

**PROPOSAL  
FOR  
2012 CHIP SEALS**

**TUSCOLA COUNTY  
BOARD OF COUNTY ROAD COMMISSIONERS**

**1733 S. MERTZ RD.  
CARO, MI 48723**

***LETTING DATE - MARCH 1, 2012***

**8:45 A.M.**

<u>Contract Item</u>	<u>Spec.</u>	<u>Pay Unit</u>	<u>Unit Price</u>	<u>Per Mile Price</u> <u>(12,906 syds)</u>
Chip Seal, Single	Binder _____ Agg. _____	Syd	_____	_____
Chip Seal, Double	Binder _____ Agg. _____	Syd	_____	_____
Chip Seal, Prime and Double	Binder _____ Agg. _____	Syd	_____	_____
Raised Pavement Markers		Each	_____	_____
Seal, Fog		Syd	_____	_____

CONTRACTOR: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

SIGN & PRINT: \_\_\_\_\_

DATE: \_\_\_\_\_

PHONE & FAX: \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_

**COMPLETION DATE: Saturday, September 15, 2012**

**Bids to be submitted in a plainly marked, sealed envelope. No faxed or emailed bids accepted.**

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DESCRIPTION

This work shall be for the season's requirements at various locations throughout Tuscola County or state highways under the maintenance jurisdiction of the Tuscola County Road Commission, and shall consist of one or more applications of bituminous material applied to the prepared surface, and one or more coverings of either coarse or fine aggregate applied to the bituminous material. The work shall be done in accordance with section 508 of the 2003 MDOT Standard Specifications for Construction, except as modified herein.

MATERIALS

Prime Coat- Shall be SS-1h or Approved Equal. Cost included with other items.

Coarse Aggregate – Shall be 25A or 29A aggregate as per section 508.02 of the 2003 MDOT Standard Specifications for Construction.

The coarse aggregate shall be from Michigan Department of Transportation tested material or a certified aggregate manufacturer.

Asphalt Emulsion - The asphalt emulsion shall be HFRS-2M (An alternate product may be submitted for bid, but will be subject to Engineer approval. Please supply the material specifications including application rate.) as follows:  
Rapid Setting Anionic Type, High-Float Asphalt Emulsion suitable for sealcoats and meeting the requirements of Section 904.03, Emulsified Asphalt in the Michigan Department of Transportation 2003 Standard Specifications for Construction.  
HFRS-2M Asphalt Emulsion shall be polymer modified by a milled process and shall conform to the requirements specified in Table I, on Page 3.

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**TABLE I**  
 ASPHALT EMULSION

<u>Tests</u>	<u>Requirements</u>
ASTM D 244, unless otherwise designated	HFRS-2M
Viscosity, Saybolt Furol, ASTM D 88: At 50°C, Sec.	75-300
Storage Stability Test, 24-hour, % Difference, Max. Demulsibility: (a)	1
50 ml, 0.02 N Ca Cl <sub>2</sub> %, min.	50
Sieve Test, %, max.	
	0.10
Distillation to 260°C, % by Weight: (b)	
Residue, min.	65
Oil Distillate, max.	2
Tests on Distillation Residue:	
Penetration, 25°C, 100g, 5 sec., dmm, ASTM D 5	80-150
Float Test, sec., min., ASTM D 139: At 60°C	1200
Ash Content, %, max., ASTM D 128	2
Toughness/Tenacity, 25°C, 50 cm/min., Nm, min., ASTM D-4 Proposal P243	4.5/3.5
Elastic Recovery, 10°C, %, min., MTM 312	60%

- (a) No appreciable coagulation or visible separation in 2 hours.
- (b) The test for residue by distillation shall be modified in accordance with MTM 302.
- (c) ASTM D 244, with modifications to include a 204°C ( $\pm 6^\circ\text{C}$ ) maximum temperature to be held for 15 minutes.

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MATERIALS (Continued)

Fog Seal - Where noted on the project list, fog seal shall be applied per the attached Michigan Department of Transportation Special Provision for Fog Seal, except as follows:

Delete Sentence: The asphalt emulsion shall be diluted in proportions of one part asphalt emulsion to three parts water.

REPLACE WITH SENTENCE: The asphalt emulsion shall be diluted in proportions of one part asphalt emulsion to one part water.

Raised Pavement Markers - Temporary Raised Pavement Markers will be furnished by the contractor. Markers shall be Amber/Yellow type, and used on all primary roads.

