performance of the Contract and must provide proof upon request. The State may require a performance bond (as specified in a Statement of Work) if, in the opinion of the State, it will ensure performance of the Contract.

6. Insurance Requirements.

- a. **General Requirements.** Contractor, at its sole expense, must maintain the insurance coverage as specified herein for the duration of the Term. Minimum limits may be satisfied by any combination of primary liability, umbrella or excess liability, and self-insurance coverage. To the extent damages are covered by any required insurance, Contractor waives all rights against the State for such damages. Failure to maintain required insurance does not limit this waiver.
- b. **Qualification of Insurers.** Except for self-insured coverage, all policies must be written by an insurer with an A.M. Best rating of A- VII or higher unless otherwise approved by DTMB Enterprise Risk Management.
- c. **Primary and Non-Contributory Coverage.** All policies for which the State of Michigan is required to be named as an additional insured must be on a primary and non-contributory basis.
- d. **Claims-Made Coverage.** If any required policies provide claims-made coverage, Contractor must:
 - (1) Maintain coverage and provide evidence of coverage for at least 3 years after the later of the expiration or termination of the Contract or the completion of all its duties under the Contract;
 - (2) Purchase extended reporting coverage for a minimum of 3 years after completion of work if coverage is cancelled or not renewed, and not replaced with another claims-made policy form with a retroactive date prior to the Effective Date of this Contract
- e. **Proof of Insurance**
 - (1) Insurance certificates showing evidence of coverage as required herein must be submitted to the Contract Administrator within 10 days of the contract execution date.
 - (2) Renewal insurance certificates must be provided on annual basis or as otherwise commensurate with the effective dates of coverage for any insurance required herein.
 - (3) Insurance certificates must be in the form of a standard ACORD Insurance Certificate unless otherwise approved by DTMB Enterprise Risk Management.
 - (4) All insurance certificates must clearly identify the Contract Number (e.g., notated under the Description of Operations on an ACORD form).
 - (5) The State may require additional proofs of insurance or solvency, including but not limited to policy declarations, policy endorsements, policy schedules, self-insured certification or authorization, and audited financial statements.
 - (6) In the event any required coverage is cancelled or not renewed, Contractor must provide written notice to the Contract Administrator no later than 5 business days following such cancellation or nonrenewal.

f. **Subcontractors.** Contractor is responsible for ensuring its subcontractors, if any, carry and maintain insurance coverage as applicable to the subcontracted service(s).

g. **Limits of Coverage & Specific Endorsements.** (See Table 6.1 Below)

TABLE 6.1

Required Limits	Additional Requirements
Commercial General Liability Insurance	
Minimum Limits: \$1,000,000 Each Occurrence \$1,000,000 Personal & Advertising Injury \$2,000,000 Products/Completed Operations \$2,000,000 General Aggregate	Contractor must have their policy endorsed to add "the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents" as additional insureds using endorsement CG 20 10 11 85, or both CG 20 10 12 19 and CG 20 37 12 19.
Umbrella or Excess Liability Insurance	
Minimum Limits: \$5,000,000 General Aggregate	Contractor must have their policy follow form.
Automobile Liability Insurance	
Minimum Limits: \$1,000,000 Per Accident	Contractor must have their policy: (1) endorsed to add "the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents" as additional insureds; and (2) include Hired and Non-Owned Automobile coverage.

Required Limits	Additional Requirements
Workers' Compensation Insurance	
Minimum Limits: Coverage according to applicable laws governing work activities.	Waiver of subrogation, except where waiver is prohibited by law.
Employers Liability Insurance	
Minimum Limits: \$500,000 Each Accident \$500,000 Each Employee by Disease \$500,000 Aggregate Disease	

h. Non-Waiver. This Section 6 is not intended to and is not to be construed in any manner as waiving, restricting or limiting the liability of either party for any obligations under this Contract, including any provisions hereof requiring Contractor to indemnify, defend and hold harmless the State.

7. Reserved

8. Reserved

9. Relationship of the Parties. The relationship between the parties is that of independent contractors. Contractor, its employees, and agents will not be considered employees of the State. No partnership or joint venture relationship is created by virtue of this Contract. Contractor, and not the State, is responsible for the payment of wages, benefits and taxes of Contractor's employees and any subcontractors. Prior performance does not modify Contractor's status as an independent contractor. Neither party has authority to contract for nor bind the other party in any manner whatsoever.

10. Reserved

11. Subcontracting. Contractor may not delegate any of its obligations under the Contract without the prior written approval of the State. Contractor must notify the State at least 90 calendar days before the proposed delegation and provide the State any information it requests to determine whether the delegation is in its best interest. If approved, Contractor must: (a) be the sole point of contact regarding all contractual matters, including payment and charges for all Contract Activities; (b) make all payments to the subcontractor; and (c) incorporate the terms and conditions contained in this Contract in any subcontract with a subcontractor. Contractor remains responsible for the completion of the Contract Activities, compliance with the terms of this Contract, and the acts and omissions of the subcontractor. The State, in its sole discretion, may require the replacement of any subcontractor.

12. Staffing. The State's Contract Administrator may require Contractor to remove or reassign personnel providing services by providing a notice to Contractor.

- 13. Background Checks.** Pursuant to Michigan law, all agencies subject to IRS Pub. 1075 are required to ask the Michigan State Police to perform fingerprint background checks on all employees, including Contractor and Subcontractor employees, who may have access to any database of information maintained by the federal government that contains confidential or personal information, including, but not limited to, federal tax information. Further, pursuant to Michigan law, any agency described above is prohibited from providing Contractors or Subcontractors with the result of such background check. For more information, please see Michigan Public Act 427 of 2018. Upon request, or as may be specified in a Statement of Work, Contractor must perform background checks on all employees and subcontractors and its employees prior to their assignment. The scope is at the discretion of the State and documentation must be provided as requested. Contractor is responsible for all costs associated with the requested background checks. The State, in its sole discretion, may also perform background checks.
- 14. Assignment.** Contractor may not assign this Contract to any other party without the prior approval of the State. Upon notice to Contractor, the State, in its sole discretion, may assign in whole or in part, its rights or responsibilities under this Contract to any other party. If the State determines that a novation of the Contract to a third party is necessary, Contractor will agree to the novation and provide all necessary documentation and signatures.
- 15. Change of Control.** Contractor will notify the State, within 30 days of any public announcement or otherwise once legally permitted to do so, of a change in Contractor's organizational structure or ownership. For purposes of this Contract, a change in control means any of the following: (a) a sale of more than 50% of Contractor's stock; (b) a sale of substantially all of Contractor's assets; (c) a change in a majority of Contractor's board members; (d) consummation of a merger or consolidation of Contractor with any other entity; (e) a change in ownership through a transaction or series of transactions; (f) or the board (or the stockholders) approves a plan of complete liquidation. A change of control does not include any consolidation or merger effected exclusively to change the domicile of Contractor, or any transaction or series of transactions principally for bona fide equity financing purposes.
- In the event of a change of control, Contractor must require the successor to assume this Contract and all of its obligations under this Contract.
- 16. Ordering.** Contractor is not authorized to begin performance until receipt of authorization as identified in a Statement of Work.
- 17. Acceptance.** Contract Activities are subject to inspection and testing by the State within 30 calendar days of the State's receipt of them ("**State Review Period**"), unless otherwise provided in a Statement of Work. If the Contract Activities are not fully accepted by the State, the State will notify Contractor by the end of the State Review Period that either: (a) the Contract Activities are accepted but noted deficiencies must be corrected; or (b) the Contract Activities are rejected. If the State finds material deficiencies, it may: (i) reject the Contract Activities without performing any further inspections; (ii) demand

performance at no additional cost; or (iii) terminate this Contract in accordance with Section 24, Termination for Cause.

Within 10 business days from the date of Contractor's receipt of notification of acceptance with deficiencies or rejection of any Contract Activities, Contractor must cure, at no additional cost, the deficiency and deliver unequivocally acceptable Contract Activities to the State. If acceptance with deficiencies or rejection of the Contract Activities impacts the content or delivery of other non-completed Contract Activities, the parties' respective Program Managers must determine an agreed to number of days for re-submission that minimizes the overall impact to the Contract. However, nothing herein affects, alters, or relieves Contractor of its obligations to correct deficiencies in accordance with the time response standards set forth in this Contract.

If Contractor is unable or refuses to correct the deficiency within the time response standards set forth in this Contract, the State may cancel the order in whole or in part. The State, or a third party identified by the State, may perform the Contract Activities and recover the difference between the cost to cure and the Contract price plus an additional 10% administrative fee.

18. Reserved

19. Reserved

20. Warranty Period. The warranty period, if applicable, for Contract Activities is a fixed period commencing on the date specified in a Statement of Work. If the Contract Activities do not function as warranted during the warranty period, the State may return such non-conforming Contract Activities to the Contractor for a full refund.

21. Invoices and Payment. Invoices must conform to the requirements communicated from time-to-time by the State. All undisputed amounts are payable within 45 days of the State's receipt. Contractor may only charge for Contract Activities provided as specified in a Statement of Work. Invoices must include an itemized statement of all charges. The State is exempt from State sales tax for direct purchases and may be exempt from federal excise tax, if Services purchased under this Agreement are for the State's exclusive use. Notwithstanding the foregoing, all fees are exclusive of taxes, and Contractor is responsible for all sales, use and excise taxes, and any other similar taxes, duties and charges of any kind imposed by any federal, state, or local governmental entity on any amounts payable by the State under this Contract.

The State has the right to withhold payment of any disputed amounts until the parties agree as to the validity of the disputed amount. The State will notify Contractor of any dispute within a reasonable time. Payment by the State will not constitute a waiver of any rights as to Contractor's continuing obligations, including claims for deficiencies or substandard Contract Activities.

Contractor's acceptance of final payment by the State constitutes a waiver of all claims by Contractor against the State for payment under this Contract, other than those claims previously filed in writing on a timely basis and still disputed.

The State will only disburse payments under this Contract through Electronic Funds Transfer (EFT). Contractor must register with the State at <http://www.michigan.gov/SIGMAVSS> to receive electronic fund transfer payments. If Contractor does not register, the State is not liable for failure to provide payment. Without prejudice to any other right or remedy it may have, the State reserves the right to set off at any time any amount then due and owing to it by Contractor against any amount payable by the State to Contractor under this Contract.

Excluding federal government charges and terms, Contractor warrants and agrees that each of the fees, economic or product terms or warranties granted pursuant to this Contract are comparable to or better than the equivalent fees, economic or product term or warranty being offered to any commercial or government customer (including any public educational institution within the State of Michigan) of Contractor. If Contractor enters into any arrangements with another customer of Contractor to provide the products or services, available under this Contract, under more favorable prices, as the prices may be indicated on Contractor's current U.S. and International price list or comparable document, then this Contract will be deemed amended as of the date of such other arrangements to incorporate those more favorable prices, and Contractor will immediately notify the State of such fee and formally memorialize the new pricing in a change notice.

- 22. Liquidated Damages.** Liquidated damages, if applicable, will be assessed as described in a Statement of Work. The parties understand and agree that any liquidated damages (which includes but is not limited to applicable credits) set forth in this Contract are reasonable estimates of the State's damages in accordance with applicable law. The parties acknowledge and agree that Contractor could incur liquidated damages for more than 1 event. The assessment of liquidated damages will not constitute a waiver or release of any other remedy the State may have under this Contract for Contractor's breach of this Contract, including without limitation, the State's right to terminate this Contract for cause under Section 24 and the State will be entitled in its discretion to recover actual damages caused by Contractor's failure to perform its obligations under this Contract. However, the State will reduce such actual damages by the amounts of liquidated damages received for the same events causing the actual damages. Amounts due the State as liquidated damages may be set off against any fees payable to Contractor under this Contract, or the State may bill Contractor as a separate item and Contractor will promptly make payments on such bills.
- 23. Stop Work Order.** The State may suspend any or all activities under the Contract at any time. The State will provide Contractor a written stop work order detailing the suspension. Contractor must comply with the stop work order upon receipt. Within 90 calendar days, or any longer period agreed to by Contractor, the State will either: (a) issue a notice authorizing Contractor to resume work, or (b) terminate the Contract or delivery order. The State will not pay for Contract Activities, Contractor's lost profits, or any additional compensation during a stop work period.

24. Termination for Cause. (a) The State may terminate this Contract for cause, in whole or in part, if Contractor, as determined by the State: (i) endangers the value, integrity, or security of any facility, data, or personnel; (ii) becomes insolvent, petitions for bankruptcy court proceedings, or has an involuntary bankruptcy proceeding filed against it by any creditor; (iii) engages in any conduct that may expose the State to liability; (iv) breaches any of its material duties or obligations under this Contract; or (v) fails to cure a breach within the time stated by the State in a notice of breach, if in its sole discretion the State has chosen to provide a time to cure. Any reference to specific breaches being material breaches within this Contract will not be construed to mean that other breaches are not material.

(b) If the State terminates this Contract under this Section, the State will issue a termination notice specifying whether Contractor must: (i) cease performance immediately. Contractor must submit all invoices for Contract Activities accepted by the State within 30 days of the date of termination. Failure to submit an invoice within that timeframe will constitute a waiver by Contractor for any amounts due to Contractor for Contract Activities accepted by the State under this Contract or (ii) continue to perform for a specified period. If it is later determined that Contractor was not in breach of the Contract, the termination will be deemed to have been a Termination for Convenience, effective as of the same date, and the rights and obligations of the parties will be limited to those provided in Section 25, Termination for Convenience.

The State will only pay for amounts due to Contractor for Contract Activities accepted by the State on or before the date of termination, subject to the State's right to set off any amounts owed by the Contractor for the State's reasonable costs in terminating this Contract. Contractor must promptly reimburse to the State any fees prepaid by the State prorated to the date of such termination, including any prepaid fees. The Contractor must pay all reasonable costs incurred by the State in terminating this Contract for cause, including administrative costs, attorneys' fees, court costs, transition costs, and any costs the State incurs to procure the Contract Activities from other sources.

