CITY OF ANN ARBOR
INVITATION TO BID

Street Crack Treatment - 2016

ITB No. 4421

Due Date: Wednesday, April 27, 2016, by 10:00 a.m.

Public Services Area
Project Management Services Unit

Issued By:

City of Ann Arbor
Procurement Unit
301 E. Huron Street
Ann Arbor, MI 48104
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## ATTACHMENTS

- City of Ann Arbor Prevailing Wage Declaration Form
- City of Ann Arbor Living Wage Forms
- City of Ann Arbor Vendor Conflict of Interest Disclosure Form
- City of Ann Arbor Non-Discrimination Ordinance Declaration of Compliance Form
- City of Ann Arbor Non-Discrimination Ordinance Notice
NOTICE OF PRE-BID CONFERENCE

A pre-bid conference for this project will be held on Wednesday, April 20, 2016 at 11:00 a.m. in the 4th Floor Conference Room of Guy C. Larcom City Hall, 301 East Huron Street, Ann Arbor, Michigan.

Attendance at this conference is optional, but highly recommended. Administrative and technical questions regarding this project will be answered at this time. The pre-bid conference is for information only. Any answers furnished will not be official until verified in writing by the Financial Services Area, Procurement Unit. Answers that change or substantially clarify the bid will be affirmed in an addendum.
INSTRUCTIONS TO BIDDERS

General
Work to be done under this Contract is generally described through the detailed specifications and must be completed fully in accordance with the contract documents. All work to be done under this Contract is located in or near the City of Ann Arbor.

Any Bid which does not conform fully to these instructions may be rejected.

Preparation of Bids
Bids should be prepared providing a straight-forward, concise description of the Bidder’s ability to meet the requirements of the ITB. Bids shall be written in ink or typewritten. No erasures are permitted. Mistakes may be crossed out and corrected and must be initialed and dated in ink by the person signing the Bid.

Bids must be submitted on the "Bid Forms" provided with each blank properly filled in. If forms are not fully completed it may disqualify the bid. No alternative bid will be considered unless alternative bids are specifically requested. If alternatives are requested, any deviation from the specification must be fully described, in detail on the "Alternate" section of Bid form.

Each person signing the Bid certifies that he/she is the person in the Bidder’s firm/organization responsible for the decision as to the fees being offered in the Bid and has not and will not participated in any action contrary to the terms of this provision.

Questions or Clarification on ITB Specifications
All questions regarding this ITB shall be submitted via email. Emailed questions and inquiries will be accepted from any and all prospective Bidders in accordance with the terms and conditions of the ITB.

All questions shall be due on or before Thursday, April 21, 2016 at 12:00 p.m., and should be addressed as follows:

Specification/Scope of Work questions emailed to ddykman@a2gov.org

Bid Process and HR Compliance questions emailed to cspencer@a2gov.org

Any error, omissions or discrepancies in the specifications discovered by a prospective contractor and/or service provider shall be brought to the attention of David Dykman at ddykman@a2gov.org immediately after discovery. Further, the contractor and/or service provider shall not be allowed to take advantage of errors, omissions or discrepancies in the specifications.

Addenda
If it becomes necessary to revise any part of the ITB, notice of the Addendum will be posted to Michigan Inter-governmental Trade Network (MITN) www.mitn.info and/or City of Ann Arbor web site www.a2gov.org for all parties to download.

Each Bidder must in its Bid, to avoid any miscommunications, acknowledge all addenda which it has received, but the failure of a Bidder to receive, or acknowledge receipt of; any addenda shall not relieve the Bidder of the responsibility for complying with the terms thereof.
The City will not be bound by oral responses to inquiries or written responses other than written addenda.

Bid Submission
All Bids are due and must be delivered to the City of Ann Arbor Procurement Unit on or before Wednesday, April 27, 2016 by 10:00 a.m. Bids submitted late or via oral, telephonic, telegraphic, electronic mail or facsimile will not be considered or accepted.

Each Bidder must submit one (1) original Bid and (1) Bid copies in a sealed envelope clearly marked: ITB No. 4421: Street Crack Treatment - 2016.

Bids must be addressed and delivered to:

City of Ann Arbor
Procurement Unit,
c/o Customer Services, 1st Floor
301 East Huron Street
P.O. Box 8647
Ann Arbor, MI  48107

All Bids received on or before the Due Date will be publicly opened and recorded immediately. No immediate decisions are rendered.

The following forms provided within this ITB Document must be included in submitted bids.

- City of Ann Arbor Prevailing Wage Declaration of Compliance
- City of Ann Arbor Living Wage Ordinance Declaration of Compliance
- Vendor Conflict of Interest Disclosure Form
- City of Ann Arbor Non-Discrimination Ordinance Declaration of Compliance

Bids that fail to provide these completed forms listed above upon bid opening will be rejected as non-responsive and will not be considered for award.

Hand delivered bids will be date/time stamped/signed by the Procurement Unit at the address above in order to be considered. Normal business hours are 9:00 a.m. to 3:00 p.m. Monday through Friday, excluding Holidays. The City will not be liable to any Bidder for any unforeseen circumstances, delivery or postal delays. Postmarking to the Due Date will not substitute for receipt of the Bid. Each Bidder is responsible for submission of their Bid.

Additional time for submission of bids past the stated due date and time will not be granted to a single Bidder; however, additional time may be granted to all Bidders when the City determines in its sole discretion that circumstances warrant it.

Award
The City intends to award a Contract(s) to the lowest responsible Bidder(s). On multi-divisional contracts, separate divisions may be awarded to separate Bidders. The City may also utilize alternatives offered in the Bid Forms, if any, to determine the lowest responsible Bidder on each division, and award multiple divisions to a single Bidder, so that the lowest total cost is achieved for the City. For unit price bids, the Contract will be awarded based upon the unit prices and the lump sum prices stated by the bidder for the work items specified in the bid documents, with
consideration given to any alternates selected by the City. If the City determines that the unit price for any item is materially different for the work item bid than either other bidders or the general market, the City, in its sole discretion, in addition to any other right it may have, may reject the bid as not responsible or non-conforming.

The acceptability of major subcontractors will be considered in determining if a Bidder is responsible. In comparing Bids, the City will give consideration to alternate Bids for items listed in the bid forms. All key staff and subcontractors are subject to the approval by the City.

**Official Documents**

The City of Ann Arbor officially distributes bid documents from the Procurement Unit or through the Michigan Intergovernmental Trade Network (MITN). Copies of the bid documents obtained from any other source are not Official copies. Addenda and other bid information will only be posted to these official distribution sites. If you obtained City of Ann Arbor Bid documents from other sources, it is recommended that you register on [www.MITN.info](http://www.MITN.info) and obtain an official Bid.

**Bid Security**

Each bid must be accompanied by a certified check, or Bid Bond by a surety licensed and authorized to do business within the State of Michigan, in the amount of 5% of the total of the bid price.

**Withdrawal of Bids**

After the time of opening, no Bid may be withdrawn for the period of Ninety (90) days.

**Contract Time**

Time is of the essence in the performance of the work under this Contract. The available time for work under this Contract is indicated on page C-2, Article III of the Contract. If these time requirements cannot be met, the Bidder must stipulate on Bid Form Section 3 - Time Alternate its schedule for performance of the work. Consideration will be given to time in evaluating bids.

**Liquidated Damages**

A liquidated damages clause, as given on page C-2, Article III of the Contract, provides that the Contractor shall pay the City as liquidated damages, and not as a penalty, a sum certain per day for each and every day that the Contractor may be in default of completion of the specified work, within the time(s) stated in the Contract, or written extensions.

Liquidated damages clauses, as given in the General Conditions, provide further that the City shall be entitled to impose and recover liquidated damages for breach of the obligations under Chapter 112 of the City Code.

The liquidated damages are for the non-quantifiable aspects of any of the previously identified events and do not cover actual damages that can be shown or quantified nor are they intended to preclude recovery of actual damages in addition to the recovery of liquidated damages.

**Human Rights Information**

All contractors proposing to do business with the City shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the Section 9:158 of
the Ann Arbor City Code. Breach of the obligation not to discriminate as outlined in Section 5, beginning at page GC-3 shall be a material breach of the contract. Contractors are required to post a copy of Ann Arbor’s Non-Discrimination Ordinance attached at all work locations where its employees provide services under a contract with the City.

Wage Requirements
Section 4, beginning at page GC-2, outlines the requirements for payment of prevailing wages and for payment of a “living wage” to employees providing service to the City under this contract. The successful bidder and its subcontractors must comply with all applicable requirements and provide documentary proof of compliance when requested.

For laborers whose wage level are subject to federal, state and/or local prevailing wage law the appropriate Davis-Bacon wage rate classification is identified based upon the work including within this contract. The wage determination(s) current on the date 10 days before bids are due shall apply to this contract. The U.S. Department of Labor (DOL) has provided explanations to assist with classification in the following resource link: www.wdol.gov.

Conflict Of Interest Disclosure
The City of Ann Arbor Purchasing Policy requires that prospective Vendors complete a Conflict of Interest Disclosure form. A contract may not be awarded to the selected Vendor unless and until the Procurement Unit and the City Administrator have reviewed the Disclosure form and determined that no conflict exists under applicable federal, state, or local law or administrative regulation. Not every relationship or situation disclosed on the Disclosure Form may be a disqualifying conflict. Depending on applicable law and regulations, some contracts may be awarded on the recommendation of the City Administrator after full disclosure, where such action is allowed by law, if demonstrated competitive pricing exists and/or it is determined the award is in the best interest of the City. A copy of the Vendor Conflict of Interest Disclosure Form is attached.

Major Subcontractors
The Bidder shall identify on Bid Form Section 4 each major subcontractor it expects to engage for this Contract if the work to be subcontracted is 15% or more of the bid sum or over $50,000, whichever is less. The Bidder also shall identify the work to be subcontracted to each major subcontractor. The Bidder shall not change or replace a subcontractor without approval by the City.

Debarment
Submission of a Bid in response to this ITB is certification that the Bidder is not currently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from participation in this transaction by any State or Federal departments or agency. Submission is also agreement that the City will be notified of any changes in this status.

Disclosures
After bids are opened, all information in a submitter’s bid is subjected to disclosure under the provisions of Michigan Public Act No. 442 of 1976, as amended (MCL 15.231 et seq.) known as the “Freedom of Information Act.” The Freedom of Information Act also provides for the complete disclosure of contracts and attachments thereto except where specifically exempted.
Bid Protest
All Bid protests must be in writing and filed with the Purchasing Agent within five (5) business days of the award action. The bidder must clearly state the reasons for the protest. If a bidder contacts a City Service Area/Unit and indicates a desire to protest an award, the Service Area/Unit shall refer the bidder to the Purchasing Agent. The Purchasing Agent will provide the bidder with the appropriate instructions for filing the protest. The protest shall be reviewed by the City Administrator or designee whose decision shall be final.

Cost Liability
The City of Ann Arbor assumes no responsibility or liability for costs incurred by the Bidder prior to the execution of a contract with the City. By submitting a bid, a bidder agrees to bear all costs incurred or related to the preparation, submission and selection process for the bid.

Reservation of Rights
The City of Ann Arbor reserves the right to accept any bid or alternative bid proposed in whole or in part, to reject any or all bids or alternatives bids in whole or in part and to waive irregularity and/or informalities in any bid and to make the award in any manner deemed in the best interest of the City.
INVITATION TO BID

City of Ann Arbor
Guy C. Larcom Municipal Building
Ann Arbor, Michigan 48107

Ladies and Gentlemen:

The undersigned, as Bidder, declares that this Bid is made in good faith, without fraud or collusion with any person or persons bidding on the same Contract; that this Bidder has carefully read and examined the bid documents, including City Nondiscrimination requirements and Declaration of Compliance Form, Living Wage requirements and Declaration of Compliance Form, Prevailing Wage requirements and Declaration of Compliance Form, Vendor Conflict of Interest Form, Notice of Pre-Bid Conference, Instructions to Bidders, Bid, Bid Forms, Contract, Bond Forms, General Conditions, Standard Specifications, Detailed Specifications, all Addenda, and the Plans (if applicable) and understands them. The Bidder declares that it conducted a full investigation at the site and of the work proposed and is fully informed as to the nature of the work and the conditions relating to the work's performance. The Bidder also declares that it has extensive experience in successfully completing projects similar to this one.

The Bidder acknowledges that it has not received or relied upon any representations or warrants of any nature whatsoever from the City of Ann Arbor, its agents or employees, and that this Bid is based solely upon the Bidder's own independent business judgment.

The undersigned proposes to perform all work shown on the plans or described in the bid documents, including any addenda issued, and to furnish all necessary machinery, tools, apparatus, and other means of construction to do all the work, furnish all the materials, and complete the work in strict accordance with all terms of the Contract of which this Bid is one part.

In accordance with these bid documents, and Addenda numbered _____, the undersigned, as Bidder, proposes to perform at the sites in and/or around Ann Arbor, Michigan, all the work included herein for the amounts set forth in the Bid Forms.

The Bidder declares that it has become fully familiar with the liquidated damage clauses for completion times and for compliance with City Code Chapter 112, understands and agrees that the liquidated damages are for the non-quantifiable aspects of non-compliance and do not cover actual damages that may be shown and agrees that if awarded the Contract, all liquidated damage clauses form part of the Contract.

The Bidder declares that it has become fully familiar with the provisions of Chapter 14, Section 1:320 (Prevailing wages) and Chapter 23 (Living Wage) of the Code of the City of Ann Arbor and that it understands and agrees to comply, to the extent applicable to employees providing services to the City under this Contract, with the wage and reporting requirements stated in the City Code provisions cited. Bidder certifies that the statements contained in the City Prevailing Wage and Living Wage Declaration of Compliance Forms are true and correct. Bidder further agrees that the cited provisions of Chapter 14 and Chapter 23 form a part of this Contract.

The Bidder declares that it has become familiar with the City Conflict of Interest Disclosure Form and certifies that the statement contained therein is true and correct.

The Bidder encloses a certified check or Bid Bond in the amount of 5% of the total of the Bid Price. The Bidder agrees both to contract for the work and to furnish the necessary Bonds and insurance documentation within 10 days after being notified of the acceptance of the Bid.
If this Bid is accepted by the City and the Bidder fails to contract and furnish the required Bonds and insurance documentation within 10 days after being notified of the acceptance of this Bid, then the Bidder shall be considered to have abandoned the Contract and the certified check or Bid Bond accompanying this Bid shall become due and payable to the City.

If the Bidder enters into the Contract in accordance with this Bid, or if this Bid is rejected, then the accompanying check or Bid Bond shall be returned to the Bidder.

In submitting this Bid, it is understood that the right is reserved by the City to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the City believes to be in its best interest.

SIGNED THIS ______ DAY OF _____________, 201_.

_________________________ ___________________________
Bidder's Name Authorized Signature of Bidder

_________________________ ___________________________
Official Address (Print Name of Signer Above)

_________________________ ___________________________
Telephone Number Email Address for Award Notice
LEGAL STATUS OF BIDDER

(The Bidder shall fill out the appropriate form and strike out the other three.)

Bidder declares that it is:

* A corporation organized and doing business under the laws of the State of ____________, for whom ____________________________, bearing the office title of ________________, whose signature is affixed to this Bid, is authorized to execute contracts.

  NOTE: If not incorporated in Michigan, please attach the corporation’s Certificate of Authority

* A limited liability company doing business under the laws of the State of ____________, whom __________________, bearing the title of ________________, whose signature is affixed to this proposal, is authorized to execute contract on behalf of the LLC.

* A partnership, organized under the laws of the state of ____________ and filed in the county of ____________, whose members are (list all members and the street and mailing address of each) (attach separate sheet if necessary):

* An individual, whose signature with address, is affixed to this Bid: ____________________________ (initial here)

Authorized Official

___________________________________________ Date ______________, 201___

(Print) Name _______________________________ Title _____________________________

Company: ____________________________________________________________________

Address: _____________________________________________________________________

Contact Phone ( ) _______________ Fax ( ) ________________________________

Email ________________________________
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**TOTAL BASE BID** $
BID FORM

Section 2 - Material and Equipment Alternates

The Base Bid proposal price shall include materials and equipment selected from the designated items and manufacturers listed in the bidding documents. This is done to establish uniformity in bidding and to establish standards of quality for the items named.

If the Contractor wishes to quote alternate items for consideration by the City, it may do so under this Section. A complete description of the item and the proposed price differential must be provided. Unless approved at the time of award, substitutions where items are specifically named will be considered only as a negotiated change in Contract Sum.

<table>
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<th>Item Number</th>
<th>Description</th>
<th>Add/Deduct Amount</th>
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If the Bidder does not suggest any material or equipment alternate, the Bidder **MUST** complete the following statement:

For the work outlined in this request for bid, the bidder does NOT propose any material or equipment alternate under the Contract.

Signature of Authorized Representative of Bidder _______________________ Date __________
BID FORM

Section 3 - Time Alternate

If the Bidder takes exception to the time stipulated in Article III of the Contract, Time of Completion, page C-2, it is requested to stipulate below its proposed time for performance of the work. Consideration will be given to time in evaluating bids.

If the Bidder does not suggest any time alternate, the Bidder MUST complete the following statement:

For the work outlined in this request for bid, the bidder does NOT propose any time alternate under the Contract.

Signature of Authorized Representative of Bidder ______________________ Date _________
Section 4 - Major Subcontractors

For purposes of this Contract, a Subcontractor is anyone (other than the Contractor) who performs work (other than or in addition to the furnishing of materials, plans or equipment) at or about the construction site, directly or indirectly for or on behalf of the Contractor (and whether or not in privity of Contract with the Contractor), but shall not include any individual who furnishes merely the individual’s own personal labor or services.

Contractor agrees that all subcontracts entered into by the Contractor shall contain similar wage provision to Section 4 of the General Conditions covering subcontractor’s employees who perform work on this contract.

For the work outlined in these documents the Bidder expects to engage the following major subcontractors to perform the work identified:

<table>
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<tr>
<th>Subcontractor (Name and Address)</th>
<th>Work</th>
<th>Amount</th>
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</table>

If the Bidder does not expect to engage any major subcontractor, the Bidder **MUST** complete the following statement:

For the work outlined in this request for bid, the bidder does NOT expect to engage any major subcontractor to perform work under the Contract.

Signature of Authorized Representative of Bidder_________________________ Date _______
## BID FORM

### Section 5 – References

Include a minimum of ___ reference from similar project completed within the past ____ years.

[Refer also to Instructions to Bidders for additional requirements, if any]

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SAMPLE STANDARD CONTRACT

If a contract is awarded, the selected contractor will be required to adhere to a set of general contract provisions which will become a part of any formal agreement. These provisions are general principles which apply to all contractors of service to the City of Ann Arbor such as the following:

CONTRACT

THIS AGREEMENT is made on the ______ day of __________, 20__, between the CITY OF ANN ARBOR, a Michigan Municipal Corporation, 301 East Huron Street, Ann Arbor, Michigan 48104 ("City") and ________________________________ ("Contractor")

(An individual/partnership/corporation, include state of incorporation) (Address)

Based upon the mutual promises below, the Contractor and the City agree as follows:

ARTICLE I - Scope of Work

The Contractor agrees to furnish all of the materials, equipment and labor necessary; and to abide by all the duties and responsibilities applicable to it for the project titled [Insert Title of Bid and Bid Number] in accordance with the requirements and provisions of the following documents, including all written modifications incorporated into any of the documents, which are incorporated as part of this Contract:

- Living Wage and Non-Discrimination Ordinances - Declaration of Compliance Forms (if applicable)
- Vendor Conflict of Interest Form
- Prevailing Wage Declaration of Compliance Form (if applicable)
- Bid Forms
- Contract and Exhibits

Bonds
- General Conditions
- Standard Specifications
- Detailed Specifications
- Plans
- Addenda

ARTICLE II - Definitions

Administering Service Area/Unit means [Insert Name of Administering Service Unit]

Project means [Insert Title of Bid and Bid Number]

ARTICLE III - Time of Completion

(A) The work to be completed under this Contract shall begin immediately on the date specified in the Notice to Proceed issued by the City.

(B) The entire work for this Contract shall be completed within ________ (    ) consecutive calendar days.

(C) Failure to complete all the work within the time specified above, including any extension granted in writing by the Supervising Professional, shall obligate the Contractor to pay the City, as liquidated damages and not as a penalty, an amount equal to $______ for each calendar day of delay in the completion of all the work. If any liquidated damages are unpaid by the Contractor, the City shall be entitled to deduct these unpaid liquidated damages from the monies due the Contractor.
The liquidated damages are for the non-quantifiable aspects of any of the previously identified events and do not cover actual damages that can be shown or quantified nor are they intended to preclude recovery of actual damages in addition to the recovery of liquidated damages.

ARTICLE IV - The Contract Sum

Choose one only.

(A) The City shall pay to the Contractor for the performance of the Contract, the lump sum price as given in the Bid Form in the amount of:

_____________________________ Dollars ($_______)

Or

(A) The City shall pay to the Contractor for the performance of the Contract, the unit prices as given in the Bid Form for the estimated bid total of:

_____________________________ Dollars ($_______)

(B) The amount paid shall be equitably adjusted to cover changes in the work ordered by the Supervising Professional but not required by the Contract Documents. Increases or decreases shall be determined only by written agreement between the City and Contractor.

ARTICLE V - Assignment

This Contract may not be assigned or subcontracted any portion of any right or obligation under this contract without the written consent of the City. Notwithstanding any consent by the City to any assignment, Contractor shall at all times remain bound to all warranties, certifications, indemnifications, promises and performances, however described, as are required of it under this contract unless specifically released from the requirement, in writing, by the City.

ARTICLE VI - Choice of Law

This Contract shall be construed, governed, and enforced in accordance with the laws of the State of Michigan. By executing this agreement, the Contractor and the City agree to venue in a court of appropriate jurisdiction sitting within Washtenaw County for purposes of any action arising under this Contract. The parties stipulate that the venue referenced in this Contract is for convenience and waive any claim of non-convenience.

Whenever possible, each provision of the Contract will be interpreted in a manner as to be effective and valid under applicable law. The prohibition or invalidity, under applicable law, of any provision will not invalidate the remainder of the Contract.

ARTICLE VII - Relationship of the Parties

The parties of the Contract agree that it is not a Contract of employment but is a Contract to accomplish a specific result. Contractor is an independent Contractor performing services for
the City. Nothing contained in this Contract shall be deemed to constitute any other relationship between the City and the Contractor.

Contractor certifies that it has no personal or financial interest in the project other than the compensation it is to receive under the Contract. Contractor certifies that it is not, and shall not become, overdue or in default to the City for any Contract, debt, or any other obligation to the City including real or personal property taxes. City shall have the right to set off any such debt against compensation awarded for services under this agreement.

ARTICLE VIII - Notice

All notices given under this Contract shall be in writing, and shall be by personal delivery or by certified mail with return receipt requested to the parties at their respective addresses as specified in the Contract Documents or other address the Contractor may specify in writing. Notice will be deemed given on the date when one of the following first occur: (1) the date of actual receipt; or (2) three days after mailing certified U.S. mail.

ARTICLE IX - Indemnification

To the fullest extent permitted by law, Contractor shall indemnify, defend and hold harmless the City, its officers, employees and agents harmless from all suits, claims, judgments and expenses including attorney's fees resulting or alleged to result, in whole or in part, from any act or omission, which is in any way connected or associated with this Contract, by the Contractor or anyone acting on the Contractor's behalf under this Contract. Contractor shall not be responsible to indemnify the City for losses or damages caused by or resulting from the City's sole negligence. The provisions of this Article shall survive the expiration or earlier termination of this contract for any reason.

ARTICLE X - Entire Agreement

This Contract represents the entire understanding between the City and the Contractor and it supersedes all prior representations, negotiations, agreements, or understandings whether written or oral. Neither party has relied on any prior representations in entering into this Contract. No terms or conditions of either party's invoice, purchase order or other administrative document shall modify the terms and conditions of this Contract, regardless of the other party’s failure to object to such form. This Contract shall be binding on and shall inure to the benefit of the parties to this Contract and their permitted successors and permitted assigns and nothing in this Contract, express or implied, is intended to or shall confer on any other person or entity any legal or equitable right, benefit, or remedy of any nature whatsoever under or by reason of this Contract. This Contract may be altered, amended or modified only by written amendment signed by the City and the Contractor.

FOR CONTRACTOR

By ___________________________

Its: ____________________________

FOR THE CITY OF ANN ARBOR

By ___________________________

Mayor

By ___________________________

City Clerk

[signatures continue on next page]
Approved as to substance

By __________________________
    City Administrator

By __________________________
    Services Area Administrator

Approved as to form and content

By __________________________
    City Attorney
PERFORMANCE BOND

(1) The Principal has entered a written Contract with the City dated ______________, 201_, for: ____________________________, and this bond is given for that Contract in compliance with Act No. 213 of the Michigan Public Acts of 1963, as amended, being MCL 129.201 et seq.

(3) Whenever the Principal is declared by the City to be in default under the Contract, the Surety may promptly remedy the default or shall promptly:

(a) complete the Contract in accordance with its terms and conditions; or

(b) obtain a bid or bids for submission to the City for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, arrange for a Contract between such bidder and the City, and make available, as work progresses, sufficient funds to pay the cost of completion less the balance of the Contract price; but not exceeding, including other costs and damages for which Surety may be liable hereunder, the amount set forth in paragraph 1.

(4) Surety shall have no obligation to the City if the Principal fully and promptly performs under the Contract.

(5) Surety agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder, or the specifications accompanying it shall in any way affect its obligations on this bond, and waives notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work, or to the specifications.

SIGNED AND SEALED this _____ day of ______________, 201_.

(Name of Surety Company) ________________________________
By ________________________________
(Signature)
Its ________________________________
(Title of Office)

(Name of Principal) ________________________________
By ________________________________
(Signature)
Its ________________________________
(Title of Office)

Approved as to form: ________________________________

Stephen K. Postema, City Attorney

Name and address of agent: ________________________________

______________________________
______________________________
______________________________
LABOR AND MATERIAL BOND

(1) ________________________________of ________________________________, (referred to as "Principal"), and ________________________________, a corporation duly authorized to do business in the State of Michigan, (referred to as "Surety"), are bound to the City of Ann Arbor, Michigan (referred to as "City"), for the use and benefit of claimants as defined in Act 213 of Michigan Public Acts of 1963, as amended, being MCL 129.201 et seq., in the amount of $ ______________________, for the payment of which Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, by this bond.

(2) The Principal has entered a written Contract with the City, dated ________________, 201_, for ________________________________; and this bond is given for that Contract in compliance with Act No. 213 of the Michigan Public Acts of 1963 as amended;

(3) If the Principal fails to promptly and fully repay claimants for labor and material reasonably required under the Contract, the Surety shall pay those claimants.

(4) Surety's obligations shall not exceed the amount stated in paragraph 1, and Surety shall have no obligation if the Principal promptly and fully pays the claimants.

SIGNED AND SEALED this ______ day of ________________, 201_

(Name of Surety Company) ________________________________
By ________________________________
(Signature)
Its ________________________________
(Title of Office)

(Name of Principal) ________________________________
By ________________________________
(Signature)
Its ________________________________
(Title of Office)

Approved as to form:

Stephen K. Postema, City Attorney

Name and address of agent:

______________________________
______________________________
______________________________
GENERAL CONDITIONS

Section 1 - Execution, Correlation and Intent of Documents

The contract documents shall be signed in 2 copies by the City and the Contractor.

The contract documents are complementary and what is called for by any one shall be binding. The intention of the documents is to include all labor and materials, equipment and transportation necessary for the proper execution of the work. Materials or work described in words which so applied have a well-known technical or trade meaning have the meaning of those recognized standards.