EQUIPMENT

All equipment must meet the requirements under Section 508.03 of the 2003 MDOT Standard Specifications for Construction, except as modified herein:

Pressure Distributor - The pressure distributor shall have a computerized application rate and speed control. This control shall have a radar ground sensing device that controls the application rate regardless of ground speed or spray bar width. The pressure distributor shall be capable of maintaining the asphalt emulsion at the specified temperature. The spray bar nozzles shall produce a uniform fan spray, and the shutoff shall be instantaneous, with no dripping. Each pressure distributor shall be capable of maintaining the specified application rate within  $\pm 0.015$  gal/syd for each load.

Aggregate Chip Spreader - The aggregate chip spreader shall have a computerized spread control, self-propelled, equipped with pneumatic tires and have a screen to remove oversized material.

Rollers - Two self-propelled pneumatic tired rollers shall be used for rolling cover aggregate immediately after spreading. Pneumatic tired rollers shall have a total compacting width of not less than 60 inches and have minimum contact pressure of 80 pounds per square inch and weighing not less than 8 tons.

(A steel-wheeled roller weighing between 6 and 8 tons may be substituted as a second finishing roller if approved by the Engineer and if it does not crush the aggregate particles).

Broom/Sweeper - A rotary power broom shall be used for removing loose material from the surface to be treated and for removing loose aggregate after work is completed. Curb areas require a vacuum/pickup type sweeper.

Pilot Car - Any reference for use of a pilot car shall be deleted.

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CONSTRUCTION

The Contractor shall follow the construction methods as described in Section 508.03 of the 2003 MDOT Standard Specifications for Construction except as modified herein:

**Completion Date: All projects shall be completed by September 15, 2012 or liquidated damages may be assessed at a rate of \$100.00 per day per project.**

APPLICATION

Before application of the asphalt emulsion for the second seal the first seal surface shall have all loose stones removed with a power broom. The contractor shall apply the asphalt emulsion at a temperature between 160°F and 190°F, followed by a uniform application of coarse aggregate.

Asphalt Emulsion –

Prime Coat – SS-1h shall be applied at a rate of 0.20 to 0.30 gals. per syd.

Bottom Seal (Double Seal Locations) - HFRS-2M shall be within the range of 0.37 - 0.41 gal/syd. The JMF target rate for the asphalt emulsion shall be 0.39 gal/syd.

Top Seal - (Double Seal and Single Seal Locations) - HFRS-2M shall be within the range of 0.39 - 0.41 gal/syd. The JMF target rate for the asphalt emulsion shall be 0.40 gal/syd.

If the target rate of 0.39 gal/syd or 0.40 gal/syd is not the optimum application rate due to the gradation of the coarse aggregate or due to existing conditions of the pavement, the contractor shall notify the engineer, immediately. The contractor shall then document the new JMF rate(s) by stationing.

The asphalt emulsion application rate as determined by a yield check, shall not exceed a tolerance of  $\pm 0.01$  gal/syd. from the established JMF application rate.

Coarse Aggregates – Application rate shall be within the range of 20-24 pounds per square yard. Use a JMF target rate for the coarse aggregate of 22 lbs/syd.

QUALITY CONTROL

The methods described in this section shall be used by the contractor to measure compliance.

General Placement Operations - The contractor shall follow the construction methods as described in Section 508.03 of the 2003 Standard Specifications for Construction except as modified herein: Placement of “Loose Gravel” signs shall be deleted.

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STOCKPILING AGGREGATE MATERIALS - The contractor shall secure his own stockpile areas at locations near the work. The Road Commission must approve stockpile locations and will require a copy of the contractor's written approval from the property owner. The contractor may use Road Commission Maintenance Garages as stockpile areas; the use of these areas must be coordinated with the Maintenance Department.

TRAFFIC CONTROL - The Road Commission will install "Road Work Ahead" signs prior to the chipseal operations.