25. Termination for Convenience. The State may immediately terminate this Contract in whole or in part without penalty and for any reason or no reason, including but not limited to, appropriation or budget shortfalls. The termination notice will specify whether Contractor must: (a) cease performance of the Contract Activities immediately. Contractor must submit all invoices for Contract Activities accepted by the State within 30 days of the date of termination. Failure to submit an invoice within that timeframe will constitute a waiver by Contractor for any amounts due Contractor for Contract Activities accepted by the State under this Contract, or (b) continue to perform the Contract Activities in accordance with Section 26, Transition Responsibilities. If the State terminates this Contract for convenience, the State will pay all reasonable costs, as determined by the State, for State approved Transition Responsibilities to the extent the funds are available.

26. Transition Responsibilities. Upon termination or expiration of this Contract for any reason, Contractor must, for a period of time specified by the State (not to exceed **90** calendar days), provide all reasonable transition assistance requested by the State, to allow for the expired or terminated portion of the Contract Activities to continue without interruption or adverse effect, and to facilitate the orderly transfer of such Contract Activities to the State or its designees. Such transition assistance may include, but is not limited to: (a) continuing to perform the Contract Activities at the established Contract rates; (b) taking all reasonable and necessary measures to transition performance of the work, including all applicable Contract Activities, training, equipment, software, leases, reports and other documentation, to the State or the State's designee; (c) transferring title in and delivering to the State, at the State's discretion, all completed or partially completed deliverables prepared under this Contract as of the Contract termination date; and (d) preparing an accurate accounting from which the State and Contractor may reconcile all outstanding accounts (collectively, "**Transition Responsibilities**"). This Contract will automatically be extended through the end of the transition period.

27. Return of State Property. Upon termination or expiration of this Contract for any reason, Contractor must take all necessary and appropriate steps, or such other action as the State may direct, to preserve, maintain, protect, or return to the State all materials, data, property, and confidential information provided directly or indirectly to the Contractor by any entity, agent, vendor, or employee of the State.

28. Indemnification. Contractor must defend, indemnify and hold the State, its departments, divisions, agencies, offices, commissions, officers, and employees harmless, without limitation, from and against any and all actions, claims, losses, liabilities, damages, costs, attorney fees, and expenses (including those required to establish the right to indemnification), arising out of or relating to: (a) any breach by Contractor (or any of Contractor's employees, agents, subcontractors, or by anyone else for whose acts any of them may be liable) of any of the promises, agreements, representations, warranties, or insurance requirements contained in this Contract; (b) any infringement, misappropriation, or other violation of any intellectual property right or other right of any third party; (c) any bodily injury, death, or damage to real or tangible personal property occurring wholly or in part due to action or inaction by Contractor (or any of Contractor's employees, agents, subcontractors, or by anyone else for whose acts any of them may be liable); and (d) any acts or omissions of Contractor (or any of Contractor's employees, agents, subcontractors, or by anyone else for whose acts any of them may be liable).

The State will notify Contractor in writing if indemnification is sought; however, failure to do so will not relieve Contractor, except to the extent that Contractor is materially prejudiced. Contractor must, to the satisfaction of the State, demonstrate its financial ability to carry out these obligations.

The State is entitled to: (i) regular updates on proceeding status; (ii) participate in the defense of the proceeding; (iii) employ its own counsel; and to (iv) retain control of the defense, at its own cost and expense, if the State deems necessary. Contractor will not, without the State's prior written consent (not to be unreasonably withheld), settle, compromise, or consent to the entry of any judgment in or otherwise seek to terminate any claim, action, or proceeding.

Any litigation activity on behalf of the State, or any of its subdivisions under this Section, must be coordinated with the Department of Attorney General. An attorney designated to represent the State may not do so until approved by the Michigan Attorney General and appointed as a Special Assistant Attorney General.

The State is constitutionally prohibited from indemnifying Contractor or any third parties.

- 29. Infringement Remedies.** If, in either party's opinion, any piece of equipment, software, commodity, or service supplied by Contractor or its subcontractors, or its operation, use or reproduction, is likely to become the subject of a copyright, patent, trademark, or trade secret infringement claim, Contractor must, at its expense: (a) procure for the State the right to continue using the equipment, software, commodity, or service, or if this option is not reasonably available to Contractor, (b) replace or modify the same so that it becomes non-infringing; or (c) accept its return by the State with appropriate credits to the State against Contractor's charges and reimburse the State for any losses or costs incurred as a consequence of the State ceasing its use and returning it.
- 30. Limitation of Liability and Disclaimer of Damages. IN NO EVENT WILL THE STATE'S AGGREGATE LIABILITY TO CONTRACTOR UNDER THIS CONTRACT, REGARDLESS OF THE FORM OF ACTION, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY OR BY STATUTE OR OTHERWISE, FOR ANY CLAIM RELATED TO OR ARISING UNDER THIS CONTRACT, EXCEED THE MAXIMUM AMOUNT OF FEES PAYABLE UNDER THIS CONTRACT.** The State is not liable for consequential, incidental, indirect, or special damages, regardless of the nature of the action.
- 31. Disclosure of Litigation, or Other Proceeding.** Contractor must notify the State within 14 calendar days of receiving notice of any litigation, investigation, arbitration, or other proceeding (collectively, "**Proceeding**") involving Contractor, a subcontractor, or an officer or director of Contractor or subcontractor, that arises during the term of the Contract, including: (a) a criminal Proceeding; (b) a parole or probation Proceeding; (c) a Proceeding under the Sarbanes-Oxley Act; (d) a civil Proceeding involving: (1) a claim that might reasonably be expected to adversely affect Contractor's viability or financial stability; or (2) a governmental or public entity's claim or written allegation of fraud; or (3) any complaint filed in a legal or administrative proceeding alleging the Contractor or its subcontractors discriminated against its employees, subcontractors, vendors, or suppliers during the term of this Contract; or (e) a Proceeding involving any license that Contractor is required to possess in order to perform under this Contract.

32. State Data. All data and information provided to Contractor by or on behalf of the State, and all data and information derived therefrom, is the exclusive property of the State ("**State Data**"); this definition is to be construed as broadly as possible. Upon request, Contractor must provide to the State, or a third party designated by the State, all State Data within 10 calendar days of the request and in the format requested by the State. Contractor will assume all costs incurred in compiling and supplying State Data. No State Data may be used for any marketing or commercial purposes.

33. Reserved

34. Non-Disclosure of Confidential Information. The parties acknowledge that each party may be exposed to or acquire communication or data of the other party that is confidential, privileged communication not intended to be disclosed to third parties.

- a. **Meaning of Confidential Information.** For the purposes of this Contract, the term "**Confidential Information**" means all information and documentation of a party that: (a) has been marked "confidential" or with words of similar meaning, at the time of disclosure by such party; (b) if disclosed orally or not marked "confidential" or with words of similar meaning, was subsequently summarized in writing by the disclosing party and marked "confidential" or with words of similar meaning; or, (c) should reasonably be recognized as confidential information of the disclosing party. The term "Confidential Information" does not include any information or documentation that was or is: (a) subject to disclosure under the Michigan Freedom of Information Act (FOIA); (b) already in the possession of the receiving party without an obligation of confidentiality; (c) developed independently by the receiving party, as demonstrated by the receiving party, without violating the disclosing party's proprietary rights; (d) obtained from a source other than the disclosing party without an obligation of confidentiality; or, (e) publicly available when received, or thereafter became publicly available (other than through any unauthorized disclosure by, through, or on behalf of, the receiving party). For purposes of this Contract, in all cases and for all matters, State Data is deemed to be Confidential Information.
- b. **Obligation of Confidentiality.** The parties agree to hold all Confidential Information in strict confidence and not to copy, reproduce, sell, transfer, or otherwise dispose of, give or disclose such Confidential Information to third parties other than employees, agents, or subcontractors of a party who have a need to know in connection with this Contract or to use such Confidential Information for any purposes whatsoever other than the performance of this Contract. The parties agree to advise and require their respective employees, agents, and subcontractors of their obligations to keep all Confidential Information confidential. Disclosure to a subcontractor is permissible where: (a) use of a subcontractor is authorized under this Contract; (b) the disclosure is necessary or otherwise naturally occurs in connection with work that is within the subcontractor's responsibilities; and (c) Contractor obligates the subcontractor in a written contract to maintain

the State's Confidential Information in confidence. At the State's request, any employee of Contractor or any subcontractor may be required to execute a separate agreement to be bound by the provisions of this Section.

- c. **Cooperation to Prevent Disclosure of Confidential Information.** Each party must use its best efforts to assist the other party in identifying and preventing any unauthorized use or disclosure of any Confidential Information. Without limiting the foregoing, each party must advise the other party immediately in the event either party learns or has reason to believe that any person who has had access to Confidential Information has violated or intends to violate the terms of this Contract and each party will cooperate with the other party in seeking injunctive or other equitable relief against any such person.
- d. **Remedies for Breach of Obligation of Confidentiality.** Each party acknowledges that breach of its obligation of confidentiality may give rise to irreparable injury to the other party, which damage may be inadequately compensable in the form of monetary damages. Accordingly, a party may seek and obtain injunctive relief against the breach or threatened breach of the foregoing undertakings, in addition to any other legal remedies which may be available, to include, in the case of the State, at the sole election of the State, the immediate termination, without liability to the State, of this Contract or any Statement of Work corresponding to the breach or threatened breach.
- e. **Surrender of Confidential Information upon Termination.** Upon termination of this Contract or a Statement of Work, in whole or in part, each party must, within 5 calendar days from the date of termination, return to the other party any and all Confidential Information received from the other party, or created or received by a party on behalf of the other party, which are in such party's possession, custody, or control; provided, however, that Contractor must return State Data to the State following the timeframe and procedure described further in this Contract. Should Contractor or the State determine that the return of any Confidential Information is not feasible, such party must destroy the Confidential Information and must certify the same in writing within 5 calendar days from the date of termination to the other party. However, the State's legal ability to destroy Contractor data may be restricted by its retention and disposal schedule, in which case Contractor's Confidential Information will be destroyed after the retention period expires.

35. Reserved

36. Reserved

37. Reserved

38. Records Maintenance, Inspection, Examination, and Audit. Pursuant to MCL 18.1470, the State or its designee may audit Contractor to verify compliance with this Contract. Contractor must retain and provide to the State or its designee and the auditor general upon request, all records related to the

Contract through the term of the Contract and for 4 years after the latter of termination, expiration, or final payment under this Contract or any extension (“**Audit Period**”). If an audit, litigation, or other action involving the records is initiated before the end of the Audit Period, Contractor must retain the records until all issues are resolved.

Within 10 calendar days of providing notice, the State and its authorized representatives or designees have the right to enter and inspect Contractor's premises or any other places where Contract Activities are being performed, and examine, copy, and audit all records related to this Contract. Contractor must cooperate and provide reasonable assistance. If financial errors are revealed, the amount in error must be reflected as a credit or debit on subsequent invoices until the amount is paid or refunded. Any remaining balance at the end of the Contract must be paid or refunded within 45 calendar days.

This Section applies to Contractor, any parent, affiliate, or subsidiary organization of Contractor, and any subcontractor that performs Contract Activities in connection with this Contract.

39. Representations and Warranties. Contractor represents and warrants: (a) Contractor is the owner or licensee of any Contract Activities that it licenses, sells, or develops and Contractor has the rights necessary to convey title, ownership rights, or licensed use; (b) all Contract Activities are delivered free from any security interest, lien, or encumbrance and will continue in that respect; (c) the Contract Activities will not infringe the patent, trademark, copyright, trade secret, or other proprietary rights of any third party; (d) Contractor must assign or otherwise transfer to the State or its designee any manufacturer's warranty for the Contract Activities; (e) the Contract Activities are merchantable and fit for the specific purposes identified in the Contract; (f) the Contract signatory has the authority to enter into this Contract; (g) all information furnished by Contractor in connection with the Contract fairly and accurately represents Contractor's business, properties, finances, and operations as of the dates covered by the information, and Contractor will inform the State of any material adverse changes; (h) all information furnished and representations made in connection with the award of this Contract is true, accurate, and complete, and contains no false statements or omits any fact that would make the information misleading; and that (i) Contractor is neither currently engaged in nor will engage in the boycott of a person based in or doing business with a strategic partner as described in 22 USC 8601 to 8606. A breach of this Section is considered a material breach of this Contract, which entitles the State to terminate this Contract under Section 24, Termination for Cause.

40. Conflicts and Ethics. Contractor will uphold high ethical standards and is prohibited from: (a) holding or acquiring an interest that would conflict with this Contract; (b) doing anything that creates an appearance of impropriety with respect to the award or performance of the Contract; (c) attempting to influence or appearing to influence any State employee by the direct or indirect offer of anything of value; or (d) paying or agreeing to pay any person, other

than employees and consultants working for Contractor, any consideration contingent upon the award of the Contract. Contractor must immediately notify the State of any violation or potential violation of these standards. This Section applies to Contractor, any parent, affiliate, or subsidiary organization of Contractor, and any subcontractor that performs Contract Activities in connection with this Contract.

- 41. Compliance with Laws.** Contractor must comply with all federal, state and local laws, rules and regulations.
- 42. Prevailing Wage.** Contractor must comply with prevailing wage requirements, to the extent applicable to this Contract.
- 43. Reserved**
- 44. Nondiscrimination.** Under the Elliott-Larsen Civil Rights Act, 1976 PA 453, MCL 37.2101, *et seq.*, the Persons with Disabilities Civil Rights Act, 1976 PA 220, MCL 37.1101, *et seq.*, and [Executive Directive 2019-09](#). Contractor and its subcontractors agree not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex (as defined in Executive Directive 2019-09), height, weight, marital status, partisan considerations, any mental or physical disability, or genetic information that is unrelated to the person's ability to perform the duties of a particular job or position. Breach of this covenant is a material breach of this Contract.
- 45. Unfair Labor Practice.** Under MCL 423.324, the State may void this Contract if the name of the Contractor, or the name of a subcontractor, manufacturer, or supplier of the Contractor, subsequently appears on the Unfair Labor Practice register compiled under MCL 423.322.
- 46. Governing Law.** This Contract is governed, construed, and enforced in accordance with Michigan law, excluding choice-of-law principles, and all claims relating to or arising out of this Contract are governed by Michigan law, excluding choice-of-law principles. Any dispute arising from this Contract must be resolved in the Michigan Court of Claims. Contractor waives any objections, such as lack of personal jurisdiction or *forum non conveniens*. Contractor must appoint an agent in Michigan to receive service of process.
- 47. Non-Exclusivity.** Nothing contained in this Contract is intended nor is to be construed as creating any requirements contract with Contractor, nor does it provide Contractor with a right of first refusal for any future work. This Contract does not restrict the State or its agencies from acquiring similar, equal, or like Contract Activities from other sources.
- 48. Force Majeure.** Neither party will be in breach of this Contract because of any failure arising from any disaster or acts of god that are beyond their control and without their fault or negligence. Each party will use commercially reasonable efforts to resume performance. Contractor will not be relieved of a breach or delay caused by its subcontractors. If immediate performance is necessary to ensure public health and safety, the State may immediately contract with a third party.