In case of a conflict among the contract documents listed below in any requirement(s), the requirement(s) of the document listed first shall prevail over any conflicting requirement(s) of a document listed later.

(1) Addenda in reverse chronological order; (2) Detailed Specifications; (3) Standard Specifications; (4) Plans; (5) General Conditions; (6) Contract; (7) Bid Forms; (8) Bond Forms; (9) Bid.

Section 2 - Order of Completion

The Contractor shall submit with each invoice, and at other times reasonably requested by the Supervising Professional, schedules showing the order in which the Contractor proposes to carry on the work. They shall include the dates at which the Contractor will start the several parts of the work, the estimated dates of completion of the several parts, and important milestones within the several parts.

Section 3 - Familiarity with Work

The Bidder or its representative shall make personal investigations of the site of the work and of existing structures and shall determine to its own satisfaction the conditions to be encountered, the nature of the ground, the difficulties involved, and all other factors affecting the work proposed under this Contract. The Bidder to whom this Contract is awarded will not be entitled to any additional compensation unless conditions are clearly different from those which could reasonably have been anticipated by a person making diligent and thorough investigation of the site.

The Bidder shall immediately notify the City upon discovery, and in every case prior to submitting its Bid, of every error or omission in the bidding documents that would be identified by a reasonably competent, diligent Bidder. In no case will a Bidder be allowed the benefit of extra compensation or time to complete the work under this Contract for extra expenses or time spent as a result of the error or omission.

Section 4 - Wage Requirements

Under this Contract, the Contractor shall conform to Chapter 14 of Title I of the Code of the City of Ann Arbor as amended; which in part states "...that all craftsmen, mechanics and laborers employed directly on the site in connection with said improvements, including said employees of subcontractors, shall receive the prevailing wage for the corresponding classes of craftsmen,
mechanics and laborers, as determined by statistics for the Ann Arbor area compiled by the United States Department of Labor. At the request of the City, any contractor or subcontractor shall provide satisfactory proof of compliance with the contract provisions required by the Section."

Where the Contract and the Ann Arbor City Ordinance are silent as to definitions of terms required in determining contract compliance with regard to prevailing wages, the definitions provided in the Davis-Bacon Act as amended (40 U.S.C. 278-a to 276-a-7) for the terms shall be used.

If the Contractor is a "covered employer" as defined in Chapter 23 of the Ann Arbor City Code, the Contractor agrees to comply with the living wage provisions of Chapter 23 of the Ann Arbor City Code. The Contractor agrees to pay those employees providing Services to the City under this Agreement a "living wage," as defined in Section 1:815 of the Ann Arbor City Code, as adjusted in accordance with Section 1:815(3); to post a notice approved by the City of the applicability of Chapter 23 in every location in which regular or contract employees providing services under this Agreement are working; to maintain records of compliance; if requested by the City, to provide documentation to verify compliance; to take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee or person contracted for employment in order to pay the living wage required by Section 1:815; and otherwise to comply with the requirements of Chapter 23.

Contractor agrees that all subcontracts entered into by the Contractor shall contain similar wage provision covering subcontractor's employees who perform work on this contract.

**Section 5 - Non-Discrimination**

The Contractor agrees to comply, and to require its subcontractor(s) to comply, with the nondiscrimination provisions of MCL 37.2209. The Contractor further agrees to comply with the nondiscrimination provisions of Section 9:158 of Chapter 112 of Title IX of the Ann Arbor City Code, and to assure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity.

**Section 6 - Materials, Appliances, Employees**

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation, and other facilities necessary or used for the execution and completion of the work. Unless otherwise specified, all materials incorporated in the permanent work shall be new, and both workmanship and materials shall be of the highest quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

The Contractor shall at all times enforce strict discipline and good order among its employees, and shall seek to avoid employing on the work any unfit person or anyone not skilled in the work assigned.

Adequate sanitary facilities shall be provided by the Contractor.

**Section 7 - Qualifications for Employment**

The Contractor shall employ competent laborers and mechanics for the work under this Contract. For work performed under this Contract, employment preference shall be given to qualified local residents.
Section 8 - Royalties and Patents

The Contractor shall pay all royalties and license fees. It shall defend all suits or claims for infringements of any patent rights and shall hold the City harmless from loss on account of infringement except that the City shall be responsible for all infringement loss when a particular process or the product of a particular manufacturer or manufacturers is specified, unless the City has notified the Contractor prior to the signing of the Contract that the particular process or product is patented or is believed to be patented.

Section 9 - Permits and Regulations

The Contractor must secure and pay for all permits, permit or plan review fees and licenses necessary for the prosecution of the work. These include but are not limited to City building permits, right-of-way permits, lane closure permits, right-of-way occupancy permits, and the like. The City shall secure and pay for easements shown on the plans unless otherwise specified.

The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the contract documents are at variance with those requirements, it shall promptly notify the Supervising Professional in writing, and any necessary changes shall be adjusted as provided in the Contract for changes in the work.

Section 10 - Protection of the Public and of Work and Property

The Contractor is responsible for the means, methods, sequences, techniques and procedures of construction and safety programs associated with the work contemplated by this contract. The Contractor, its agents or sub-contractors, shall comply with the "General Rules and Regulations for the Construction Industry" as published by the Construction Safety Commission of the State of Michigan and to all other local, State and National laws, ordinances, rules and regulations pertaining to safety of persons and property.

The Contractor shall take all necessary and reasonable precautions to protect the safety of the public. It shall continuously maintain adequate protection of all work from damage, and shall take all necessary and reasonable precautions to adequately protect all public and private property from injury or loss arising in connection with this Contract. It shall make good any damage, injury or loss to its work and to public and private property resulting from lack of reasonable protective precautions, except as may be due to errors in the contract documents, or caused by agents or employees of the City. The Contractor shall obtain and maintain sufficient insurance to cover damage to any City property at the site by any cause.

In an emergency affecting the safety of life, or the work, or of adjoining property, the Contractor is, without special instructions or authorization from the Supervising Professional, permitted to act at its discretion to prevent the threatened loss or injury. It shall also so act, without appeal, if authorized or instructed by the Supervising Professional.

Any compensation claimed by the Contractor for emergency work shall be determined by agreement or in accordance with the terms of Claims for Extra Cost - Section 15.

Section 11 - Inspection of Work

The City shall provide sufficient competent personnel for the inspection of the work.

The Supervising Professional shall at all times have access to the work whenever it is in preparation or progress, and the Contractor shall provide proper facilities for access and for
If the specifications, the Supervising Professional's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give the Supervising Professional timely notice of its readiness for inspection, and if the inspection is by an authority other than the Supervising Professional, of the date fixed for the inspection. Inspections by the Supervising Professional shall be made promptly, and where practicable at the source of supply. If any work should be covered up without approval or consent of the Supervising Professional, it must, if required by the Supervising Professional, be uncovered for examination and properly restored at the Contractor's expense.

Re-examination of any work may be ordered by the Supervising Professional, and, if so ordered, the work must be uncovered by the Contractor. If the work is found to be in accordance with the contract documents, the City shall pay the cost of re-examination and replacement. If the work is not in accordance with the contract documents, the Contractor shall pay the cost.

Section 12 - Superintendence

The Contractor shall keep on the work site, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Supervising Professional. The superintendent will be responsible to perform all on-site project management for the Contractor. The superintendent shall be experienced in the work required for this Contract. The superintendent shall represent the Contractor and all direction given to the superintendent shall be binding as if given to the Contractor. Important directions shall immediately be confirmed in writing to the Contractor. Other directions will be confirmed on written request. The Contractor shall give efficient superintendence to the work, using its best skill and attention.

Section 13 - Changes in the Work

The City may make changes to the quantities of work within the general scope of the Contract at any time by a written order and without notice to the sureties. If the changes add to or deduct from the extent of the work, the Contract Sum shall be adjusted accordingly. All the changes shall be executed under the conditions of the original Contract except that any claim for extension of time caused by the change shall be adjusted at the time of ordering the change.

In giving instructions, the Supervising Professional shall have authority to make minor changes in the work not involving extra cost and not inconsistent with the purposes of the work, but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order by the Supervising Professional, and no claim for an addition to the Contract Sum shall be valid unless the additional work was ordered in writing.

The Contractor shall proceed with the work as changed and the value of the work shall be determined as provided in Claims for Extra Cost - Section 15.

Section 14 - Extension of Time

Extension of time stipulated in the Contract for completion of the work will be made if and as the Supervising Professional may deem proper under any of the following circumstances:

(1) When work under an extra work order is added to the work under this Contract;

(2) When the work is suspended as provided in Section 20;
(3) When the work of the Contractor is delayed on account of conditions which could not have been foreseen, or which were beyond the control of the Contractor, and which were not the result of its fault or negligence;

(4) Delays in the progress of the work caused by any act or neglect of the City or of its employees or by other Contractors employed by the City;

(5) Delay due to an act of Government;

(6) Delay by the Supervising Professional in the furnishing of plans and necessary information;

(7) Other cause which in the opinion of the Supervising Professional entitles the Contractor to an extension of time.

The Contractor shall notify the Supervising Professional within 7 days of an occurrence or conditions which, in the Contractor's opinion, entitle it to an extension of time. The notice shall be in writing and submitted in ample time to permit full investigation and evaluation of the Contractor's claim. The Supervising Professional shall acknowledge receipt of the Contractor's notice within 7 days of its receipt. Failure to timely provide the written notice shall constitute a waiver by the Contractor of any claim.

In situations where an extension of time in contract completion is appropriate under this or any other section of the contract, the Contractor understands and agrees that the only available adjustment for events that cause any delays in contract completion shall be extension of the required time for contract completion and that there shall be no adjustments in the money due the Contractor on account of the delay.

Section 15 - Claims for Extra Cost

If the Contractor claims that any instructions by drawings or other media issued after the date of the Contract involved extra cost under this Contract, it shall give the Supervising Professional written notice within 7 days after the receipt of the instructions, and in any event before proceeding to execute the work, except in emergency endangering life or property. The procedure shall then be as provided for Changes in the Work - Section 13. No claim shall be valid unless so made.

If the Supervising Professional orders, in writing, the performance of any work not covered by the contract documents, and for which no item of work is provided in the Contract, and for which no unit price or lump sum basis can be agreed upon, then the extra work shall be done on a Cost-Plus-Percentage basis of payment as follows:

(1) The Contractor shall be reimbursed for all reasonable costs incurred in doing the work, and shall receive an additional payment of 15% of all the reasonable costs to cover both its indirect overhead costs and profit;

(2) The term "Cost" shall cover all payroll charges for employees and supervision required under the specific order, together with all worker's compensation, Social Security, pension and retirement allowances and social insurance, or other regular payroll charges on same; the cost of all material and supplies required of either temporary or permanent character; rental of all power-driven equipment at agreed upon rates, together with cost of fuel and supply charges for the equipment; and any costs incurred by the Contractor as a direct result of executing the order, if approved by the Supervising Professional;
(3) If the extra is performed under subcontract, the subcontractor shall be allowed to compute its charges as described above. The Contractor shall be permitted to add an additional charge of 5% percent to that of the subcontractor for the Contractor's supervision and contractual responsibility;

(4) The quantities and items of work done each day shall be submitted to the Supervising Professional in a satisfactory form on the succeeding day, and shall be approved by the Supervising Professional and the Contractor or adjusted at once;

(5) Payments of all charges for work under this Section in any one month shall be made along with normal progress payments. Retainage shall be in accordance with Progress Payments-Section 16.

No additional compensation will be provided for additional equipment, materials, personnel, overtime or special charges required to perform the work within the time requirements of the Contract.

When extra work is required and no suitable price for machinery and equipment can be determined in accordance with this Section, the hourly rate paid shall be 1/40 of the basic weekly rate listed in the Rental Rate Blue Book published by Dataquest Incorporated and applicable to the time period the equipment was first used for the extra work. The hourly rate will be deemed to include all costs of operation such as bucket or blade, fuel, maintenance, "regional factors", insurance, taxes, and the like, but not the costs of the operator.

Section 16 - Progress Payments

The Contractor shall submit each month, or at longer intervals, if it so desires, an invoice covering work performed for which it believes payment, under the Contract terms, is due. The submission shall be to the City's Finance Department - Accounting Division. The Supervising Professional will, within 10 days following submission of the invoice, prepare a certificate for payment for the work in an amount to be determined by the Supervising Professional as fairly representing the acceptable work performed during the period covered by the Contractor's invoice. To insure the proper performance of this Contract, the City will retain a percentage of the estimate in accordance with Act 524, Public Acts of 1980. The City will then, following the receipt of the Supervising Professional's Certificate, make payment to the Contractor as soon as feasible, which is anticipated will be within 15 days.

An allowance may be made in progress payments if substantial quantities of permanent material have been delivered to the site but not incorporated in the completed work if the Contractor, in the opinion of the Supervising Professional, is diligently pursuing the work under this Contract. Such materials shall be properly stored and adequately protected. Allowance in the estimate shall be at the invoice price value of the items. Notwithstanding any payment of any allowance, all risk of loss due to vandalism or any damages to the stored materials remains with the Contractor.

In the case of Contracts which include only the Furnishing and Delivering of Equipment, the payments shall be; 60% of the Contract Sum upon the delivery of all equipment to be furnished, or in the case of delivery of a usable portion of the equipment in advance of the total equipment delivery, 60% of the estimated value of the portion of the equipment may be paid upon its delivery in advance of the time of the remainder of the equipment to be furnished; 30% of the Contract Sum upon completion of erection of all equipment furnished, but not later than 60 days after the date of delivery of all of the equipment to be furnished; and payment of the final 10% on final completion of erection, testing and acceptance of all the equipment to be furnished; but not later than 180 days after the date of delivery of all of the equipment to be furnished, unless testing has been completed and shows the equipment to be unacceptable.
With each invoice for periodic payment, the Contractor shall enclose a Contractor's Declaration - Section 43, and an updated project schedule per Order of Completion - Section 2.

**Section 17 - Deductions for Uncorrected Work**

If the Supervising Professional decides it is inexpedient to correct work that has been damaged or that was not done in accordance with the Contract, an equitable deduction from the Contract price shall be made.

**Section 18 - Correction of Work Before Final Payment**

The Contractor shall promptly remove from the premises all materials condemned by the Supervising Professional as failing to meet Contract requirements, whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute the work in accordance with the Contract and without expense to the City and shall bear the expense of making good all work of other contractors destroyed or damaged by the removal or replacement.

If the Contractor does not remove the condemned work and materials within 10 days after written notice, the City may remove them and, if the removed material has value, may store the material at the expense of the Contractor. If the Contractor does not pay the expense of the removal within 10 days thereafter, the City may, upon 10 days written notice, sell the removed materials at auction or private sale and shall pay to the Contractor the net proceeds, after deducting all costs and expenses that should have been borne by the Contractor. If the removed material has no value, the Contractor must pay the City the expenses for disposal within 10 days of invoice for the disposal costs.

The inspection or lack of inspection of any material or work pertaining to this Contract shall not relieve the Contractor of its obligation to fulfill this Contract and defective work shall be made good. Unsuitable materials may be rejected by the Supervising Professional notwithstanding that the work and materials have been previously overlooked by the Supervising Professional and accepted or estimated for payment or paid for. If the work or any part shall be found defective at any time before the final acceptance of the whole work, the Contractor shall forthwith make good the defect in a manner satisfactory to the Supervising Professional. The judgment and the decision of the Supervising Professional as to whether the materials supplied and the work done under this Contract comply with the requirements of the Contract shall be conclusive and final.

**Section 19 - Acceptance and Final Payment**

Upon receipt of written notice that the work is ready for final inspection and acceptance, the Supervising Professional will promptly make the inspection. When the Supervising Professional finds the work acceptable under the Contract and the Contract fully performed, the Supervising Professional will promptly sign and issue a final certificate stating that the work required by this Contract has been completed and is accepted by the City under the terms and conditions of the Contract. The entire balance found to be due the Contractor, including the retained percentage, shall be paid to the Contractor by the City within 30 days after the date of the final certificate.

Before issuance of final certificates, the Contractor shall file with the City:

1. The consent of the surety to payment of the final estimate;
2. The Contractor's Affidavit in the form required by Section 44.

In case the Affidavit or consent is not furnished, the City may retain out of any amount due the Contractor, sums sufficient to cover all lienable claims.
The making and acceptance of the final payment shall constitute a waiver of all claims by the City except those arising from:

1. unsettled liens;
2. faulty work appearing within 12 months after final payment;
3. hidden defects in meeting the requirements of the plans and specifications;
4. manufacturer's guarantees.

It shall also constitute a waiver of all claims by the Contractor, except those previously made and still unsettled.

**Section 20 - Suspension of Work**

The City may at any time suspend the work, or any part by giving 5 days notice to the Contractor in writing. The work shall be resumed by the Contractor within 10 days after the date fixed in the written notice from the City to the Contractor to do so. The City shall reimburse the Contractor for expense incurred by the Contractor in connection with the work under this Contract as a result of the suspension.

If the work, or any part, shall be stopped by the notice in writing, and if the City does not give notice in writing to the Contractor to resume work at a date within 90 days of the date fixed in the written notice to suspend, then the Contractor may abandon that portion of the work suspended and will be entitled to the estimates and payments for all work done on the portions abandoned, if any, plus 10% of the value of the work abandoned, to compensate for loss of overhead, plant expense, and anticipated profit.

**Section 21 - Delays and the City's Right to Terminate Contract**

If the Contractor refuses or fails to prosecute the work, or any separate part of it, with the diligence required to insure completion, ready for operation, within the allowable number of consecutive calendar days specified plus extensions, or fails to complete the work within the required time, the City may, by written notice to the Contractor, terminate its right to proceed with the work or any part of the work as to which there has been delay. After providing the notice the City may take over the work and prosecute it to completion, by contract or otherwise, and the Contractor and its sureties shall be liable to the City for any excess cost to the City. If the Contractor's right to proceed is terminated, the City may take possession of and utilize in completing the work, any materials, appliances and plant as may be on the site of the work and useful for completing the work. The right of the Contractor to proceed shall not be terminated or the Contractor charged with liquidated damages where an extension of time is granted under Extension of Time - Section 14.

If the Contractor is adjudged a bankrupt, or if it makes a general assignment for the benefit of creditors, or if a receiver is appointed on account of its insolvency, or if it persistently or repeatedly refuses or fails except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials, or if it fails to make prompt payments to subcontractors or for material or labor, or persistently disregards laws, ordinances or the instructions of the Supervising Professional, or otherwise is guilty of a substantial violation of any provision of the Contract, then the City, upon the certificate of the Supervising Professional that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor 3 days written notice, terminate this Contract. The City may then take possession of the premises and of all materials, tools and appliances thereon and without prejudice to any other remedy it may have, make good the deficiencies or finish the work by whatever method it may deem expedient, and deduct the cost from the payment due the Contractor. The Contractor shall not be entitled to receive any further payment until the work
is finished. If the expense of finishing the work, including compensation for additional managerial and administrative services exceeds the unpaid balance of the Contract Sum, the Contractor and its surety are liable to the City for any excess cost incurred. The expense incurred by the City, and the damage incurred through the Contractor's default, shall be certified by the Supervising Professional.

**Section 22 - Contractor's Right to Terminate Contract**

If the work should be stopped under an order of any court, or other public authority, for a period of 3 months, through no act or fault of the Contractor or of anyone employed by it, then the Contractor may, upon 7 days written notice to the City, terminate this Contract and recover from the City payment for all acceptable work executed plus reasonable profit.

**Section 23 - City's Right To Do Work**

If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this Contract, the City, 3 days after giving written notice to the Contractor and its surety may, without prejudice to any other remedy the City may have, make good the deficiencies and may deduct the cost from the payment due to the Contractor.

**Section 24 - Removal of Equipment and Supplies**

In case of termination of this Contract before completion, from any or no cause, the Contractor, if notified to do so by the City, shall promptly remove any part or all of its equipment and supplies from the property of the City, failing which the City shall have the right to remove the equipment and supplies at the expense of the Contractor.

The removed equipment and supplies may be stored by the City and, if all costs of removal and storage are not paid by the Contractor within 10 days of invoicing, the City upon 10 days written notice may sell the equipment and supplies at auction or private sale, and shall pay the Contractor the net proceeds after deducting all costs and expenses that should have been borne by the Contractor and after deducting all amounts claimed due by any lien holder of the equipment or supplies.

**Section 25 - Responsibility for Work and Warranties**

The Contractor assumes full responsibility for any and all materials and equipment used in the construction of the work and may not make claims against the City for damages to materials and equipment from any cause except negligence or willful act of the City. Until its final acceptance, the Contractor shall be responsible for damage to or destruction of the project (except for any part covered by Partial Completion and Acceptance - Section 26). The Contractor shall make good all work damaged or destroyed before acceptance. All risk of loss remains with the Contractor until final acceptance of the work (Section 19) or partial acceptance (Section 26). The Contractor is advised to investigate obtaining its own builders risk insurance.

The Contractor shall guarantee the quality of the work for a period of one year. The Contractor shall also unconditionally guarantee the quality of all equipment and materials that are furnished and installed under the contract for a period of one year. At the end of one year after the Contractor's receipt of final payment, the complete work, including equipment and materials furnished and installed under the contract, shall be inspected by the Contractor and the Supervising Professional. Any defects shall be corrected by the Contractor at its expense as soon as practicable but in all cases within 60 days. Any defects that are identified prior to the end of one year shall also be inspected by the Contractor and the Supervising Professional and shall be corrected by the Contractor at its expense as soon as practicable but in all cases within...
The Contractor shall assign all manufacturer or material supplier warranties to the City prior to final payment. The assignment shall not relieve the Contractor of its obligations under this paragraph to correct defects.

**Section 26 - Partial Completion and Acceptance**

If at any time prior to the issuance of the final certificate referred to in Acceptance and Final Payment - Section 19, any portion of the permanent construction has been satisfactorily completed, and if the Supervising Professional determines that portion of the permanent construction is not required for the operations of the Contractor but is needed by the City, the Supervising Professional shall issue to the Contractor a certificate of partial completion, and immediately the City may take over and use the portion of the permanent construction described in the certificate, and exclude the Contractor from that portion.

The issuance of a certificate of partial completion shall not constitute an extension of the Contractor's time to complete the portion of the permanent construction to which it relates if the Contractor has failed to complete it in accordance with the terms of this Contract. The issuance of the certificate shall not release the Contractor or its sureties from any obligations under this Contract including bonds.

If prior use increases the cost of, or delays the work, the Contractor shall be entitled to extra compensation, or extension of time, or both, as the Supervising Professional may determine.

**Section 27 - Payments Withheld Prior to Final Acceptance of Work**

The City may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any certificate to the extent reasonably appropriate to protect the City from loss on account of:

1. Defective work not remedied;
2. Claims filed or reasonable evidence indicating probable filing of claims by other parties against the Contractor;
3. Failure of the Contractor to make payments properly to subcontractors or for material or labor;
4. Damage to another Contractor.

When the above grounds are removed or the Contractor provides a Surety Bond satisfactory to the City which will protect the City in the amount withheld, payment shall be made for amounts withheld under this section.

**Section 28 - Contractor's Insurance**

1. The Contractor shall procure and maintain during the life of this Contract, including the guarantee period and during any warranty work, such insurance policies, including those set forth below, as will protect itself and the City from all claims for bodily injuries, death or property damage which may arise under this Contract; whether the act(s) or omission(s) giving rise to the claim were made by the Contractor or by any subcontractor or anyone employed by them directly or indirectly. In the case of all contracts involving on-site work, the Contractor shall provide to the City, before the commencement of any work under this
contract, certificates of insurance and other documentation satisfactory to the City demonstrating it has obtained the policies and endorsements required on behalf of itself, and when requested, any subcontractor(s). The certificates of insurance endorsements and/or copies of policy language shall document that the Contractor satisfies the following minimum requirements.

(a) Worker’s Compensation Insurance in accordance with all applicable state and federal statutes. Further, Employers Liability Coverage shall be obtained in the following minimum amounts:

- Bodily Injury by Accident - $500,000 each accident
- Bodily Injury by Disease - $500,000 each employee
- Bodily Injury by Disease - $500,000 each policy limit

(b) Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 07 98 or current equivalent. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements specifically for the following coverages: Products and Completed Operations, Explosion, Collapse and Underground coverage or Pollution. Further there shall be no added exclusions or limiting endorsements which diminish the City’s protections as an additional insured under the policy. The following minimum limits of liability are required:

- $1,000,000 Each occurrence as respect Bodily Injury Liability or Property Damage Liability, or both combined.
- $2,000,000 Per Job General Aggregate
- $1,000,000 Personal and Advertising Injury
- $2,000,000 Products and Completed Operations Aggregate

(c) Motor Vehicle Liability Insurance, including Michigan No-Fault Coverages, equivalent to, as a minimum, Insurance Services Office form CA 00 01 07 97 or current equivalent. Coverage shall include all owned vehicles, all non-owned vehicles, and all hired vehicles. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements which diminish the City’s protections as an additional insured under the policy. Further, the limits of liability shall be $1,000,000 for each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.

(d) Umbrella/Excess Liability Insurance shall be provided to apply excess of the Commercial General Liability, Employers Liability and the Motor Vehicle coverage enumerated above, for each occurrence and for aggregate in the amount of $1,000,000.

(2) Insurance required under subsection (1)(b) and (1)(c) above shall be considered primary as respects any other valid or collectible insurance that the City may possess, including any self-insured retentions the City may have; and any other insurance the City does possess shall be considered excess insurance only and shall not be required to contribute with this insurance. Further, the Contractor agrees to waive any right of recovery by its insurer against the City.

(3) Insurance companies and policy forms are subject to approval of the City Attorney, which approval shall not be unreasonably withheld. Documentation must provide and demonstrate an unconditional 30 day written notice of cancellation in favor of the City of Ann Arbor. Further, the documentation must explicitly state the following: (a) the policy number; name of insurance company; name and address of the agent or authorized
representative; name and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions which shall be approved by the City, in its sole discretion; (c) that the policy conforms to the requirements specified. Contractor shall furnish the City with satisfactory certificates of insurance and endorsements prior to commencement of any work. Upon request, the Contractor shall provide within 30 days a copy of the policy(ies) to the City. If any of the above coverages expire by their terms during the term of this Contract, the Contractor shall deliver proof of renewal and/or new policies and endorsements to the Administering Service Area/Unit at least ten days prior to the expiration date.

(4) Any Insurance provider of Contractor shall be admitted and authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company’s Key Rating Guide of “A-” Overall and a minimum Financial Size Category of “V”. Insurance policies and certificates issued by non-admitted insurance companies are not acceptable unless approved in writing by the City.

(5) City reserves the right to require additional coverage and/or coverage amounts as may be included from time to time in the Detailed Specifications for the Project.

(6) The provisions of General Condition 28 shall survive the expiration or earlier termination of this contract for any reason.

Section 29 - Surety Bonds

Bonds will be required from the successful bidder as follows:

(1) A Performance Bond to the City of Ann Arbor for the amount of the bid(s) accepted;
(2) A Labor and Material Bond to the City of Ann Arbor for the amount of the bid(s) accepted.

Bonds shall be executed on forms supplied by the City in a manner and by a Surety Company authorized to transact business in Michigan and satisfactory to the City Attorney.

Section 30 - Damage Claims

The Contractor shall be held responsible for all damages to property of the City or others, caused by or resulting from the negligence of the Contractor, its employees, or agents during the progress of or connected with the prosecution of the work, whether within the limits of the work or elsewhere. The Contractor must restore all property injured including sidewalks, curbing, sodding, pipes, conduit, sewers or other public or private property to not less than its original condition with new work.