- a. Lane Closures: The contractor shall maintain traffic as per the Tuscola County Road Commission Maintaining Traffic Special Provision attached.
- b. Temporary Road Closures: Will be allowed if approved by the engineer on a site-specific basis. Type III barricades or arrow boards will be required at each end of the project along with a traffic regulator for re-routing traffic.
- c. Temporary Raised Pavement Markers: (Primary roads only - if required by Engineer) Before applying any asphaltic emulsion that would obliterate existing traffic centerline. The contractor shall place temporary yellow pavement markers on the existing centerline at intervals of not more than 100 feet. Installation shall be as follows:

The pavement surface must be clean and dry. Any temporary pavement marking tape placed during the Machine Patching Operation shall be removed at this time. Remove and release paper from the adhesive. Place the marker with protective cap in place on the centerline and apply the pressure with hand or foot. The reflector must face on-coming traffic after the cover is removed. Installation is to be made prior to the application of chip seal, and the reflector will protrude above the new material, allowing the centerline to be easily located. The reflector has a protective cap, which is to be removed after the bituminous seal is constructed.

MEASUREMENT AND PAYMENT – Contract items shall be invoiced by location. Measurement will be made by the unit specified on page one. Proper material tickets shall be provided with the invoice documenting quantity used of each material. Contractors Daily Reports shall also accompany the invoice showing data as specified in section 508.03.G of the MDOT Standard Specifications book.

The contract unit prices shall be payment in full for all labor, materials, and equipment needed to accomplish the work, including brooming, establishment of yield intervals, maintaining traffic and delayed acceptance inspection.

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PROPOSED WORK –

Primary: Akron Rd, Colwood to M-81, 2.40 miles of Single ChipSeal with FogSeal\*

Local: Wells Twp, Lee Hill Rd, Rossman to E. Dayton, 1.85 miles of Double ChipSeal and FogSeal

Wells Twp, Froede Rd, M-46 to Bevens, 3.0 miles of Double ChipSeal and FogSeal

Note I – Other locations may be supplied at a later date.

\*Shall be coordinated with Contractor performing the Bituminous Scratch Course.

WARRANTY – The Contractor hereby warrants his work and material for one year from date of placement. The Road Commission may choose to hold up to 10% of the project bid cost until the warranty expires.

DELAYED ACCEPTANCE – After 30 days from the time of placement of the chip seal, the Road Commission’s inspector, in the company of the contractor if possible, shall inspect the work for any deficiencies. These deficiencies will be limited to surface flushing, surface patterns, or loss of stone retention. All correction work shall be accomplished within seven (7) working days after notification or an agreed upon date. The contractor shall furnish the materials, equipment and labor to make the identified corrections to the satisfaction of the Road Commission at no additional cost to the Road Commission.

LIABILITY

The Contractor shall at all times exercise extreme care and shall assume all liability for any damages resulting from his operations and shall hold the Tuscola County Road Commission harmless from any such claims or damages.

The successful bidder must also furnish certificates or policies giving satisfactory evidence of insurance coverage to the minimum extent of \$500,000.00 property damage and \$1,000,000.00 personal liability to insure adequate payment for any damage caused by his operations.

The contractor shall, prior to the start of work, file with the Tuscola County Road Commission a certificate that he carries Workmen’s Compensation Insurance. The attached certificate of insurance is required for the successful bidder or bidders.

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**NON-COMPLIANCE WITH PROJECT SPECIFICATION PROVISIONS**

**Any variation from the specifications of the project herein without written approval from the Tuscola County Road Commission and/or its authorized representative may result in, at the discretion of the Road Commission, the voiding and/or canceling of the acceptance of any bid and/or contract, resulting from this project.**

**The Board reserves the right to accept or reject any or all proposals and to re-advertise or to accept the proposal, that in their opinion, is in the best interest of Tuscola County.**

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
FOG SEAL

C&amp;T:KPK

1 of 3

C&amp;T:APPR:TC:CJB:06-24-08

**a. Description.** This work consists of furnishing all materials, equipment, labor and preparation necessary for an application of a fog seal following a chip seal. A fog seal is a light application of a slow-setting emulsified asphalt diluted with water. All work and materials shall be in accordance with the Standard Specifications for Construction, except as modified herein.

**b. Materials.** The material shall meet the following requirement:

Asphalt Emulsion: CSS-1h, SS-1h ..... 904

**c. Equipment.** Equipment shall be safe, environmentally acceptable, and capable of producing a quality product.

**d. Pressure Distributor.** The pressure distributor shall have a ground speed control device interconnected with the asphalt emulsion pump such that the specified application rate will be supplied at any speed. The pressure distributor shall be capable of maintaining the asphalt emulsion at the specified temperature. The spray bar nozzles shall produce a uniform fan spray, and the shutoff shall be instantaneous, with no dripping. Each pressure distributor shall be capable of maintaining the specified application rate within  $\pm 0.015$  gal/sq. yd. for each load.