49. Dispute Resolution. The parties will endeavor to resolve any Contract dispute in accordance with this provision. The dispute will be referred to the parties' respective Contract Administrators or Program Managers. Such referral must include a description of the issues and all supporting documentation. The parties must submit the dispute to a senior executive if unable to resolve the dispute within 15 business days. The parties will continue performing while a dispute is being resolved, unless the dispute precludes performance. A dispute involving payment does not preclude performance.

Litigation to resolve the dispute will not be instituted until after the dispute has been elevated to the parties' senior executive and either concludes that resolution is unlikely or fails to respond within 15 business days. The parties are not prohibited from instituting formal proceedings: (a) to avoid the expiration of statute of limitations period; (b) to preserve a superior position with respect to creditors; or (c) where a party makes a determination that a temporary restraining order or other injunctive relief is the only adequate remedy. This Section does not limit the State's right to terminate the Contract.

50. Media Releases. News releases (including promotional literature and commercial advertisements) pertaining to the Contract or project to which it relates must not be made without the prior written approval of the State, and then only in accordance with the explicit written instructions of the State.

51. Schedules. All Schedules and Exhibits that are referenced herein and attached hereto are hereby incorporated by reference. The following Schedules are attached hereto and incorporated herein:

Document Title	Document Description
Schedule A	Statement of Work
Schedule B	Pricing
Schedule C	Preventative Maintenance Checklist
Schedule D	Forms
Schedule E	Signal Maintenance Contract Locations

52. Entire Agreement and Order of Precedence. This Contract, which includes Statement of Work, and schedules and exhibits, is the entire agreement of the parties related to the Contract Activities. This Contract supersedes and replaces all previous understandings and agreements between the parties for the Contract Activities. If there is a conflict between documents, the order of precedence is: (a) first, this Contract, excluding its schedules, exhibits, and Statement of Work; (b) second, Statement of Work as of the Effective Date; and (c) third, schedules expressly incorporated into this Contract as of the Effective Date. NO TERMS ON CONTRACTOR'S INVOICES, ORDERING DOCUMENTS, WEBSITE, BROWSE-WRAP, SHRINK-WRAP, CLICK-WRAP,

CLICK-THROUGH OR OTHER NON-NEGOTIATED TERMS AND CONDITIONS PROVIDED WITH ANY OF THE CONTRACT ACTIVITIES, OR DOCUMENTATION HEREUNDER, EVEN IF ATTACHED TO THE STATE'S DELIVERY OR PURCHASE ORDER, WILL CONSTITUTE A PART OR AMENDMENT OF THIS CONTRACT OR IS BINDING ON THE STATE OR ANY AUTHORIZED USER FOR ANY PURPOSE. ALL SUCH OTHER TERMS AND CONDITIONS HAVE NO FORCE AND EFFECT AND ARE DEEMED REJECTED BY THE STATE AND THE AUTHORIZED USER, EVEN IF ACCESS TO OR USE OF THE CONTRACT ACTIVITIES REQUIRES AFFIRMATIVE ACCEPTANCE OF SUCH TERMS AND CONDITIONS.

- 53. Severability.** If any part of this Contract is held invalid or unenforceable, by any court of competent jurisdiction, that part will be deemed deleted from this Contract and the severed part will be replaced by agreed upon language that achieves the same or similar objectives. The remaining Contract will continue in full force and effect.
- 54. Waiver.** Failure to enforce any provision of this Contract will not constitute a waiver.
- 55. Survival.** Any right, obligation or condition that, by its express terms or nature and context is intended to survive, will survive the termination or expiration of this Contract; such rights, obligations, or conditions include, but are not limited to, those related to transition responsibilities; indemnification; disclaimer of damages and limitations of liability; State Data; non-disclosure of Confidential Information; representations and warranties; insurance and bankruptcy.
- 56. Contract Modification.** This Contract may not be amended except by signed agreement between the parties (a "**Contract Change Notice**"). Notwithstanding the foregoing, no subsequent Statement of Work or Contract Change Notice executed after the Effective Date will be construed to amend this Contract unless it specifically states its intent to do so and cites the section or sections amended.

SCHEDULE A – STATEMENT OF WORK CONTRACT ACTIVITIES

Contract No. 240000000658

University Region Maintenance of Electronic Control Devices

BACKGROUND

The Michigan Department of Transportation (MDOT) is responsible for the maintenance and upkeep of the traffic signal system. To meet this responsibility, MDOT University Region has established this Contract with prequalified contractor to provide non-routine maintenance for traffic signals, freeway lighting, Intelligent Transportation System (ITS) equipment and other electronic traffic control devices. Also, provide routine preventative maintenance for traffic signals.

SCOPE

The work included in this contract must consist of the complete maintenance and upkeep of the traffic signal system and inspection for the ITS system for Livingston, Washtenaw, and Monroe Counties on 24 hours a day, 365 days a year basis by a Michigan Department of Transportation (MDOT) prequalified Contractor for Electrical Construction (L) and Intelligent Transportation Systems (ITS) work. The Contractor must supply all personnel, training, tools, equipment, and any other needs necessary to maintain the system in a first-class operating condition at all times.

The Contractor must promptly respond to all emergency calls regardless of the hour. Maintenance will be required for approximately 46 signalized intersections for Livingston County, 47 signalized intersections for Monroe County, three (3) rest areas, freeway lighting along US-23, I-75 and I-96, and 6 weigh scale houses as shown in Schedule E. Locations identified above will include all controllers, internally illuminated case signs, pedestrian signals, traffic control signals of all types, traffic signal poles, messenger or support cables, mast arms, in-pavement loop detectors for signal actuation, pedestrian push buttons, overhead lane designation signs, wiring and all other pertinent and related equipment existing at the time the contract is executed. The Contractor should reasonably maintain a sufficient inventory (supplied by MDOT) of signals, controllers, detectors and all incidental brackets, fittings, cables, illuminated signs, LED signal heads, etc. necessary for the completion of intersection repairs as may be required. Controllers and other major components furnished must be consistent (i.e., the same make and manufacturer) with signal equipment already in use and in operation on the system under MDOT jurisdiction.

The scope of service may be extended to additional counties in the University Region as needed. The additional counties include Jackson, Hillsdale, Lenawee, Eaton, Clinton, and Ingham.

REQUIREMENTS

The Contractor must be currently listed as an MDOT Prequalified Contractor in the following categories:

L - Electrical Construction

ITS - Intelligent Transportation Systems (ITS) work

The Contractor must be aware of the conditions under which the required work is to be performed, the areas of work, obstacles which may be encountered, and all other relevant matters concerning the work required.

Unless stated otherwise, work under this contract must be done in accordance with the currently published MDOT Standard Specifications for Construction.

web address: <https://mdotjboss.state.mi.us/SpecProv/specBookHome.htm>

The Contractor will be responsible for the cost and replacement of any damage as a result of performing contract activities.

The Contractor is directly and solely responsible for disposal of surplus and unsuitable material as stated within the currently published MDOT Standard Specifications for Construction, 205.03.P.2.

1. General Requirements

1.1. MMUTCD Compliance

The maintenance of traffic signals must conform to MDOT's Maintenance Work Zone Traffic Control Guidelines. The successful contractor must have a thorough knowledge of the MDOT's requirements for traffic signal installation and maintenance as specified in Part IV – Signals, Michigan Manual of Uniform Traffic Control Devices [MDOT - Transportation Standards and Special Details \(state.mi.us\)](https://mdotjboss.state.mi.us/SpecProv/specBookHome.htm). The Contractor must keep fully informed of any changes in said manual which affects traffic signal installation and maintenance.

1.2. Site Investigation

The Contractor will be notified to investigate and become familiar with conditions relating to the work to be performed according to the contract and specifications, and failure on the part of the bidder to investigate or inspect, will ***not*** be grounds for additional compensation under the terms, conditions and specifications of the bid proposal. Advance inquiry may be made to the MDOT Program Manager.

1.3. Traffic Control

The Contractor, in the course of doing normal signal maintenance or emergency repair work, must place and maintain standard signs and barricades whenever necessary to protect the public and must place and maintain during the time of darkness sufficient non-extinguishable lights as will effectively warn and

safeguard the public against crashes. Traffic control devices must conform to the current Michigan Manual of Uniform Traffic Control Devices. All such devices must be furnished by the Contractor. All maintenance of traffic operations must follow MMUTCD and MDOT guidance consistent with the operation.

All protection and control devices within the areas of construction must be considered as incidental to the protection of the public and no extra payment, therefore will be made. For purposes of this contract the area of construction must be considered any area in which work is in such a stage that safe travel of the public is affected.

The occurrence of any accident/crash involving public use of the streets or sidewalks while the Contractor has work under progress where the person involved was walking or was operating a vehicle in a prudent manner must be considered evidence of insufficient protection as herein prescribed.

The Contractor, as far as practical, must keep the streets and grounds free of equipment, new material, rubbish, evacuated material and debris during progress of any work required.

Temporary crossings must be provided and maintained by the Contractor for vehicular and pedestrian traffic during the construction of an improvement, including temporary roadways for the use of police, fire, schools, hospitals and driveways in use and alley returns. Such crossings and temporary roadways must be provided at locations to such widths and lengths as directed by MDOT.

Maintenance Work Zone Traffic Control Guidelines can be found at the following link: https://www.michigan.gov/documents/zonecontrol_112912_7.pdf

Work Zones Maintaining Traffic Typical can be found at the following link: <https://mdotjboss.state.mi.us/TSSD/tssdHome.htm>

1.4. Qualified Personnel

The MDOT certified Contractor must have skilled maintenance personnel available to respond without undue delay for all emergency calls, including lamp failures. The work must be overseen by a licensed master's electrician and maintenance personnel should possess all required training and certification necessary to perform the work in this contract. When the contractor is given notice, personnel must be available 24 hours a day, 365 days a year to make changes in timing, splits, off-sets, or flasher operation timing on individual controllers or a series of controllers.

The Contractor must provide skilled maintenance for all components and existing traffic signal systems and further provide his personnel with adequate training to keep them well informed of new innovations, techniques, and equipment in the field of traffic signal control.

The Contractor must be prequalified in the following:

Intelligent Transportation System (Master & Electrical License required)

Electrical (Sections 819, 820 Standard Specifications)

The Contractor must personally supervise the work or must have a competent person at the sites at all times to act for him.

1.5. Routine Maintenance Performance

In performing routine maintenance, the Contractor must follow the checklist provided in Schedule C- Preventative Maintenance Checklist for all full traffic signals (device type 1). Each task must be performed annually and place particular emphasis on the following:

The height of signals must be measured at least once a year and necessary adjustments made to ensure that all signals are at least sixteen and half (16 ½') feet in height above the roadway. A written record must be made indicating height, date checked, and any adjustment made.

The Contractor must maintain the appearance of every traffic signal installation in a manner consistent with the Michigan Manual of Uniform Traffic Control Devices.

Routine inspection and cleaning of freeway lighting, rest area lighting, and other facilities may also be required but will be paid for as non-routine maintenance.

1.6. Non-Routine Maintenance

Routine maintenance work as outline above will be authorized by award of this contract to the successful Contractor. The Contractor will also perform emergency or non-routine work as authorized by the MDOT. No other work may be performed such as major maintenance except by authorization by the Michigan Department of Transportation.

The Contractor must respond and repair all trouble calls. within 24 hours of official notification. Any trouble call that is deemed an emergency must be responded to immediately.

The contractor is responsible to provide all required documentation as shown in Schedule D-Forms to the Michigan Department of Transportation with each billing.

1.7. Emergency Repair Work

It is understood and agreed that time is of the essence in respect to emergency repair work contemplated hereunder and the Contractor agrees to do all work covered by the Contract in conformity with the provisions set forth herein and to perform all work with all due diligence so as to complete any work required under

this contact within the shortest, reasonable period of time. Emphasis must be placed on work resulting from a traffic crash. Emergency repair work will be paid as non-routine maintenance and must be completed immediately.

Work must be completed in accordance with Schedule F-Guideline for Electrical Traffic Control Device Maintenance.

1.8. Major Maintenance

Major maintenance generally includes new signal installations and repair work where a major component is added or replaced at a location. This work is reviewed and paid for at the contracted rates for regular and overtime hours worked and to complete the repair. This rate includes all labor and equipment costs needed to complete the work. Except in emergency situations, all major maintenance repairs and installations must require a written estimate and approval from the MDOT Project Manager.

Major maintenance includes, but is not limited to the following activities:

- Installation of new major components, i.e., signal heads including LED, pedestrian signal heads including LED, controllers, video detection equipment, cabinets, case signs, overhead signs, time-based coordinators, messenger, steel poles, mast arms, wood poles, pedestals, conduit, uninterrupted power supply (UPS) units, and replacement or installation of new pavement loops.
- Covering or uncovering of case signs or signal heads associated with construction activities at the direction of the MDOT Project Manager.
- Installing, relocating or removing case signs, overhead signs, or signal heads and all associated cables and poles for construction as the direction of the MDOT Project Manager.

1.9. Coordination of Work

Unless specifically identified as work to be provided by the MDOT staff, the contractor must supervise and furnish all labor, equipment, supplies, materials (except as otherwise noted herein), and perform satisfactorily the professional services at the frequencies and during the times as specified herein. The professional services must include all functions normally considered a part of completing his work in a satisfactory manner.