Section 31 - Refusal to Obey Instructions

If the Contractor refuses to obey the instructions of the Supervising Professional, the Supervising Professional shall withdraw inspection from the work, and no payments will be made for work performed thereafter nor may work be performed thereafter until the Supervising Professional shall have again authorized the work to proceed.

Section 32 - Assignment

Neither party to the Contract shall assign the Contract without the written consent of the other. The Contractor may assign any monies due to it to a third party acceptable to the City.
Section 33 - Rights of Various Interests

Whenever work being done by the City's forces or by other contractors is contiguous to work covered by this Contract, the respective rights of the various interests involved shall be established by the Supervising Professional, to secure the completion of the various portions of the work in general harmony.

The Contractor is responsible to coordinate all aspects of the work, including coordination of, and with, utility companies and other contractors whose work impacts this project.

Section 34 - Subcontracts

The Contractor shall not award any work to any subcontractor without prior written approval of the City. The approval will not be given until the Contractor submits to the City a written statement concerning the proposed award to the subcontractor. The statement shall contain all information the City may require.

The Contractor shall be as fully responsible to the City for the acts and omissions of its subcontractors, and of persons either directly or indirectly employed by them, as it is for the acts and omissions of persons directly employed by it.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions and all other contract documents applicable to the work of the subcontractors and to give the Contractor the same power to terminate any subcontract that the City may exercise over the Contractor under any provision of the contract documents.

Nothing contained in the contract documents shall create any contractual relation between any subcontractor and the City.

Section 35 - Supervising Professional's Status

The Supervising Professional has the right to inspect any or all work. The Supervising Professional has authority to stop the work whenever stoppage may be appropriate to insure the proper execution of the Contract. The Supervising Professional has the authority to reject all work and materials which do not conform to the Contract and to decide questions which arise in the execution of the work.

The Supervising Professional shall make all measurements and determinations of quantities. Those measurements and determinations are final and conclusive between the parties.

Section 36 - Supervising Professional's Decisions

The Supervising Professional shall, within a reasonable time after their presentation to the Supervising Professional, make decisions in writing on all claims of the City or the Contractor and on all other matters relating to the execution and progress of the work or the interpretation of the contract documents.

Section 37 - Storing Materials and Supplies

Materials and supplies may be stored at the site of the work at locations agreeable to the City unless specific exception is listed elsewhere in these documents. Ample way for foot traffic and
drainage must be provided, and gutters must, at all times, be kept free from obstruction. Traffic on streets shall be interfered with as little as possible. The Contractor may not enter or occupy with agents, employees, tools, or material any private property without first obtaining written permission from its owner. A copy of the permission shall be furnished to the Supervising Professional.

Section 38 - Lands for Work

The Contractor shall provide, at its own expense and without liability to the City, any additional land and access that may be required for temporary construction facilities or for storage of materials.

Section 39 - Cleaning Up

The Contractor shall, as directed by the Supervising Professional, remove at its own expense from the City's property and from all public and private property all temporary structures, rubbish and waste materials resulting from its operations unless otherwise specifically approved, in writing, by the Supervising Professional.

Section 40 - Salvage

The Supervising Professional may designate for salvage any materials from existing structures or underground services. Materials so designated remain City property and shall be transported or stored at a location as the Supervising Professional may direct.

Section 41 - Night, Saturday or Sunday Work

No night or Sunday work (without prior written City approval) will be permitted except in the case of an emergency and then only to the extent absolutely necessary. The City may allow night work which, in the opinion of the Supervising Professional, can be satisfactorily performed at night. Night work is any work between 8:00 p.m. and 7:00 a.m. No Saturday work will be permitted unless the Contractor gives the Supervising Professional at least 48 hours but not more than 5 days notice of the Contractor's intention to work the upcoming Saturday.

Section 42 - Sales Taxes

Under State law the City is exempt from the assessment of State Sales Tax on its direct purchases. Contractors who acquire materials, equipment, supplies, etc. for incorporation in City projects are not likewise exempt. State Law shall prevail. The Bidder shall familiarize itself with the State Law and prepare its Bid accordingly. No extra payment will be allowed under this Contract for failure of the Contractor to make proper allowance in this bid for taxes it must pay.
Section 43

CONTRACTOR'S DECLARATION

I hereby declare that I have not, during the period ____________, 20__, to ____________, 20__, performed any work, furnished any materials, sustained any loss, damage or delay, or otherwise done anything in addition to the regular items (or executed change orders) set forth in the Contract titled _________________________, for which I shall ask, demand, sue for, or claim compensation or extension of time from the City, except as I hereby make claim for additional compensation or extension of time as set forth on the attached itemized statement. I further declare that I have paid all payroll obligations related to this Contract that have become due during the above period and that all invoices related to this Contract received more than 30 days prior to this declaration have been paid in full except as listed below.

There is/is not (Contractor please circle one and strike one as appropriate) an itemized statement attached regarding a request for additional compensation or extension of time.

Contractor ___________________________ Date ___________________________

By ___________________________
(Signature)

Its ___________________________
(Title of Office)

Past due invoices, if any, are listed below.
CONTRACTOR'S AFFIDAVIT

The undersigned Contractor, ______________________________, represents that on ________________, 20___, it was awarded a contract by the City of Ann Arbor, Michigan to __________________ under the terms and conditions of a Contract titled _____________________________. The Contractor represents that all work has now been accomplished and the Contract is complete.

The Contractor warrants and certifies that all of its indebtedness arising by reason of the Contract has been fully paid or satisfactorily secured; and that all claims from subcontractors and others for labor and material used in accomplishing the project, as well as all other claims arising from the performance of the Contract, have been fully paid or satisfactorily settled. The Contractor agrees that, if any claim should hereafter arise, it shall assume responsibility for it immediately upon request to do so by the City of Ann Arbor.

The Contractor, for valuable consideration received, does further waive, release and relinquish any and all claims or right of lien which the Contractor now has or may acquire upon the subject premises for labor and material used in the project owned by the City of Ann Arbor.

This affidavit is freely and voluntarily given with full knowledge of the facts.

__________________________    __________________________
Contractor                  Date

By __________________________
(Signature)

Its ____________________________
(Title of Office)

Subscribed and sworn to before me, on this _____ day of __________, 20___
__________________________, __________ County, Michigan

Notary Public
__________________________ County, MI
My commission expires on:
STANDARD SPECIFICATIONS

All work under this contract shall be performed in accordance with the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction. All work under this Contract which is not included in these Standard Specifications, or which is performed using modifications to these Standard Specifications, shall be performed in accordance with the City of Ann Arbor Detailed Specifications, MDOT Supplemental Specifications, and MDOT Special Provisions included in these contract documents. Any reference to the Michigan Department of Transportation (the “Department”) in the above Standard Specifications, Supplemental Specifications, and Special Provisions shall also mean the City of Ann Arbor.

The Michigan Department of Transportation 2012 Standard Specification for Construction may be downloaded from the following web link:

http://mdotcf.state.mi.us/public/specbook/2012/
CITY OF ANN ARBOR

DETAILED SPECIFICATION
FOR
PROJECT SCHEDULE

AA:DAD 1 of 2  04/05/16

The entire work under this Contract shall be completed in accordance with, and subject to, the scheduling requirements outlined below, and all other requirements of the Contract Documents.

The Contractor is expected to be furnished with two (2) copies of the Contract, for its execution, on or before June 7, 2016. The Contractor shall properly execute both copies of the Contract and return them, with the required Bonds and Insurance documentation, to the City by June 24, 2016. The Contractor shall not begin the work before the applicable date(s) as described herein without approval from the Project Engineer, and in no case before the receipt of the fully executed Contract and Notice to Proceed.

By no later than June 17, 2016 the Contractor shall submit a detailed schedule of work (project work schedule) for the Engineer’s review and approval. This schedule must fully comply with the scheduling requirements contained in this Detailed Specification, and shall include a beginning date and completion date for the project. The schedule of streets where crack treatments are to be applied will be in a systematic manner. Once work is started it will continue until all available streets scheduled for crack treatments at that time are complete. Work shall not start until the project work schedule is approved in writing by the Engineer. The Contractor shall update the approved project work schedule each week, unless otherwise as directed by the Engineer.

The Contractor shall begin the work of this project on or before July 5, 2016, and only upon receipt of the fully executed Contract and Notice to Proceed. Appropriate time extensions shall be granted if the Notice to Proceed is delayed beyond this date.

It is anticipated the Contractor may need to make multiple trips to complete the work in accordance with the approved Project Work Schedule. The entire project shall be completed on or before September 30, 2016.

Failure to complete all work as specified, within the times specified, including time extensions granted thereto as determined by the Engineer, shall entitle the City to deduct from the payments due the Contractor $500.00 in “Liquidated Damages”, and not as a penalty, for each and every calendar day the work remains incomplete beyond the date specified. Liquidated Damages will be assessed until the required work is completed in the current construction season. If, with the Engineer’s approval, work is extended beyond seasonal limitations, the assessment of Liquidated Damages will be discontinued until the work is resumed in the following construction season.

Time is of the essence in the performance of the work of this Contract. The Contractor is expected to mobilize sufficient personnel and equipment and work throughout all authorized hours to complete the project by the final completion date. Should the Contractor demonstrate that they must work on some Sundays in order to maintain the project schedule, they may do so between the hours of 9:00 a.m. and 5:00 p.m. with prior approval from the City. There will be no additional compensation due to the Contractor for work performed on Sundays.

The Engineer may delay or stop the work due to threatening weather conditions. The Contractor shall not be compensated for unused materials or downtime due to rain, or the threat of rain. The Contractor is solely responsible for repairing all damages to the work and to the site, including road infrastructures, road subgrades, and any adjacent properties, which are caused as a result of working in the rain.
The Contractor shall not work in the dark except as approved by the Engineer and only when lighting for night work is provided as detailed elsewhere in this contract. The Engineer may stop the work, or may require the Contractor to defer certain work to another day, if, in the Engineer's opinion, the work cannot be completed within the remaining daylight hours, or if inadequate daylight is present to either properly perform or inspect the work. The Contractor will not be compensated for unused materials or downtime, when delays or work stoppages are directed by the Engineer for darkness and/or inadequate remaining daylight reasons. The Contractor is solely responsible for repairing all damages to the work and to the site, including road infrastructures, road subgrades, and any adjacent properties, which are caused as a result of working in the dark.

If the construction contract is not completed within the specified period(s) including any extensions of time granted thereto, at the sole discretion of the City of Ann Arbor, this Contract may be terminated with no additional compensation due to the Contractor, and the Contractor may be forbidden to bid on future City of Ann Arbor projects for a period of at least three (3) years. If the Engineer elects to terminate the Contract, contract items paid for on a Lump Sum basis shall be paid up to a maximum percentage equal to the percentage of the contract work that has been completed.

Costs for the Contractor to organize, coordinate, and schedule all of the project work will not be paid for separately, but shall be included in the bid price of other pay items under the contract.
a. **Description.** This work consists of treating cracks in Hot Mix Asphalt (HMA) surfaces using either a saw or rout and seal process or an overband process.

b. **Materials.** Provide materials in accordance with subsections 502.02 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction with the following modification:


c. **Construction.** Ensure all construction is in accordance with subsection 502.03 of the MDOT 2012 Standard Specifications for Construction with the following modification:

1. Add the following to the end of subsection 502.03.D.2.b. of the MDOT 2012 Standard Specifications for Construction: “Allow curing for a minimum of 3 days prior to placement of micro-surface.”

2. Add the following to the end of subsection 502.03.D.2.c of the MDOT 2012 Standard Specifications for Construction: “Allow curing for a minimum of 7 days prior to placement of chip seal.”

3. Add the following to the end of subsection 502.03.D.2.d of the MDOT 2012 Standard Specifications for Construction: “Allow curing for a minimum of 14 days prior to placement of paver placed surface seal.”

4. Add the following to the end of subsection 502.03.D.2.e of the MDOT 2012 Standard Specifications for Construction: “Allow curing for a minimum of 14 days prior to placement of HMA ultra-thin overlay.”

d. **Measurement and Payment.** Delete subsection 502.04 of the MDOT 2012 Standard Specifications for Construction, in its entirety and replace it with the following:

**502.04 Measurement and Payment.**

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overband Crack Fill, Lane</td>
<td>Lane Mile</td>
</tr>
<tr>
<td>HMA Crack Treatment, Lane</td>
<td>Lane Mile</td>
</tr>
</tbody>
</table>

A. **Overband Crack Fill.** The Engineer will measure **Overband Crack Fill, Lane** along the centerline of each lane. This measurement includes the traffic lane, as defined in the Lane Mile Inventory, any adjacent paved shoulders, and bike lanes. Parking lanes will be measured as separately.
The unit price for **Overband Crack Fill, Lane** includes the cost of preparing and filling the cracks using the overband method, providing the required documentation, corrective work, and temporary traffic markings.

B. **HMA Crack Treatment.** The Engineer will measure **HMA Crack Treatment, Lane** along the centerline of each lane. This measurement includes traffic lanes, as defined in the Lane Mile Inventory, any adjacent paved shoulders, and bike lanes. Parking lanes will be measured as separately.

The unit price for **HMA Crack Treatment, Lane** includes the cost of preparing, filling and sealing the cracks, including treating working cracks with the saw or rout and seal method, and treating non-working cracks with the overband method.
a. Description. Traffic shall be maintained by the Contractor throughout the project duration in accordance with subsection 104.11 and section 812 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, the Michigan Manual of Uniform Traffic Control Devices (MMUTCD), applicable supplemental specifications, as directed by the Engineer, and as herein specified.

The following, and herein included, MDOT Maintaining Traffic Typicals and Work Zone Device Details apply to the project: M0020a, M0050a, M0090a, M0110a, M0120a, M0140a, M0150a, M0231a, M0232a, M0240a, M0250, M0270a, M0300a, M0310a, M0370a, M0380a, M0400a, M0410a, M0430a, M0440a, M0490a, M0500a, WZD-100-A, and WZD-125-E.

These maintaining traffic provisions are subject to change in the event of special community activities.

The permanent pavement marking items are included in the contract and shall be placed per the MDOT 2012 Standard Specifications for Construction prior to the removal of any devices required to temporarily maintain traffic during construction, and also prior to opening the project to traffic.

b. Materials. Materials for all devices used to temporarily control and maintain traffic shall meet the requirements of section 812 of the MDOT 2012 Standard Specifications for Construction, the MMUTCD, and the applicable MDOT typicals and details included herein.

All signs shall be 48 inches by 48 inches, unless otherwise noted. Temporary signs, which are to remain in the same place for 14 days or more, shall be installed on driven posts. All other temporary signs may be installed on portable supports. All signs shall have a minimum bottom height of 7.0 feet.

Channelizing devices required for all lane closures shall be 42 inch channelizing devices.


The Contractor shall furnish and place all necessary temporary traffic control devices to maintain traffic during construction. All work, construction equipment, and material storage shall be kept behind the curb, or behind barricades or channelizing devices, all in combination with protective fencing, if required to protect open excavations, and shall not in any way hamper vehicle movement or impair traffic vision. The contractor shall also provide protection to all uncured concrete sidewalk, driveways, and curb and gutter as may be needed until all traffic, either foot or otherwise, can cross without damage. Additional barricades and protective fencing shall be installed at the end of each day to insure no disturbance to the work area.

Distances between warning, regulatory, and guide signs as shown on the typicals and details are approximate, and may require field adjustment, as directed by the Engineer.
The Contractor shall maintain two-way traffic on major streets, one-way traffic utilizing flag control on local streets, and keep all intersections open to traffic at all times, unless specifically authorized in writing by the Engineer.

The Contractor shall maintain traffic such that no vehicle shall be required to drive into active work areas.

All temporary traffic/pedestrian control devices furnished by the Contractor shall remain the property of the Contractor. The City shall not be responsible for stolen or damaged signs, barricades, plastic drums and other traffic maintenance items. The Contractor shall replace missing and/or damaged traffic control devices immediately, at no additional cost to the City.

1. Construction Influence Area (CIA). The CIA shall consist of the width of the project right-of-way and easements, and the areas shown on plans where placement of temporary traffic control devices are required in advance of the work zone(s).

The Contractor shall furnish, erect, maintain, and upon completion of the work, remove all traffic control devices within and around the CIA for the safety and protection of traffic. This includes, but is not limited to, regulatory and warning signs, barricades, channeling devices and other minor devices where required by the Engineer.

The Contractor shall coordinate its operations with all subcontractors, utilities, and/or other contractors performing work on this and other projects within, or adjacent to, the Construction Influence Area (CIA). The contractor shall avoid conflicts in maintaining traffic operations, signing, and orderly progress of other contract work.

2. Permits. Prior to the start of construction, the Contractor shall obtain a "Right-of-Way" Permit from City of Ann Arbor Customer Services Unit. The Contractor shall notify the Project Engineer and obtain a "Traffic Detour or Lane Closure" Permit from City of Ann Arbor Project Management Services Unit a minimum of 72 business hours prior to the implementation of any traffic shifts, lane closures and street closures. The fees for these permits will be waived.

3. Work Times and Restrictions. All work shall be conducted Monday through Saturday between 7:00am and 8:00pm; unless an alternate plan identifying the days and hours of work has been authorized by the City prior to commencement of construction. Should night work be required for any reason, the Project Engineer must be notified three (3) working days (72 hours) in advance of such work, and the work must have the approval of the City prior to commencement.

Only work of an emergency nature or work required to insure traffic safety shall be performed on Sunday and only with prior approval by the City.

No road work shall be performed nor traffic interruptions be permitted, including lane closures, on Sundays, and during the July 4th and Labor Day holiday periods. All streets and sidewalks that can be opened shall be opened. Trucking on or off site will not be permitted.

During non-working periods, any area with uncompleted work shall have plastic drums at specific locations and protective fencing, as directed by the Engineer, and at no additional cost to the project.
4. Traffic Restrictions. The Contractor shall, at all times, conduct its work to insure the least possible obstruction to traffic and inconvenience to the general public, businesses, and residents in the vicinity of the work.

Traffic on major streets should not be impacted between the hours of 7:00 a.m. to 9:00 a.m. and from 3:30 p.m. to 6:00 p.m. unless otherwise approved by the Engineer or as specified on the Lane Closure Permit. All major changes in traffic control shall be made either between 9:00 a.m. and 3:30 p.m. or between 7:00 p.m. and 6:30 a.m. in order to minimize interference with rush hour traffic. All traffic controls must be in place and ready for traffic each day by 6:30 a.m. and 3:30 p.m. Temporary obstruction of traffic for loading and unloading of trucks, and other construction activities, will be permitted with approval from the Engineer if the Contractor provides traffic regulators (flag persons) in conformance with Part VI of the MMUTCD. During temporary obstructions, a minimum of two traffic regulators are required. The cost of traffic regulators (flag control) shall be included in the contract pay item “Traf Regulator Control”.

Access to businesses, residences, and side street(s) within the CIA shall be maintained for the duration of the project. The Contractor shall make every effort to coordinate its operations to minimize interruptions impacting this access. The Contractor shall notify the Project Engineer forty-eight (48) hours in advance of any work to be performed on or near business or residential driveways, and stage work so that it is part-width when it is necessary to work in these areas. Prohibiting access to businesses and residences will not be allowed during any phase of construction, and flagging will be required at the discretion of the Engineer.

A minimum of one lane of traffic in each direction must be maintained on Pauline Blvd at all times by use of signage and other traffic control devices unless otherwise authorized by the Engineer.

Lane width shall be a minimum of 9 feet wide. Contractor shall schedule work so that under no circumstances traffic is stopped. The work within the CIA shall be suspended during peak traffic hours and/or when traffic is being unduly hampered or delayed by all construction activity, at the discretion of the Engineer.

5. Emergency Services. The Contractor shall notify local police, fire departments and emergency response units a minimum of three business days (72 hours) prior to the closure of any lanes, or traffic shifts causing restricted movements of traffic or restricted access. Fire hydrants in or adjacent to the work shall be kept “live” and fire fighting forces made aware of their availability at all times during construction.

d. Measurement and Payment. The completed work for maintaining traffic, as described, will be paid for at the contract unit prices for the following items in accordance with subsection 812.04 of the Standard Specifications for Construction.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channelizing Device, 42 inch, Furn</td>
<td>Each</td>
</tr>
<tr>
<td>Channelizing Device, 42 inch, Oper</td>
<td>Each</td>
</tr>
<tr>
<td>Lighted Arrow, Type C, Furn</td>
<td>Each</td>
</tr>
<tr>
<td>Lighted Arrow, Type C, Oper</td>
<td>Each</td>
</tr>
</tbody>
</table>
The estimated quantities for maintaining traffic are based on the signing and related traffic control devices deemed necessary for this project as shown on the applicable MDOT Maintaining Traffic Typicals, and include traffic regulators, lighted arrows and minor traffic devices.

Payment for traffic control devices shall be based on the maximum quantity in place at any one time during the project, as determined by the Engineer. Non-standard specially fabricated signs, other than those used to determine the maximum square feet of signage, will be paid for separately by the unit square foot for each sign furnished and operated during construction.

Any additional signing or maintaining traffic devices required to expedite the construction shall be at the Contractor’s expense.

Temporary traffic control devices will be paid for only once irrespective of the number of times moved. Traffic control devices not paid for separately shall be included in the payment for the pay item “Minor Traf Devices”. 

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Unit</th>
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<tbody>
<tr>
<td>Minor Traf Devices</td>
<td>Lump Sum</td>
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<tr>
<td>Sign Cover</td>
<td>Each</td>
</tr>
<tr>
<td>Sign, Type B, Temp, Prismatic, Furn</td>
<td>Square Foot</td>
</tr>
<tr>
<td>Sign, Type B, Temp, Prismatic, Oper</td>
<td>Square Foot</td>
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<tr>
<td>Sign, Type B, Temp, Prismatic, Special, Furn</td>
<td>Square Foot</td>
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<tr>
<td>Sign, Type B, Temp, Prismatic, Special, Oper</td>
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<tr>
<td>Traf Regulator Control</td>
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## Minimum Merging Taper Length "L" (Feet)

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<td>975</td>
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</table>

The formulas for the minimum length of a merging taper in deriving the "L" values shown in the above tables are as follows:

"L" = \( \frac{W \times S^2}{60} \) where posted speed prior to the work area is 40 MPH or less

"L" = \( S \times W \) where posted speed prior to the work area is 45 MPH or greater

- **L** = Minimum length of merging taper
- **S** = Posted speed limit in MPH prior to work area
- **W** = Width of offset

### Types of Tapers

- **Upstream Tapers**
  - Merging Taper: \( L \) = Minimum
  - Shifting Taper: \( \frac{1}{2} L \) = Minimum
  - Shoulder Taper: \( \frac{1}{3} L \) = Minimum
  - Two-Way Traffic Taper: 100' = Maximum

- **Downstream Tapers** (Use is Optional)
  - 100' = Minimum (per lane)

### MDOT Traffic and Safety

Maintaining Traffic Typical

- **Drawn by:** CONNIE CH.
- **Checked by:** EMM
- **Plan Date:** JUNE 2006
- **File:** K:/CON/TSR/STE/ENGLISH/WNTRF/M0020a.dgn
- **Rev.:** 08/25/2006

---

**DS-9**
DISTANCE BETWEEN TRAFFIC CONTROL DEVICES "D"
AND LENGTH OF LONGITUDINAL BUFFER SPACE ON
"WHERE WORKERS AREN'T" SEQUENCES

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<thead>
<tr>
<th>&quot;D&quot; (FEET)</th>
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<tbody>
<tr>
<td>POSTED SPEED LIMIT, MPH (PRIOR TO WORK AREA)</td>
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<td></td>
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<td></td>
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</table>

GUIDELINES FOR LENGTH OF
LONGITUDINAL BUFFER SPACE "B"

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<thead>
<tr>
<th>SPEED* MPH</th>
<th>LENGTH FEET</th>
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<td>476</td>
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<tr>
<td>70</td>
<td>542</td>
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</tbody>
</table>

* POSTED SPEED, OFF PEAK 85TH PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED

1 BASED UPON AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) BRAKING DISTANCE PORTION OF STOPPING SIGHT DISTANCE FOR WET AND LEVEL PAVEMENTS (A POLICY ON GEOMETRIC DESIGN OF HIGHWAY AND STREETS), AASHTO. THIS AASHTO DOCUMENT ALSO RECOMMENDS ADJUSTMENTS FOR THE EFFECT OF GRADE ON STOPPING AND VARIATION FOR TRUCKS.
SIGN PLACEMENT IS THE SAME FOR BOTH DIRECTIONS

PROJECT LIMITS

WORK ZONE

PROJECT LIMITS

REMAINING SEQUENCE SIGNING PER APPROPRIATE TYPICAL

TRAFFIC FINES DOUBLED IN WORK ZONES

R5-18

INJURE / KILL A WORKER $7500 + 15 YEARS

R5-18b

ROAD WORK AHEAD

W20-1

SIGN = 48 ft2 - TYPE B
FOR ONE DIRECTION OF TRAFFIC
W20-1 QUANTITY INCLUDED WITH APPROPRIATE TYPICAL FOR SEQUENCE SIGNING

TYPICAL ADVANCE SIGNING TREATMENT FOR INTERMEDIATE AND SHORT TERM STATIONARY WORK ZONE OPERATIONS WHERE ALL TRAFFIC CONTROL DEVICES ARE REMOVED AT END OF EACH WORK DAY ON AN UNDIVIDED TWO-WAY ROADWAY

NOT TO SCALE
NOTES

30. THE APPROPRIATE ADVANCE SIGNING SEQUENCE(S), (M0030a THROUGH M0080a) SHALL BE USED ON ALL PROJECTS.

35. THESE SIGNS ARE INTENDED TO BE USED WITHIN THE LIMITS OF THE TEMPORARY SEQUENCE SIGNING AS IS SHOWN ON 1 OF 2. THESE SIGNS ARE NOT TO BE INTERMINGLED WITH ANY OTHER TEMPORARY SEQUENCE SIGNING EXCEPT AS SHOWN.

SIGN SIZES

- C20-2 - 48" x 24"
- R5-18 - 48" x 60"
- R5-18b - 48" x 60"
- W20-1 - 48" x 48"
SUPPLEMENTAL SET OF SPEED LIMIT SIGNS ARE REQUIRED WHEN MAJOR INTERSECTIONS ARE MORE THAN 2 MILES APART, SUCH THAT NO SETS OF THESE SPEED LIMIT SIGNS ARE EVER PLACED MORE THAN 2 MILES APART.

KEY

- • • CHANNELIZING DEVICES
  • TRAFFIC FLOW
  ■ PERMANENT SIGNS MAY EXIST
  ▲ REQUIRED AFTER MAJOR INTERSECTIONS
  ♦ PART OF LEAD IN SIGNING SEQUENCE

TYPICAL TEMPORARY TRAFFIC CONTROL FOR SUPPLEMENTAL SPEED LIMIT TREATMENT ON A TWO-WAY ROADWAY WHERE WORKERS PRESENT

NOT TO SCALE
NOTES

11. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
   AND LENGTH OF LONGITUDINAL BUFFERS
   L = MINIMUM LENGTH OF TAPER
   SEE M0020a FOR "D" AND "L" 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.

7. ALL TEMPORARY SIGNS, TYPE III BARRI CADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS SHALL MEET NCHRP 350 CRASHWORTHY REQUIREMENTS STIPULATED IN THE CURRENT 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.

8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.
NOTES

1. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
   1/3 L = MINIMUM LENGTH OF TAPER
   B = LENGTH OF LONGITUDINAL BUFFER
   SEE M0020g FOR "D," "L," AND "B" 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.

4. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S).

5. FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.


7. ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS SHALL MEET NCHRP 350 CRASHWORTHY REQUIREMENTS STIPULATED IN THE CURRENT 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.

8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.