**e. Miscellaneous.** A power broom and all necessary hand tools, thermometers, etc., shall be provided. Distributors and power brooms shall be equipped with at least one visible approved flashing, rotating, or oscillating amber light.

**f. Pre-Paving On-Site Meeting.** A pre-paving meeting between the Engineer and Contractor will be held prior to beginning work. The agenda for this meeting will include:

1. Review work schedule.
2. Review traffic control plan.
3. Review equipment calibration and adjustments.
4. Review condition of materials and equipment.
5. Review quality control plan (JMF, Yield Check Methods, etc.).

**g. Weather Limitations.** The fog seal shall be placed when the pavement and atmospheric temperature is 55 degrees F or above. Placement is not permitted if there is threatening weather and temperatures are forecasted to be below 32 degrees F within 24 hours from the time of work.

**h. Construction.** The Engineer shall require the longitudinal construction joint to be either

placed at the edge of metal of the driving lane, at a location requiring a minimal overlap onto the driving lane, or at a location requiring a minimal overlap of the new longitudinal joint as a result of milling and resurfacing.

The contractor shall complete application of the fog seal within 48 hours of the application of chip seal, but shall not apply the fog seal on the same day as the application of chip seal.

**i. Asphalt Emulsion.** Emulsion applied by a pressure distributor shall be applied at a uniform rate, without splattering or drilling from the spray bar, by using low pressure. Nozzle angle and spray bar height must be adjusted to insure correct spray pattern.

The asphalt emulsion shall be diluted in proportions of one part asphalt emulsion to three parts water. The dilution shall be done at the emulsion plant.

The recommended total quantity of fog seal used shall be within the range of 0.10 to 0.15 gal/sq. yd. of diluted material. The objective for a proper application of fog seal is to apply a uniform coverage of emulsion, just sufficient to flow into and seal the pavement pores, small cracks, and voids to protect against water infiltration and weathering and to also prevent loss of aggregate from the chip seal.

**j. Quality Control.** The following measures shall be used by the Contractor to maintain quality control and uniformity. If a condition is identified that causes an unsatisfactory fog seal, all production work shall stop and corrective action must be immediately taken. The Contractor shall perform the corrective action at no additional cost to the contract. The quality control measures will be effective until work is accepted.

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with current Department procedures contained in, but not limited to, the MDOT Construction Manual and the MDOT Quality Assurance Procedures Manual. The quality control system shall detail plans, procedures, and organization necessary to produce a fog seal that complies with the contract requirements. A Contractor Quality Control (CQC) plan shall be the means by which the Contractor ensures that the warranty related treatment complies with the requirements of the contract. The controls shall be adequate to cover all fog seal operations. A copy of the plan will be submitted to the Engineer for approval at the pre-construction meeting. The Contractor will comply with the approved plan throughout the project and the Engineer shall be allowed access to all work in progress for the purpose of Assurance review and testing.

As a minimum, the quality control plan will address the following items.

- The materials to be used on the project.
- Sampling and testing methods used to determine compliance with material specifications.
- The equipment to be used on the project.
- Calibration method used to determine compliance with the application rates.
- The procedures for pavement preparation.
- The controls that will be implemented by the Contractor to ensure that the fog seal material is cured or set up satisfactorily before opening to traffic.
- Proposed procedure for monitoring initial acceptance requirements.

If there are adverse environmental conditions, the contractor will provide the Engineer an action plan that clearly demonstrates how the fog seal operation will be adjusted for the actual environmental

conditions.

**k. Asphalt Emulsion.** The asphalt emulsion application rate as determined by a yield check, shall not exceed a tolerance of ± 0.015 gal/sq. yd. from the established JMF application rate.

**l. Documentation.** The Contractor shall provide the Engineer a daily report with the following information:

- Control Section/Project Number/County/Route/Engineer
- Date/Air Temperature/Pavement Temperature/Humidity
- Asphalt Emulsion Temperature
- Beginning and Ending Stations
- JMF: Application and dilution rates (asphalt emulsion)
- Yield Checks on Asphalt Emulsion (3 per day, minimum)
- Length/Width/Total Square Yards
- Contractor's Signature

Other required documentation shall include:

- Asphalt Emulsion: Per current acceptance procedures

**m. Measurement and Payment.** The completed work as described will be measured and paid for at the contract unit price using the following contract item.