1.10. Supervision by Contractor

The Contractor will supervise and direct the work of its employees. The Contractor will be solely responsible for the means, methods, techniques, sequences, and procedures of the professional services performed. The

Contractor will appoint a Project Supervisor who must have been designated in writing by the bidder at the time the Request for Proposal is submitted. The Project Supervisor must have fully authority to act on behalf to the Contractor and all communications given to the Project Supervisor must be as binding as if given to the Contractor. The Project Supervisor must be present to the extent necessary so as to perform adequate supervision and coordination of the work.

1.11. Additional Traffic Control Devices

The MDOT has the right to add new signals to the maintenance contract. The MDOT will notify the Contractor in writing when each new signal is installed in order that the location can be added to the maintenance contract. Each new location will be added at the unit price bid of the Proposal. The monthly increase together with the base bid will be paid to the Contractor for monthly traffic signal maintenance for the balance of the contract term.

1.12. Equipment and Materials

The Contractor must have all necessary equipment and tools to safely install and maintain traffic signals, traffic signal poles, inner-connect cable and all other signal equipment such as case signs, pedestrian signals, overhead lane designation signs and any other related equipment.

The MDOT must have the right to inspect any material to be used in carrying out the terms of this contract.

The MDOT must assume responsibility for all availability of any materials, equipment or components required under the contract. The MDOT must be responsible for the quality and standards of all materials, equipment and components under this contract.

Materials, equipment, components or completed work supplied by the Contractor not complying may be rejected by the MDOT and must be replaced by the Contractor at no cost to the MDOT.

MDOT must supply materials listed below:

- Traffic Signal Cabinet
- Traffic Signal Controllers
- Signal heads
- Case Sign
- Pedestrian heads
- Pedestrian inserts
- Pedestrian poles

2. Service Requirements

2.1. Work Hours

The Contractor must provide Contract Activities during the State's normal working hours Monday – Friday, 6:00 a.m. to 6:00 p.m. EST, and possible night and weekend hours depending on the requirements of the project.

2.2. Project Prevailing Wage Requirements, applicable only if construction or installation is required as part of Contract Activities

The Contractor (and its Subcontractors) must pay all mechanics and laborers employed directly on the site of the work, unconditionally and at least once a week, and without subsequent deduction or rebate on any account, the full amounts accrued at time of payment, computed at wage rates not less than those stated in the advertised specifications as prevailing wages based on locality, regardless of any contractual relationship which may be alleged to exist between the Contractor or subcontractor and the laborers and mechanics.

Contractor must post the scale of wages to be paid in a prominent and easily accessible place at the site of the work.

2.3. Record Keeping

Documentation by the Contractor is required for the work completed under this contract. Detailed maintenance records on each individual signalized intersection must be kept of all phases of cleaning, maintaining, repairing, etc. A "Traffic Signal Trouble Report" and "Job Report" must be completed and submitted by the Contractor for any maintenance activity and emergency repair work. The record must include date, time and the work performed. It must include a listing of all equipment, parts replaced, including lamp bulbs. Such records along with invoices (if any) must be filed monthly with the MDOT Project Manager. Report forms are included in Schedule D-Forms. MDOT may also require detailed maintenance records to be submitted electronically.

2.4. Meetings

The Contractor must attend the following meetings:

- The Contractor will be required to attend a Kick-off meeting within 2 weeks of the contract effective date.
- The Contractor will attend an annual coordination meeting to review project and contract activities.
- The State may request other meetings as it deems appropriate.

3. Staffing

3.1. Contractor Representative

The Contractor must appoint one individual specifically assigned to State of Michigan accounts who will respond to State inquiries regarding the Contract

Activities, answer questions related to ordering and delivery, etc. (the “Contractor Representative”).

The Contractor must notify the Contract Administrator at least 14 calendar days before removing or assigning a new Contractor Representative.

Contract Representative:

Name:	Steve Severance
Title:	SEC/TRES
Address:	4140 Rollridge Kalamazoo, MI 49004
Phone Number:	269-345-0134
Email Address:	steve@sevelectric.com

3.2. Disclosure of Subcontractors

Subcontractors will not be utilized in the performance of this Contract.

3.3. Security

The Contractor will be subject the following security procedures:

The Contractor’s staff may be required to make deliveries to or enter State facilities. The State may require the Contractor’s personnel to wear State issued identification badges.

The Contractor must: (a) explain how it intends to ensure the security of State facilities, (b) whether it uses uniforms and ID badges, etc., (c) identify the company that will perform background checks, and (d) the scope of the background checks.

Contractor work trucks will be always driven. Logos will always be on every work vehicle. ID will always be present on all employees. Background checks are performed for employees by our insurance carrier upon request. All employees have driving records reviewed.

4. Pricing

4.1. Price Term

Pricing is firm for a 365-day period (“Pricing Period”). The first pricing period begins on the Effective Date. Adjustments may be requested in writing by either party and will take effect no earlier than the next Pricing Period.

4.2. Price Changes

Adjustments will be based on changes in actual Contractor costs. Any request must be supported by written evidence documenting the change in costs. The State may consider sources, such as the Consumer Price Index; Producer Price Index; other pricing indices as needed; economic and industry data;

manufacturer or supplier letters noting the increase in pricing; and any other data the State deems relevant.

Following the presentation of supporting documentation, both parties will have 30 days to review the information and prepare a written response. If the review reveals no need for modifications, pricing will remain unchanged unless mutually agreed to by the parties. If the review reveals that changes are needed, both parties will negotiate such changes, for no longer than 30 days, unless extended by mutual agreement.

The Contractor remains responsible for Contract Activities at the current price for all orders received before the mutual execution of a Change Notice indicating the start date of the new Pricing Period.

5. Ordering

5.1. Authorizing Document

The appropriate authorizing document for the Contract will be delivery order.

6. Acceptance

6.1. Acceptance, Inspection and Testing

Acceptance occurs when the MDOT Program Manager or designee inspects and approves the completed work.

6.2. Final Acceptance

Final acceptance occurs when MDOT makes payment for the work.

7. Invoice and Payment

7.1. Invoice Requirements

All invoices submitted to the State must include: (a) date; (b) purchase order; (c) quantity; (d) description of the Contract Activities; (e) unit price; (f) shipping cost (if any); (g) vendor-generated invoice number; and (h) total price.

7.2. Payment Methods

The State will make payment for Contract Activities

As required by MCL 18.1283, the Contractor must electronically register with the State at <https://sigma.michigan.gov/webapp/PRDVSS2X1/AltSelfService> to receive EFT payments.

7.3. Procedure

Copies of time sheets containing name of employees, date and hours worked on major maintenance and emergency repair work must be submitted with the invoice. Components purchased by the bidder for emergency repair and major maintenance work are reimbursable upon receipt of a copy of a supplier's invoice. These components will be paid for at cost plus 5% surcharge for

administrative costs to the Contractor. The Contractor must also submit equipment warranties furnished by the manufacturer. All parts and materials must be documented as a direct expense and itemized on the invoice.

All parts and materials must be F.O.B. Destination with transportation charges included in the price of the part/material order.

Invoices are to be emailed to the MDOT Program Manager, Stephanie Palmer at PalmerS@michigan.gov.

7.4. Quick Payment Terms

A one (1) percent discount off invoice if paid within five (5) days of receipt of invoice.

8. Project Plan

The Contractor will carry out this project under the direction and control of the Agency. The Contractor will create and submit a project plan annually to present to the Project Manager for review. The plan must include signals last date of service, resources required, process for addressing issues/changes, log of non-routine work.

The Contractor utilizes an electronic processing and entry format for all inspections and routine maintenance, including repairs and work orders. Timesheets, work descriptions, and reporting is completed electronically. In addition to reporting and invoicing, access to a service app is also provided to MDOT employees to initiate and review service requests.

9. Liquidated Damages

Late or improper completion of the Contract Activities will cause loss and damage to the State, and it would be impracticable and extremely difficult to fix the actual damage sustained by the State. Therefore, if there is late or improper completion of the Contract Activities the State is entitled to collect liquidated damages in the amount of \$1,000 and an additional \$100 per day for each day Contractor fails to remedy the late or improper completion of the Work.

10. Performance Bonds

The Contractor must furnish performance and lien bonds each for not less than 100% of the total contract price. The bonds must be on forms provided by MDOT. The bonds must meet the requirements of Michigan law and MDOT and include other items such as the Powers of Attorney and Endorsement as specified by MDOT. The same surety responsible for writing the performance bond must write the lien bond. It is the Contractor's responsibility to ensure that the lien bond conforms with the terms of MCL 570.101 et seq.

SCHEDULE B - PRICING

Contract No. 240000000658
University Region Maintenance of Electronic Control Devices

Description	Quantity	Unit of Measure	Unit Cost	Extended Cost
Routine Signal Maintenance	93 signals	Each	\$1,500.00	\$139,500.00
Unit amount includes replacement parts				
Regular hours of work are defined as 6:00 am to 6:00 pm.				
All costs must be F.O.B. Destination with transportation charges prepaid on the order.				
Total Bid Amount			\$139,500.00	
Description	Quantity	Unit of Measure	Unit Cost	Extended Cost
Non-Routine Signal Maintenance Regular	1600	Hours	\$140.00	\$224,000.00
regular work hours Mon. through Fri. 6 am to 6 pm				
**Routine inspection and cleaning of freeway lighting, rest area lighting, and other facilities may also be required but will be paid for as non-routine maintenance. **				
All costs must be F.O.B. Destination with transportation charges prepaid on the order.				
Total Bid Amount			\$244,000.00	
Description	Quantity	Unit of Measure	Unit Cost	Extended Cost
Non-Routine Signal Maintenance Overtime	100	Hours	\$210.00	\$21,000.00
overtime work hours Mon. through Fri. from 6pm to 6 am and Saturday and Sunday				
Description-INFORMATION & BUDGET ONLY				Extended Cost
Parts and Material (Direct Expenses)				\$15,000.00
All parts and materials shall be documented as a direct expense and itemized on the invoice.				
All costs must be F.O.B. Destination with transportation charges prepaid on the order.				
Total Bid Amount			\$36,000.00	
Total Estimated Contract Value			\$399,500.00	

Schedule C: Preventive Maintenance Checklist								
TASK	Minimum Recommended Interval*				Min. Level of Maintenance Required			
	Months			Years 2-5	A	B	C	D
	3	6	12					
CABINETS								
• Lubricate hinges and locks			X				X	X
• Vacuum cabinet			X				X	X
• Replace filters			X				X	X
• Check weatherproof seals (gaskets)			X				X	X
• Check anchor bolts			X				X	X
• Check for water accumulation and check duct sealant			X				X	X
• Check ground rod clamp and wire			X				X	X
• Check wiring schematics and records			X				X	X
• Check operation of fan and heater			X				X	X
• Check radio interference filter and lightning arrestor			X				X	X
• Check circuit breaker and fuses			X				X	X
• Check ground fault receptacle			X				X	X
• Measure voltages at service inputs in cabinet	As required						X	X
• Check and record current being drawn	As required						X	X
• Remove any snow or brush	As required					X	X	X
SIGNAL HEADS								
• Clean lenses, signs, reflectors			X			X	X	X
• Replace lamps (incandescents)			X		X	X	X	X
• Check gasket for water infiltration and deterioration			X				X	X
• Check alignment			X				X	X
• Check for wear on the span wire, signal wire, and mechanical hardware (clevis pins, clamps)			X				X	X
• Check mast arms, free-swinging signals; check clevis and chain			X				X	X
• Check for cracks or rust in the hardware			X				X	X
• Check hoods, wing nuts, and hinges			X				X	X
• Replace substandard hardware	As required						X	X
• Replace defective lenses and reflectors or lamps	As required						X	X
• Check locking rings (surface); install proper locking devices as required			X				X	X
• Check condition of back plates (if used)			X				X	X
MAST ARMS AND POLES								
• Check alignment of mast arms			X				X	X
• Inspect poles, transformer bases and arms for damage caused by impact with vehicles			X				X	X
• Inspect for rust; spot paint as required			X				X	X
• Inspect joints for rust and cracks at arm/upright location and at base plate			X				X	X
• Inspect anchor bolts for rust and tightness			X				X	X
SPAN WIRE AND POLES								
• Inspect for rust			X				X	X
• Inspect joints for rust, grout, and tightness			X				X	X
• Inspect condition of span and tether wires			X				X	X

Schedule C: Preventive Maintenance Checklist								
TASK	Minimum Recommended Interval*				Min. Level of Maintenance Required			
	Months			Years 2-5	A	B	C	D
	3	6	12					
- Verify span and tether wire vertical clearance at low spot of sag - Check clamps and hardware - Check guy wire, anchors, and guards, wood poles			X				X	X
PUSH BUTTONS								
- Check push buttons on each end of actuated crosswalks and visually verify pedestrian signal operation; verify timing - Check push button indicator lamp (if one exists) for operation - Check push button signs; clean or replace if necessary - Check push button sign alignment			X				X	X
			X				X	X
			X				X	X
			X				X	X
DETECTORS								
Sensors								
- Visually inspect roadway along loop detector saw cut for exposed wires, cracks, potholes, rutting, etc. - Check alignment for sonic, magnetic, video, and radar-type detectors; verify call inputs to controller phases			X				X	X
			X				X	X
- Verify special functions, e.g., delay, extension - Refocusing, realigning, and/or lense cleaning of video detection cameras and resetting detector zones as needed. Upgrading video detection system firmwars as needed.			X				X	X
			X				X	X
Amplifiers								
- Check whether the detector is detecting vehicles within its design zone of detection - Tune the detector if necessary - Check whether the connectors are tight and secure			X				X	X
			X				X	X
			X				X	X
JUNCTION BOXES AND HANDHOLES								
- Check integrity of the splices - Check the ground rod, clamp connection, and bonding of conduits - Check the insulation - Check for abnormal amounts of water - Check lid for abnormal condition and fit			X				X	X
			X				X	X
			X				X	X
			X				X	X
			X				X	X
SOLID STATE, ANALOG, AND MICRO PROCESSOR-BASED CONTROL EQUIPMENT								
General								
- Check whether the time settings match the current timing permit - Check whether indicator lamps on the modules are working; replace failed lamps - Check for extension by detector actuation - Check whether modules fit tightly and securely into the frame - Check whether connectors are tight and secure - Wipe dust off controller, detectors, and auxiliary equipments			X				X	X
			X				X	X
			X				X	X
			X				X	X
			X				X	X
			X				X	X

Schedule C: Preventive Maintenance Checklist								
TASK	Minimum Recommended Interval*				Min. Level of Maintenance Required			
	Months			Years 2-5	A	B	C	D
	3	6	12					
Conflict Monitors								
• Replace with bench-tested unit and take to repair shop for testing			X				X	X
Load Switches								
• Check load switch packs			X				X	X
Relays								
• Check mercury relays (if used) for excessive splash			X				X	X
Flashers								
• Check whether firm in socket; check on/off ratio and flash rate			X				X	X
Switches								
• Verify operation of each switch position			X				X	X
• Check for loose wires			X				X	X
Terminal Connections								
• Check for discoloration and tightness			X				X	X
INTERCONNECTED EQUIPMENT								
• Verify communication is in tact within the system			X				X	X
• Check whether controller operates in the mode selected by the supervisory master (i.e., time-based coordinator) and verify TBC of local matches TBC in master			X				X	X
• Disconnect from the master supervisory system and check for “free” or backup operations			X				X	X
• Check any special equipment per manufacturer’s recommendation			X				X	X
MISCELLANEOUS								
• Record all changes in timing, wiring, or any function		As required					X	X
• Record current flow at un-metered installations		As required					X	X

* or earlier if required

ELECTRICAL DEVICES TROUBLE REPORT

Michigan Department
of Transportation
0499 (10/00)

Clear Form

PRINT LEGIBLY. This form does not need to be typewritten.