29A. THE TYPE OF REFLECTIVE SHEETING USED FOR THE W20-1a PLAQUE SHALL BE THE SAME AS THE TYPE USED FOR THE PARENT SIGN.

SIGN SIZES

DIAMOND WARNING - 48" x 48"
W20-1a PLAQUE - 48" x 36"
R2-1 REGULATORY - 48" x 60"
R5-18c REGULATORY - 48" x 48"
WORK AREA VARIES

KEY
- • • • CHANNELIZING DEVICES
- > TRAFFIC FLOW
- * USE THE "NEXT-- MILES" SIGN WHEN SHOULDER CLOSURE EXCEEDS 1 MILE IN LENGTH
- □ REFLECTS EXISTING SPEED LIMIT

SIGN = 172 ft² - TYPE B
W/PLAQUE = 184 ft² - TYPE B
PLUS ADDITIONAL R2-1's THRUOUT WORK AREA

PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL MO0300-M0080G.

PLACE THROUGHOUT WORK AREA AS INDICATED IN THE NOTES.

LEGEND REFLECTS SPEED LIMIT BEYOND WORK AREA.

PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL MO0300-M0080G.

NOT TO SCALE
NOTES

1. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
   1/3 L = MINIMUM LENGTH OF TAPER
   B = LENGTH OF LONGITUDINAL BUFFER
   SEE MO020a FOR “D,” “L,” AND “B” 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.

4. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S).

5. FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.


7. ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS SHALL MEET NCHRP 350 CRASHWORTHY REQUIREMENTS STIPULATED IN THE CURRENT 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.

8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.

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.

16C. WHEN EXISTING SPEED LIMITS ARE REDUCED MORE THAN 10 MPH, THE SPEED LIMIT SHALL BE STEPPED DOWN IN NO MORE THAN 10 MPH INCREASES.

29A. THE TYPE OF REFLECTIVE SHEETING USED FOR THE W20-1a PLAQUE SHALL BE THE SAME AS THE TYPE USED FOR THE PARENT SIGN.
PLACE THROUGHOUT WORK AREA AS INDICATED AND AFTER ALL MAJOR CROSSROADS IF PERMANENT SIGNS ARE NOT IN PLACE.

PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL MO030a-MO080a.

PLACE THROUGHOUT WORK AREA AS INDICATED AND AFTER ALL MAJOR CROSSROADS IF PERMANENT SIGNS ARE NOT IN PLACE.

KEY

TRAFFIC REGULATOR

CHANNELIZING DEVICES

LIGHTED ARROW PANEL (CAUTION MODE)

TRAFFIC FLOW

REFLECTS EXISTING SPEED LIMIT

SIGN = 200 ft2 - 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, NO SPEED REDUCTION

NOT TO SCALE
NOTES

1H. \( D = \text{DISTANCE BETWEEN TRAFFIC CONTROL DEVICES} \)
   \( \text{AND LENGTH OF LONGITUDINAL BUFFERS} \)
   \( \text{SEE } \text{M0020a FOR } "D" \text{ VALUES.} \)

2. \( \text{ALL NON-APPLICABLE SIGNING WITHIN THE C JA SHALL BE MODIFIED TO FIT CONDITIONS, COVERED OR REMOVED.} \)

3. \( \text{DISTANCES BETWEEN SIGNS, THE VALUES FOR WHICH ARE SHOWN IN TABLE D, ARE APPROXIMATE AND MAY NEED} \)
   \( \text{ADJUSTING AS DIRECTED BY THE ENGINEER.} \)

3A. \( \text{THE "WORK ZONE BEGINS" (R5-18c) SIGN SHALL BE USED ONLY IN THE INITIAL SIGNING SEQUENCE IN THE WORK} \)
   \( \text{ZONE. SUBSEQUENT SEQUENCES IN THE SAME WORK ZONE SHALL OMIT THIS SIGN AND THE QUANTITIES SHALL BE} \)
   \( \text{ADJUSTED APPROPRIATELY.} \)

4A. \( \text{THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES IN THE TAPER AREA(S) SHOULD BE 15} \)
   \( \text{FEET AND SHOULD BE EQUAL IN FEET TO TWICE THE POSTED SPEED IN MILES PER HOUR IN THE PARALLEL AREA(S).} \)

5. \( \text{FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.} \)

6. \( \text{WHEN CALLED FOR IN THE FHWA ACCEPTANCE LETTER FOR THE SIGN SYSTEM SELECTED, THE TYPE A WARNING} \)
   \( \text{FLASHER, SHOWN ON THE WARNING SIGNS, SHALL BE POSITIONED ON THE SIDE OF THE SIGN NEAREST THE ROADWAY.} \)

7. \( \text{ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS} \)
   \( \text{SHALL MEET NCHRP 350 CRASHWORTHY REQUIREMENTS STIPULATED IN THE CURRENT EDITION OF THE} \)
   \( \text{MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE CURRENT EDITION OF THE STANDARD} \)
   \( \text{SPECIFICATIONS FOR CONSTRUCTION, THE STANDARD PLANS AND APPLICABLE SPECIAL PROVISIONS,} \)
   \( \text{ONLY DESIGNS AND MATERIALS APPROVED BY MDOT WILL BE ALLOWED.} \)

9. \( \text{ALL TRAFFIC REGULATORS SHALL BE PROPERLY TRAINED AND SUPERVISED.} \)

9A. \( \text{IN ANY OPERATION INVOLVING MORE THAN ONE TRAFFIC REGULATOR, ONE PERSON SHOULD BE DESIGNATED AS HEAD} \)
   \( \text{TRAFFIC REGULATOR.} \)

10. \( \text{ALL TRAFFIC REGULATORS' CONDUCT, THEIR EQUIPMENT, AND TRAFFIC REGULATING PROCEDURES SHALL CONFORM} \)
    \( \text{TO THE CURRENT EDITION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTC D) AND THE} \)
    \( \text{CURRENT EDITION OF THE MDOT HANDBOOK ENTITLED "TRAFFIC REGULATORS INSTRUCTION MANUAL."} \)

11. \( \text{WHEN TRAFFIC REGULATING IS ALLOWED DURING THE HOURS OF DARKNESS, APPROPRIATE LIGHTING SHALL BE} \)
    \( \text{PROVIDED TO SUFFICIENTLY ILLUMINATE THE TRAFFIC REGULATOR'S STATIONS.} \)

12E. \( \text{THE MAXIMUM DISTANCE BETWEEN THE TRAFFIC REGULATORS SHALL BE NO MORE THAN 2 MILES IN LENGTH UNLESS} \)
    \( \text{RESTRICTED FURTHER IN THE SPECIAL PROVISIONS FOR MAINTAINING TRAFFIC. ALL SEQUENCES OF MORE THAN 2} \)
    \( \text{MILES IN LENGTH WILL REQUIRE WRITTEN PERMISSION FROM THE ENGINEER BEFORE PROCEEDING.} \)

13. \( \text{WHEN INTERSECTING ROADS OR SIGNIFICANT TRAFFIC GENERATORS (SHOPPING CENTERS, MOBILE HOME PARKS, ETC.)} \)
    \( \text{OCCUR WITHIN THE ONE-LANE TWO-WAY OPERATION, INTERMEDIATE TRAFFIC REGULATORS AND APPROPRIATE} \)
    \( \text{SIGNING SHALL BE PLACED AT THESE LOCATIONS.} \)

14. \( \text{ADDITIONAL SIGNING AND/OR ELONGATED SIGNING SEQUENCES SHOULD BE USED WHEN TRAFFIC VOLUMES ARE} \)
    \( \text{SIGNIFICANT ENOUGH TO CREATE BACKUPS BEYOND THE W3-4 SIGNS.} \)

15. \( \text{THE HAND HELD (PADLEE) SIGNS REQUIRED BY THE MMUTC D TO CONTROL TRAFFIC WILL BE PAID FOR AS PART OF} \)
    \( \text{FLAG CONTROL.} \)

28E. \( \text{THE TRAFFIC REGULATORS SHOULD BE POSITIONED AT OR NEAR THE SIDE OF THE ROAD SO THAT THEY ARE SEEN} \)
    \( \text{CLEARLY AT A MINIMUM DISTANCE OF 500 FEET. THIS MAY REQUIRE EXTENDING THE BEGINNING OF THE LANE} \)
    \( \text{CLOSED TO OVERCOME VIEWING PROBLEMS CAUSED BY HILLS AND CURVES.} \)

SIGN SIZES

- \( \text{DIAMOND WARNING - 48" x 48"} \)
- \( \text{R2-1 REGULATORY - 48" x 60"} \)
- \( \text{R5-18c REGULATORY - 48" x 48"} \)

TYPICAL TEMPORARY TRAFFIC CONTROL FOR
A TWO-LANE TWO-WAY ROADWAY WHERE ONE
LANE IS CLOSED UTILIZING TRAFFIC
REGULATORS, NO SPEED REDUCTION

DRAWN BY: CONIA/DE:JF
CHECKED BY: BMM/CRB
OCTOBER 2011
MO140a SHEET

NOT TO SCALE
1H. $D =$ DISTANCE BETWEEN TRAFFIC CONTROL DEVICES AND LENGTH OF LONGITUDINAL BUFFERS. SEE MO020a 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" (R-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, TYPE III BARRICADES SHALL BE LIGHTED.


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 ON 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 W-4 SIGNS.

15. THE HAND HELD (PADLE) 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**

<table>
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<th>Type</th>
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<tbody>
<tr>
<td>DIAMOND WARNING</td>
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</tr>
<tr>
<td>RECTANGULAR REGULATORY</td>
<td>48&quot; x 60&quot;</td>
</tr>
<tr>
<td>R5-18c REGULATORY</td>
<td>48&quot; x 48&quot;</td>
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</table>

NOT TO SCALE
PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL MD030a-MD050a.

PLACE THROUGHOUT WORK AREA AS INDICATED AND AFTER ALL MAJOR CROSSROADS IF PERMANENT SIGNS ARE NOT IN PLACE.

PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL MD030a-MD050a.

TYPICAL TEMPORARY TRAFFIC CONTROL
FOR CLOSING ONE LANE OF A THREE LANE ROADWAY WITH CLFTo AND SHIFTING ONE THROUGH LANE INTO THE CLFTO NO SPEED REDUCTION

KEY

- CHANNELIZING DEVICES
- LIGHTED ARROW PANEL (CAUTION MODE)
- TRAFFIC FLOW
- REFLECTS EXISTING SPEED LIMIT

SIGN = 184 ft+ - TYPE B
PLUS ADDITIONAL R2-1's
THROUGHOUT WORK AREA

NOT TO SCALE
NOTES

1F. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
   1/2 L, AND 1/3 L = MINIMUM LENGTH OF TAPER
   B = LENGTH OF LONGITUDINAL BUFFER
   SEE M0020a FOR "D," "L," AND "B" VALUES

2. ALL NON-APPLICABLE SIGNING WITHIN THE CJA 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.

4E. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S).

5. FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.

6. 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 CURRENT 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.

8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.

21. ALL EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH EITHER PROPOSED CHANGES IN TRAFFIC PATTERNS OR PROPOSED TEMPORARY TRAFFIC MARKINGS, SHALL BE REMOVED BEFORE ANY CHANGE IS MADE IN THE TRAFFIC PATTERN. EXCEPTION WILL BE MADE FOR DAYTIME-ONLY TRAFFIC PATTERNS THAT ARE ADEQUATELY DELINEATED BY OTHER TRAFFIC CONTROL DEVICES.
KEY

- * * * CHANNELIZING DEVICES
- ** LIGHTED ARROW PANEL (CAUTION MODE)
- ←→ TRAFFIC FLOW
- ■ REFLECTS EXISTING SPEED LIMIT

SIGN = 200 ft² - TYPE B
PLUS ADDITIONAL R2-1's THROUGHOUT WORK AREA

PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL M0030a-M0050a.

LEGEND REFLECTS SPEED LIMIT BEYOND WORK AREA

PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL M0030a-M0050a.

PLACE THROUGHOUT WORK AREA AS INDICATED AND AFTER ALL MAJOR CROSSROADS IF PERMANENT SIGNS ARE NOT IN PLACE.

PLACE THROUGHOUT WORK AREA AS INDICATED IN THE NOTES.

MAXIMUM 10MPH SPEED REDUCTION THIS DIRECTION

TYPICAL TEMPORARY TRAFFIC CONTROL FOR CLOSING ONE LANE OF A THREE LANE ROADWAY WITH CLFTO AND SHIFTING ONE THROUGH LANE INTO THE CLFTO USING A SINGLE STEP DOWN IN SPEED LIMIT IN ONE DIRECTION ONLY

NOT TO SCALE
1. $D = \text{DISTANCE BETWEEN TRAFFIC CONTROL DEVICES}$
   
   $1/2\ L$, and $1/3\ L = \text{MINIMUM LENGTH OF TAPER}$

   $B = \text{LENGTH OF LONGITUDINAL BUFFER}$

   See M020a for "D," "L," and "B" 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.

4. The maximum recommended distance(s) between channelizing devices should be equal in feet to the posted speed in miles per hour on taper(s) and twice the posted speed in the parallel area(s).

5. For overnight closures, Type III barricades shall be lighted.

6. 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 crashworthiness requirements stipulated in the current 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.

8. When buffer areas are established, there shall be no equipment or materials stored or work conducted in the buffer area.

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.

21. All existing pavement markings which are in conflict with either proposed changes in traffic patterns or proposed temporary traffic markings, shall be removed before any change is made in the traffic pattern. Exception will be made for daytime-only traffic patterns that are adequately delineated by other traffic control devices.

### SIGN SIZES

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**NOT TO SCALE**

TYPICAL TEMPORARY TRAFFIC CONTROL FOR CLOSING ONE LANE OF A THREE LANE ROADWAY WITH CLFTO AND SHIFTING ONE THROUGH LANE INTO THE CLFTO USING A SINGLE STEP DOWN IN SPEED LIMIT IN ONE DIRECTION ONLY

MDOT Michigan Department of Transportation
TRAFFIC AND SAFETY
MAINTAINING TRAFFIC
TYPICAL

DRAWN BY: CONIAE/DJF
CHECKED BY: BMM/DJR
OCTOBER 2011
M0232a
2
FILE: RD/TAS/Typicals/Signs/MT/MT NonFwy/M0232a Rev.
10/18/2011

DS-26
**KEY**

- CHANNELIZING DEVICES
- LIGHTED ARROW PANEL
- TRAFFIC FLOW
- REFLECTS EXISTING SPEED LIMIT

**SIGN = 136 ft² - TYPE B PLUS ADDITIONAL R2-1’s THROUGHOUT WORK AREA**

PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL M0030c-M0080a.

PLACE THROUGHOUT WORK AREA AS INDICATED AND AFTER ALL MAJOR CROSSROADS IF PERMANENT SIGNS ARE NOT IN PLACE.

PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL M0030c-M0080a.

**TYPICAL TEMPORARY TRAFFIC CONTROL**

FOR A ONE-LANE CLOSURE ON AN UNDIVIDED MULTI-LANE ROADWAY, NO SPEED REDUCTION
NOTES

1B. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
L = MINIMUM LENGTH OF TAPER
B = LENGTH OF LONGITUDINAL BUFFER
SEE M0020a FOR "D," "L," AND "B" 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.

4E. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S).

5. FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.


7. ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS SHALL MEET NCHRP 350 CRASHWORTHY REQUIREMENTS STIPULATED IN THE CURRENT 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.

8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.

21. ALL EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH EITHER PROPOSED CHANGES IN TRAFFIC PATTERNS OR PROPOSED TEMPORARY TRAFFIC MARKINGS, SHALL BE REMOVED BEFORE ANY CHANGE IS MADE IN THE TRAFFIC PATTERN. EXCEPTION WILL BE MADE FOR DAYTIME-ONLY TRAFFIC PATTERNS THAT ARE ADEQUATELY DELINEATED BY OTHER TRAFFIC CONTROL DEVICES.


SIGN SIZES
DIAMOND WARNING - 48" x 48"
R2-1 REGULATORY - 48" x 60"
R5-18c REGULATORY - 48" x 48"
W20-1
ROAD WORK AHEAD

W20-5
ROAD WORK AHEAD

W4-2
REDUCED SPEED ZONE AHEAD

W3-5b
RIGHT LANE CLOSED AHEAD

W20-1
ROAD WORK AHEAD

W5-1
PLACE THROUGHOUT WORK AREA AS INDICATED IN THE NOTES.

R2-1
NO SPEED REDUCTION
THIS DIRECTION

PLACE THROUGHOUT WORK AREA AS INDICATED AND AFTER ALL MAJOR CROSSROADS IF PERMANENT SIGNS ARE NOT IN PLACE.

R2-1
SPEED LIMIT
XX

END ROAD WORK

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

R2-1
SPEED LIMIT
XX

LEGEND REFLECTS SPEED LIMIT BEYOND WORK AREA

R2-1
SPEED LIMIT
XX

MAXIMUM 10MPH SPEED
REDUCTION THIS DIRECTION

R2-1
WORK ZONE BEGINS
R5-18c

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

KEY

- CHANNELIZING DEVICES
- LIGHTED ARROW PANEL
- TRAFFIC FLOW
- REFLECTS EXISTING SPEED LIMIT

SIGN = 172 ft² - TYPE B
PLUS ADDITIONAL R2-1’S THROUGHOUT WORK AREA

TYPICAL TEMPORARY TRAFFIC CONTROL FOR
A ONE-LANE CLOSURE ON AN UNDIVIDED
MULTI-LANE ROADWAY USING A SINGLE
STEP DOWN IN SPEED LIMIT
IN ONE DIRECTION ONLY

NOT TO SCALE
NOTES

18. \[ D = \text{DISTANCE BETWEEN TRAFFIC CONTROL DEVICES} \]
   \[ L = \text{MINIMUM LENGTH OF TAPER} \]
   \[ B = \text{LENGTH OF LONGITUDINAL BUFFER} \]

   SEE M0020a FOR \text quotation marks \text{"D," "L," AND "B" VALUES}.

2. \text ALL NON-APPLICABLE SIGNING WITHIN THE CIA SHALL BE MODIFIED TO FIT CONDITIONS, COVERED OR REMOVED.

3. \text DISTANCES BETWEEN SIGNS, THE VALUES FOR WHICH ARE SHOWN IN TABLE D, ARE APPROXIMATE AND MAY NEED ADJUSTING AS DIRECTED BY THE ENGINEER.

3A. \text 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.

4E. \text THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREAS).

5. \text FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.


7. \text ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS SHALL MEET NCHRP 350 CRASHWORTHY REQUIREMENTS STIPULATED IN THE CURRENT 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.

8. \text WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.

16A. \text 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. \text 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. \text WHEN EXISTING SPEED LIMITS ARE REDUCED MORE THAN 10 MPH, THE SPEED LIMIT SHALL BE STEPPED DOWN IN NO MORE THAN 10 MPH INCREMENTS.

21. \text ALL EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH EITHER PROPOSED CHANGES IN TRAFFIC PATTERNS OR PROPOSED TEMPORARY TRAFFIC MARKINGS, SHALL BE REMOVED BEFORE ANY CHANGE IS MADE IN THE TRAFFIC PATTERN. EXCEPTION WILL BE MADE FOR DAYTIME-ONLY TRAFFIC PATTERNS THAT ARE ADEQUATELY DELINEATED BY OTHER TRAFFIC CONTROL DEVICES.


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\textbf{SIGN SIZES}
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\text NOT TO SCALE
**NOT TO SCALE**

**MDOT**
Traffic and Safety
Maintaining Traffic Typical

**TYPICAL TEMPORARY TRAFFIC CONTROL**
For closing the center two lanes of a multi-lane undivided roadway, (no CLFTO) no speed reduction

**FILE:** PW R07/15/Typicals/Signs/MT NON FWY/M0270a.dgn
**REV.:** 10/12/2011

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**KEY**
- **CHANNELIZING DEVICES**
- **LIGHTED ARROW PANEL**

**TRAFFIC FLOW**
- **REFLECTS EXISTING SPEED LIMIT**

**SIGN = 168 ft² - TYPE B**
Plus additional R2-1s throughout work area.

---

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

**PLACE THROUGHOUT WORK AREA AS INDICATED AND AFTER ALL MAJOR CROSSROADS IF PERMANENT SIGNS ARE NOT IN PLACE.**

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

---

**END WORK**

---

**SHEET 1 OF 2**
1B. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
   L = MINIMUM LENGTH OF TAPER
   B = LENGTH OF LONGITUDINAL BUFFER
   SEE M0020a FOR "D," "L," AND "B" 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.

4B. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON MERGING TAPER(S), TWICE THE POSTED SPEED IN THE PARALLEL AREA(S), AND 25 FEET IN THE DOWNSTREAM TAPER AREA(S).

5. FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.


7. ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS SHALL MEET NCHRP 350 CRASHWORTHY REQUIREMENTS STIPULATED IN THE CURRENT 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.

8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.

21. ALL EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH EITHER PROPOSED CHANGES IN TRAFFIC PATTERNS OR PROPOSED TEMPORARY TRAFFIC MARKINGS, SHALL BE REMOVED BEFORE ANY CHANGE IS MADE IN THE TRAFFIC PATTERN. EXCEPTION WILL BE MADE FOR DAYTIME-ONLY TRAFFIC PATTERNS THAT ARE ADEQUATELY DELINEATED BY OTHER TRAFFIC CONTROL DEVICES.


---

**SIGN SIZES**

- **Diamond Warning** - 48" x 48"
- **R2-1 Regulatory** - 48" x 60"
- **R5-18c Regulatory** - 48" x 48"
PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL MO0300a-M00800a.

PLACE THROUGHOUT WORK AREA AS INDICATED AND AFTER ALL MAJOR CROSSROADS IF PERMANENT SIGNS ARE NOT IN PLACE.

PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL MO0300a-M00800a.
10. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
   L & 1/2 L = MINIMUM LENGTH OF TAPER
   B = LENGTH OF LONGITUDINAL BUFFER
   SEE MO020a FOR "D," "L," AND "B" 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.

4E. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S).

5. FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.

6. 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 CURRENT 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.

8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.

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KEY

- CHANNELIZING DEVICES
- LIGHTED ARROW PANEL
- TYPE A WARNING FLASHER (REQUIRED)
- TRAFFIC FLOW

SIGN = 304 ft2 - TYPE B
PLUS ADDITIONAL R2-1’s THROUGHOUT WORK AREA

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

LEGEND REFLECTS SPEED LIMIT BEYOND WORK AREA

PLACE THROUGHOUT WORK AREA AS INDICATED IN THE NOTES.

LEGEND REFLECTS SPEED LIMIT BEYOND WORK AREA

NOT TO SCALE
PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL MO300c-MO0800c.
1. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
   L & 1/2 L = MINIMUM LENGTH OF TAPER
   B = LENGTH OF LONGITUDINAL BUFFER
   SEE M0020a FOR “D,” “L,” AND “B” 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.

4. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S).

5. FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.

6. 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 CURRENT 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.

8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.

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.

21. ALL EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH EITHER PROPOSED CHANGES IN TRAFFIC PATTERNS OR PROPOSED TEMPORARY TRAFFIC MARKINGS, SHALL BE REMOVED BEFORE ANY CHANGE IS MADE IN THE TRAFFIC PATTERN. EXCEPTION WILL BE MADE FOR DAYTIME-ONLY TRAFFIC PATTERNS THAT ARE ADEQUATELY DELINEATED BY OTHER TRAFFIC CONTROL DEVICES.


SIGN SIZES

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIAMOND WARNING</td>
<td>48&quot; x 48&quot;</td>
</tr>
<tr>
<td>W-6 WARNING</td>
<td>48&quot; x 24&quot;</td>
</tr>
<tr>
<td>RECTANGULAR REGULATORY</td>
<td>48&quot; x 60&quot;</td>
</tr>
<tr>
<td>RS-18c REGULATORY</td>
<td>48&quot; x 48&quot;</td>
</tr>
</tbody>
</table>

NOT TO SCALE
PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL M0030a-M0080c.

PLACE THROUGHOUT WORK AREA AS INDICATED AND AFTER ALL MAJOR CROSSROADS IF PERMANENT SIGNS ARE NOT IN PLACE.

PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL M0030a-M0080c.

SIGN = 168 ft2 - TYPE B PLUS ADDITIONAL R2-1’S THROUGHOUT WORK AREA

NOT TO SCALE
NOTES

10. \( D = \text{DISTANCE BETWEEN TRAFFIC CONTROL DEVICES} \)
\( L \& 1/3 \ L = \text{MINIMUM LENGTH OF TAPER} \)
\( B = \text{LENGTH OF LONGITUDINAL BUFFER} \)
SEE M0020a FOR "D," "L," AND "B" 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.

4E. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S).

5. FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.


7. ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS SHALL MEET NCHRP 350 CRASHWORTHY REQUIREMENTS STATED IN THE CURRENT 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.

8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.

21. ALL EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH EITHER PROPOSED CHANGES IN TRAFFIC PATTERNS OR PROPOSED TEMPORARY TRAFFIC MARKINGS, SHALL BE REMOVED BEFORE ANY CHANGE IS MADE IN THE TRAFFIC PATTERN. EXCEPTION WILL BE MADE FOR DAYTIME-ONLY TRAFFIC PATTERNS THAT ARE ADEQUATELY DELINEATED BY OTHER TRAFFIC CONTROL DEVICES.


SIGN SIZES
DIAMOND WARNING - 48" x 48"
R2-1 REGULATORY - 48" x 60"
R5-18c REGULATORY - 48" x 48"

TYPICAL TEMPORARY TRAFFIC CONTROL FOR CLOSING A CENTER-LANE FOR LEFT TURN ONLY AND AN ADJACENT THROUGH LANE IN EACH DIRECTION ON A MULTI-LANE UNDIVIDED ROADWAY, NO SPEED REDUCTION

NOT TO SCALE
WORK AREA VARIES

SHOULDER

KEY

1 / 3 L

WORK AREA VARI

W 20 - 1

ROAD WORK AHEAD

W20-5G (MODIFIED)

REduced

SPEED ZONE

AHEAD

W3-5b

WORK ZONE BEGINS

R5-18c

SPEED LIMIT

XX

R2-1

PLACE THROUGHOUT WORK AREA
AS INDICATED IN THE NOTES.

SPEED LIMIT

XX

R2-1

LEGEND REFLECTS SPEED LIMIT BEYOND WORK AREA.

SPEED LIMIT

XX

R2-1

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

SPEED LIMIT

XX

R2-1

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

SIGN = 240 f+2 - TYPE B
PLUS ADDITIONAL R2-1's
THROUGHOUT WORK AREA

channelizing devices

lighted arrow panel

TRAFFIC FLOW

PLACE THROUGHOUT WORK AREA
AS INDICATED IN THE NOTES.
10. \( D = \text{distance between traffic control devices} \)
    \( L \& \frac{1}{3} L = \text{minimum length of taper} \)
    \( B = \text{length of longitudinal buffer} \)
    See M0020a for "D," "L," and "B" 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.

4E. The maximum recommended distance(s) between channelizing devices should be equal in feet to the posted speed in miles per hour on taper(s) and twice the posted speed in the parallel area(s).

5. For overnight closures, Type III barricades shall be lighted.

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 Crashworthiness Requirements stipulated in the current 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.

8. When buffer areas are established, there shall be no equipment or materials stored or work conducted in the buffer area.

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.

21. All existing pavement markings which are in conflict with either proposed changes in traffic patterns or proposed temporary traffic markings, shall be removed before any change is made in the traffic pattern. Exception will be made for daytime-only traffic patterns that are adequately delineated by other traffic control devices.

26C. The lighted arrow panel shall be located at the beginning of the merging taper as shown. When physical limitations restrict its placement as indicated, then it shall be placed as close to the beginning of the merging taper as possible.