<b>Contract Item (Pay Item)</b>	<b>Pay Unit</b>
Seal, Fog .....	Square Yard

**Seal, Fog** includes all materials, equipment, and labor for placement of the asphalt emulsion including surface preparation, stationing, and documentation.

**Your bid will not be accepted unless the enclosed agreement is signed and returned with your bid.**

**AGREEMENT**

This agreement made this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_  
by and between the Board of Tuscola County Road Commissioners and \_\_\_\_\_  
\_\_\_\_\_.

1. \_\_\_\_\_ hereby agrees to undertake the following work  
in the status of an independent contractor performing the following job:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Said contractor, \_\_\_\_\_, shall at all times exercise extreme care and shall assume any and all liability for property damage or bodily injury resulting from the above operation by this employees, agents, assigns, sub-contractors and anyone else acting under his control or direction; and will indemnify, hold harmless and defend the Tuscola County Road Commission, its Commissioners or employees from any and all claims for property damage or bodily injury arising out of this Agreement.

3. Said contractor, \_\_\_\_\_, while engaged in said job shall maintain and furnish certificates of insurance, naming the Tuscola County Road Commission and Commissioners as **an additional insured** under the policy, with policy limits of \$500,000/\$1,000,000 for property damage and bodily injury, and **shall** furnish the Tuscola County Road Commission copies of said certificates of insurance prior to commencing any work on said project. Additionally, said contractor, \_\_\_\_\_, shall furnish prior to start of said job with the Board of Tuscola County Road Commissioners, a policy of insurance certifying he carries and has in effect worker's compensation insurance on all those required to be covered under Michigan law.

4. The address of the Board of Tuscola County Road Commissioners is 1733 S. Mertz Rd., Caro, MI 48723.

Witnessed:

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Board of Tuscola County Road Commissioners

\_\_\_\_\_  
Contractor

TUSCOLA COUNTY  
ROAD COMMISSION  
“AN EQUAL OPPORTUNITY EMPLOYER”

SPECIAL PROVISION  
FOR  
MAINTAINING TRAFFIC  
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GENERAL

Traffic shall be maintained in accordance with Sections 103.05, 103.06, 812, and 922 of the 2003 Michigan Department of Transportation (MDOT) Standard Specifications for Construction, including any Supplemental Specifications, and as herein specified.

CONSTRUCTION INFLUENCE AREA

The construction influence area (CIA) shall consist of the width of the project right-of-way from 3,500 feet before the project P.O.B. to 3,500 feet beyond the project P.O.E. and 500 feet in all directions along all cross roads.

TRAFFIC CONTROL DEVICES

All traffic control devices and their usage shall conform to the Michigan Manual on Uniform Traffic Control Devices (MMUTCD), 2005 edition as amended, and as herein specified.

Sign covers shall be placed over existing regulatory, warning and construction signs that are not applicable during construction.

Signing for a lane closure shall be according to attached MDOT Maintaining Traffic Typical Figure M0150a. The use of the speed limit signs, R 2-1, will be as needed.

Sheeting shall conform to Engineer grade reflective sheeting and must meet the requirements for ASTM D 4956 Type I engineer grade sheeting, as per section 922.02B, of the 2003 Standard Specifications for Construction.