Use reverse for additional REMARKS/DESCRIPTION if necessary.

LOCATION											JOB REPORT NO.			
REPORTED BY:											TIME CALL RECEIVED ☐ A.M. ☐ PM.		DATE	
TIME ELECTRICIAN NOTIFIED ☐ A.M. ☐ PM.		TIME ARRIVED ☐ A.M. ☐ PM.		TIME COMPLETED ☐ A.M. ☐ PM.		TOTAL TRAVEL TIME		TRUCK NO.		ACCIDENT INVOLVED ☐ YES ☐ NO				
TYPE (☒ One)		TROUBLE		RED OUT	YELLOW OUT	GREEN OUT	NO COLOR	DON'T WALK OUT	WALK OUT	SIGNAL in FLASH	POWER FAILURE	TIMING PROBLEM	SIGNAL LOW	OTHER (NOTE IN REMARKS)
☐ SIGNAL		REPORTED												
☐ FLASHER		FOUND												
☐ KEEP RIGHT														
☐ O'HEAD LUMIN.														
☐ OTHER														

REMARKS

DESCRIPTION OF WORK PERFORMED

ELECTRICIAN(S) (SIGNATURE)

DATE

CALL RECEIVED BY:

REPORT APPROVED BY (SIGNATURE)

DATE

ELECTRICAL DEVICES TROUBLE REPORT

Michigan Department
of Transportation
0499 (10/00)

Clear Form

PRINT LEGIBLY. This form does not need to be typewritten.

Use reverse for additional REMARKS/DESCRIPTION if necessary.

LOCATION											JOB REPORT NO.			
REPORTED BY:											TIME CALL RECEIVED ☐ A.M. ☐ PM.		DATE	
TIME ELECTRICIAN NOTIFIED ☐ A.M. ☐ PM.		TIME ARRIVED ☐ A.M. ☐ PM.		TIME COMPLETED ☐ A.M. ☐ PM.		TOTAL TRAVEL TIME		TRUCK NO.		ACCIDENT INVOLVED ☐ YES ☐ NO				
TYPE (☒ One)		TROUBLE		RED OUT	YELLOW OUT	GREEN OUT	NO COLOR	DON'T WALK OUT	WALK OUT	SIGNAL in FLASH	POWER FAILURE	TIMING PROBLEM	SIGNAL LOW	OTHER (NOTE IN REMARKS)
☐ SIGNAL		REPORTED												
☐ FLASHER		FOUND												
☐ KEEP RIGHT														
☐ O'HEAD LUMIN.														
☐ OTHER														

REMARKS

DESCRIPTION OF WORK PERFORMED

ELECTRICIAN(S) (SIGNATURE)

DATE

CALL RECEIVED BY:

REPORT APPROVED BY (SIGNATURE)

DATE

DESCRIPTION OF ARTICLES OR SERVICES RENDERED**TRAVEL EXPENSE:**

MATERIAL TOTAL

EQUIPMENT TOTAL

GRAND TOTAL

SIGN AND SIGNAL SUPERVISOR APPROVAL

DATE _____

MA 240000000658

REPORT OF DEPARTMENT PROPERTY DAMAGE

DISTRIBUTION:
REGION MAINT. ENGR.
YOUR FILES

Information required by Act 17, P.A. of 1925.

Failure to supply this information will result in non-payment for service.

ACCIDENT/INCIDENT REPORT NUMBER	OWNER/DRIVER	ACCIDENT DATE
TRUNKLINE NUMBER	POLICING AGENCY	
AGENCY MAKING REPAIRS (List all agencies involved)	CONTACT PERSON	AGENCY PHONE NO.

WORK COMPLETED, CHECK APPROPRIATE BOX:

☐ Repair guardrail, Total guardrail length _____ ft	☐ Repair sign	☐ Other repair _____
☐ Replacement of entire guardrail system	☐ Total sign replacement	☐ Other total replacement _____

CHECK
APPROPRIATE
BOX:

☐ Repairs/replacement to damage caused by the above accident have been completed. The cost is itemized below.	☐ Below is an estimated cost of damage caused by the accident above.	☐ Estimate previously reported.
---	---	--

Labor	INSTALLER BY SHOP IDENTIFIER NUMBER	DATES WORKED	HOURS	RATE	DIRECT LABOR CHARGES
		Additional Page			DIRECT LABOR COST TOTAL
Equipment	NUMBER OR DESCRIPTION	DATES WORKED	HOURS	RATE	DIRECT EQUIP. CHARGES
		Additional Page			DIRECT EQUIPMENT COST TOTAL
Materials	ITEM DESCRIPTION	UNIT	COST/UNIT		DIRECT MATERIAL CHARGES
		Additional Page			DIRECT MATERIAL COST TOTAL
TOTAL DIRECT COSTS					

INDIRECT COSTS

LABOR ADDITIVE (fringe) %	% x	DIRECT LABOR COST TOTAL	=	
MATERIAL HANDLING %	% x	DIRECT MATERIAL COST TOTAL	=	
OVERHEAD %	% x	TOTAL DIRECT COSTS	=	
TOTAL INDIRECT COSTS				
TOTAL COST (TOTAL DIRECT COSTS + TOTAL INDIRECT COSTS)				

TO BE FILLED OUT BY ARU ONLY

SIGNATURE	LESS DEPRECIATION (On Replacement Cost Only)	\$
TITLE	MAIN OFFICE CHARGE	\$
DATE	GRAND TOTAL	\$

ACCIDENT/INCIDENT REPORT NUMBER	OWNER/DRIVER	ACCIDENT DATE
DESCRIPTION OF ARTICLES OR SERVICE RENDERED		

Labor	INSTALLER BY SHOP IDENTIFIER NUMBER	DATES WORKED	HOURS	RATE	DIRECT LABOR CHARGES
	Return to First Page				ENTER TOTAL ON PAGE ONE
Equipment	NUMBER OR DESCRIPTION	DATES WORKED	HOURS	RATE	DIRECT EQUIP. CHARGES
Return to First Page				ENTER TOTAL ON PAGE ONE	

ADDITIONAL PAGE MAY BE USED IF NEEDED

ACCIDENT DATE

[illegible]

Reference Guide for completing Michigan Department of Transportation Report of Department Property Damage Form 443

- The calculations are automatic when the form is completed on line.
- Make sure you sign the form and include your title and the date.
- A new section has been added which is to be completed by MDOT's Accounts Receivable Unit.

ACCIDENT/INCIDENT REPORT NUMBER - Can be found in the upper right corner of the Traffic Crash Report.

OWNER/DRIVER – Can be found in the center of the Traffic Crash Report.

ACCIDENT DATE - Can be found in the upper left corner of the Traffic Crash Report.

TRUNKLINE NUMBER - Can be found in the center of the Traffic Crash Report.

POLICING AGENCY - Can be found in the top middle of the Traffic Crash Report.

AGENCY MAKING REPAIRS - The garage or the County Road Commission making the repairs.

CONTACT PERSON - Supervisor overseeing trunkline repairs that can answer any questions regarding the items that were filled out on form 443.

AGENCY PHONE NUMBER - The garage phone number or county road commission phone number where the contact person can be reached.

WORK COMPLETED, CHECK APPROPRIATE BOX

-Repair Guardrail – a guardrail is repaired when less than the whole guardrail is being replaced. (Example: Only one tri-beam rail used)

- If this is a guardrail repair, what is the total length of the entire guardrail from end to end, including, the part that was repaired.

-Replacement of entire Guardrail – a guardrail is replaced when the whole guardrail is taken down from end to end and replaced with all new guardrail.

-Repair Sign – a sign is repaired when only a portion has to be replaced (Example: The post is replaced but the original sign is reinstalled).

-Total sign Replacement – a sign is replaced when the sign itself is taken down and replaced with a new sign (Example: The post(s), sign, nuts and bolts are totally replaced).

-Other Repair – Would include repairs to traffic signals, bridges, driveways, traffic control, clean-up cost, etc., but would not include signs or guardrails.

-Other total Replacement – Would include total replacement of traffic signals, bridges, etc., but would not include signs or guardrails.

Check Appropriate Box: Check only one box.

Repairs/replacement to damage caused by the above accident have been *completed*. The cost is itemized below.

Or

Below is an *estimated* cost of damage caused by the accident above.

Or

Estimate previously reported.

Labor

INSTALLER BY SHOP IDENTIFIER - Employee number, Installers initials, or TMW number as long as the information on the 443 form can be identified to a specific individual. This will reduce the number of harassing phone calls to these individuals.

DATES WORKED - These would be all the dates you were at this site.

HOURS - This would be the hours you were at the site.

RATE - This is the hourly rate including benefits.

DIRECT LABOR CHARGES - Hours worked multiplied by rate equals direct labor charges.

DIRECT LABOR COST TOTAL – Total of all direct labor charges.

Equipment

NUMBER OR DESCRIPTION - Equipment number or description.

DATES WORKED - The date the equipment was at the job site.

HOURS - Hours worked on site.

RATE - Equipment rental rate which is recalculated annually.

DIRECT EQUIPMENT CHARGE - Hours multiplied by rate equals direct equipment charges.

DIRECT EQUIPMENT COST TOTAL – Total of all direct equipment charges.

Materials

ITEM DESCRIPTION - Description if the item(s) used for the repair or replacement.

UNIT - The number of units used on this particular job.

COST/UNIT - Cost of one unit.

DIRECT MATERIAL CHARGES - Units multiplied by cost per unit equals direct material charges.

DIRECT MATERIAL COST TOTAL – Total of all direct material charges.

TOTAL DIRECT COST- Add direct labor charges plus direct equipment charges plus direct material charges equals total direct cost.

Indirect Costs

LABOR ADDITIVE - Multiply Labor Additive rate by direct labor charges.

* County Road Commission - refer to State Trunkline Maintenance Contract.

MATERIAL HANDLING - Multiply material handling charge percentage times total direct material charges to equal the indirect material charges.

*MDOT repair facilities do not charge a handling fee. Only County Road Commissions have handling charges as established in contract agreement.

OVERHEAD – Multiply overhead rate by the direct costs.

*For County Road Commission, the overhead rate is set by the county according to a formula in the State Trunkline Maintenance Contract.

TOTAL INDIRECT COST - Total of indirect labor charges plus indirect material charges plus indirect cost for overhead

TOTAL COST TO REPAIR/REPLACE -Total of the direct charges plus the total indirect charges.

**Additional pages can be added to include more space for Labor, Equipment and Materials and a description of articles or service rendered. See additional pages online.

SIGNATURE – Individual completing form.

TITLE – Job title of individual completing form.

Schedule E

Locations					
Control Section	Device Type	Spot	County	Description	Last Modernized
47014	10	8	Livingston	I96 EB AT ON RAMP FROM US23 SB (#007H)	2001
47014	10	9	Livingston	I96 WB AT ON RAMP FROM US23 NB (#007F)	2001
47014	1	10	Livingston	US23 NB OFF RAMP @ M59 (HIGHLAND) (SPUI)	2003
47041	8	2	Livingston	M-36 AT 670' EAST OF PETTYSVILLE RD	2002
47041	1	3	Livingston	M36 @ PETTYS RD	2008
47041	1	4	Livingston	M36 @ MERRILL RD	2011
47041	2	8	Livingston	M36 (SPICER) @ M36 (HAMBURG)	2020
47041	1	9	Livingston	M36 (MAIN) @ DEXTER, PINCKNEY RD	2008
47041	1	12	Livingston	M36 @ CHILSON RD	2015
47041	1	13	Livingston	M36 @ MCGREGOR RD	2003
47041	1	16	Livingston	M36 @ PETTYSVILLE RD	2008
47041	1	17	Livingston	M36 @ HAMBURG RD	2008
47041	8	18	Livingston	M-36 @ 1400' W. OF HAMBURG	2010
47041	4	19	Livingston	M-36 @ COUNTRY ELEMENTARY SCHOOL	2008
47061	1	2	Livingston	I96BL (GRAND RIVER) @ WALNUT	2025
47061	1	11	Livingston	I96BL (GRAND RIVER) @ BYRON RD	2025
47061	1	12	Livingston	I96BL (GRAND RIVER) @ HIGHLANDER WAY	2025
47061	1	13	Livingston	BL-96(GRAND RIVER) AT HOWELL SCHOOL DR	2025
47062	1	1	Livingston	I96BL (GRAND RIVER) @ THE PLAZA CENTER DR	1992
47062	1	2	Livingston	I96BL (GRAND RIVER) @ M155 (MICHIGAN)	2025
47062	1	4	Livingston	I96BL @ LAWSON RD	2003
47062	1	5	Livingston	BL-96(GR RV) @ MEIJER/LIVINGSTON COMMONS	1999
47062	1	9	Livingston	I96BL (GRAND RIVER) @ NATIONAL ST	2025
47062	1	10	Livingston	I96BL (GRAND RIVER) @ CHILSON RD	2002
47062	1	11	Livingston	I96BL (GRAND RIVER) @ LATSON RD	2012
47062	1	12	Livingston	I96BL (GRAND RIVER) @ GRAND OAKS DR	2015
47062	1	13	Livingston	I96BL (GRAND RIVER) @ GOLF CLUB RD	2008
47062	1	206	Livingston	BL-96 (GRAND RIVER) @ I-96 WB OFF-RAMP (LAKE CHEM	2003
47065	10	1	Livingston	I96 EB AT BL96 EB ON RAMP (FROM GRAND RIVER AVE)	2001
47065	1	3	Livingston	I96 WB OFF RAMP @ GRAND RIVER & HILTON	2024
47065	1	103	Livingston	I96 EB OFF RAMP @ GRAND RIVER & HILTON	2024
47065	1	6	Livingston	I96 WB OFF RAMP @ (D19) PINCKNEY RD	2015
47065	1	7	Livingston	I96 WB OFF RAMP @ LATSON ROAD	2012
47065	1	105	Livingston	I96 WB OFF-RAMP @ SPENCER RD	2005
47065	1	107	Livingston	I96 EB OFF RAMP @ LATSON ROAD	2012
47066	1	1	Livingston	I96 WB OFF RAMP @ FOWLerville RD	2015
47066	11	3	Livingston	I96 @ FOWLerville WEIGH STATION	2016