### SIGN SIZES

- **Diamond Warning**: 48" x 48"
- **Rectangular Regulatory**: 48" x 60"
- **R5-18c Regulatory**: 48" x 48"
NO SPEED REDUCTION

TWO THROUGH LANES IN EACH DIRECTION,
UNDIVIDED ROADWAY AND MAINTAINING
CLOSED ONE LANE OF A FIVE-LANE
TYPICAL

PLACE THIS SIGN ALONG WITH THE
ADVANCE WORK ZONE SIGNING AS
DEPICTED ON THE APPROPRIATE
TYPICAL M0030c-M0080a.

PLACE THROUGHOUT WORK AREA AS
INDICATED AND AFTER ALL MAJOR
CROSSROADS IF PERMANENT SIGNS
ARE NOT IN PLACE.

PLACE THIS SIGN ALONG WITH THE
ADVANCE WORK ZONE SIGNING AS
DEPICTED ON THE APPROPRIATE
TYPICAL M0030c-M0080a.

TYPICAL TEMPORARY TRAFFIC CONTROL
FOR CLOSING ONE LANE OF A FIVE-LANE
UNDIVIDED ROADWAY AND MAINTAINING
TWO THROUGH LANES IN EACH DIRECTION,
NO SPEED REDUCTION

NOT TO SCALE

FILE: K:\DGN-TSR-STDS-ENGLISH-MNTRF-M04000.dgn REV. 10/19/2011

TYPICAL TEMPORARY TRAFFIC CONTROL
FOR CLOSING ONE LANE OF A FIVE-LANE
UNDIVIDED ROADWAY AND MAINTAINING
TWO THROUGH LANES IN EACH DIRECTION,
NO SPEED REDUCTION

NOT TO SCALE

FILE: K:\DGN-TSR-STDS-ENGLISH-MNTRF-M04000.dgn REV. 10/19/2011
NOTES

1. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
   1/2 L, AND 1/3 L = MINIMUM LENGTH OF TAPER
   B = LENGTH OF LONGITUDINAL BUFFER
   SEE M0020a FOR "D," "L," AND "B" 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.

4E. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S).

5. FOR OVERNIGHT CLOSURES, TYPE I]I BARRICADES SHALL BE LIGHTED.

6. 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 CURRENT 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.

8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.

21. ALL EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH EITHER PROPOSED CHANGES IN TRAFFIC PATTERNS OR PROPOSED TEMPORARY TRAFFIC MARKINGS, SHALL BE REMOVED BEFORE ANY CHANGE IS MADE IN THE TRAFFIC PATTERN. EXCEPTION WILL BE MADE FOR DAYTIME-ONLY TRAFFIC PATTERNS THAT ARE ADEQUATELY DELINEATED BY OTHER TRAFFIC CONTROL DEVICES.

**SIGN SIZES**

DIAMOND WARNING - 48" x 48"
W1-6 WARNING - 48" x 24"
R2-1 REGULATORY - 48" x 60"
R5-18c REGULATORY - 48" x 48"
KEY

- - - CHANNELIZING DEVICES

* TYPE A WARNING FLASHER
  (REQUIRED)

→ TRAFFIC FLOW

■ REFLECTS EXISTING SPEED LIMIT

SIGN = 220 f+2 - TYPE B
PLUS ADDITIONAL R2-1'S
THROUGHOUT WORK AREA

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

LEGEND REFLECTS SPEED LIMIT BEYOND WORK AREA

PLACE THROUGHOUT WORK AREA AS INDICATED AND AFTER ALL MAJOR CROSSROADS IF PERMANENT SIGNS ARE NOT IN PLACE.

NO SPEED REDUCTION THIS DIRECTION

TEMPORARY PAVEMENT MARKINGS

PLACE THROUGHOUT WORK AREA AS INDICATED AND AFTER ALL MAJOR CROSSROADS IF PERMANENT SIGNS ARE NOT IN PLACE.

1/3 L

1/2 L

1/2 L

1/2 L

1/2 L

MAXIMUM 10MPH SPEED
REDUCTION THIS DIRECTION

TYPICAL TEMPORARY TRAFFIC CONTROL FOR CLOSING ONE LANE OF A FIVE-LANE UNDIVIDED ROADWAY AND MAINTAINING TWO THROUGH LANES IN EACH DIRECTION USING A SINGLE STEP DOWN IN SPEED LIMIT IN ONE DIRECTION ONLY

SIGN = 220 f+2 - TYPE B
PLUS ADDITIONAL R2-1'S
THROUGHOUT WORK AREA

NOT TO SCALE
1. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
   1/2 L, AND 1/3 L = MINIMUM LENGTH OF TAPER
   B = LENGTH OF LONGITUDINAL BUFFER
   SEE M0020a FOR "D," "L," AND "B" 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.

4. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S).

5. FOR OVERNIGHT CLOSURES, TYPE IIII BARRICADES SHALL BE LIGHTED.

6. 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 IIII BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS SHALL MEET NCHRP 350 CRASHWORTHY REQUIREMENTS STIPULATED IN THE CURRENT 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.

8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.

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.

21. ALL EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH EITHER PROPOSED CHANGES IN TRAFFIC PATTERNS OR PROPOSED TEMPORARY TRAFFIC MARKINGS, SHALL BE REMOVED BEFORE ANY CHANGE IS MADE IN THE TRAFFIC PATTERN. EXCEPTION WILL BE MADE FOR DAYTIME-ONLY TRAFFIC PATTERNS THAT ARE ADEQUATELY DELINEATED BY OTHER TRAFFIC CONTROL DEVICES.
W 20 - 1
ROAD WORK

W 20 - 5a
(MODIFIED)

W 20 - 5
ROAD WORK
CLOSED

1 / 3 L

1 / 2 L

1 / 2 L

1 / 2 L

W 1 - 6

W 1 - 4

W 20 - 1

W 20 - 5

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

PLACE THROUGHOUT WORK AREA AS INDICATED AND AFTER ALL MAJOR CROSSROADS IF PERMANENT SIGNS ARE NOT IN PLACE.

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

PLACE THROUGHOUT WORK AREA AS INDICATED AND AFTER ALL MAJOR CROSSROADS IF PERMANENT SIGNS ARE NOT IN PLACE.

KEY

CHANNELIZING DEVICES

LIGHTED ARROW PANEL

TYPE A WARNING FLASHER (REQUIRED)

TRAFFIC FLOW

REFLECTS EXISTING SPEED LIMIT

SIGN = 216 ft2 - TYPE B
PLUS ADDITIONAL R2-1's
THROUGHOUT WORK AREA

NOT TO SCALE

TYPICAL TEMPORARY TRAFFIC CONTROL
FOR CLOSING TWO ADJACENT THROUGH LANES OF A FIVE-LANE UNDIVIDED ROADWAY, NO SPEED REDUCTION

DRAWN BY: CONIAE+df#
CHECKED BY: BMMCDB
OCTOBER 2011
MO430a
FILE: K1-DGN-TSR-STD-ENGLISH-MNTHF-MD430a.dgn
REV. 10/20/2011

SHEET 1 OF 2
NOTES

1E. \( D = \) DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
   \( L, \frac{1}{2}L, \) AND \( \frac{1}{3}L = \) MINIMUM LENGTH OF TAPER
   \( B = \) LENGTH OF LONGITUDINAL BUFFER
   SEE MDOT 2020a FOR "D," "L," AND "B" VALUES

2. ALL NON-APPLICABLE SIGNING WITHIN THE CJA 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.

4E. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S).

5. FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.

6. THE TYPE A WARNING FLASHER SHOWN ON THE WARNING SIGNS SHALL BE POSITIONED ON THE SIDE OF THE SIGN NEAREST THE ROADWAY.

   ONLY DESIGNS AND MATERIALS APPROVED BY MDOT WILL BE ALLOWED.

8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.

21. ALL EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH EITHER PROPOSED CHANGES IN TRAFFIC PATTERNS OR PROPOSED TEMPORARY TRAFFIC MARKINGS, SHALL BE REMOVED BEFORE ANY CHANGE IS MADE IN THE TRAFFIC PATTERN. EXCEPTIOINS WILL BE MADE FOR DAYTIME-ONLY TRAFFIC PATTERNS THAT ARE ADEQUATELY DELINEATED BY OTHER TRAFFIC CONTROL DEVICES.


SIGN SIZES

DIAMOND WARNING - 48" x 48"
W1-6 WARNING - 48" x 24"
R2-L REGULATORY - 48" x 60"
R5-18c REGULATORY - 48" x 48"
1E. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
   L, 1/2 L, AND 1/3 L = MINIMUM LENGTH OF TAPER
   B = LENGTH OF LONGITUDINAL BUFFER
   SEE M0020a FOR "D," "L," AND "B" 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.

4. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S).

5. FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.

6. 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 SPECIFIED IN THE CURRENT 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.

8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.

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.

21. ALL EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH EITHER PROPOSED CHANGES IN TRAFFIC PATTERNS OR PROPOSED临时 TRAFFIC MARKINGS, SHALL BE REMOVED BEFORE ANY CHANGE IS MADE IN THE TRAFFIC PATTERN. EXCEPTION WILL BE MADE FOR DAYTIME-ONLY TRAFFIC PATTERNS THAT ARE ADEQUATELY DELINEATED BY OTHER TRAFFIC CONTROL DEVICES.


**Sign Sizes**

- Diamond Warning: 48" x 48"
- W1-6 Warning: 48" x 24"
- Rectangular Regulatory: 48" x 60"
- R5-18c Regulatory: 48" x 48"
PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL M0030a-M0080a.

PLACE THROUGHOUT WORK AREA AS INDICATED AND AFTER ALL MAJOR CROSSROADS IF PERMANENT SIGNS ARE NOT IN PLACE.

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

KEY

- CHANNELIZING DEVICES
- LIGHTED ARROW PANEL
- TYPE A WARNING FLASHER (REQUIRED)
- TRAFFIC FLOW
- REFLECTS EXISTING SPEED LIMIT

SIGN = 248 ft^2 - TYPE B
PLUS ADDITIONAL R2-1's THROUGHOUT WORK AREA

NOT TO SCALE
NOTES

1E. \( D = \text{distance between traffic control devices} \)
\( L, \frac{1}{2} L, \text{and} \frac{1}{3} L = \text{minimum length of taper} \)
\( B = \text{length of longitudinal buffer} \)

SEE M0020a FOR "D," "L," AND "B" 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.

4E. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S).

5. FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.

6. 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 CURRENT 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.

8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.

21. ALL EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH EITHER PROPOSED CHANGES IN TRAFFIC PATTERNS OR PROPOSED TEMPORARY TRAFFIC MARKINGS, SHALL BE REMOVED BEFORE ANY CHANGE IS MADE IN THE TRAFFIC PATTERN. EXCEPTION WILL BE MADE FOR DAYTIME-ONLY TRAFFIC PATTERNS THAT ARE ADEQUATELY DELINEATED BY OTHER TRAFFIC CONTROL DEVICES.


SIGN SIZES

DIAMOND WARNING - 48" x 48"
W1-6 WARNING - 48" x 24"
R2-1 REGULATORY - 48" x 60"
R5-18c REGULATORY - 48" x 48"
PLACE THIS SIGN ALONG WITH THE ADVANCE WORK ZONE SIGNING AS DEPICTED ON THE APPROPRIATE TYPICAL M0030a-M0080a.

TYPICAL TEMPORARY TRAFFIC CONTROL FOR CLOSING THREE LANES OF A FIVE-LANE UNDIVIDED ROADWAY USING A SINGLE STEP DOWN IN SPEED LIMIT
1E. \( D = \text{distance between traffic control devices} \)
\( L, 1/2L, \text{and } 1/3L = \text{minimum length of taper} \)
\( B = \text{length of longitudinal buffer} \)

NOTE: SEE \( \text{MDOT 0020a} \) FOR "D," "L," AND "B" VALUES.

2. All non-applicable signing within the CJA 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.

4. The maximum recommended distance(s) between channelizing devices should be equal in feet to the posted speed in miles per hour on taper(s) and twice the posted speed in the parallel area(s).

5. For overnight closures, Type III barricades shall be lighted.

6. 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 NCCHP 350 crashworthiness requirements stipulated in the current 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.

8. When buffer areas are established, there shall be no equipment or materials stored or work conducted in the buffer area.

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.

21. All existing pavement markings which are in conflict with either proposed changes in traffic patterns or proposed temporary traffic markings, shall be removed before any change is made in the traffic pattern. Exception will be made for daytime-only traffic patterns that are adequately delineated by other traffic control devices.

26C. The lighted arrow panel shall be located at the beginning of the merging taper as shown. When physical limitations restrict its placement as indicated, then it shall be placed as close to the beginning of the merging taper as possible.
## SIGN MATERIAL SELECTION TABLE

<table>
<thead>
<tr>
<th>SIGN SIZE</th>
<th>TYPE I</th>
<th>TYPE II</th>
<th>TYPE III</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 36&quot; X 36&quot;</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>&gt;36&quot; X 36&quot; ≤ 96&quot; TO WIDE</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>&gt; 96&quot; WIDE TO 144&quot; WIDE</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>&gt; 144&quot; WIDE</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

- **TYPE I**: ALUMINUM EXTRUSION
- **TYPE II**: PLYWOOD
- **TYPE III**: ALUMINUM SHEET

Rounding of corners is not required for Type I or II signs.
Vertical joints are not permitted.
Horizontal joints through sign legend or symbols are not permitted.

## POST SIZE REQUIREMENTS TABLE

<table>
<thead>
<tr>
<th>SIGN AREA (ft²)</th>
<th>U-CHANNEL STEEL</th>
<th>SQUARE TUBULAR STEEL</th>
<th>WOOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 9</td>
<td>1 - 3 lb/ft*</td>
<td>1 - 2&quot; 12 or 14 GA*</td>
<td>N/A</td>
</tr>
<tr>
<td>9 ≤ 20</td>
<td>2 - 3 lb/ft</td>
<td>2 - 2&quot; 12 or 14 GA</td>
<td>1 - 4&quot; X 6&quot;*</td>
</tr>
<tr>
<td>&gt; 20 ≤ 30</td>
<td>N/A</td>
<td>N/A</td>
<td>2 - 6&quot; X 6&quot;</td>
</tr>
<tr>
<td>&gt; 30 ≤ 60</td>
<td>N/A</td>
<td>N/A</td>
<td>2 - 6&quot; X 8&quot;</td>
</tr>
<tr>
<td>&gt; 60 ≤ 84</td>
<td>N/A</td>
<td>N/A</td>
<td>3 - 6&quot; X 8&quot;</td>
</tr>
</tbody>
</table>

*Signs 4 feet and greater in width require 2 posts.
Signs greater than 8 feet in width require 2 or 3 wood posts depending on area of sign.
A maximum of 2 posts within a 7' path is permitted.
FOR ALL 11' AND 12' LONG SIGNS ON 3 WOOD SUPPORTS, SPREAD POSTS SO AS TO HAVE A 8' MIN. TO 9' MAX. DISTANCE BETWEEN OUTSIDE POSTS.

* FOR ALL 11' AND 12' LONG SIGNS ON 3 WOOD SUPPORTS, SPREAD POSTS SO AS TO HAVE A 8' MIN. TO 9' MAX. DISTANCE BETWEEN OUTSIDE POSTS.
ROAD WORK AHEAD

DETOUR AHEAD

RURAL

RURAL WITH ADVISORY SPEED PLATE

6'-12'

5' MIN.

6'-12'

6'

4' MIN.

PAVED SHOULDER

ROAD CLOSED AHEAD

RIGHT LANE CLOSED AHEAD

URBAN

URBAN

WALKWAY

WALKWAY

2'

7' MIN.

4" MAX.

(CURBED AREAS OR WHERE WALKWAYS ARE PRESENT)

(CURBED AREAS OR WHERE WALKWAYS ARE PRESENT)

BOTTOM HEIGHT AND OFFSET

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.
3 lb. U-CHANNEL STEEL POST
(NO SPLICE)

NOT TO SCALE

MOUNT SIGN ON OPEN FACE OF
U-CHANNEL STEEL POST

WEIGHT = 3 lbs/ft
SECT. MOD. X.-X. = 0.31 CUBIC INCHES MIN.
MOUNT SIGN ON OPEN FACE OF UPPER U - CHANNEL STEEL POST

5/16" BOLTS
2 REQUIRED

5/16" BOLTS
2 REQUIRED

5/16" BOLTS
2 REQUIRED

3 lb. U - CHANNEL STEEL POST (WITH SPLICE)

MOUNT SIGN ON OPEN FACE OF UPPER U - CHANNEL STEEL POST

1" - 2"

TRAFFIC FLOW

UPPER SPLICE

LOWER SPLICE

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN

8/2006

WZD-100-A
NOTES:

1. The spacer thickness shall be 1/16" less than the gap between the post when positioned in the unbolted configuration.

2. The exterior bolt (closest to lap), spacer, washer, and nut shall be installed in a prepunched hole 1" to 2" from the end of the lap.

3. The interior bolt (farthest from lap), spacer, washer, and nut shall be installed in the next prepunched hole.

4. The driven post shall always be mounted in front of the upper post with respect to the adjacent oncoming traffic, regardless of the direction the sign is facing.

5. The splice lap shall be fastened by four 5/16" dia. galvanized A449 bolts (SAE J429 Grade 5) or galvanized A325 bolts.

3 lb. U - CHANNEL STEEL POST
(WITH SPLICE)
1. Material: 12 gauge carbon steel.

2. Tolerance on all dimensions ±0.0625".

3. Finish—after stamping and punching, galvanize according to current specifications for zinc (hot galvanize) coatings on products fabricated from plates or strips.

**Steel Sign Reinforcing Plate**

*Required for Type III signs only*

**Sign to 3 lb. Post Connection**

**Notes:** (for steel sign reinfor' plate)

- Material: 12 gauge carbon steel.
- Tolerance on all dimensions ±0.0625".
- Finish—after stamping and punching, galvanize according to current specifications for zinc (hot galvanize) coatings on products fabricated from plates or strips.
THE POST MAY BE DRIVEN OR PLACED IN AN AUGERED HOLE. IF AUGERED, BACKFILL WITH EXISTING MATERIAL IN FIVE EQUAL LAYERS, TAMING EACH LAYER.

1/4" SAW CUT (EXCEPT IN SINGLE POST ASSEMBLIES) 1" (FOR 4" X 6" NOMINAL POST) 1 1/2" (FOR 6" X 8" NOMINAL POST)

WOOD POST BREAKAWAY HOLES/ DIRECT EMBEDMENT DETAILS

WOOD POST BREAKAWAY HOLES ARE TO BE CENTERED ON POSTS.

4" DIA. AUGERED HOLE FOR 4" X 6" POST
10" DIA. AUGERED HOLE FOR 6" X 8" POST

WOOD POST SHALL BE IN CONFORMANCE TO SECTION 912 OF THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

SAW CUT DETAIL
(MULTIPLE POST INSTALLATIONS)

WOOD POST DETAILS

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN

PENDING PHWA APPROVAL DATE 8/2006 WZD-100-A SHEET 8 OF 11
**TYPE II AND TYPE III SIGNS**

- **4" x 6" (nominal) or 5" x 8" (nominal) wood post**
  - 3/8" dia. galvanized bolt,
  - 2 galvanized flat washers & galvanized nylon insert locknuts (typ.)
  - Aluminum L 4" x 3" x 3/8" angles may be installed on either side of each post.
- **1 1/2" (typ.) panel width**
- **1/2" x 3/4" elongated bolt holes** may be used to facilitate alignment of aluminum angles.

**END VIEW**

- **Type I sign - erection details**

**WOOD POST CONNECTIONS**

- **3/8" dia. galvanized bolts on approx. 24" centers**
- **1/6 sign length**
- **0.015" (typ.)**
- **12" (typ.)**
- **0.040" exterior corner radius (typ.)**
- **1/2" x 3/4" elongated bolts** may be used to facilitate alignment of panels.
- **Saw cut**

**NOT TO SCALE**
HOLES OPTIONAL EXCEPT FOR ANCHOR/POST CONNECTION AND SIGN CONNECTION LOCATIONS.

POST LENGTH VARIES

ANCHOR SLEEVE
TUBE SIZE = 2 1/2" x 2 1/2"
WALL THICKNESS = 12 GA
HOLES OPTIONAL EXCEPT FOR ANCHOR/POST CONNECTION AND SIGN CONNECTION LOCATIONS.

SIGN POST
TUBE SIZE = 2" x 2"
WALL THICKNESS =12 OR 14 GA

INSERT CONNECTION HARDWARE
(PER MANUFACTURER'S SPECIFICATIONS)

GRAGE

TUBE SIZE = 2" x 2"
WALL THICKNESS =12 OR 14 GA

ON TWO OPPOSITE OR ALL FOUR SIDES

SQUARE TUBULAR STEEL POST
GENERAL NOTES:

1. A maximum of two posts within a 7 foot path is permitted.

2. All sign posts shall comply with NCHRP 350.

3. All posts shall be embedded a minimum of 42”.

4. Bracing of post is not permitted.

5. Sign shall be level, and upright for the duration of installation.

6. Erect posts so the sign face and supports do not vary from plumb by more than 3/16” in 3’. Provide a center-to-center distance between posts within 2 percent of plan distance.

7. No more than one splice per post, as shown, will be permitted.

8. Post types shall not be mixed within a sign support installation.

9. No vertical joints are permitted in sign. No horizontal joints through sign legend or symbols are permitted in sign.

10. Remove sign posts and/or post stubs in their entirety when no longer required.

11. All labor, materials, and equipment, including temporary supports required to install, maintain, relocate, cover, and/or remove the temporary sign, including supports, are considered to be included in the cost of the temporary sign.

12. Saw cuts in wood posts are to be parallel to the bottom of the sign.

13. Posts shall not extend more than 4” above top of sign.
PERFORATED SQUARE STEEL TUBE OPTION

ANGLE IRON OPTION

BARRICADE RAIL SHEETING OPTIONS
TYPE III BARRICADES

Other Type III Barricades meeting current NCHRP crash worthy criteria can be found on the FHWA Safety website at http://safety.fhwa.dot.gov/roadway_dept/road_hardware/wzd.htm

NOT TO SCALE
Other temporary sign supports meeting current NCHRP crash worthy criteria can be found on the FHWA Safety website at http://safety.fhwa.dot.gov/roadway_dept/road_hardware/wzd.htm.
PLASTIC DRUM

NOTES:
- DRUMS SHALL HAVE AT LEAST 4 HORIZONTAL REFLECTORIZED STRIPES (2 ORANGE AND 2 WHITE) OF 6" UNIFORM WIDTH, ALTERNATING IN COLOR WITH THE TOPMOST REFLECTORIZED STRIPE BEING ORANGE. NON-REFLECTORIZED SPACES BETWEEN THE HORIZONTAL REFLECTORIZED ORANGE AND WHITE STRIPES SHALL BE ORANGE IN COLOR AND EQUAL IN WIDTH.

SYMBOLS TO BE USED ON PLANS

- REFLECTORIZED ORANGE
- REFLECTORIZED WHITE
- NON-REFLECTORIZED ORANGE

NOTES:
- 2" PERFORATED SQUARE STEEL TUBES MAY BE USED TO FABRICATE THE HORIZONTAL BASE OF THE TYPE III BARRICADE.
- WARNING LIGHTS SHALL BE PLACED ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND ALL OTHER PROVISIONS IN THE CONTRACT WHEN THEY ARE USED ON THE III BARRICADE.
- SEE ROAD STANDARD PLANS R-113-SERIES FOR TEMPORARY CROSSOVERS FOR DIVIDED ROADWAY, AND R-126-SERIES FOR TYPICAL LOCATION AND SPACING OF PLASTIC DRUMS FOR PLACEMENT OF TEMPORARY CONCRETE BARRIER.
- SANDBAGS SHALL BE USED WHEN SUPPLEMENTAL WEIGHTS ARE REQUIRED TO ACHIEVE STABILITY OF THE BARRICADE. THE SANDBAGS SHALL BE PLACED SO THEY WILL NOT COVER OR OBSTRUCT ANY REFLECTIVE PORTION OF THE TRAFFIC CONTROL DEVICE.

WARNING LIGHTS SHALL BE PLACED ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND ALL OTHER PROVISIONS IN THE CONTRACT WHEN THEY ARE USED ON THE III BARRICADE.

SEE ROAD STANDARD PLANS R-113-SERIES FOR TEMPORARY CROSSOVERS FOR DIVIDED ROADWAY, AND R-126-SERIES FOR TYPICAL LOCATION AND SPACING OF PLASTIC DRUMS FOR PLACEMENT OF TEMPORARY CONCRETE BARRIER.

SANDBAGS SHALL BE USED WHEN SUPPLEMENTAL WEIGHTS ARE REQUIRED TO ACHIEVE STABILITY OF THE BARRICADE. THE SANDBAGS SHALL BE PLACED SO THEY WILL NOT COVER OR OBSTRUCT ANY REFLECTIVE PORTION OF THE TRAFFIC CONTROL DEVICE.
APPENDIX

MDOT Special Provisions
MDOT Supplemental Specifications
Delete Subsection 104.07.B.2 on page 36 of the Standard Specifications for Construction, in its entirety and replace it with the following:

2. **Construction Safety Program.** Before beginning work on the project, the Contractor must submit a written “Construction Safety Program” that outlines the plan and procedures for preventing and mitigating accidents and fires on the project and meeting all health and safety requirements of the contract. Also in the program include provisions for meeting the requirements of subsection 812.03 and details for the materials and equipment that will be used to prevent construction related debris or materials from entering the open lanes of traffic and what actions, including traffic control measures, will be taken to immediately and safely remove the debris or material from the roadway. The Contractor must meet with the Engineer to discuss the “Construction Safety Program” and to develop mutual understandings to govern the administration and enforcement of the program.

Replace the second sentence in the first paragraph of Subsection 104.07.C.3 on page 37 of the Standard Specifications for Construction with the following:

The Contractor is responsible, at the Contractor’s expense, to provide the necessary materials and equipment to prevent construction related debris or materials from entering the open lanes of traffic. This includes protection of traffic controls, removal of spilled materials or debris from the roadbed or drainage courses, and repair of damaged facilities necessary for public travel and safety.
Add the following, to the end, of subsection 104.07.B, Safety and Health Requirements, on page 36 of the Standard Specification for Construction:

4. **Worker Visibility.** Effective November 24, 2008, all workers within the right-of-way who are exposed to traffic or to construction equipment within the work area, must wear high visibility clothing.

High visibility clothing or high visibility safety apparel is personal protective safety clothing that is intended to provide conspicuity during both daytime and nighttime usage. High Visibility safety apparel must meet the Performance Class 2 or 3 requirements of the American National Standards Institute/International Safety Equipment Association (ANSI/ISEA) 107-2004 for High-Visibility Safety Apparel and subsequent revisions thereof.

Costs incurred to comply with this requirement will be the responsibility of the Contractor.
Delete the subsection 812.03.C, Deficient Traffic Control Operations on page 601 of the
Standard Specifications for Construction in its entirety, and replace with the following.