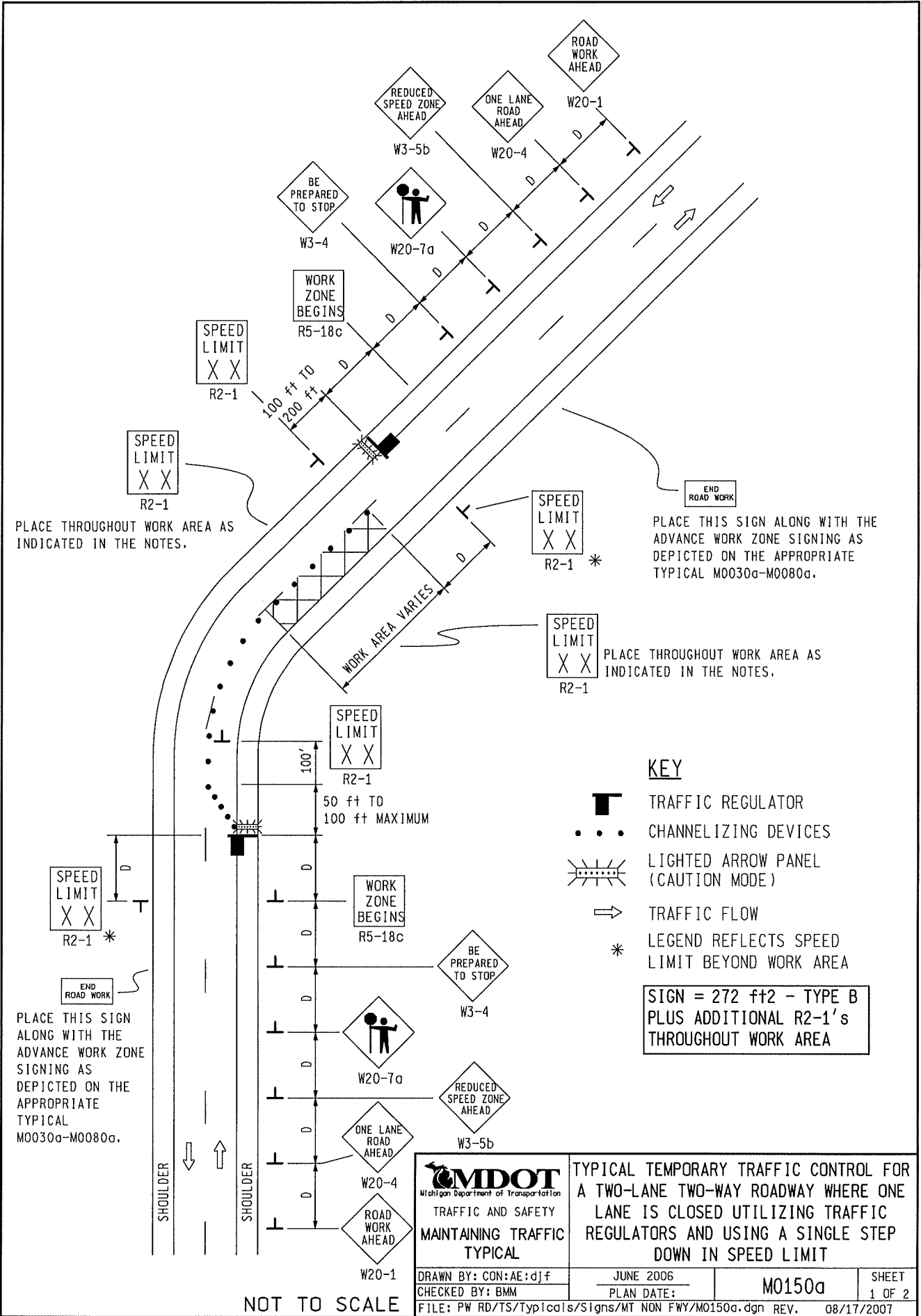
TRAFFIC RESTRICTIONS

Work shall be conducted during daylight hours only. No work shall be conducted on Sundays unless approved by the Engineer.

The maximum distance between the traffic regulators shall be no more than 2 miles in length. All sequences of more than 2 miles in length will require written permission from the Engineer before proceeding.

PAYMENT

Payment for Maintaining Traffic shall be included in other Bid unit prices. There will be no separate payment for Maintaining Traffic.



PLACE THROUGHOUT WORK AREA AS INDICATED IN THE NOTES.

PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL M0030a-M0080a.

PLACE THROUGHOUT WORK AREA AS INDICATED IN THE NOTES.

**KEY**

- TRAFFIC REGULATOR
- CHANNELIZING DEVICES
- LIGHTED ARROW PANEL (CAUTION MODE)
- TRAFFIC FLOW
- LEGEND REFLECTS SPEED LIMIT BEYOND WORK AREA

**SIGN = 272 ft<sup>2</sup> - TYPE B PLUS ADDITIONAL R2-1's THROUGHOUT WORK AREA**

		TYPICAL TEMPORARY TRAFFIC CONTROL FOR A TWO-LANE TWO-WAY ROADWAY WHERE ONE LANE IS CLOSED UTILIZING TRAFFIC REGULATORS AND USING A SINGLE STEP DOWN IN SPEED LIMIT	
		TRAFFIC AND SAFETY MAINTAINING TRAFFIC TYPICAL	
DRAWN BY: CON:AE:djf	JUNE 2006	M0150a	SHEET 1 OF 2
CHECKED BY: BMM	PLAN DATE:		
FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0150a.dgn REV. 08/17/2007			