47082	1	2	Livingston	M59 (HIGHLAND) @ OAK GROVE & MICHIGAN	2022
47082	1	4	Livingston	M59 (HIGHLAND) @ RELOCATED BURKHART RD	2006
47082	1	5	Livingston	M59 (HIGHLAND) @ I96BL (GRAND RIVER)	2006
47082	1	6	Livingston	M59 (HIGHLAND RD) @ EAGER RD	2019
47082	1	7	Livingston	M59 (HIGHLAND RD) @ CLARK RD	2020
47082	1	11	Livingston	M59 (HIGHLAND) @ BYRON RD	2006
47082	1	13	Livingston	M59 (HIGHLAND) @ WHITMORE LAKE RD	2003
47082	1	18	Livingston	M59 (HIGHLAND ROAD) @ CROSSOVER/BLAINE	2009
47082	1	20	Livingston	M59 (HIGHLAND) @ HARTLAND HIGH SCHOOL	2020
47082	1	22	Livingston	M-59 (HIGHLAND) @ HACKER RD.	2019
47082	4	23	Livingston	M59 (HIGHLAND) AT CHARYL STOCKWELL ACADEMY DR	2009
47082	1	24	Livingston	M-59 @ WALMART DR.	2009
47082	1	25	Livingston	M-59 WB @ HARTLAND RD. (RELOCATED)	2009
47082	1	27	Livingston	M-59 (Highland Road) @ Argentine Road	2023
47082	1	105	Livingston	M-59 (HIGHLAND) at X-OVER EAST OF GRAND RIVER	2006
47082	1	124	Livingston	M-59 WB @ X-OVER 666' E. OF WALMART DR.	2009
47121	1	1	Livingston	M155 (MICHIGAN) @ W SIBLEY ST	2025
47121	1	3	Livingston	M155 (MICHIGAN) @ M155 (MASON)	2025
58032	1	1	Monroe	M50 (TECUMSEH,MONROE) @ RILEY & MAIN ST	2008
58032	1	8	Monroe	M50 (TECUMSEH) @ ANN ARBOR RD	1998
58033	1	5	Monroe	US23 NB OFF RAMP @ M50	1998
58033	1	105	Monroe	US23 SB OFF RAMP @ M50	1998
58034	1	1	Monroe	US23 NB OFF RAMP @ STERNS ROAD	2012
58034	1	101	Monroe	US-23 SB OFF RAMP @ STERNS ROAD	2012
58041	1	2	Monroe	M-50 AT CABELA BLVD. EAST / HELLE BLVD.	2000
58042	1	2	Monroe	M50 @ IDA MAYBEE RD & LEWIS	2015
58042	1	3	Monroe	M50 (S CUSTER) @ HERR RD	2003
58042	3	4	Monroe	M50 @ 2240' W OF RAISINVILLE RD	2006
58042	4	10	Monroe	M-50 @ WATERLOO SCHOOL CROSSING	2021
58042	1	10	Monroe	M-50 @ WATERLOO SCHOOL CROSSING	2021
58042	1	11	Monroe	M50 @ RAISINVILLE RD	1998
58051	2	1	Monroe	US24 (TELEGRAPH) @ ERIE RD	2004
58051	1	2	Monroe	US24 (TELEGRAPH) @ STERNS RD	2021
58051	10	102	Monroe	US24 (TELEGRAPH) @ STERNS RD	2021
58051	10	202	Monroe	US24 (TELEGRAPH) @ STERNS RD	2021
58051	1	3	Monroe	US24 (TELEGRAPH) @ SMITH,LAVOY RDS	2007
58052	1	1	Monroe	US24 (TELEGRAPH) @ M151 & LUNA PIER RD	2021
58052	3	2	Monroe	US24 (TELEGRAPH) @ NORTH END DIV US24	1985
58052	1	3	Monroe	US24 (TELEGRAPH) @ DUNBAR RD	2017
58052	1	4	Monroe	US24 (TELEGRAPH) @ M50 (FRONT)	2024
58052	1	5	Monroe	US24 (TELEGRAPH) @ STEWART RD	2012
58052	1	8	Monroe	US24 (TELEGRAPH) @ ALBAIN RD	2021
58052	1	10	Monroe	US24 (TELEGRAPH) @ 7TH ST	2024
58052	1	11	Monroe	US24 (TELEGRAPH) @ HOLIDAY DR,LAZY BOY	2021
58052	1	15	Monroe	US24 (TELEGRAPH) @ LORAIN ST	2024
58052	11	16	Monroe	US24 (TELEGRAPH) @ MONROE WEIGH STATION	2006

58052	1	18	Monroe	US24 (TELEGRAPH) @ FREDRICKS RD	1999
58052	1	19	Monroe	US24 (TELEGRAPH) @ MALL RD (S. JCT)	2012
58052	1	21	Monroe	US24 (TELEGRAPH) @ MALL RD (N. JCT)	2007
58053	1	1	Monroe	US24 (TELEGRAPH) @ M125 (MONROE)	2004
58053	1	2	Monroe	US24 (TELEGRAPH) @ NEWPORT RD	2015
58053	1	3	Monroe	US24 (TELEGRAPH) @ CARLETON ROCKWOOD RD	2004
58071	1	1	Monroe	M125 (DIXIE HWY) @ MANHATTAN & STODDARD	2004
58071	1	2	Monroe	M125 (MONROE) @ 6TH	2004
58071	1	3	Monroe	M125 (MONROE) @ 3RD	2004
58071	1	4	Monroe	M125 (MONROE) @ 2ND	2004
58071	1	5	Monroe	M125 (MONROE) @ M50 (FIRST)	2004
58071	1	6	Monroe	M125 (MONROE) @ M50 (FRONT)	2004
58071	1	7	Monroe	M125, M50 (MONROE) @ M50 (ELM)	2014
58071	1	8	Monroe	M125 (MONROE) @ NOBLE ST	2024
58071	2	9	Monroe	M125 (DIXIE HWY) @ SUMMIT	2004
58071	1	10	Monroe	M125 (DIXIE HWY) @ US24 CONNECTOR,LUNA PIER RD	2021
58071	10	110	Monroe	M125 (DIXIE HWY) @ US24 CONNECTOR,LUNA PIER RD	2021
58071	10	210	Monroe	M125 (DIXIE HWY) @ US24 CONNECTOR,LUNA PIER RD	2021
58071	1	11	Monroe	M125 (MONROE) @ STEWART & COLE	2014
58071	8	12	Monroe	M-125(DIXIE) @ MONROE TWP FIRE STATION	2003
58071	1	13	Monroe	M125 (MONROE) @ JONES ST,SHOPPING CENTER	2003
58071	1	15	Monroe	M125 (DIXIE HWY) @ DUNBAR	2000
58071	8	20	Monroe	M125 @ LAPLAISANCE & OTTER CREEK	2008
58071	1	24	Monroe	M125 (DIXIE HWY) @ STERNS RD	2024
58071	1	25	Monroe	M125 (DIXIE HWY) @ ALBAIN RD	2004
58071	1	26	Monroe	M125 (MONROE) @ NADEAU RD	2014
58071	1	27	Monroe	M125 @ MABLE KEHRES RETIREMENT CENTER	2004
58071	1	28	Monroe	M125 (MONROE) @ FRENCHTOWN MALL	2024
58071	8	30	Monroe	M125 @ FRENCHTOWN FIRE STATION	2008
58151	11	7	Monroe	I75 @ ERIE WEIGH STATION	2022
58152	1	3	Monroe	I75 SB OFF RAMP @ NADEAU RD	2015
58152	1	5	Monroe	I75 SB OFF RAMP @ DIXIE HWY (OLD M50)	2015
58152	1	105	Monroe	I75 NB OFF RAMP @ DIXIE HWY (OLD M-50)	2015

GUIDELINE

FOR

ELECTRICAL

TRAFFIC CONTROL DEVICE

MAINTENANCE

Michigan Department of Transportation
Operations Division
Final Version - July 2010

This document supersedes all previous guidelines and procedures relative to electrical traffic control device maintenance and hereafter referred in this document as guidelines.

INTRODUCTION

Traffic control devices must be properly maintained to command respect and to obtain accurate action on the part of motorists. It is the intent of this guide to establish minimum maintenance procedures to accomplish this task.

Department maintenance has been established on a statewide basis utilizing Region Signal Electricians. Where local agencies can provide properly trained personnel and equipment, maintenance and/or installation of electrical devices can be undertaken by these agencies when authorized. All other installations are handled by the Statewide Signal Shop or by contract.

SIGNAL MAINTENANCE BY LOCAL AGENCIES

Where local agencies can provide qualified personnel, and equipment, maintenance and installation of electrical devices can be undertaken by these agencies when authorized. Each individual Signal Cost Agreement form specifies who will be responsible for maintenance, and at what level. Four levels of signal maintenance have been established for local agencies that wish to maintain or install electrical traffic control devices on trunk lines within their jurisdictional area. Each level of maintenance carries with it the responsibility for having *qualified personnel performing the required maintenance work in the proper manner, and at established intervals. It is the responsibility of each agency to possess all necessary licenses and certifications required to perform the work at that level. All new installations or modernizations shall be done in accordance with the MDOT Work Authorizations, Division of Operations-Traffic and Safety Standard Specifications and detailed drawings, and any applicable laws and rules governing all electrical installations including but not limited to the National Electrical Code (NEC), National Electrical Safety Code (NESC), Michigan Manual of Uniform Traffic Control Devices (MMUTCD), International Municipal Signal Association (IMSA), etc. Local agencies shall adhere to the Federal Highway Final Rule on Worker Visibility, and shall follow all appropriate MIOSHA standards and rules when conducting this work.

Responsibility levels for maintaining and installing are as follows:

Type A - Requires emergency relamping of incandescent bulbs only. Qualified personnel and a vehicle with aerial lift must be available on a 24-hour basis.

Type B - Requires both routine and emergency relamping of incandescent bulbs only and optical unit cleaning. Controller repairs are not authorized.

Guideline for Electrical Traffic Control Device Maintenance

Qualified personnel and a vehicle with aerial lift must be available on a 24-hour basis.

Type C - Requires both routine and emergency relamping, optical unit cleaning, and maintenance of all signal related equipment. Qualified personnel must be properly licensed as either a master electrician/journeyman and have a working knowledge of controllers, to the satisfaction of MDOT personnel. MDOT qualified personnel must be available on a 24-hour basis.

Type D - Requires complete routine and emergency maintenance of electrical devices, including controllers, by properly licensed personnel. Also requires installation and modernization of all devices as required by Department Work Authorization. A master electrician/journeyman shall be available on a 24-hour basis.

*Qualified Personnel is defined as: A person or persons who have the skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training on the hazards involved, has the proper license, certification, and can perform a particular task meeting the mandates and current laws/regulations as defined by the State of Michigan.

SIGNAL MAINTENANCE

The electrical device maintenance guidelines have been developed for use by the region signal electricians and the agencies throughout the state who are responsible for maintaining electrical traffic control devices on state trunk lines. The ultimate goal is to ensure that a uniform system of maintenance is utilized with respect to all electrical devices that are department responsibility.

It shall be the responsibility of each agency performing electrical device work under a departmental agreement to perform the items described at the agreed level and in the manner as prescribed in this Signal Maintenance Guideline unless otherwise approved.

Relamping

All traffic signal incandescent and LED lamps shall be changed at the recommended intervals per the Preventive Maintenance Checklist (Appendix A). All incandescent lamps shall be standard A-21 and P-25 traffic signal lamps rated at 8000 hours or greater. All LED lamps must meet the current MDOT specifications. Incandescent lamp size shall be according to Table 1.

Guideline for Electrical Traffic
Control Device Maintenance

Mercury vapor lamps will be changed to current standards at the time of the next signal modernization.

Table 1: Lamp Requirements

OPTICAL DEVICE	LIGHT OUTPUT
8" Incandescent Signal	67-69 Watt Series
9" Incandescent Pedestrian Signal	67-69 Watt Series
12" Incandescent Pedestrian Signal	116 Watt Series, 130V
12" Incandescent Signal	150 Watt Series, 130V
Weigh Station and School Lamps	50 Watt Series, 12V
12" LED Signal	Current MDOT specifications
12" LED Pedestrian Signal	Current MDOT specifications
16" LED Countdown Pedestrian Signals	Current MDOT specifications

Optical Unit Cleaning

Signal lenses, reflectors, and lamps shall be thoroughly cleaned according to the recommended intervals described in Appendix A.

MAINTENANCE OF CONTROLLERS

Controller Timing

Every controller shall be kept in effective operation in strict accordance with its predetermined timing permit. A copy of the permit shall be posted in the control cabinet. Timing changes should be made only by authorized persons when directed by the Engineer, using written instructions which describe details of each change.

The time settings (dial, splits, and offsets) shall be verified against the current timing permit according to the recommended interval described in Appendix A.

A Traffic Signal Timing Record Card (MDOT Form 1577) shall be completed and returned to MDOT whenever a change or modification to the signal timing has been made. A copy of this pre-addressed postal card is provided in Appendix B.