C. Deficient Traffic Control Operations.

1. Traffic Control Quality and Compliance. The following applies to all aspects of the
traffic control plan and traffic control devices except the Type D lights on plastic drums
which are covered elsewhere in the contract.

   a. Traffic Control not Anticipated in Design. If at any time during the project,
      including the time during the seasonal suspension, the Engineer documents that the
      traffic control requires improvements beyond the scope of the Traffic Control Plan, the
      Engineer will provide written instructions to the Contractor and traffic control supplier
      what improvements are required. The Contractor must develop and submit to the
      Engineer for approval, a written implementation schedule for improvements. If the
      schedule is not approved, or if the schedule is approved but is not followed, the
      Department will adjust the contract according to subsection 812.03.C.1.c.iii. If the
      implementation schedule is not followed, the Engineer will notify the Contractor and
      traffic control supplier in writing that they are in violation of this subsection. The work
      of making traffic control improvements directed by the Engineer that are beyond the
      scope of the Traffic Control Plan will be paid for as extra work.

   b. As Designed Traffic Control. If at any time during the project, including the time
      during the seasonal suspension, the Engineer documents that the traffic control is
      deficient, inadequate or improperly placed, the Engineer will provide written notification
      with instructions for corrective action to the Contractor and traffic control supplier.
      Upon receipt of the notification of corrective action, the Contractor has 4 hours to
      correct the traffic control. If the traffic control cannot be corrected within the 4 hour
      time period, the Contractor will develop a written implementation schedule for the
      corrective action and submit the schedule to the Engineer for approval within 1 hour
      of receiving the written notification. If the schedule is not approved, or if the schedule
      is approved but is not followed, the Department will adjust the contract according to
      subsection 812.03.C.1.c.iii. If the implementation schedule is not followed, the
      Engineer will notify the Contractor and traffic control supplier in writing that they are in
      violation of this subsection.

   c. Corrective Action. The Engineer will give written notification to the Contractor as
      identified above. Failure to make corrections within the timeframe required may result
      in the following actions by the Engineer:
i. Stop work on the project until the Contractor completes corrective action,
ii. Order corrective action by others in accordance with subsection 107.07, subsection 108.02, subsection 812.03.B, and in the interest of public safety.
iii. A contract price adjustment will be made in the amount of $100 per hour for every hour or portion thereof the improvements or corrective action remains incomplete as described herein. If improvements or corrections have not been made to the satisfaction of the Department, the contract will be adjusted until the traffic control is acceptable.
MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
MINOR TRAFFIC DEVICES AND TRAFFIC REGULATOR CONTROL DURING AN
APPROVED EXTENSION OF TIME

Delete the first sentence of the second paragraph in subsection 812.04.U, Price Adjustments for Authorized Extensions of Time, on page 631 of the Standard Specifications for Construction and replace with the following.

The Department will not make price adjustments for temporary traffic control devices, Minor Traf Devices, and Traf Regulator Control during authorized extensions of time if liquidated damages are assessed in accordance with subsection 108.08 and subsection 108.09.

Delete the third paragraph and Formula 812-1 of subsection 812.04.U, Price Adjustments for Authorized Extensions of Time, on page 631 of the Standard Specifications for Construction, that starts with “The Department will use the following formula…” and replace with the following.

The Department will use the following formula to calculate the unit price adjustments. The adjustment for Minor Traf Devices will be at a daily rate of \((a/b)\) not to exceed $900.00 per calendar or work day and the adjustment for Traf Regulator Control will be at a daily rate of \((a/b)\) not to exceed $650.00 per calendar or work day. When calculating the adjustment, either calendar or working days will be used for both original contract time and additional days.

\[
\frac{a}{b} \times c = \text{Unit price adjustment}
\]

Formula 812-1

where:

\(a\) = Original contract unit price.

\(b\) = Original contract time (For calendar date projects the original contract time will be calculated as the number of calendar days from the start date to the contract completion date as identified on the progress schedule, form 1130).

\(c\) = Additional days the item was in use or required to be on standby during the authorized extension of time.
MICHIGAN
DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION
FOR
LIGHTS ON TRAFFIC CONTROL DEVICES

Delete the third paragraph of subsection 812.03.D.5, Channelizing Devices, on page 605 of the Standard Specifications for Construction, in its entirety and replace with the following:

Use plastic drums or plastic drums with attached lights as called for in the contract. For plastic drums where lights are required provide one Type D warning light on each plastic drum. Fasten the warning light to the top of the drum in accordance with subsection 922.07. Stand the plastic drums upright and stabilize them with weight to prevent overturning. Do not mount signs on the drums.

Delete the second paragraph of subsection 812.03.D.6.b, 42 inch Channelizing Devices, on page 605 of the Standard Specifications for Construction, in its entirety and replace with the following:

Place plastic drums or lighted plastic drums as called for in the contract in the taper area, ensuring the device spacing does not exceed, 1 foot/mile per hour times the work zone speed limit in miles per hour.

Delete the first paragraph of subsection 812.03.D.15, Portable Changeable Message Signs, on page 614 of the Standard Specifications for Construction, in its entirety and replace with the following:

Use portable changeable message signs (PCMS) as required. Delineate a deployed PCMS using three plastic drums or three lighted plastic drums wrapped with high intensity reflective sheeting as called for in the contract. If the PCMS is in use, rest the tires on the ground with wheel chocks or elevate the trailer, with the bottom of the tires above the ground. If a PCMS is not needed, turn it off and remove it from the immediate traffic area in accordance with subsection 812.03.G.5.

Delete the third paragraph of subsection 812.03.G.6, Maintaining Lights, on page 618 of the Standard Specifications for Construction, in its entirety and replace with the following:

For plastic drums where lights are required per the contract ensure lights work at the time of initial installation and at stage changes during the project. During the project, ensure at least 95 percent of the total number of active lights, work. Ensure that no more than three adjacent lights are non-operational at any time.

Any inspection and discovery of non-functioning lights by the Engineer will be documented and provided to the prime contractor and the traffic control supplier.
If written notification of non-functioning lights is given prior to 12:00 p.m. (noon), 95 percent compliance will be required within the same day before 12:00 a.m. (midnight).

If notice is given after 12:00 p.m. (noon), 95 percent compliance must be attained as soon as possible, but no later than 11:59 p.m. of the following day.

A contract price adjustment, of $100 per hour for every hour the lights are non-functioning or corrective action remains incomplete after the compliance period, is to be processed for failure to be in compliance per the time frames as noted above. The $100 per hour assessment is not per individual light, but is based on the overall notification of non-compliant lights.

Delete the second paragraph of subsection 812.03.I.3, Aggregate Surface and HMA, on page 620 of the Standard Specifications for Construction, in its entirety and replace with the following:

During darkness, place and maintain plastic drums or lighted plastic drums, wrapped with high intensity reflective sheeting, to protect traffic as called for in the contract. For windrow sections in the center of the travel way, install plastic drums or lighted plastic drums wrapped with high intensity reflective sheeting as called for in the contract, at the ends, along each side, and at the end of breaks where traffic passes through or crosses the windrow. Alternate the placement of drums along each side with no greater than 150 feet between the drums.

Delete subsection 812.03.I.5.b, Staggered Lane Endings with Vertical Longitudinal Joints, on page 621 of the Standard Specifications for Construction, in its entirety and replace with the following:

b. If the points of ending of adjacent lanes are less than 250 feet apart, install plastic drums or lighted plastic drums as called for in the contract, at 30 foot intervals along the length of each side of the affected pavement, and place W21-4 “Road Work Ahead” signs ahead of the pavement area.

Delete subsection 812.04.I, Sign, Portable, Changeable Message, Operated, on page 626 of the Standard Specifications for Construction, in its entirety and replace with the following:

I. Sign, Portable, Changeable Message, Operated. The unit price for Sign, Portable, Changeable Message, Oper includes the cost of programming and operating the signs in accordance with subsection 812.04.E. The Department will pay separately for the cost of delineating each trailer with, three plastic drums or three lighted plastic drums as called for in the contract, as Plastic Drums, High Intensity, Furn; Plastic Drums, High Intensity, Oper; Plastic Drums, High Intensity, Lighted, Furn; or Plastic Drums, High Intensity, Lighted, Oper.
Delete Table 812-1 in subsection 812.04.E, on page 625 of the Standard Specifications for Construction, in its entirety and replace with the following.

Table 812-1 Partial Payment Schedule for Minor Traffic Devices and Traffic Regulator Control

<table>
<thead>
<tr>
<th>Percent of Original Contract Amount Earned</th>
<th>Total Percent of Unit Price Paid</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>50</td>
<td>55</td>
</tr>
<tr>
<td>75</td>
<td>80</td>
</tr>
<tr>
<td>90</td>
<td>100</td>
</tr>
</tbody>
</table>
MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TYPE B, TEMPORARY, PRISMATIC, SPECIAL

a. **Description.** This work consists of fabricating, placing, maintaining, removing, and/or relocating the Type B, Temporary, Prismatic, Special signs identified in the proposal or on the plans. The signs have non-standard legends and may be project specific.

b. **Materials.** Use prismatic grade reflective sheeting, as described in section 922 of the Standard Specifications for Construction.

Use Type I, II or III substrates for stand alone signs as permitted by MDOT Traffic Special Detail WZD-100-A and on portable sign supports.

Ensure sign posts, as described in section 919 of the Standard Specifications for Construction and MDOT Traffic Special Detail WZD-100-A are used.

Route markers or overlays used in the fabrication or modification of Type B, Temporary, Prismatic, Special signs must either be directly applied to the Type B, Temporary, Prismatic, Special sign face or be fabricated utilizing Type III or Type IV substrate as defined in section 919 of the Standard Specifications for Construction. Overlays or route markers fabricated with Type II substrates are prohibited.

c. **Construction.** The Type B, Temporary, Prismatic, Special signs must meet the requirements for Sign, Type B, Temp, Prismatic, Furn and Oper as outlined in section 812 of the Standard Specifications for Construction.

Ensure Type B, Temporary, Prismatic, Special signs are not fabricated with vertical seams. Horizontal seams are not to cross through the sign legend.

Temporary sign overlays may be used to modify the legends of Type B, Temporary, Prismatic, Special signs.

Install Type B, Temporary, Prismatic, Special signs on driven or augured, steel or wood, sign supports, according to MDOT Traffic Special Detail WZD-100-A and subsections 812.03, 919.04 and section 912 of the Standard Specifications for Construction, unless otherwise indicated on the plans, proposal or approved by the Engineer.

d. **Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price using the following pay items:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sign, Type B, Temp, Prismatic, Special, Furn</td>
<td>Square Foot</td>
</tr>
</tbody>
</table>
Sign, Type B, Temp, Prismatic, Special, Oper will be paid for the same as described for the pay item Sign, Type __, Temp, Prismatic, Furn in subsection 812.04.C of the Standard Specifications for Construction. In addition, the pay item includes the fabrication of all initial route markers and overlays for the Type B, Temporary, Prismatic, Special signs.

Sign, Type B, Temp, Prismatic, Special, Oper will be paid for the same as described for the pay item Sign, Type __, Temp, Prismatic, Oper in subsections 812.04.D and 812.04.B of the Standard Specifications for Construction.

Payment for operated items also includes the removal of all portable or driven or augured sign supports (including post stubs and ballast) used to install the Type B, Temporary, Prismatic, Special signs.

Payment for operated items will also include the installation and/or removal of all overlays used to modify portions of Type B, Temporary, Prismatic, Special signs as specified on the plans, proposal or required by the Engineer and includes all equipment and material necessary to install and/or remove the overlays as required for the life of the contract. When sign overlays, including different route markers, are used to modify portions of Type B, Temporary, Prismatic, Special signs, only the overlay will be paid for as additional square footage of Sign, Type B, Temp, Prismatic, Special, Furn.
Delete the last paragraph of subsection 812.03.D.3, on page 604 of the Standard Specifications for Construction in its entirety, and replace with the following.

Mount construction signs on portable sign support standards only if signs are to remain in place for 14 days or less, or as allowed by the Engineer if fixed supports are not possible.

Delete the second paragraph of subsection 812.04.C, on page 624 of the Standard Specifications for Construction in its entirety, and replace with the following:

The Engineer will measure **Sign, Type __, Temp, Prismatic, Furn** as the total cumulative area of the maximum number of each sign legend that is in use during the course of the project unless previously paid. The unit price for **Sign, Type __, Temp, Prismatic, Furn** includes the cost of portable or driven sign supports.

Delete the second paragraph of subsection 812.04.D, on page 624 of the Standard Specifications for Construction in its entirety, and replace with the following:

The Engineer will measure **Sign, Type __, Temp, Prismatic, Oper** as the total cumulative area of the maximum number of each sign legend that is in use during the course of the project unless previously paid.
### MICHIGAN DEPARTMENT OF TRANSPORTATION

**SUPPLEMENTAL SPECIFICATION FOR ERRATA TO THE 2012 STANDARD SPECIFICATIONS**

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<th>Page</th>
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<tbody>
<tr>
<td>3</td>
<td>101.02</td>
<td>Modify the abbreviation reading “AIS” to read “AISI”.</td>
</tr>
</tbody>
</table>
| 4    | 101.02     | Delete the following abbreviations and the long forms MDDELEG MDNRE.  
  Add the following abbreviations and the long forms  
  MDNR  Michigan Department of Natural Resources  
  MDEQ  Michigan Department of Environmental Quality  
  MDLARA  Michigan Department of Licensing and Regulatory Affairs  
  NESC  National Electrical Safety Code |
| 27   | 103.02.B.2 | Change the last sentence of the first paragraph to read "For decreases below 75 percent, the maximum allowable payment for work performed, including any adjustment, will not exceed an amount equal to 75 percent of the original contract quantity times the contract unit price." |
| 34   | 104.05     | The first sentence of this subsection should read "If the Contractor performs unauthorized work (work performed without the inspections required by the contract, extra work performed without Department approval, work performed contrary to the inspectors direction, or work performed while under suspension by the inspector), the Engineer may reject the unauthorized work." |
| 46   | 104.12     | Add the following to the end of the first paragraph "The use of right-of-way in wetlands and floodplains, or the crossing of water courses by construction equipment is prohibited." |
| 53   | 105.09     | Add the following to the end of the second paragraph "Any specifically produced material not purchased by the Department, will remain the Contractors and must be removed from the project prior to final acceptance." |
| 56   | 107.02.B.2 | This sentence should read "U.S.Amy Corps of Engineers' Section 404, Dredge and Fill; and Section 10, Navigable Waterway." |
| 56   | 107.02.B   | Add the subsection reading as follows:  
  "3. U.S. Coast Guard Section 9, Navigable Waterway."  
  Change "MDNRE" to "MDEQ" in this subsection. |

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<tbody>
<tr>
<td>64</td>
<td>107.12</td>
<td>Change the first sentence of the first paragraph to read: “For protection of underground utilities and in accordance with 2013 PA 174, the Contractor must notify Miss Dig at least 3 work days, excluding Saturdays, Sundays and holidays, before beginning each excavation in areas where public utilities have not been previously located.”</td>
</tr>
<tr>
<td>65</td>
<td>107.15.A</td>
<td>Change &quot;MDNRE&quot; to &quot;MDEQ&quot; in four instances in this subsection.</td>
</tr>
<tr>
<td>66</td>
<td>107.15.A.3</td>
<td>Add the following to the end of the paragraph &quot;Note that a burn permit from the MDNR is required for any open burning whenever the ground is not snow covered. Any individuals that allow a fire to escape will be in violation of the Natural Resources and Environmental Protection Act and will be required to reimburse the costs of suppressing the wild fire.&quot;</td>
</tr>
<tr>
<td>67*</td>
<td>107.16</td>
<td>The third sentence should read &quot;In State Forests, the Contractor must contact the local Unit Manager, Forest Management Division, MDNR, regarding the work to be performed within or adjacent to the forest land.&quot; Delete the last sentence of the first paragraph of this subsection.</td>
</tr>
<tr>
<td>83</td>
<td>108.10.C.1</td>
<td>In Table 108-1 delete the last row of the table and replace it with the following: ≥50,000,000 4,500</td>
</tr>
<tr>
<td>107</td>
<td>150.04</td>
<td>Change the following pay item reading “Mobilization, Max __” to read “Mobilization, Max (dollar)” at nine locations throughout the subsection.</td>
</tr>
<tr>
<td>112</td>
<td>201.03.A.3.b</td>
<td>Change &quot;MDNRE&quot; to &quot;MDNR&quot; in three instances in this subsection.</td>
</tr>
<tr>
<td>150</td>
<td>208.01</td>
<td>Change &quot;MDNRE&quot; to &quot;MDEQ&quot; in this subsection.</td>
</tr>
<tr>
<td>180</td>
<td>308.03.A</td>
<td>Change the first sentence of the second paragraph to read: “Do not operate equipment required to place backfill directly on geotextile products.”</td>
</tr>
<tr>
<td>185</td>
<td>401.03.A</td>
<td>Change the first sentence of the second paragraph to read: Where unstable soil conditions, or obstructions other than rock, require excavation of the trench below the elevation detailed on the plans; undercut, backfill, and compact the trench as directed by the Engineer.</td>
</tr>
<tr>
<td>188</td>
<td>401.03.H</td>
<td>Change the second sentence of the paragraph to read “Jack steel pipes in place in accordance with subsection 401.03.G”.</td>
</tr>
<tr>
<td>189</td>
<td>401.03.N</td>
<td>Add the following sentence to the end of the first paragraph &quot;Where possible, maintain the stream flow thru a temporary channel or temporary culvert.&quot;</td>
</tr>
</tbody>
</table>

An asterisk (*) indicates an entry which has been revised from an earlier version of this Supplemental Specification.
The second sentence of the second paragraph should read "Direct water from the dewatering operations through a filter bag before discharging to an existing drainage facility."

Change the fourth pay item from the end of the list to read as follows: "Steel Casing Pipe, ___ inch, Tr Det ___.

Change the third pay item from the top of the list to read as follows: "Sewer, CI __, ___ inch, Jacked in Place"

Change the last sentence of the first paragraph to read "The Department will not make an adjustment in the pay items of Minor Traf Devices or Traf Regulator Control."

Change the sentence to read: "Removing and replacing pavement adjacent to the adjusted cover per Standard Plan R-37 Series."

Change the first sentence of the first paragraph to read: "Design precast box culverts less than 10 feet in span length measured along the centerline of the roadway in accordance with current AASHTO LRFD Bridge Design Specifications and ASTM C 1577."

Add the following sentence to the end of the first paragraph: "Design precast box culverts greater than or equal to 10 feet in span length measured along the centerline of the roadway for HL-93 Modified live load."

Change the first sentence of the first paragraph to read: "Submit shop drawings for culverts greater than or equal to 10 feet in span length measured along the centerline of the roadway to the Engineer, for review and approval in accordance with subsection 104.02."

Change the second sentence of the first paragraph to read: "Before manufacture, perform load ratings on precast three-sided, arch or box culverts greater than or equal to 10 feet in span length measured along the centerline of the roadway, in accordance with the AASHTO Manual of Bridge Evaluation, Section 6, Part A, the Michigan Bridge Analysis Guide current at the time load rating is performed, and the Michigan Structure Inventory and Appraisal Guide."

Add the following after the first sentence of the second paragraph: "Where possible, maintain the stream flow thru the existing channel, temporary channel, or temporary culvert."

Replace the fifth paragraph of this subsection with the following: "The Contractor may use cast-in-place wing walls, headwalls, and aprons, as alternatives to precast wing walls, headwalls, and aprons."
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<tbody>
<tr>
<td>225</td>
<td>406.03.G.2</td>
<td>Change the third sentence of the first paragraph to read: “Before placing the open-graded aggregate 34R, compact the coarse aggregate 6A using at least three passes of a vibrating plate compactor.”</td>
</tr>
<tr>
<td>226</td>
<td>406.03.G.2</td>
<td>Change the first sentence of the second paragraph of this subsection to read: &quot;Fill the space between the box culvert joints during placement of box sections with closed-cell rubber extrusion type gaskets in accordance with ASTM C 990.&quot;</td>
</tr>
<tr>
<td>226</td>
<td>406.04.A.9</td>
<td>Change the sentence to read: “Providing plan modifications including design, additional plan quantities and pay items to accommodate any changes to the precast units as shown on the plans.”</td>
</tr>
<tr>
<td>226*</td>
<td>406.04.A</td>
<td>Add the following paragraph after the last paragraph of the subsection: “The substructure design is specific to the three-sided or arch culvert detailed on the plans. The Contractor must use approved MDOT service vendors qualified in Hydraulics, Geotechnical Engineering Services, and Short and Medium Span Bridges to perform the required design and plan modifications, as directed by the Engineer, if the Contractor selects a culvert shape different than shown on the plans.”</td>
</tr>
<tr>
<td>227</td>
<td>406.04.B</td>
<td>Add the following new item in the list of items in this subsection: 2. Headwalls, wingwalls, aprons, and curtain walls, precast or cast-in-place;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Renumber the exist items 2 through 4 in this list to read 3 through 5.</td>
</tr>
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<td></td>
<td></td>
<td>Delete existing item numbered 5 and replace with the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. Inserts for bars and connection hardware; and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Renumber the existing item 6 in this list to read 7.</td>
</tr>
<tr>
<td>227</td>
<td>406.04.B</td>
<td>Delete the first and second paragraphs following the list of items in this subsection and replace with the following: “The Department will pay separately for cast-in-place concrete, other than for culvert segments, wing walls, and headwalls; excavation; protective coating; providing and placing backfill material; by plan quantity in accordance with subsection 109.01.A.”</td>
</tr>
<tr>
<td>239</td>
<td>501.03.C.6</td>
<td>The first sentence of this subsection should read &quot;Except as specified in subsection 501.03.C.4, removing HMA surface applies to removing HMA overlying a material designated for removal or that is required to remain in place.”</td>
</tr>
</tbody>
</table>

An asterisk (*) indicates an entry which has been revised from an earlier version of this Supplemental Specification.
An asterisk (*) indicates an entry which has been revised from an earlier version of this Supplemental Specification.

**Change footnote e in Table 501-5 to read:**
"Flushing severe enough to significantly affect surface friction (Friction Number <35)."

The first sentence of this subsection should read "The Engineer will measure, and the Department will pay for removing HMA surface, no greater than 12 inches thick, overlying a material designated for removal or that is required to remain in place, as **HMA Surface, Rem.**"

The second paragraph of this subsection should read "The Engineer will measure, and the Department will pay for removing HMA surface, greater than 12 inches thick, overlying a material designated for removal or that is required to remain in place, as **Pavt, Rem** in accordance with subsection 204.04."

**Delete this subsection in its entirety.**

**Delete this subsection in its entirety.**

This subsection should read "The unit prices for **Micro-Surface**, regardless of the type required, include cleaning existing pavement; applying a bond coat; temporary pavement markings; stationing; corrective action; and traffic control to complete corrective action."

In table 601-2 delete the row for Grade P-NC concrete in its entirety.

In table 601-2, the first sentence of footnote b. should read:
"Use coarse aggregate 6A, 6AA or 6AAA for Grades P1, P2 and M."

In table 601-2, footnote c. should read:
"The mix design basis for bulk volume (dry, loose) of course aggregate per unit volume of concrete is 72% for Grade P1; 74% for Grade P2."

Note c. in Table 602-1 should read "Refer to Section D6 of the Materials Quality Assurance Procedures Manual for inspection procedure."

The last paragraph in this subsection should read "If the Engineer approves a substitution of a higher concrete grade for a lesser grade (e.g., P1 for P2), the Department will pay for the higher grade of concrete using the original bid and pay items of the lesser grade."

Change the second material in the list to read:
"Concrete, Grade P-NC..................................................603"

Change the third material in the list to read:
"Base Course Aggregate, 4G, 21AA, 22A........................................902"

Change the last sentence of the second paragraph to read "Apply the required curing compound in two coats, at a rate of at least 1 gallon per 25 square yards for each coat."
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<tr>
<td>342</td>
<td>603.04.G.3</td>
<td>Change &quot;D1&quot; to &quot;W&quot; in two instances in this subsection.</td>
</tr>
<tr>
<td>351</td>
<td>701.04</td>
<td>Replace Tables 701-1A and 701-1B with the Table 701-1 below.</td>
</tr>
<tr>
<td>372</td>
<td>705.03.C.1</td>
<td>Add the following sentence after the first paragraph of this subsection: &quot;Do not drive piles within a radius of 25 feet of newly placed concrete until the concrete attains at least 75 percent of its specified minimum strength.&quot;</td>
</tr>
<tr>
<td>374</td>
<td>705.03.C.2.c</td>
<td>Change the last sentence of the second paragraph to read “Drive test piles to the minimum pile length or practical refusal, whichever is greater”.</td>
</tr>
<tr>
<td>379</td>
<td>705.04</td>
<td>Change the fifth item down the list to read: “Pile, Galv (Structure No.)”</td>
</tr>
<tr>
<td>380</td>
<td>705.04</td>
<td>Change the last item in the list to read: “Pile Driving Equipment, Furn (Structure No.)”</td>
</tr>
<tr>
<td>383</td>
<td>706.02</td>
<td>The fourth paragraph following the list of materials should read &quot;Provide AASHTO M 270, Grade 36 steel, meeting the requirements of ASTM A 786, galvanized in accordance with section 707, for expansion joint cover plates. Provide plates at least 3/8 inch thick. Use plates with a slip resistance equal to or greater than those meeting the requirements of ASTM A 786 and must be approved by the Engineer. Provide ASTM F 593 (Type 304) stainless steel, 3/4-inch or 1/2-inch diameter, flathead countersunk screws with 3/4-inch or 1/2-inch diameter inserts for use in expansion joint cover plates.&quot;</td>
</tr>
<tr>
<td>389</td>
<td>706.03.D.4.b</td>
<td>Change the first sentence of the fourth paragraph to read &quot;Design forms, form supports, and attachments to carry dead loads, and resultant horizontal loads due to forming of cantilever overhangs.&quot;</td>
</tr>
<tr>
<td>391</td>
<td>706.03.E.8</td>
<td>Change the first sentence of the second paragraph of this subsection to read: &quot;Patch sawed or sheared ends and visible defects in accordance with ASTM A 775.&quot;</td>
</tr>
<tr>
<td>392</td>
<td>706.03.E.8</td>
<td>Change the last sentence of the third paragraph of this subsection to read: &quot;Coat mechanical splices after splice installation in accordance with ASTM A 775 for patching damaged epoxy coating.&quot;</td>
</tr>
<tr>
<td>394</td>
<td>706.03.H.1</td>
<td>Delete the last paragraph on page 394 and replace it with the following: &quot;Do not cast sidewalk, curb, or barrier pours until the deck concrete attains at least the minimum specified 7-day flexural or compressive strength, and after completion of the 7-day continuous wet cure. The forming of succeeding portions may occur, provided the wet cure is maintained.&quot;</td>
</tr>
</tbody>
</table>

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<tr>
<td>406*</td>
<td>706.03.N.1.b</td>
<td>Add the following to the end of the last paragraph of the subsection: “Do not discontinue wet cure nor cast succeeding portions onto the bridge deck prior to completion of the 7-day two-phase continuous wet cure. Ensure excess or ponding cure water is removed prior to casting of succeeding structure portions.”</td>
</tr>
<tr>
<td>414</td>
<td>707.01.B</td>
<td>Change the last sentence of the first paragraph to read &quot;For horizontally curved or continuous span or cantilevered span girders the Engineer will consider intermediate cross frames and connection plates and stiffeners as primary members.&quot;</td>
</tr>
<tr>
<td>416</td>
<td>707.03.C.1</td>
<td>Change the title of the subsection from “Shop Plans to read “Shop Drawings””. Change the second sentence of this subsection to read: “Do not use design drawings in lieu of shop drawings.”</td>
</tr>
<tr>
<td>426</td>
<td>707.03.C.17</td>
<td>Change the second sentence in the first paragraph of this subsection to read: &quot;Tap oversized galvanized nuts in accordance with ASTM A 563 or AASHTO M 292 and meet Supplementary Requirement S1 of ASTM A 563 or AASHTO M 292.”</td>
</tr>
<tr>
<td>430</td>
<td>707.03.D.7.b</td>
<td>Delete the first sentence of the last paragraph of this subsection.</td>
</tr>
<tr>
<td>430*</td>
<td>707.03.D.7.b</td>
<td>Change the title of the Table 707-4 to read: &quot;Minimum Bolt Tension for ASTM A 325 Bolts&quot;</td>
</tr>
<tr>
<td>430</td>
<td>707.03.D.7.b</td>
<td>Change &quot;104,000&quot; to &quot;103,000&quot; in the last row under the column titled Minimum Bolt Tension.</td>
</tr>
<tr>
<td>431</td>
<td>707.03.D.7.c</td>
<td>Add the following sentence to the end of the first paragraph of this subsection: “If using impact wrenches, provide wrenches sufficient to tighten each bolt in approximately 10 seconds.”</td>
</tr>
<tr>
<td>431*</td>
<td>707.03.D.7.c</td>
<td>Change the first sentence of the second paragraph to read: &quot;Do not reuse ASTM A 325 bolts and nuts.&quot;</td>
</tr>
<tr>
<td>434</td>
<td>707.04.A</td>
<td>Change the first sentence of the first paragraph of this subsection to read: “The Engineer will measure structural steel by the calculated weight of metal in the finished structure, excluding filler metal in welding, as shown on the shop drawings or working drawings.”</td>
</tr>
<tr>
<td>438</td>
<td>708.03.A.2</td>
<td>Change the title of the subsection from “Shop Plans to read “Shop Drawings””.</td>
</tr>
</tbody>
</table>

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<tbody>
<tr>
<td>441*</td>
<td>708.03.A.11</td>
<td>Change the last sentence of the first paragraph to read “Cure concrete at temperatures from 70 °F to 150 °F until concrete attains the release strength shown on the shop drawings.”</td>
</tr>
<tr>
<td>441</td>
<td>708.03.A.11</td>
<td>Change the fourth sentence of the fourth paragraph to read “Do not exceed a maximum concrete temperature of 150 °F during the curing cycle.”</td>
</tr>
<tr>
<td>458</td>
<td>711.03.A</td>
<td>Change the first sentence in the first paragraph to read: “Shop drawings for structural steel and pipe railings are not required.”</td>
</tr>
<tr>
<td>460</td>
<td>711.04.A</td>
<td>Change the second sentence of the first paragraph to read: “The unit price for Bridge Barrier Railing includes the cost of placing steel reinforcement, providing and placing concrete, constructing joints, and forming, finishing, curing and protecting the concrete.”</td>
</tr>
<tr>
<td>461</td>
<td>711.04.F</td>
<td>The title of this subsection should read “Reflective Marker, Permanent Barrier.”</td>
</tr>
<tr>
<td>467</td>
<td>712.03.C</td>
<td>Add the following to the end of the third paragraph of the subsection: “Propose complete details of drilling, cleaning, and bonding systems for anchoring reinforcement and submit for the Engineer’s approval before use. The minimum embedment depth must be nine times the anchor diameter for threaded rod or bolt and twelve times the anchor diameter for reinforcing bar. Propose a drilling method that does not cut or damage existing reinforcing steel. Prepare at least three proof tests per anchor diameter and type in the same orientation in which they will be installed on the existing structure, on a separate concrete block, in the presence of the Engineer. The Engineer will proof test the...”</td>
</tr>
<tr>
<td>471</td>
<td>712.03.J</td>
<td>Add the following to the end of the second paragraph of the subsection: “Select adhesive anchor systems from the Qualified Products List.”</td>
</tr>
<tr>
<td>471</td>
<td>712.03.J.1</td>
<td>Delete the first paragraph in this subsection and replace it with the following: “Propose complete details of drilling, cleaning, and bonding systems for anchoring reinforcement and submit for the Engineer’s approval before use. The minimum embedment depth must be nine times the anchor diameter for threaded rod or bolt and twelve times the anchor diameter for reinforcing bar. Propose a drilling method that does not cut or damage existing reinforcing steel. Prepare at least three proof tests per anchor diameter and type in the same orientation in which they will be installed on the existing structure, on a separate concrete block, in the presence of the Engineer. The Engineer will proof test the...”</td>
</tr>
</tbody>
</table>
proposed systems. The Engineer will base approval of the anchoring system on the following criteria:

471  712.03.J.2  Change the third sentence of the first paragraph to read: "Use a tension testing device for unconfined testing, in accordance with ASTM E 488."