NOT TO SCALE


## NOTES

- 1H. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES AND LENGTH OF LONGITUDINAL BUFFERS  
SEE M0020a FOR "D" VALUES.
2. ALL NON-APPLICABLE SIGNING WITHIN THE CIA SHALL BE MODIFIED TO FIT CONDITIONS, COVERED OR REMOVED.
3. DISTANCES BETWEEN SIGNS, THE VALUES FOR WHICH ARE SHOWN IN TABLE D, ARE APPROXIMATE AND MAY NEED ADJUSTING AS DIRECTED BY THE ENGINEER.
- 3A. THE "WORK ZONE BEGINS" (R5-18c) SIGN SHALL BE USED ONLY IN THE INITIAL SIGNING SEQUENCE IN THE WORK ZONE. SUBSEQUENT SEQUENCES IN THE SAME WORK ZONE SHALL OMIT THIS SIGN AND THE QUANTITIES SHALL BE ADJUSTED APPROPRIATELY.
- 4A. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES IN THE TAPER AREA(S) SHOULD BE 15 FEET AND SHOULD BE EQUAL IN FEET TO TWICE THE POSTED SPEED IN MILES PER HOUR IN THE PARALLEL AREA(S).
5. FOR OVERNIGHT CLOSURES, CHANNELIZING DEVICES SHALL BE LIGHTED PLASTIC DRUMS.
6. WHEN CALLED FOR IN THE FHWA ACCEPTANCE LETTER FOR THE SIGN SYSTEM SELECTED, THE TYPE A WARNING FLASHER, SHOWN ON THE WARNING SIGNS, SHALL BE POSITIONED ON THE SIDE OF THE SIGN NEAREST THE ROADWAY.
7. ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS SHALL MEET NCHRP 350 CRASHWORTHY REQUIREMENTS STIPULATED IN THE 2005 EDITION OF THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE STANDARD PLANS AND APPLICABLE SPECIAL PROVISIONS. ONLY DESIGNS AND MATERIALS APPROVED BY MDOT WILL BE ALLOWED.
9. ALL TRAFFIC REGULATORS SHALL BE PROPERLY TRAINED AND SUPERVISED.
- 9A. IN ANY OPERATION INVOLVING MORE THAN ONE TRAFFIC REGULATOR, ONE PERSON SHOULD BE DESIGNATED AS HEAD TRAFFIC REGULATOR.
10. ALL TRAFFIC REGULATORS' CONDUCT, THEIR EQUIPMENT, AND TRAFFIC REGULATING PROCEDURES SHALL CONFORM TO THE CURRENT EDITION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) AND THE CURRENT EDITION OF THE MDOT HANDBOOK ENTITLED "TRAFFIC REGULATORS INSTRUCTION MANUAL."
11. WHEN TRAFFIC REGULATING IS ALLOWED DURING THE HOURS OF DARKNESS, APPROPRIATE LIGHTING SHALL BE PROVIDED TO SUFFICIENTLY ILLUMINATE THE TRAFFIC REGULATOR'S STATIONS.
- 12E. THE MAXIMUM DISTANCE BETWEEN THE TRAFFIC REGULATORS SHALL BE NO MORE THAN 2 MILES IN LENGTH UNLESS RESTRICTED FURTHER IN THE SPECIAL PROVISIONS FOR MAINTAINING TRAFFIC. ALL SEQUENCES OF MORE THAN 2 MILES IN LENGTH WILL REQUIRE WRITTEN PERMISSION FROM THE ENGINEER BEFORE PROCEEDING.
13. WHEN INTERSECTING ROADS OR SIGNIFICANT TRAFFIC GENERATORS (SHOPPING CENTERS, MOBILE HOME PARKS, ETC.) OCCUR WITHIN THE ONE-LANE TWO-WAY OPERATION, INTERMEDIATE TRAFFIC REGULATORS AND APPROPRIATE SIGNING SHALL BE PLACED AT THESE LOCATIONS.
14. ADDITIONAL SIGNING AND/OR ELONGATED SIGNING SEQUENCES SHOULD BE USED WHEN TRAFFIC VOLUMES ARE SIGNIFICANT ENOUGH TO CREATE BACKUPS BEYOND THE W3-4 SIGNS.
15. THE HAND HELD (PADDLE) SIGNS REQUIRED BY THE MMUTCD TO CONTROL TRAFFIC WILL BE PAID FOR AS PART OF FLAG CONTROL.
- 16A. ADDITIONAL SPEED LIMIT SIGNS REFLECTING THE REDUCED SPEED SHALL BE PLACED AFTER EACH MAJOR CROSSROAD THAT INTERSECTS THE WORK AREA WHERE THE REDUCED SPEED IS IN EFFECT, AND AT INTERVALS ALONG THE ROADWAY SUCH THAT NO SPEED LIMIT SIGNS REFLECTING THE REDUCED SPEED ARE MORE THAN TWO MILES APART.
- 16B. WHEN REDUCED SPEED LIMITS ARE UTILIZED IN THE WORK AREA, ADDITIONAL SPEED LIMIT SIGNS RETURNING TRAFFIC TO ITS NORMAL SPEED SHALL BE PLACED BEYOND THE LIMITS OF THE REDUCED SPEED AS INDICATED.
- 16E. WHEN EXISTING SPEED LIMITS ARE REDUCED MORE THAN 10 MPH, THE SPEED LIMIT SHALL BE STEPPED DOWN IN NO MORE THAN 10 MPH INCREMENTS.
- 28E. THE TRAFFIC REGULATORS SHOULD BE POSITIONED AT OR NEAR THE SIDE OF THE ROAD SO THAT THEY ARE SEEN CLEARLY AT A MINIMUM DISTANCE OF 500 FEET. THIS MAY REQUIRE EXTENDING THE BEGINNING OF THE LANE CLOSURE TO OVERCOME VIEWING PROBLEMS CAUSED BY HILLS AND CURVES.