Electro-mechanical Controllers

Electrical mechanical devices shall be maintained according to the recommendations listed in Appendix A.

Solid-State Controllers

On site maintenance and troubleshooting should be limited to the tasks described in Appendix A. Any malfunctioning controller must be replaced and the malfunctioning units shall be sent to the manufacturer for repair. Be sure to provide adequate safety at the intersection during troubleshooting.

MAINTENANCE RECORDS

Detailed maintenance records shall be kept for all work using MDOT Forms 499, 489, 443, and 1531. Copies of these forms are provided in Appendix B. All applicable forms shall be completed and submitted to MDOT for payment of services. Notify Transportation Service Center coordinator of any repairs that are needed beyond routine maintenance activities. Maintenance records shall be kept for at least seven years.

When doing installations and modernization work authorizations issued by MDOT Division of Operations-Traffic and Safety, an Installation Completion pre-addressed postal card (Figure 5) should be completed and returned to MDOT Traffic Signals Unit.

HANDLING OF TROUBLE CALLS

All trouble calls concerning traffic signal operations are to be investigated. It is necessary to undertake any indicated repairs immediately. If for some reason personnel cannot be immediately dispatched to the signal, or travel time is great, it is recommended that the maintaining agency contact law enforcement officials to control traffic until maintenance personnel can resolve the problem. An investigation determining that a general power failure is the cause of a problem

Guideline for Electrical Traffic Control Device Maintenance

requires no further action (see Appendix C for Bureau of Highways Informational Memorandum- BOHIM-2004-24). Placement of portable generators as a temporary power source should not be undertaken.

Response to trouble calls concerning other electrical devices shall be undertaken as soon as work schedules permit, but not later than the next working day unless it is determined that immediate attention is required for public safety. Devices such as flashing beacons, keep right signs, school speed limit signs, warning signs with beacons, sign illuminations, and illuminated case signs are normally of a supplemental nature and can be repaired the next regular working day and as schedules allow.

RESPONSE TIME

The initial response time to investigate a reported problem intersection and verify and identify the problem immediately and should not exceed two hours. This initial verification can be performed by the police in emergency situations. Following verification, either a final repair or emergency repair – depending on the nature of the equipment problem – should be performed as follows:

- ★ Emergency repair temporarily restores safe operation within a 24-hour period. Overtime may be required to perform emergency repairs.
- ★ Final repair to bring the equipment into conformance with the permit specifications should be completed within 30 days unless prohibited by weather conditions or unavailability of equipment. Overtime should be avoided whenever possible when completing final repairs.
- ★ Routine maintenance described in Appendix A should be completed during regularly scheduled hours (non overtime hours).

GENERAL INFORMATION

All materials used for maintenance or completion of Departmental work authorizations must meet MDOT specifications unless approval for alternates is obtained from the Department. Specifications are available from the Division of Operations- Traffic and Safety in Lansing. No work shall be subcontracted without prior approval of the Department. All traffic control devices as required by the Michigan Manual of Uniform Traffic Control Devices shall be utilized during any installation or maintenance activities.

Guideline for Electrical Traffic
Control Device Maintenance

Be sure to use adequate safety precautions at the intersection during all maintenance activities.

Local agencies shall adhere to the Federal Highway Final Rule on Worker Visibility, and shall follow all appropriate MIOSHA standards and rules when conducting this work.

Appendix A: Preventive Maintenance Checklist

TASK	Minimum Recommended Interval*				Min. Level of Maintenance Required			
	Months			Years 2-5				
	3	6	12		A	B	C	D
CABINETS								
• Lubricate hinges and locks			X				X	X
• Vacuum cabinet			X				X	X
• Replace filters		X					X	X
• Check weatherproof seals (gaskets)			X				X	X
• Check anchor bolts			X				X	X
• Check for water accumulation and check duct sealant			X				X	X
• Check ground rod clamp and wire			X				X	X
• Check wiring schematics and records			X				X	X
• Check operation of fan and heater		X					X	X
• Check radio interference filter and lightning arrestor			X				X	X
• Check circuit breaker and fuses			X				X	X
• Check ground fault receptacle			X				X	X
• Measure voltages at service inputs in cabinet	As required						X	X
• Check and record current being drawn	As required						X	X
• Remove any snow or brush	As required					X	X	X
SIGNAL HEADS								
• Clean lenses, signs, reflectors			X			X	X	X
• Replace lamps (incandescents)			X		X	X	X	X
• Check gasket for water infiltration and deterioration			X				X	X
• Check alignment		X					X	X
• Check for wear on the span wire, signal wire, and mechanical hardware (clevis pins, clamps)			X				X	X
• Check mast arms, free-swinging signals; check clevis and chain		X					X	X
• Check for cracks or rust in the hardware		X					X	X
• Check hoods, wing nuts, and hinges			X				X	X

• Replace substandard hardware	As required						X	X
• Replace defective lenses and reflectors or lamps	As required						X	X
• Check locking rings (surface); install proper locking devices as required			X				X	X
• Check condition of back plates (if used)		X					X	X
• Perform a nighttime check for visibility from each approach			X				X	X
MAST ARMS AND POLES								
• Check alignment of mast arms			X				X	X
• Inspect poles, transformer bases and arms for damage caused by impact with vehicles			X				X	X
• Inspect for rust; spot paint as required			X				X	X
• Inspect joints for rust and cracks at arm/upright location and at base plate			X				X	X
• Inspect anchor bolts for rust and tightness			X				X	X
SPAN WIRE AND POLES								
• Inspect for rust			X				X	X
• Inspect joints for rust, grout, and tightness			X				X	X
• Inspect condition of span and tether wires			X				X	X
• Verify span and tether wire vertical clearance at low spot of sag			X				X	X
• Check clamps and hardware			X				X	X
• Check guy wire, anchors, and guards, wood poles			X				X	X
PUSH BUTTONS								
• Check push buttons on each end of actuated crosswalks and visually verify pedestrian signal operation; verify timing		X					X	X
• Check push button indicator lamp (if one exists) for operation		X					X	X
• Check push button signs; clean or replace if necessary		X					X	X
• Check push button sign alignment			X				X	X
ELECTROMECHANICAL CONTROL EQUIPMENT								
Dial Assemblies								
• Check for wear on key follower			X				X	X
• Check for burned, pitted, or discolored contacts			X				X	X
• Check key positions			X				X	X

• Check for cycle gear size and mesh			X				X	X
• Check dial motor operation			X				X	X
• Check all dials according to manufacturer's recommendations			X				X	X
• If controller is part of a system, check offset			X				X	X
• Check duration of the advance pulse			X				X	X
Cam Assemblies								
• Check for end play			X				X	X
• Clean and lubricate as required by manufacturer			X				X	X
• Visually inspect for abnormal wear and/or cracks			X				X	X
• Check for burned, pitted, or discolored contacts			X				X	X
• Check for spring tension on contacts			X				X	X
• Check for loose wiring to contacts			X				X	X
• Check that operations of advancing mechanism conforms with manufacturer's requirements			X				X	X
• Check whether all connections are secure and tight			X				X	X
• Visually inspect wires for wear, rubbing, or deterioration of insulation			X				X	X
• Install dust cover as required			X				X	X
Relays								
• Check for burned, pitted, or discolored contacts			X				X	X
• Check for tight and secure fit into sockets			X				X	X
• For latch-type relays, check for latch operation per manufacturer's recommendations			X				X	X
Flashers								
• Check flash rate			X				X	X
• Check operation			X				X	X
• Check for burned, pitted, or discolored contacts			X				X	X
• Check for tight and secure fit into sockets			X				X	X
Switches								
• Verify operation of each switch position			X				X	X
• Check for loose wires			X				X	X
Terminal Connections								

• Check visually for signs of corrosion or any abnormal condition			X				X	X
• Tighten all terminal connections			X				X	X
DETECTORS								
Sensors								
• Visually inspect roadway along loop detector saw cut for exposed wires, cracks, potholes, rutting, etc.			X				X	X
• Check alignment for sonic, magnetic, video, and radar-type detectors; verify call inputs to controller phases			X				X	X
• Verify special functions, e.g., delay, extension			X				X	X
Amplifiers								
• Check whether the detector is detecting vehicles within its design zone of detection			X				X	X
• Tune the detector if necessary			X				X	X
• Check whether the connectors are tight and secure			X				X	X
JUNCTION BOXES AND HANDHOLES								
• Check integrity of the splices			X				X	X
• Check the ground rod, clamp connection, and bonding of conduits			X				X	X
• Check the insulation			X				X	X
• Check for abnormal amounts of water			X				X	X
• Check lid for abnormal condition and fit			X				X	X
SOLID STATE, ANALOG, AND MICRO PROCESSOR-BASED CONTROL EQUIPMENT								
General								
• Check whether the time settings match the current timing permit			X				X	X
• Check whether indicator lamps on the modules are working; replace failed lamps			X				X	X
• Check for extension by detector actuation			X				X	X
• Check whether modules fit tightly and securely into the frame			X				X	X
• Check whether connectors are tight and secure			X				X	X

• Wipe dust off controller, detectors, and auxiliary equipments			X				X	X
Conflict Monitors								
• Replace with bench-tested unit and take to repair shop for testing			X				X	X
Load Switches								
• Check load switch packs			X				X	X
Relays								
• Check mercury relays (if used) for excessive splash			X				X	X
Flashers								
• Check whether firm in socket; check on/off ratio and flash rate			X				X	X
Switches								
• Verify operation of each switch position			X				X	X
• Check for loose wires			X				X	X
Terminal Connections								
• Check for discoloration and tightness			X				X	X
INTERCONNECTED EQUIPMENT								
• Verify communication is in tact within the system			X				X	X
• Check whether controller operates in the mode selected by the supervisory master (i.e., time-based coordinator) and verify TBC of local matches TBC in master			X				X	X
• Disconnect from the master supervisory system and check for “free” or backup operations			X				X	X
• Check any special equipment per manufacturer’s recommendation			X				X	X
MISCELLANEOUS								
• Record all changes in timing, wiring, or any function		As required					X	X
• Record current flow at un-metered installations		As required					X	X

* or earlier if required

TRAFFIC SIGNAL TIMING RECORD

*Information required by Act 51 of 1951,
as documentation for potential litigation.*

COMPLETE AND RETURN

FILE REF.	LOCATION	
☐ Timing installed as authorized by permit dated.	DATE INSTALLED	
☐ Timing NOT installed as authorized. Copy of corrected permit enclosed. Explanation:		

TIMING PERMIT IN CONTROLLER	INSTALLED BY
-----------------------------	--------------

TRAFFIC SIGNAL TIMING RECORD

*Information required by Act 51 of 1951,
as documentation for potential litigation.*

COMPLETE AND RETURN

FILE REF.	LOCATION	
☐ Timing installed as authorized by permit dated.	DATE INSTALLED	
☐ Timing NOT installed as authorized. Copy of corrected permit enclosed. Explanation:		

TIMING PERMIT IN CONTROLLER MA 240000000658	INSTALLED BY
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TRAFFIC SIGNAL TIMING RECORD

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COMPLETE AND RETURN

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NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL

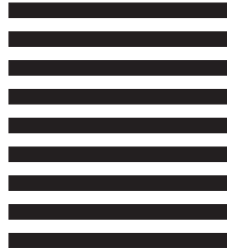
FIRST-CLASS MAIL PERMIT NO. 1312 LANSING, MI

POSTAGE WILL BE PAID BY ADDRESSEE

MICHIGAN DEPARTMENT OF TRANSPORTATION
TRAFFIC & SAFETY DIVISION
TRAFFIC SIGNALS UNIT
PO BOX 30050
LANSING MI 48909-9791



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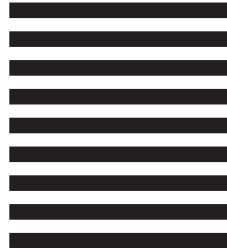
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ELECTRICAL DEVICES TROUBLE REPORT

Michigan Department
of Transportation
0499 (10/00)

Clear Form

PRINT LEGIBLY. This form does not need to be typewritten.

Use reverse for additional REMARKS/DESCRIPTION if necessary.

JOB REPORT NO.

LOCATION

REFERENCE NO.

REPORTED BY:

TIME CALL RECEIVED

☐ A.M.
☐ P.M.

DATE

TIME ELECTRICIAN NOTIFIED

☐ A.M.
☐ P.M.

TIME ARRIVED

☐ A.M.
☐ P.M.

TIME COMPLETED

☐ A.M.
☐ P.M.

TOTAL TRAVEL TIME

TRUCK NO.

ACCIDENT INVOLVED

☐ YES ☐ NO

TYPE (☒ One)

TROUBLE

RED
OUT

YELLOW
OUT

GREEN
OUT

NO
COLOR

DON'T WALK
OUT

WALK
OUT

SIGNAL in
FLASH

POWER
FAILURE

TIMING
PROBLEM

SIGNAL
LOW

OTHER
(NOTE IN REMARKS)

☐ SIGNAL

☐ FLASHER

☐ KEEP RIGHT

☐ O'HEAD LUMIN.

☐ OTHER

REPORTED

FOUND

REMARKS

DESCRIPTION OF WORK PERFORMED

ELECTRICIAN(S) (SIGNATURE)

DATE

CALL RECEIVED BY:

REPORT APPROVED BY (SIGNATURE)

DATE

ELECTRICAL DEVICES TROUBLE REPORT

Michigan Department
of Transportation
0499 (10/00)

Clear Form

PRINT LEGIBLY. This form does not need to be typewritten.

Use reverse for additional REMARKS/DESCRIPTION if necessary.

JOB REPORT NO.

LOCATION

REFERENCE NO.

REPORTED BY:

TIME CALL RECEIVED

☐ A.M.
☐ P.M.

DATE

TIME ELECTRICIAN NOTIFIED

☐ A.M.
☐ P.M.

TIME ARRIVED

☐ A.M.
☐ P.M.

TIME COMPLETED

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(NOTE IN REMARKS)

☐ SIGNAL

☐ FLASHER

☐ KEEP RIGHT

☐ O'HEAD LUMIN.