473  712.03.L.2  Change the first sentence in the second paragraph of this subsection to read: "If using epoxy coated steel reinforcement, epoxy coat mechanical reinforcement splices in accordance with ASTM A 775."

473  712.03.L.3  Delete the existing first sentence in the first paragraph.

473  712.03.L.3  Change the third sentence of the first paragraph to read "Provide two test splices on the largest bar size."

473*  712.03.L.3  Change the sentence beginning “Demonstrate to the…. to read: “Demonstrate to the Engineer that splices have a tensile strength of 125 percent of the bar yield strength and high strength splices have a tensile strength of 150 percent of the bar yield strength."

488  713.02  Add the following as subsection 713.02.C: "C. Structural Steel for Retrofitting and Welded Repairs. Structural steel material used for retrofitting and welded repairs of primary members as defined in subsection 707.01.B must meet longitudinal Charpy V-Notch impact test requirements."

501  715.02  Add the following material reference above the two existing items: “Sealant for Perimeter of Beam Plates..........................713"

508  715.03.D.1  Add the following sentence after the second paragraph of the subsection: “Apply sealant for perimeter of beam plates in accordance with subsection 713.03.F.”

515  716.03.A  Delete the second paragraph of this subsection in its entirety.

Change the last sentence of the last paragraph of this subsection to read: “Provide a primer dry film thickness for the top flange between 4 mils and 10 mils.”

519  716.04  Change the second sentence of the first paragraph of this subsection to read: "The unit price for Field Repair of Damaged Coating (Structure No.) includes the costs of making field repairs to the shop applied coating system; prime coat surfaces and exposed surfaces of bolts, nuts, and washers; and repairing stenciling."
An asterisk (*) indicates an entry which has been revised from an earlier version of this Supplemental Specification.

This subsection should read "The unit price for **Drain Casting Assembly** includes the cost of providing and installing the downspout and, if necessary, the lower bracket to the drain casting."

Change the section number "906" in the third material in the list to read "919."

Delete the following pay item from the list:
Temp Casing........................................................................................Foot

Delete this subsection in its entirety.

Renumbe this subsection as follows:
"2. **Permanent Casing.**"

Change "Non reinf" in the last pay item of the list with "Nonreinf".

Change the second sentence of the second paragraph to read:
"The unit price for **Railing for Steps** includes the cost of providing, fabricating, installing, and grouting the railing."

Delete the following pay item from the list:
Guardrail Buffered End .................................................................Each

Change the fifth paragraph of this subsection to read:
"The Engineer will measure Guardrail Salv and Guardrail, Mult, Salv along the face of the rail (one face for multiple beams), including terminals and end shoes."

Change the first paragraph of this subsection to read:
"The Department will not pay separately for protective fence required in accordance with subsection 104.07."

Change the first sentence to read:
"The unit price for **Field Office, Cl __** includes the cost of setup, providing access, grading, maintaining, plowing snow, and utility hook-up charges."

Delete the existing second and third sentences in the first paragraph and replace them with the following:
"The unit price for **Field Office, Utility Fees** includes the cost of monthly usage fees for electricity, gas, telephone service and charges, fuel for the stove, monthly water and sanitary service."

Change the existing fourth sentence in the first paragraph to read:
"The Department will reimburse the Contractor for monthly usage fees for electricity, gas, telephone, water and sanitary charges incurred by the Department."

Change the subsection to read
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<tbody>
<tr>
<td>578</td>
<td>810.03.N.2</td>
<td>Add the following sentence after the first sentence of the second paragraph on this page: &quot;Mark each nut and bolt to reference the required rotation.&quot;</td>
</tr>
<tr>
<td>584</td>
<td>810.04</td>
<td>Delete the last pay item in the list: Truss Fdn Anchor Bolts, Replace.................................Each</td>
</tr>
<tr>
<td>596</td>
<td>811.03.G</td>
<td>Delete this subsection in its entirety.</td>
</tr>
<tr>
<td>597*</td>
<td>811.03.H</td>
<td>Rename this subsection as follows: &quot;G. Raised Pavement Marker (RPM) Removal.&quot;</td>
</tr>
<tr>
<td>597*</td>
<td>811.04</td>
<td>Change &quot;Crosshatching&quot; in the last pay item of the list on this page to &quot;Cross Hatching&quot;.</td>
</tr>
<tr>
<td>598*</td>
<td>811.04</td>
<td>Delete the following pay items from the list: Pavt Mrkg, (material), 4 inch, SRSM, (color)..........................Foot Pavt Mrkg, (material), 4 inch, SRSM, 2nd Application, (color)......Foot Add the following pay items to the list: &quot;Pavt Mrkg, Polyurea, (legend).................................Each Pavt Mrkg, Polyurea, (symbol).................................Each” Change the sixth item down the list to read: &quot;Pavt Mrkg, Polyurea, __ inch, Cross Hatching, (color)” Change the eleventh item down the list to read: &quot;Rem Curing Compound, for Longit Mrkg, __ inch...............Foot” Change the last item in the list to read: &quot;Witness, Log, Layout, $1000.00”</td>
</tr>
<tr>
<td>599</td>
<td>811.04.B</td>
<td>Delete this subsection in its entirety.</td>
</tr>
<tr>
<td>599</td>
<td>811.04</td>
<td>Rename the following subsections as follows: &quot;B. Call Back. C. Pavement Marking Removal. D. Material Deficiency.”</td>
</tr>
<tr>
<td>602</td>
<td>812.03.D</td>
<td>Change the first sentence to read &quot;Provide and maintain traffic control devices meeting the requirements in the ATSSA Quality Guidelines for Work Zone Traffic Control Devices and Features.”</td>
</tr>
<tr>
<td>603</td>
<td>812.03.D.1</td>
<td>The last sentence on this page should read &quot;Lay the sign behind the guardrail, with the uprights pointing downstream from the traffic, and place the support stands and ballasts close to the guardrail.”</td>
</tr>
</tbody>
</table>

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<tr>
<td>604</td>
<td>812.03.D.2</td>
<td>The first sentence of the fourth paragraph should read &quot;Do not use burlap or similar material to cover Department or Local Government owned signs.&quot;</td>
</tr>
<tr>
<td>604</td>
<td>812.03.D.5</td>
<td>The fifth sentence of the first paragraph should read &quot;Do not mix drums and cones within a traffic channeling sequence.&quot;</td>
</tr>
<tr>
<td>605</td>
<td>812.03.D.6.b</td>
<td>Change the first sentence of the first paragraph to read: &quot;The Department will allow the nighttime use of 42-inch channelizing devices, in the tangent area only, on CPM and pavement marking of any duration where the use of plastic drums restricts proposed lane widths to less than 11 feet, including shy distance.&quot;</td>
</tr>
<tr>
<td>605</td>
<td>812.03.D.7</td>
<td>Add the following sentence after the first sentence of the first paragraph: &quot;Place a shoulder closure taper in advance of the lighted arrows placed on the shoulders.&quot;</td>
</tr>
<tr>
<td>607</td>
<td>812.03.D.9</td>
<td>Delete the second paragraph of this subsection and replace with the following: &quot;Link sections together to fully engage the connection between sections. Maintain the barrier with end-attachments engaged and within 2 inches of the alignment shown on the plans.&quot;</td>
</tr>
<tr>
<td>608</td>
<td>812.03.D.10.b</td>
<td>Add the following sentence after the first paragraph of this subsection: &quot;Use an NCHRP 350, Test Level 3, or MASH accepted attenuation system.&quot;</td>
</tr>
<tr>
<td>608</td>
<td>812.03.D.10.b</td>
<td>Delete the second sentence of the second paragraph of this subsection beginning with &quot;Install sand module attenuators...&quot;</td>
</tr>
<tr>
<td>608</td>
<td>812.03.D.10.b</td>
<td>Add the following sentence after the second paragraph of this subsection: &quot;Install impact attenuation devices as shown on the plans, as directed by the Engineer, or both.&quot;</td>
</tr>
<tr>
<td>609</td>
<td>812.03.D.10.d</td>
<td>Add the following sentence after the first paragraph of this subsection: &quot;Use an NCHRP 350, Test Level 3, or MASH accepted attenuation system.&quot;</td>
</tr>
<tr>
<td>610</td>
<td>812.03.D.11.a</td>
<td>Change &quot;Type R tape&quot; to read &quot;Type R marking&quot; in three locations in this subsection.</td>
</tr>
<tr>
<td>613</td>
<td>812.03.D.14.a.iii</td>
<td>Change the sentence in this subsection to read &quot;Place an ET Type or SKT Type extruder guardrail ending on both blunt guardrail ends.&quot;</td>
</tr>
<tr>
<td>615</td>
<td>812.03.F</td>
<td>The second sentence of the second paragraph of this subsection should read: &quot;The Contractor may use a Type R temporary pavement marking cover, per subsection 812.03.D.12 when authorized by the Engineer.&quot;</td>
</tr>
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<td>616</td>
<td>812.03.F.2</td>
<td>The last sentence of the first paragraph should read: &quot;If the removal equipment cannot collect all removal debris, operate a self-propelled sweeper capable of continuously vacuuming up the removal debris immediately behind the removal equipment.&quot;</td>
</tr>
<tr>
<td>617</td>
<td>812.03.G.3</td>
<td>The first sentence of the second paragraph should read: &quot;Sweep the shoulder and remove debris prior to placing traffic on the shoulder and throughout the time the shoulder is used to maintain traffic.&quot;</td>
</tr>
<tr>
<td>617</td>
<td>812.03.G.4.a</td>
<td>Delete &quot;48 inch by 48 inch&quot; from the first sentence of this subsection.</td>
</tr>
<tr>
<td>618*</td>
<td>812.03.G.7</td>
<td>The first sentence of the first paragraph should read: &quot;Clean barrier reflectors, plastic drums, 42 inch channelizing devices, tubular markers, signs, barricades, and attached lights in operation on the project to ensure they meet required luminosity.&quot;</td>
</tr>
<tr>
<td>619</td>
<td>812.03.G.8</td>
<td>The second sentence of the third paragraph from the end of the subsection should read: &quot;Illuminate traffic regulator stations at night per subsection 812.03.H.&quot;</td>
</tr>
<tr>
<td>621</td>
<td>812.03.I.6</td>
<td>Delete &quot;48 inch by 48 inch&quot; from the second sentence of this subsection.</td>
</tr>
<tr>
<td>622*</td>
<td>812.03.J</td>
<td>The second paragraph should read &quot;Apply one 2-inch wide horizontal stripe of red and white conspicuity tape along at least 50 percent of each side of, and across the full width of the rear of the vehicle or equipment.&quot;</td>
</tr>
<tr>
<td>622</td>
<td>812.04</td>
<td>Change the second item down the list to read: “Traf Regulator Control”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change the sixth item down the list to read: “Sign Cover, Type I”</td>
</tr>
<tr>
<td>626</td>
<td>812.04.I</td>
<td>Change the reference &quot;812.04.E&quot; in the first sentence to &quot;812.04.D&quot;.</td>
</tr>
<tr>
<td>628</td>
<td>812.04.M.4</td>
<td>Add the following as the first sentence of this subsection: “The Engineer will not measure a temporary barrier ending move as Conc Barrier Ending, Temp, Relocated if it involves work defined in subsection 812.04.M.3.”</td>
</tr>
<tr>
<td>629</td>
<td>812.04.N.1</td>
<td>Change the reference &quot;811.04.D&quot; in the second paragraph of this subsection to read &quot;811.04.C&quot;.</td>
</tr>
<tr>
<td>630</td>
<td>812.04.S</td>
<td>Change the first sentence to read: &quot;The Department will not make additional payments for traffic regulating, signing, arrow boards, and lighting systems for traffic regulator stations operated at night due to a temporary PTS system failure.&quot;</td>
</tr>
<tr>
<td>634</td>
<td>813.03.C.3</td>
<td>Change the reference &quot;903.07.A&quot; in the paragraph of this subsection to read &quot;907.07.B&quot;.</td>
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<tr>
<td>646</td>
<td>815.04</td>
<td>Change the first, third and fourth pay items in the list to read: “Site Preparation, Max (dollar) .................................. Lump Sum Watering and Cultivating, First Season, Min (dollar)........... Lump Sum Watering and Cultivating, Second Season, Min (dollar) ....... Lump Sum”</td>
</tr>
<tr>
<td>646</td>
<td>815.04.C.1</td>
<td>Change the following pay item reading: “Watering and Cultivating, First Season, Min. (dollar)” to read “Watering and Cultivating, First Season, Min (dollar)” at two locations throughout the subsection.</td>
</tr>
<tr>
<td>646</td>
<td>815.04.C.1.b</td>
<td>Delete this subsection in its entirety.</td>
</tr>
<tr>
<td>646</td>
<td>815.04.C.1.c</td>
<td>Rename this subsection to read: “b. Removal and disposal of unacceptable plants.”</td>
</tr>
<tr>
<td>646</td>
<td>815.04.C.2</td>
<td>Change the following pay item reading: “Watering and Cultivating, Second Season, Min. (dollar)” to read “Watering and Cultivating, Second Season, Min (dollar)” at three locations throughout the subsection.</td>
</tr>
<tr>
<td>647</td>
<td>815.04.C.2</td>
<td>Change the last paragraph of this subsection to read: “For each unacceptable plant identified, the Engineer will calculate a 50 percent reduction in the unit price for the relevant (Botanical Name) pay item, and will process a negative assessment for each unacceptable plant for that amount.”</td>
</tr>
<tr>
<td>650</td>
<td>816.03.B</td>
<td>Delete the first paragraph of this subsection and replace with the following: &quot;Conduct soil tests when called for in the contract or when directed by the Engineer. Provide soils tests results to the Engineer when testing is required. Provide and place fertilizer as indicated below and as indicated in the soils tests, if required.&quot;</td>
</tr>
<tr>
<td>650</td>
<td>816.03.B.1</td>
<td>Change the sentence to read: &quot;For Class A fertilizer, evenly apply 176 pounds of chemical fertilizer nutrient per acre on a prepared seed bed.&quot;</td>
</tr>
<tr>
<td>650</td>
<td>816.03.B.2</td>
<td>Change the sentence to read: &quot;For Class B fertilizer, evenly apply 120 pounds of chemical fertilizer nutrient per acre on a prepared seed bed.&quot;</td>
</tr>
<tr>
<td>650*</td>
<td>816.03.B.3</td>
<td>Change the sentence to read: &quot;For Class C fertilizer, evenly apply 80 pounds of chemical fertilizer nutrient per acre on established turf.&quot;</td>
</tr>
<tr>
<td>663*</td>
<td>819.01</td>
<td>Delete the first paragraph in the subsection and replace it with the following: “This work consists of providing operating electrical and lighting units; removing, salvaging, or disposing of existing electrical and lighting components; excavating, backfilling, restoring the site in accordance with section 816; and disposing of waste excavated materials. Complete this work in accordance with this section, section 820, and the contract and to the requirements of the NEC, the National Electrical...”</td>
</tr>
</tbody>
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Safety Code, and the MDLARA for those items not identified in the contract.”

Change the third sentence of the second paragraph in this subsection to read: “Contact the MDLARA for electrical service inspection and pay the applicable fees.”

671 819.03.F.1 Change the paragraph to read: “Install light standard foundations as shown on the plans and the standard plans, as applicable.”

673 819.03.G.4.b Change the last sentence of the first paragraph to read: “Tighten the anchor bolts to a snug tight condition as described in the third paragraph of subsection 810.03.N.2 ensuring the lock washer is completely compressed.”

673 819.03.G.4.b Delete the first two sentences of the second paragraph and replace with the following: "Tighten bolts connecting the pole to the frangible base to a snug tight condition. Snug tight is the tightness attained by a few impacts of an impact wrench, or the full effort of a person using an ordinary spud wrench. The lock washers must be fully compressed.”

678* 819.04 Delete the last item in the list on this page reading: “DB Cable, in Conduit, 600 Volt, (number) 1/C# (size)........... Foot”

680 819.04 Change the first paragraph to read: “Unless otherwise required, the unit prices for the pay items listed in this subsection include the cost of excavation, granular material, backfill, and disposal of waste excavated material. If the contract does not include pay items for restoring the site in kind in accordance with section 816, the Department will consider the cost of restoration included in the pay items listed in this subsection.”

680 819.04.A Add the following paragraph after the first paragraph of the subsection. “The unit prices for Conduit, Rem include the cost of removing the type, number, and size of conduit shown on the plans.”

Change the third paragraph of the subsection to read: “The unit prices for Conduit, (type), __ inch and Conduit, DB, (number), __ inch include the cost of installing the type, number, and size of conduit shown on the plans, and installing marking tape.”

681 819.04.B Change the last paragraph of the subsection to read: “The unit price for DB Cable, in Conduit, Rem includes the cost of removing all cables from the existing conduit measured per lineal foot of conduit.”

681 819.04.C Change the first paragraph of the subsection to read: 

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<td>751</td>
<td>Table 902-7</td>
<td>Under the Material column in the fifth row change the &quot;FA3&quot; to read &quot;3FA&quot;.</td>
</tr>
<tr>
<td>752</td>
<td>Table 902-8</td>
<td>Under the Material column in the fourth row change the &quot;FA2&quot; to read &quot;2FA&quot;.</td>
</tr>
<tr>
<td>752</td>
<td>Table 902-8</td>
<td>Under the Material column in the fifth row change the &quot;FA3&quot; to read &quot;3FA&quot;.</td>
</tr>
<tr>
<td>761</td>
<td>Table 904-2</td>
<td>Delete the footnote f and any other reference to footnote f from the table.</td>
</tr>
<tr>
<td>767</td>
<td>905.03</td>
<td>Change the first sentence of the first paragraph to read: “Deformed bars, must meet the requirements of ASTM A 706, ASTM A 615, or ASTM A 996 (Type R or Type A only) for Grade 60 steel bars, unless otherwise required”.</td>
</tr>
<tr>
<td>767*</td>
<td>905.03</td>
<td>Change the first sentence of the second paragraph to read: “Unless otherwise specified, spiral reinforcement must meet the requirements of plain or deformed Grade 40 steel bars of ASTM A 615, ASTM A 996 (Type A), or the requirements of cold-drawn wire of ASTM A 1064”.</td>
</tr>
<tr>
<td>767</td>
<td>905.03</td>
<td>Change the first sentence of the third paragraph to read: “Bar reinforcement for prestressed concrete beams must meet the requirements of ASTM A 996 (Type R) for Grade 60 steel bars, except the Engineer will allow bar reinforcement that meets the requirements of ASTM A 615 or ASTM A 996 (Type A) for Grade 40 steel bars for stirrups in prestressed concrete beams”.</td>
</tr>
<tr>
<td>768</td>
<td>905.03.C</td>
<td>Change the first sentence in the subsection to read: &quot;Epoxy coated steel reinforcement, if required, must be coated in accordance with ASTM A 775, with the following exceptions and additions.&quot;</td>
</tr>
<tr>
<td>768</td>
<td>905.03.C.3</td>
<td>Change the first sentence of this subsection to read: &quot;Include written certification that the coated reinforcing bars were cleaned, coated, and tested in accordance with ASTM A 775 with the coating applicator.&quot;</td>
</tr>
<tr>
<td>768</td>
<td>905.05</td>
<td>Change the first sentence of the first paragraph to read: “Deformed steel bars must meet the requirements of ASTM A 706 or the requirements for Grade 40, Grade 50, or Grade 60 of ASTM A 615 or ASTM A 996 (Type R or Type A only)”.</td>
</tr>
<tr>
<td>768</td>
<td>905.06</td>
<td>Delete this subsection in its entirety and replace it with the following: &quot;Deformed wire fabric for prestressed concrete and fabric for concrete pavement reinforcement must meet the requirements of ASTM A 1064 and fabricated as required.&quot;</td>
</tr>
<tr>
<td>772</td>
<td>906.07</td>
<td>Change the first paragraph to read:</td>
</tr>
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### Errata

"High-strength bolt fasteners for structural joints must meet the requirements of ASTM A 325 Type 1 bolts. High-strength nuts for structural joints must meet the requirements of ASTM A 563 Grade DH or AASHTO M 292 Grade 2H. High-strength washers for structural joints must meet the requirements of ASTM F 436 Type 1 for circular, beveled, clipped circular, and clipped beveled washers."

Change the second sentence of the second paragraph of this subsection to read:
"Galvanized nuts must be tapped oversize in accordance with ASTM A 563 and meet Supplementary Requirements S1, Lubricant and Rotational Capacity Test for Coated Nuts and S2, Lubricant Dye."