### SIGN SIZES

DIAMOND WARNING - 48" x 48"  
 RECTANGULAR REGULATORY - 48" x 60"  
 R5-18c REGULATORY - 48" x 48"

NOT TO SCALE

 TRAFFIC AND SAFETY MAINTAINING TRAFFIC TYPICAL	TYPICAL TEMPORARY TRAFFIC CONTROL FOR A TWO-LANE TWO-WAY ROADWAY WHERE ONE LANE IS CLOSED UTILIZING TRAFFIC REGULATORS AND USING A SINGLE STEP DOWN IN SPEED LIMIT		
	DRAWN BY: CON:AE:djff	JUNE 2006	M0150a
CHECKED BY: BMM	PLAN DATE:		
FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0150a.dgn REV. 08/17/2007			

TUSCOLA COUNTY ROAD COMMISSION  
TITLE IV COMPLIANCE  
APPENDIX A

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor shall comply with the Regulations relative to non-discrimination in Federally-assisted programs of the Department of Transportation, Title 49, code of Federal Regulations, Part 21 as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulation, including employment practices when the contractor covers a program set forth in Appendix B of the Regulations.
3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to non-discrimination on the grounds of race, color, or national origin.
4. **Information and Reports:** The contractor shall provide all information and reports required by the Regulations, or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the **Tuscola County Road Commission** to be pertinent to ascertain compliance with such Regulations or directives. Where any information required of a contractor is in the exclusive possession of another who fails or refuses this information, the contractor shall so certify to the State highway department, or the Federal Highway Administration as appropriate, and shall set forth what efforts it has made to obtain the information.
5. **Sanctions for Non-compliance:** In the event of the contractor's non-compliance with the non-discrimination provisions of this contract, the **Tuscola County Road Commission** shall impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:
  - (a) Withholding of payments to the contractor under the contract until the contractor complies, and/or
  - (b) Cancellation, termination or suspension of the contract, in whole or in part.
6. **Incorporation of Provisions:** The contractor shall include the provisions of paragraphs(1) through (6) in every subcontract, including procurement of materials and leases of equipment, unless exempt by the Regulations, or directives issues pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the **Tuscola County Road Commission** may direct as a means of enforcing such provisions including sanctions for non-compliance: Provided, however, that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the **Tuscola County Road Commission** to enter into such litigation to protect the interests of the County, and, in addition, the contractor may request the State highway department to enter into such litigation to protect the interests of the State and/or the United States to enter into such litigation to protect the interests of the United States.

“The **TUSCOLA COUNTY ROAD COMMISSION**, in accordance with Title VI of the Civil Rights Act of 1964, 78-252, 42 U.S.C. 2000d-222d-4, the Civil Rights Act of 1987, P.L. 100-259, and Title 49, Code of Federal Regulations, Department of Transportation, subtitle A, Office of the Secretary, Part 21, Non-discrimination in federally assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, Disadvantaged Business Enterprise firms will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of Race, Color, Sex, Age, National Origin, or Handicap in consideration for an award. For additional compliance information, please see Appendix A.”