☐ OTHER

REPORTED

FOUND

REMARKS

DESCRIPTION OF WORK PERFORMED

ELECTRICIAN(S) (SIGNATURE)

DATE

CALL RECEIVED BY:

REPORT APPROVED BY (SIGNATURE)

DATE

DIVISION	WORK ORDER NO.	REFERENCE NO.	REGION	COUNTY
MUNICIPALITY	REQUESTED BY:	INTERSECTION OF:		
DATE JOB STARTED	DATE JOB FINISHED	IN SERVICE	APPLICATION	

DESCRIPTION OF ARTICLES OR SERVICES RENDERED

[illegible]

SIGN AND SIGNAL SUPERVISOR APPROVAL

DATE _____

[illegible]

REPORT OF DEPARTMENT PROPERTY DAMAGEDISTRIBUTION:
REGION MAINT. ENGR.
YOUR FILES

Information required by Act 17, P.A. of 1925.

Failure to supply this information will result in non-payment for service.

ACCIDENT/INCIDENT REPORT NUMBER	OWNER/DRIVER	ACCIDENT DATE
TRUNKLINE NUMBER	POLICING AGENCY	
AGENCY MAKING REPAIRS (List all agencies involved)	CONTACT PERSON	AGENCY PHONE NO.

WORK COMPLETED, CHECK APPROPRIATE BOX:

☐ Repair guardrail, Total guardrail length _____ ft	☐ Repair sign	☐ Other repair _____
☐ Replacement of entire guardrail system	☐ Total sign replacement	☐ Other total replacement _____

CHECK APPROPRIATE BOX: ☐ Repairs/replacement to damage caused by the above accident have been completed. The cost is itemized below. ☐ Below is an estimated cost of damage caused by the accident above. ☐ Estimate previously reported.

Labor	INSTALLER BY SHOP IDENTIFIER NUMBER	DATES WORKED	HOURS	RATE	DIRECT LABOR CHARGES
Additional Page				DIRECT LABOR COST TOTAL	
Equipment	NUMBER OR DESCRIPTION	DATES WORKED	HOURS	RATE	DIRECT EQUIP. CHARGES
Additional Page				DIRECT EQUIPMENT COST TOTAL	
Materials	ITEM DESCRIPTION	UNIT	COST/UNIT	DIRECT MATERIAL CHARGES	
Additional Page				DIRECT MATERIAL COST TOTAL	
TOTAL DIRECT COSTS					

INDIRECT COSTS

LABOR ADDITIVE (fringe) %	% x	DIRECT LABOR COST TOTAL	=	
MATERIAL HANDLING %	% x	DIRECT MATERIAL COST TOTAL	=	
OVERHEAD %	% x	TOTAL DIRECT COSTS	=	
TOTAL INDIRECT COSTS				
TOTAL COST (TOTAL DIRECT COSTS + TOTAL INDIRECT COSTS)				

TO BE FILLED OUT BY ARU ONLY

SIGNATURE	LESS DEPRECIATION (On Replacement Cost Only)	\$
TITLE	MAIN OFFICE CHARGE	\$
DATE	GRAND TOTAL	\$

ACCIDENT/INCIDENT REPORT NUMBER	OWNER/DRIVER	ACCIDENT DATE
DESCRIPTION OF ARTICLES OR SERVICE RENDERED		

Labor	INSTALLER BY SHOP IDENTIFIER NUMBER	DATES WORKED	HOURS	RATE	DIRECT LABOR CHARGES
	Return to First Page				ENTER TOTAL ON PAGE ONE
Equipment	NUMBER OR DESCRIPTION	DATES WORKED	HOURS	RATE	DIRECT EQUIP. CHARGES
	Return to First Page				ENTER TOTAL ON PAGE ONE
MA 240000000658				61	

ADDITIONAL PAGE MAY BE USED IF NEEDED

ACCIDENT DATE

[illegible]

Reference Guide for completing Michigan Department of Transportation Report of Department Property Damage Form 443

- The calculations are automatic when the form is completed on line.
- Make sure you sign the form and include your title and the date.
- A new section has been added which is to be completed by MDOT's Accounts Receivable Unit.

ACCIDENT/INCIDENT REPORT NUMBER - Can be found in the upper right corner of the Traffic Crash Report.

OWNER/DRIVER – Can be found in the center of the Traffic Crash Report.

ACCIDENT DATE - Can be found in the upper left corner of the Traffic Crash Report.

TRUNKLINE NUMBER - Can be found in the center of the Traffic Crash Report.

POLICING AGENCY - Can be found in the top middle of the Traffic Crash Report.

AGENCY MAKING REPAIRS - The garage or the County Road Commission making the repairs.

CONTACT PERSON - Supervisor overseeing trunkline repairs that can answer any questions regarding the items that were filled out on form 443.

AGENCY PHONE NUMBER - The garage phone number or county road commission phone number where the contact person can be reached.

WORK COMPLETED, CHECK APPROPRIATE BOX

-Repair Guardrail – a guardrail is repaired when less than the whole guardrail is being replaced. (Example: Only one tri-beam rail used)

- If this is a guardrail repair, what is the total length of the entire guardrail from end to end, including, the part that was repaired.

-Replacement of entire Guardrail – a guardrail is replaced when the whole guardrail is taken down from end to end and replaced with all new guardrail.

-Repair Sign – a sign is repaired when only a portion has to be replaced (Example: The post is replaced but the original sign is reinstalled).

-Total sign Replacement – a sign is replaced when the sign itself is taken down and replaced with a new sign (Example: The post(s), sign, nuts and bolts are totally replaced).

-Other Repair – Would include repairs to traffic signals, bridges, driveways, traffic control, clean-up cost, etc., but would not include signs or guardrails.

-Other total Replacement – Would include total replacement of traffic signals, bridges, etc., but would not include signs or guardrails.

Check Appropriate Box: Check only one box.

Repairs/replacement to damage caused by the above accident have been *completed*. The cost is itemized below.

Or

Below is an *estimated* cost of damage caused by the accident above.

Or

Estimate previously reported.

Labor

INSTALLER BY SHOP IDENTIFIER - Employee number, Installers initials, or TMW number as long as the information on the 443 form can be identified to a specific individual. This will reduce the number of harassing phone calls to these individuals.

DATES WORKED - These would be all the dates you were at this site.

HOURS - This would be the hours you were at the site.

RATE - This is the hourly rate including benefits.

DIRECT LABOR CHARGES - Hours worked multiplied by rate equals direct labor charges.

DIRECT LABOR COST TOTAL – Total of all direct labor charges.

Equipment

NUMBER OR DESCRIPTION - Equipment number or description.

DATES WORKED - The date the equipment was at the job site.

HOURS - Hours worked on site.

RATE - Equipment rental rate which is recalculated annually.

DIRECT EQUIPMENT CHARGE - Hours multiplied by rate equals direct equipment charges.

DIRECT EQUIPMENT COST TOTAL – Total of all direct equipment charges.

Materials

ITEM DESCRIPTION - Description if the item(s) used for the repair or replacement.

UNIT - The number of units used on this particular job.

COST/UNIT - Cost of one unit.

DIRECT MATERIAL CHARGES - Units multiplied by cost per unit equals direct material charges.

DIRECT MATERIAL COST TOTAL – Total of all direct material charges.

TOTAL DIRECT COST- Add direct labor charges plus direct equipment charges plus direct material charges equals total direct cost.

Indirect Costs

LABOR ADDITIVE - Multiply Labor Additive rate by direct labor charges.

* County Road Commission - refer to State Trunkline Maintenance Contract.

MATERIAL HANDLING - Multiply material handling charge percentage times total direct material charges to equal the indirect material charges.

*MDOT repair facilities do not charge a handling fee. Only County Road Commissions have handling charges as established in contract agreement.

OVERHEAD – Multiply overhead rate by the direct costs.

*For County Road Commission, the overhead rate is set by the county according to a formula in the State Trunkline Maintenance Contract.

TOTAL INDIRECT COST - Total of indirect labor charges plus indirect material charges plus indirect cost for overhead

TOTAL COST TO REPAIR/REPLACE -Total of the direct charges plus the total indirect charges.

**Additional pages can be added to include more space for Labor, Equipment and Materials and a description of articles or service rendered. See additional pages online.

SIGNATURE – Individual completing form.

TITLE – Job title of individual completing form.

ELECTRICAL DEVICES INSTALLATION COMPLETION DATE

Information required by MDOT to complete billing process

COMPLETE AND RETURN

REGION: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

FILE REF.	W.O. NO.
-----------	----------

LOCATION

WORK TO BE PERFORMED BY

COMPLETION DATE	CIRCUIT NO.
-----------------	-------------

CABLE NO.	PAIR NO.
-----------	----------

WATTAGE CHANGE ☐ Yes ☐ No	UTILITY ☐ Detroit Edition ☐ Consumer Energy ☐ Other
--	---

SIGNATURE	TITLE	DATE
-----------	-------	------

ELECTRICAL DEVICES INSTALLATION COMPLETION DATE

Information required by MDOT to complete billing process

COMPLETE AND RETURN

REGION: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

FILE REF.	W.O. NO.
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LOCATION

WORK TO BE PERFORMED BY

COMPLETION DATE	CIRCUIT NO.
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CABLE NO.	PAIR NO.
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SIGNATURE	TITLE	DATE
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ELECTRICAL DEVICES INSTALLATION COMPLETION DATE

Information required by MDOT to complete billing process

COMPLETE AND RETURN

REGION: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

FILE REF.	W.O. NO.
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LOCATION

WORK TO BE PERFORMED BY

COMPLETION DATE	CIRCUIT NO.
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WATTAGE CHANGE ☐ Yes ☐ No	UTILITY ☐ Detroit Edition ☐ Consumer Energy ☐ Other
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SIGNATURE	TITLE	DATE
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ELECTRICAL DEVICES INSTALLATION COMPLETION DATE

Information required by MDOT to complete billing process

COMPLETE AND RETURN

REGION: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

FILE REF.	W.O. NO.
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LOCATION

WORK TO BE PERFORMED BY

COMPLETION DATE	CIRCUIT NO.
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CABLE NO.	PAIR NO.
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WATTAGE CHANGE ☐ Yes ☐ No	UTILITY ☐ Detroit Edition ☐ Consumer Energy ☐ Other
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SIGNATURE	TITLE	DATE
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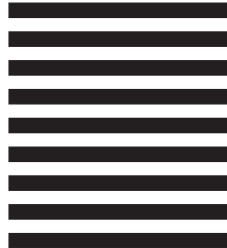
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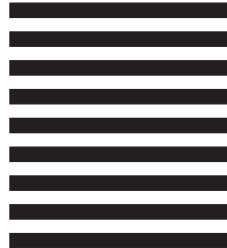
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LANSING MI 48909-9791



DATE: October 7, 2004

TO: Region Engineers
Region Delivery Engineers
Region Development Engineers
TSC Managers
Resident/Project Engineers
Region Construction Engineers
Region Traffic and Safety Engineers
Region Maintenance Engineers

FROM: Larry E. Tibbits
Chief Operations Engineer

John C. Friend
Engineer of Delivery

SUBJECT: Bureau of Highway Instructional Memorandum 2004-24
Dark Signals Due to Power Outage

To ensure consistent treatment of dark signalized intersections (signal not operating due to local area power outage), the following is a clarification of MDOT policy.

Current maintenance guidelines on dark signals (last revised in 1993) states "An investigation determining that a general power failure is the cause of a problem requires no further action. Placement of portable generators as a temporary power source should not be undertaken. Possible damage to signal equipment may occur. Temporary stop signs may be placed at the intersection and the controller switched to flash operation. After power is restored, the intersection should be switched back to normal operation."

Upon notification of a dark signal, the appropriate region's electrician (or authorized equivalent) should contact the power company to determine if the dark signal is because of a local power outage. If it is determined the power outage is the cause of the dark signal, the following options are available and listed in their preferred order:

1. No action taken - traffic shall proceed as per the Michigan Vehicle Code, Section 257.649, Right-of-Way; Rules; Violations as Civil Infraction.
2. Traffic control is provided by uniformed police officers at the sole discretion and responsibility of the police enforcement agency in a manner determined solely by the police enforcement agency.

3. At signalized intersections under MDOT's jurisdiction (which includes local streets which intersect with trunkline routes), placement of temporary stop signs must be approved by authorized MDOT region/TSC operations staff or by authorized staff of direct maintenance garages or special crews facilities. Reimbursement for work activity by a contract agency would be made.

If a temporary stop sign is placed, the signal must be switched to flash operation with care given to which approaches will be stopping and that they match the colors of the flashing signal once power is restored. Usually under flash operation, the major approaches will flash yellow and the minor approaches flash red. Activating the flash operation requires the electrician maintaining the intersection (or authorized personnel as approved by the appropriate region's electrician) to switch the traffic signal. Without this change in operation, the traffic signal will return to stop and go operation within seconds after power is restored, which could cause conflicts between the signal and any temporary signage (conflicting green or yellow indications with a stop sign for the same approach). If temporary stop signs are placed, they shall be continuously monitored by the local agency to insure removal upon restoration of power. At that time, the signal must be switched back to the normal stop and go mode of operation by MDOT forces or authorized personnel. If it cannot be ensured that the signal will come back in the appropriate flash mode in conjunction with the temporary traffic control, stop signs shall not be placed at the intersection.

As was stated earlier, placement of a portable generator as a temporary power source should not be undertaken. However, contract maintaining agencies that have extensive knowledge and experience with traffic signals can request prior written approval from MDOT to use generators. As part of the request, the maintaining agency will need to identify how they will prioritize generator placement during area wide power outages. The request will then need to be reviewed by appropriate MDOT personnel before authorization is given.

Chief Operations Officer

BOH-DEL:T&S:PJC:nw

Subject Index: Traffic Control

cc: J. Culp, Traffic and Safety Support Area
 C & T Support Area Staff
 M. DeLong, Real Estate Support Area
 M. VanPortfleet, Design Support Area
 C. Roberts, Maintenance Support Area
 B. O'Brien, C & T Support Area
 J. Polasek
 S. El Ahmad
 C. Rademacher
 P. Sebenick
 G. Moore

Engineer of Delivery

T. Fudaly, FHWA
 MRBA
 MCPA
 MCA
 MAA
 AUC
 CRAM
 MRPA
 ACEC
 MPA

K. Reincke
 MAPA
 MCPA