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<td>772</td>
<td>906.08</td>
<td>Change the last sentence of the first paragraph to read &quot;Washers must be made from austenitic stainless steel ASTM A 276 UNS designation S31600 or S31603.&quot;</td>
</tr>
<tr>
<td>777*</td>
<td>907.03.D.2.a</td>
<td>Change the first sentence of the second paragraph to read: &quot;Angle sections must be nominal 2½ inch by 2½ inch by ¼ inch.&quot;</td>
</tr>
<tr>
<td>777*</td>
<td>907.03.D.2.b</td>
<td>Change the first sentence of the first paragraph to read: &quot;Angle section braces must be nominal 1¼ inch by 1¼ inch by ¼ inch or nominal 2 inch by 2 inch 3/16 inch.&quot;</td>
</tr>
<tr>
<td>782</td>
<td>908.04</td>
<td>Change the first sentence of the first paragraph of this subsection to read: &quot;Steel castings for steel construction must meet the requirements of ASTM A 148 for Grade 60/90 carbon steel castings, as shown on the plans, unless the Engineer approves an alternate in writing.&quot;</td>
</tr>
<tr>
<td>783*</td>
<td>908.09.A</td>
<td>Change the title of this subsection and the first sentence to read &quot;A. Base Plates, Angle, and Non-Tubular Post Elements. Galvanized base plates, angle, rail splice elements, and non-tubular post elements must meet the requirements of ASTM A 36 and ASTM A 123&quot;.</td>
</tr>
<tr>
<td>783*</td>
<td>908.09.B</td>
<td>Change the title of this subsection and the first sentence to read &quot;B. Rail Elements and Tubular Post Elements. Rail elements and tubular post elements must meet the requirements of ASTM A 500, for Grade B and subsection 908.09.B and be galvanized in accordance with ASTM A 123&quot;.</td>
</tr>
<tr>
<td>784</td>
<td>908.09.C</td>
<td>Change the second sentence to read: &quot;Heavy hex nuts must meet the requirements of ASTM A 563.&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change the third sentence to read: &quot;Bolts, used as rail fasteners, washers and nuts must meet the requirements of ASTM A 325, Type 1.&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change the sixth sentence to read:</td>
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</table>
| 785  | 908.11.B   | "All flat washers must meet the requirements of ASTM F 436."
|      |            | Add the following sentence to the end of the subsection: "Bolts, nuts, washers and other hardware must be hot-dip galvanized in accordance with AASHTO M 232."
|      |            | Change the second paragraph to read: "Bolts, nuts, and round washers for guardrail, other than at bridge barrier railings, must meet the requirements of ASTM A 307, ASTM A 563 (Grade A with Supplementary Requirements S1 of ASTM A 563), and ASTM F 436, respectively."
|      |            | Change the third paragraph to read: "Washers, other than round washers, for guardrail must meet the requirements for circular washers in ASTM F 436 except that the dimensions must be as shown on the plans."
|      |            | Change the fifth paragraph to read: "Bolts, nuts, and washers for connections at bridge barrier railings must conform to ASTM A 325 Type 1 galvanized high-strength structural bolts with suitable nuts and hardened washers."
| 787  | 908.14.B   | Add the following sentence to the end of the third paragraph of this subsection: "Exposed threaded ends of anchor bolts must be galvanized a minimum of 20 inches."
|      |            | Change the sixth paragraph in this subsection to read: "Provide washers meeting the requirements of ASTM F 436 for circular washers."
| 787  | 908.14.B   | Change the second sentence of the fourth paragraph to read “After coating, the maximum limit of pitch and major diameter for bolts with a diameter no greater than 1 inch may exceed the Class 2A limit by no greater than 0.021 inch, and by no greater than 0.031 inch for bolts greater than 1 inch in diameter”. |
| 787* | 908.14.C   | Change the first paragraph to read "Provide either four or six high strength anchor bolts per the contract plans, meeting the mechanical requirements of ASTM F 1554, for Grade 105, with each standard. Anchor bolts for traffic signal strain poles must meet the requirements of subsection 908.14.B with the following exceptions and additions:" |
| 789  | 909.03     | Change the second sentence of the second paragraph to read: "As an alternative to the AASHTO M 36 requirements for metal pipe, the Contractor may use gasket material meeting the low temperature flexibility and elevated temperature flow test requirements of ASTM C 990, excluding the requirements for softening point, flashpoint and fire point." |

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<table>
<thead>
<tr>
<th>Page</th>
<th>Subsection</th>
<th>Errata</th>
</tr>
</thead>
<tbody>
<tr>
<td>841*</td>
<td>914.13</td>
<td>In the first sentence of this subsection change &quot;ASTM D 1248, for Type III, Class B&quot; to read &quot;ASTM D 4976, Group 2, Class 4, Grade 4&quot;.</td>
</tr>
<tr>
<td>844</td>
<td>916.01.A</td>
<td>Change the first sentence to read: &quot;Cobblestone must consist of rounded or semi-rounded rock fragments with an average dimension from 3 inches to 10 inches.&quot;</td>
</tr>
<tr>
<td>845</td>
<td>916.01.D.1</td>
<td>Change the second sentence to read: &quot;Checkdams for ditch grades 2 percent or greater must be constructed using cobblestone or broken concrete ranging from 3 inches to 10 inches in size.&quot;</td>
</tr>
<tr>
<td>851*</td>
<td>917.10.B.1</td>
<td>Delete the paragraph and replace it with the following: “1. Class A. Provide and apply Class A chemical nutrient fertilizer either according to MSU Soil Testing Lab Recommendations for Phosphorus Applications to Turfgrass, except the maximum single application rate of nutrient will be 48 pounds per acre, when soil tests are required or as indicated in subsections 917.10.B.1.a and 917.10.B.1.b.”</td>
</tr>
<tr>
<td>851</td>
<td>917.10.B.1</td>
<td>Add the MSU Soil Testing Lab Recommendations for Phosphorus Applications to Turfgrass, found below, after the first paragraph of this subsection.</td>
</tr>
<tr>
<td>853</td>
<td>917.15.B.1</td>
<td>Change the second sentence of the subsection to read: “The net must meet the requirements of subsection 917.15.D and be capable of reinforcing the blanket to prevent damage during shipping, handling, and installation.”</td>
</tr>
<tr>
<td>857</td>
<td>918.01</td>
<td>Add the following two paragraphs following the first paragraph of this subsection: “Wall thickness and outside diameter dimensions must conform to ASTM D 1785 for smooth-wall schedule 40 and 80 PVC conduit material. The Department will allow no more than 3 percent deviation from the minimum wall thickness specified. Wall thickness range must be within 12 percent in accordance with ASTM D 3035 for smooth-wall coilable schedule 40 and 80 PE conduit.”</td>
</tr>
<tr>
<td>858</td>
<td>918.01.E</td>
<td>Delete the first three sentences of the second paragraph shown on page 858.</td>
</tr>
<tr>
<td>863</td>
<td>918.06.F.1</td>
<td>Delete the third paragraph in this subsection in its entirety and replace it with the following: &quot;Provide smooth or deformed welded wire fabric in accordance with ASTM A 1064.”</td>
</tr>
<tr>
<td>864</td>
<td>918.07.C</td>
<td>Change the first sentence of the first paragraph to read: “Provide anchor bolts, nuts, and washers meeting the requirements of subsection 908.14.A and subsection 908.14.B.”</td>
</tr>
<tr>
<td>Page</td>
<td>Subsection</td>
<td>Errata</td>
</tr>
<tr>
<td>------</td>
<td>------------</td>
<td>--------</td>
</tr>
<tr>
<td>864</td>
<td>918.07.C</td>
<td>Delete the second sentence of the second paragraph.</td>
</tr>
<tr>
<td>864</td>
<td>918.07.C</td>
<td>Change the third sentence to read: “Provide anchor bolts threaded 4 inches beyond the anchor bolt projection shown on the plans.”</td>
</tr>
<tr>
<td>867</td>
<td>918.08.C</td>
<td>Change the last sentence of the first paragraph on this page to read: “Galvanize bolts, nuts, washers, and lock washers as specified in subsection 908.14.B.”</td>
</tr>
<tr>
<td>867</td>
<td>918.08.C</td>
<td>Change the last sentence of the subsection to read: “Provide each frangible base with manufacturer access covers as shown on the plans.”</td>
</tr>
<tr>
<td>867*</td>
<td>918.08.D</td>
<td>Delete this subsection in its entirety and replace with the following: &quot;Provide galvanized anchor bolts, studs, nuts, couplings, and washers in accordance with subsection 908.14.”</td>
</tr>
<tr>
<td>879</td>
<td>918.10.J</td>
<td>Change the third sentence of the second paragraph of this subsection to read: &quot;Provide anchor bolts and associated nuts, washers, and hardware meeting the requirements of subsection 908.14.”</td>
</tr>
<tr>
<td>887</td>
<td>919.06</td>
<td>Change the second paragraph to read: “Shims must be fabricated from brass shim stock or brass strip meeting the requirements of ASTM B 36, for copper alloy UNS No. C26000, half-hard rolled temper, or fabricated from galvanized sheeting meeting the requirements of ASTM A 653, for Coating Designation G 90.”</td>
</tr>
<tr>
<td>903</td>
<td>921.03.D</td>
<td>Delete the last three sentences of the first paragraph of this subsection.</td>
</tr>
<tr>
<td>914</td>
<td>921.05.D</td>
<td>Change the first sentence of this subsection to read: &quot;Provide anchor bolts meeting the requirements of subsection 908.14.C, including elongation and reduction of area requirements.”</td>
</tr>
<tr>
<td>916</td>
<td>921.07</td>
<td>Change the first sentence of the first paragraph to read: &quot;Provide LED case signs internally illuminated by LEDs and changeable message case signs internally illuminated with LED light sources.”</td>
</tr>
<tr>
<td>936</td>
<td>922.04.B</td>
<td>In the first sentence of the first paragraph change the &quot;R-52&quot; to &quot;R-126&quot;.</td>
</tr>
<tr>
<td>936</td>
<td>922.04.B</td>
<td>Add the following to the end of the first paragraph: “Hardware used to connect the end section to the barrier must meet the requirements of NCHRP 350 or MASH (Test Level 3 or higher).”</td>
</tr>
<tr>
<td>936</td>
<td>922.04.B</td>
<td>In the first sentence of the second paragraph delete &quot;R-52”.</td>
</tr>
<tr>
<td>953*</td>
<td>Pay Item Index</td>
<td>Delete the following pay item reading: “DB Cable, in Conduit, 600 Volt, (number) 1/C# (size) ..........678 819”</td>
</tr>
</tbody>
</table>

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<th>Errata</th>
</tr>
</thead>
<tbody>
<tr>
<td>969</td>
<td>Pay item Index</td>
<td>Change the following pay item in the list to read: “Witness, Log, Layout, $1000.00”</td>
</tr>
<tr>
<td>993</td>
<td>General Index</td>
<td>Change “Shop Plans (see Plans and Working Drawings)” to read “Shop Drawings (see Plans and Working Drawings)”</td>
</tr>
</tbody>
</table>

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Table 701-1
Concrete Structure Mixtures

<table>
<thead>
<tr>
<th>Concrete Grade (e,h)</th>
<th>Section Number Reference (i)</th>
<th>Cement Content per cyd (b,c)</th>
<th>Slump (inches)</th>
<th>Minimum Strength of Concrete (f)</th>
<th>Flexural (psi)</th>
<th>Compressive (psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Type A, D or no Admixture</td>
<td>Before Admixture (g)</td>
<td>After Admixture (Type MR)</td>
<td>After Admixture (Type F or G)</td>
</tr>
<tr>
<td>D (a)</td>
<td>706, 711, 712</td>
<td>658 (d) 7.0</td>
<td>0 - 3</td>
<td>0 - 3</td>
<td>0 - 6</td>
<td>0 - 7</td>
</tr>
<tr>
<td>S1</td>
<td>706</td>
<td>611 6.5</td>
<td>3 - 5</td>
<td>0 - 3</td>
<td>3 - 6</td>
<td>3 - 7</td>
</tr>
<tr>
<td>T</td>
<td>705, 706</td>
<td>611 6.5</td>
<td>3 - 7</td>
<td>0 - 4</td>
<td>3 - 7</td>
<td>3 - 8</td>
</tr>
<tr>
<td>S2 (a)</td>
<td>401, 705, 706, 712, 713, 801, 802, 803, 810</td>
<td>564 6.0</td>
<td>0 - 3</td>
<td>0 - 3</td>
<td>0 - 6</td>
<td>0 - 7</td>
</tr>
<tr>
<td>S3</td>
<td>402, 403, 803, 804, 806</td>
<td>517 5.5</td>
<td>0 - 3</td>
<td>0 - 3</td>
<td>0 - 6</td>
<td>0 - 7</td>
</tr>
</tbody>
</table>

a. Unless otherwise required, use Coarse Aggregate 6AA or 17A for exposed structural concrete in bridges, retaining walls, and pump stations.
b. Do not place concrete mixtures containing supplemental cementitious materials unless the local average minimum temperature for the next 10 consecutive days is forecast to be above 40 °F. Adjustments to the time required for opening to construction or vehicular traffic may be necessary. Cold weather protection may be required, as described in the quality control plan. The restriction does not apply to Grade S1 concrete in foundation piling below ground level or Grade T concrete in tremie construction.
c. Type III cement is not permitted.
d. Use admixture quantities specified by the Qualified Products Lists to reduce mixing water. Admixture use is required for Grade D, Grade S2, and Grade S3, concrete with a reduced cement content. Use a water-reducing retarding admixture at the required dosage for Grade D concrete to provide the setting retardation required. When the maximum air temperature is not forecast to exceed 60 °F for the day, the Contractor may use a water-reducing admixture or a water-reducing retarding admixture. Ensure Grade D concrete in concrete diaphragms contains a water-reducing admixture, or a water-reducing retarding admixture. For night casting, the Contractor may use a water-reducing admixture in lieu of water-reducing retarding admixture, provided that the concrete can be placed and finished prior to initial set.
e. The mix design basis for bulk volume (dry, loose) of coarse aggregate per unit volume of concrete is 68% for Grade S1, and 70% for Grade D, Grade S2, Grade T, and Grade S3.
f. The Contractor may use flexural strength to determine form removal. Use compressive strength for acceptance in other situations.
g. MR = Mid-range.
h. The Engineer will allow the use of an optimized aggregate gradation as specified in section 604.

Section Number Reference:
- Culverts: 711 Bridge Railings: 803 Concrete Sidewalk, Sidewalk Ramps, and Steps
- Storm Sewers: 712 Bridge Rehabilitation-Concrete: 804 Concrete Barriers and Glare Screens
- Drainage Structures: 713 Bridge Rehabilitation-Steel: 806 Bicycle Paths
- Foundation Piling: 801 Concrete Driveways: 810 Permanent Traffic Signs and Supports
- Structural Concrete Construction: 802 Concrete Curb, Gutter and Dividers

An asterisk (*) indicates an entry which has been revised from an earlier version of this Supplemental Specification.
### Table 902-6
Superpave Final Aggregate Blend Physical Requirements

<table>
<thead>
<tr>
<th>Est. Traffic (million ESAL)</th>
<th>Mix Type</th>
<th>Percent Crushed Minimum Criteria</th>
<th>Fine Aggregate Angularity Minimum Criteria</th>
<th>% Sand Equivalent Minimum Criteria</th>
<th>Los Angeles Abrasion % Loss Maximum Criteria</th>
<th>% Soft Particles Maximum Criteria (b)</th>
<th>% Flat and Elongated Particles Maximum Criteria (c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Top &amp; Leveling Courses</td>
<td>Base Course</td>
<td>Top &amp; Leveling Courses</td>
<td>Base Course</td>
<td>Top &amp; Leveling Courses</td>
<td>Base Course</td>
</tr>
<tr>
<td>&lt; 0.3</td>
<td>LVSP</td>
<td>55/—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>&lt; 0.3</td>
<td>E03</td>
<td>55/—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>≥0.3 - &lt;1.0</td>
<td>E1</td>
<td>65/—</td>
<td>—</td>
<td>40</td>
<td>—</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>≥1.0 - &lt;3</td>
<td>E3</td>
<td>75/—</td>
<td>50/—</td>
<td>40(a)</td>
<td>40(a)</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>≥3 - &lt;10</td>
<td>E10</td>
<td>85/80</td>
<td>60/—</td>
<td>45</td>
<td>40</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>≥10 - &lt;30</td>
<td>E30</td>
<td>95/90</td>
<td>80/75</td>
<td>45</td>
<td>40</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>≥30 - &lt;100</td>
<td>E50</td>
<td>100/100/10</td>
<td>95/90</td>
<td>45</td>
<td>45</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

(a) For an E3 mixture type that enters the restricted zone as defined in Table 902-5, the minimum is 43. If these criteria are satisfied, acceptance criteria and associated incentive/disincentive or pay adjustment tied to this gradation restricted zone requirement included in contract, do not apply. Otherwise, final gradation blend must be outside of the restricted zone.

(b) Soft particles maximum is the sum of the shale, siltstone, ochre, coal, clay-ironstone and particles that are structurally weak or are non-durable in service.

(c) Maximum by weight with a 1 to 5 aspect ratio.

Note: “85/80” denotes that 85 percent of the coarse aggregate has one fractured face and 80 percent has at least two fractured faces.

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<table>
<thead>
<tr>
<th>Preservative</th>
<th>Minimum Retention, (pcf)</th>
<th>AWPA Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Guardrail Posts</td>
<td>Sign Posts</td>
</tr>
<tr>
<td>Pentachlorophenol</td>
<td>0.60</td>
<td>0.50</td>
</tr>
<tr>
<td>CCA, ACZA</td>
<td>0.60</td>
<td>0.50</td>
</tr>
<tr>
<td>ACQ (a)</td>
<td>0.60</td>
<td>Not Allowed</td>
</tr>
<tr>
<td>CA-B (a)</td>
<td>0.31</td>
<td>Not Allowed</td>
</tr>
<tr>
<td>CA-A (a)</td>
<td>0.31</td>
<td>Not Allowed</td>
</tr>
<tr>
<td>Other Waterborne preservatives</td>
<td>AWPA Commodity Specification A, Table 3.0, Use Category 4B</td>
<td>Not Allowed</td>
</tr>
</tbody>
</table>

a. Non-Metallic washers or spacers are required for timber and lumber treated with ACQ or CA placed in direct contact with aluminum. Do not use with sign posts.
An asterisk (*) indicates an entry which has been revised from an earlier version of this Supplemental Specification.

Web resources: [www.turf.msu.edu](http://www.turf.msu.edu) or [www.bephosporussmart.msu.edu](http://www.bephosporussmart.msu.edu)
The "wage and employment requirements" of Section 1:320 of Chapter 14 of Title I of the Ann Arbor City Code mandates that the city not enter any contract, understanding or other arrangement for a public improvement for or on behalf of the city unless the contract provides that all craftsmen, mechanics and laborers employed directly on the site in connection with said improvements, including said employees of subcontractors, shall receive the prevailing wage for the corresponding classes of craftsmen, mechanics and laborers, as determined by statistics for the Ann Arbor area compiled by the United States Department of Labor. Where the contract and the Ann Arbor City Code are silent as to definitions of terms required in determining contract compliance with regard to prevailing wages, the definitions provided in the Davis-Bacon Act as amended (40 U.S.C. 278-a to 276-a-7) for the terms shall be used. Further, to the extent that any employees of the contractor providing services under this contract are not part of the class of craftsmen, mechanics and laborers who receive a prevailing wage in conformance with section 1:320 of Chapter 14 of the Code of the City of Ann Arbor, employees shall be paid a prescribed minimum level of compensation (i.e. Living Wage) for the time those employees perform work on the contract in conformance with section 1:815 of Chapter 23 of Title I of the Code of the City of Ann Arbor.

At the request of the city, any contractor or subcontractor shall provide satisfactory proof of compliance with this provision.

The Contractor agrees:

(a) To pay each of its employees whose wage level is required to comply with federal, state or local prevailing wage law, for work covered or funded by this contract with the City,

(b) To require each subcontractor performing work covered or funded by this contract with the City to pay each of its employees the applicable prescribed wage level under the conditions stated in subsection (a) or (b) above.

(c) To provide to the City payroll records or other documentation within ten (10) business days from the receipt of a request by the City.

(d) To permit access to work sites to City representatives for the purposes of monitoring compliance, and investigating complaints or non-compliance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services in accordance with the terms of the wage and employment provisions of the Chapter 14 of the Ann Arbor City Code-. The undersigned certifies that he/she has read and is familiar with the terms of Section 1:320 of Chapter 14 of the Ann Arbor City Code and by executing this Declaration of Compliance obligates his/her employer —and —any subcontractor employed by it to perform work on the contract to the wage and employment requirements stated herein. The undersigned further acknowledges and agrees that if it is found to be in violation of the wage and employment requirements of Section 1:320 of the Chapter 14 of the Ann Arbor City Code it shall has be deemed a material breach of the terms of the contract and grounds for termination of same by the City.

Company Name

Signature of Authorized Representative Date

Print Name and Title

Address, City, State, Zip

Phone/Email address

Questions about this form? Contact Procurement Office City of Ann Arbor Phone: 734/794-6500
CITY OF ANN ARBOR
LIVING WAGE ORDINANCE

RATE EFFECTIVE APRIL 30, 2016 - ENDING APRIL 29, 2017

$12.93 per hour     $14.43 per hour
If the employer provides health care benefits*     If the employer does NOT provide health care benefits*

Employers providing services to or for the City of Ann Arbor or recipients of grants or financial assistance from the City of Ann Arbor for a value of more than $10,000 in a twelve-month period of time must pay those employees performing work on a City of Ann Arbor contract or grant, the above living wage.

ENFORCEMENT

The City of Ann Arbor may recover back wages either administratively or through court action for the employees that have been underpaid in violation of the law. Persons denied payment of the living wage have the right to bring a civil action for damages in addition to any action taken by the City.

Violation of this Ordinance is punishable by fines of not more than $500/violation plus costs, with each day being considered a separate violation. Additionally, the City of Ann Arbor has the right to modify, terminate, cancel or suspend a contract in the event of a violation of the Ordinance.

* Health Care benefits include those paid for by the employer or making an employer contribution toward the purchase of health care. The employee contribution must not exceed $.50 an hour for an average work week; and the employer cost or contribution must equal no less than $1/hr for the average work week.

The Law Requires Employers to Display This Poster Where Employees Can Readily See It.

For Additional Information or to File a Complaint Contact: Colin Spencer at 734/794-6500 or cspencer@a2gov.org

Revised 4/30/2016 Rev. 0
The Ann Arbor Living Wage Ordinance (Section 1:811-1:821 of Chapter 23 of Title I of the Code) requires that an employer who is (a) a contractor providing services to or for the City for a value greater than $10,000 for any twelve-month contract term, or (b) a recipient of federal, state, or local grant funding administered by the City for a value greater than $10,000, or (c) a recipient of financial assistance awarded by the City for a value greater than $10,000, shall pay its employees a prescribed minimum level of compensation (i.e., Living Wage) for the time those employees perform work on the contract or in connection with the grant or financial assistance. The Living Wage must be paid to these employees for the length of the contract/program.

Companies employing fewer than 5 persons and non-profits employing fewer than 10 persons are exempt from compliance with the Living Wage Ordinance. If this exemption applies to your company/non-profit agency please check here [   ] No. of employees ___

The Contractor or Grantee agrees:

(e) To pay each of its employees whose wage level is not required to comply with federal, state or local prevailing wage law, for work covered or funded by a contract with or grant from the City, no less than the Living Wage. The current Living Wage is defined as $12.93/hour for those employers that provide employee health care (as defined in the Ordinance at Section 1:815 Sec. 1 (a)), or no less than $14.43/hour for those employers that do not provide health care. The Contractor or Grantor understands that the Living Wage is adjusted and established annually on April 30 in accordance with the Ordinance and covered employers shall be required to pay the adjusted amount thereafter to be in compliance (Section 1:815(3).

(f) To post a notice approved by the City regarding the applicability of the Living Wage Ordinance in every workplace or other location in which employees or other persons contracting for employment are working.

(g) To provide to the City payroll records or other documentation within ten (10) business days from the receipt of a request by the City.

(h) To permit access to work sites to City representatives for the purposes of monitoring compliance, and investigating complaints or non-compliance.

(i) To take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee covered by the Living Wage Ordinance or any person contracted for employment and covered by the Living Wage Ordinance in order to pay the living wage required by the Living Wage Ordinance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services or agrees to accept financial assistance in accordance with the terms of the Living Wage Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Living Wage Ordinance, obligates the Employer/Grantee to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract or grant of financial assistance.

Company Name

Signature of Authorized Representative Date

Print Name and Title

Address, City, State, Zip

Phone/Email address

Questions about this form? Contact Procurement Office City of Ann Arbor Phone: 734/794-6500

Revised 2/17/16 Rev 0 LW-2
Vendor Conflict of Interest Disclosure Form

All vendors interested in conducting business with the City of Ann Arbor must complete and return the Vendor Conflict of Interest Disclosure Form in order to be eligible to be awarded a contract. Please note that all vendors are subject to comply with the City of Ann Arbor’s conflict interest policies as stated within the certification section below.

If a vendor has a relationship with a City of Ann Arbor official or employee, an immediate family member of a City of Ann Arbor official or employee, the vendor shall disclose the information required below.

Certification: I hereby certify that to my knowledge, there is no conflict of interest involving the vendor named below:

1. No City official or employee or City employee’s immediate family member has an ownership interest in vendor’s company or is deriving personal financial gain from this contract.
2. No retired or separated City official or employee who has been retired or separated from the City for less than one (1) year has an ownership interest in vendor’s Company.
3. No City employee is contemporaneously employed or prospectively to be employed with the vendor.
4. Vendor hereby declares it has not and will not provide gifts or hospitality of any dollar value or any other gratuities to any City employee or elected official to obtain or maintain a contract.
5. Please note any exceptions below:

<table>
<thead>
<tr>
<th>Vendor Name</th>
<th>Vendor Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Conflict of Interest Disclosure**

Name of City of Ann Arbor employees, elected officials, or immediate family members with whom there maybe a potential conflict of interest.

<table>
<thead>
<tr>
<th>Relationship to</th>
<th>Interest in vendor’s company</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>employee</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Disclosing a potential conflict of interest does not disqualify vendors. In the event vendors do not disclose potential conflicts of interest and they are detected by the City, vendor will be exempt from doing business with the City.

I certify that the information provided is true and correct by my signature below:

---

Signature of Vendor Authorized Representative

Date

Printed Name of Vendor Authorized Representative

PROCUREMENT USE ONLY

☐ Yes, named employee was involved in Bid / Proposal process.

☐ No, named employee was not involved in procurement process or decision.
CITY OF ANN ARBOR NON-DISCRIMINATION ORDINANCE

Relevant provisions of Chapter 112, Nondiscrimination, of the Ann Arbor City Code are included below. You can review the entire ordinance at www.a2gov.org/departments/city- clerk

Intent: It is the intent of the city that no individual be denied equal protection of the laws; nor shall any individual be denied the enjoyment of his or her civil or political rights or be discriminated against because of actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight.

Discriminatory Employment Practices: No person shall discriminate in the hire, employment, compensation, work classifications, conditions or terms, promotion or demotion, or termination of employment of any individual. No person shall discriminate in limiting membership, conditions of membership or termination of membership in any labor union or apprenticeship program.

Discriminatory Effects: No person shall adopt, enforce or employ any policy or requirement which has the effect of creating unequal opportunities according to actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight for an individual to obtain housing, employment or public accommodation, except for a bona fide business necessity. Such a necessity does not arise due to a mere inconvenience or because of suspected objection to such a person by neighbors, customers or other persons.

Nondiscrimination by City Contractors: All contractors proposing to do business with the City of Ann Arbor shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the guidelines of this section. All city contractors shall ensure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity and tends to eliminate inequality based upon any classification protected by this chapter. All contractors shall 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 any applicable protected classification. All contractors shall be required to post a copy of Ann Arbor's Non-Discrimination Ordinance at all work locations where its employees provide services under a contract with the city.

Complaint Procedure: If any individual has a grievance alleging a violation of this chapter, he/she has 180 calendar days from the date of the individual's knowledge of the allegedly discriminatory action or 180 calendar days from the date when the individual should have known of the alleged discriminatory action to file a complaint with the city's Human Rights Commission. If an individual fails to file a complaint alleging a violation of this chapter within the specified time frame, the complaint will not be considered by the Human Rights Commission. The complaint should be made in writing to the Human Rights Commission. The complaint may be filed in person with the City Clerk, by e-mail at aahumanrightscommission@gmail.com, or by mail (Ann Arbor Human Rights Commission, PO Box 8647, Ann Arbor, MI 48107). The complaint must contain information about the alleged discrimination, such as name, address, phone number of the complainant and location, date and description of the alleged violation of this chapter.

Private Actions For Damages or Injunctive Relief: To the extent allowed by law, an individual who is the victim of discriminatory action in violation of this chapter may bring a civil action for appropriate injunctive relief or damages or both against the person(s) who acted in violation of this chapter.

This is an official government notice and must be displayed where employees can readily see it.

2015 Rev. 0
CITY OF ANN ARBOR
DECLARATION OF COMPLIANCE

Non-Discrimination Ordinance

The “non-discrimination by city contractors” provision of the City of Ann Arbor Non-Discrimination Ordinance (Ann Arbor City Code Chapter 112, Section 9:158) requires all contractors proposing to do business with the City to treat employees in a manner which provides equal employment opportunity and does not discriminate against any of their employees, any City employee working with them, or any applicant for employment on the basis of actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight. It also requires that the contractors include a similar provision in all subcontracts that they execute for City work or programs.

In addition the City Non-Discrimination Ordinance requires that all contractors proposing to do business with the City of Ann Arbor must satisfy the contract compliance administrative policy adopted by the City Administrator. A copy of that policy may be obtained from the Purchasing Manager.

The Contractor agrees:

(a) To comply with the terms of the City of Ann Arbor’s Non-Discrimination Ordinance and contract compliance administrative policy.

(b) To post the City of Ann Arbor’s Non-Discrimination Ordinance Notice in every workplace or other location in which employees or other persons are contracted to provide services under a contract with the City.

(c) To provide documentation within the specified time frame in connection with any workforce verification, compliance review or complaint investigation.

(d) To permit access to employees and work sites to City representatives for the purposes of monitoring compliance, or investigating complaints of non-compliance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services in accordance with the terms of the Ann Arbor Non-Discrimination Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Non-Discrimination Ordinance, obligates the Contractor to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract.

Company Name

Signature of Authorized Representative Date

Print Name and Title

Address, City, State, Zip

Phone/Email address

Questions about the Notice or the City Administrative Policy, Please contact:
Procurement Office of the City of Ann Arbor
(734) 794-6500

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