



REQUEST FOR PROPOSALS PACKET

**2017 RIVER POINTE SUBDIVISION SPECIAL ASSESSMENT
ROAD RESURFACING**

SPECIFICATIONS AND LOG PLANS

SEPTEMBER 30, 2016

HRC NO. 20160615



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ADVERTISEMENT FOR BIDS
RIVER POINTE SPECIAL ASSESSMENT
ROAD RESURFACING
DELHI CHARTER TOWNSHIP

Sealed proposals for the construction of the River Pointe Special Assessment Road Resurfacing will be received by the Delhi Charter Township (Owner) at the Delhi Community Services Center located at 2074 Aurelius Road, Holt, Michigan 48842, until 1:30 p.m., Local Time on November 3, 2016, at which time and place all bids will be publicly opened and read.

Bidders shall review and comply with the Instructions to Bidders, which are incorporated by reference, and carefully review all Contract Documents, as defined in the Instructions to Bidders. Bids submitted after the exact time specified for receipt will not be considered.

The Contract will consist of the following principal items of work and appurtenances as specified herein and shown on the Contract Drawings.

Description of Work

The scope of this project is generally described as milling and paving the streets in the River Pointe Subdivision with minor curb and gutter repair and ADA sidewalk ramp replacement.

Copies of Plans and Specifications and Proposal Forms shall be available on or after **September 30, 2016** at the offices of Hubbell, Roth & Clark, Inc., Consulting Engineers, 555 Hulet Drive, Bloomfield Hills, Michigan 48302-0360. A non-refundable payment of Twenty (\$20.00) Dollars, **CHECK ONLY, payable to "Hubbell, Roth & Clark, Inc."** will be required for each set of Drawings and Specifications. Drawings and Specifications can be shipped by U.P.S. ground for a shipping and handling charge of Five (\$5.00) Dollars, CHECK ONLY, non-refundable, to Hubbell, Roth & Clark, Inc.

Any questions regarding the Bid Documents should be directed by email to Miranda Thompson at mthompson@hrc-engr.com. If necessary, an addendum will be issued to make all bidders aware of any issues.

Proposals submitted by Bidders who have been debarred, suspended, or made ineligible by any Federal Agency will be rejected.

Each bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any bid.

Each bid proposal shall be submitted on the proposal forms provided and shall be accompanied by a certified check, cashier's check or bid bond, executed by the bidder and Surety Company, payable to the Delhi Charter Township in the amount of Five Percent (5%) of the accompanying bid. Proposal Guarantee shall provide assurance that the bidder will, upon acceptance of the bid, execute the necessary Contract with the Delhi Charter Township. No bid may be withdrawn after scheduled closing time for receiving bids for at least Sixty (60) days.

The successful bidder will be required to furnish satisfactory Performance, Labor and Material, and Maintenance and Guarantee Bonds.

The Delhi Charter Township reserves the right to reject all bids and to waive irregularities in bidding.

No Proposal will be received unless made on blanks furnished and delivered to the Township Clerk on or before 1:30 p.m., Local time, November 3, 2016.

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SECTION 00030

SCOPE OF WORK

The scope of this project is generally described as milling and paving the streets in the River Pointe Subdivision with minor curb and gutter repair and ADA sidewalk ramp replacement.

The pavement thickness varies within the subdivision, as shown in the soil borings. Where pavement depth is less than the 3.5” desired milling depth, aggregate base conditioning may be required to prepare for HMA placement. This project will also include minor structure adjustments with curb and gutter replacement near structures, as directed by the Engineer.

Contractor is responsible for working with residents to provide notice for access issues to driveways. Temporary traffic control measures needed for the safety of the workers and residents shall be the responsibility of the contractor.

Location map, typical sections and pavement cores attached.

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SECTION 00120
INSTRUCTIONS TO BIDDERS

SCOPE OF WORK

The work under this Contract shall consist of the furnishing of all labor, material, equipment, services, and all incidental items necessary to complete the project in accordance with the Contract Documents.

OBSERVATION OF SITE

Before submitting a Proposal, each bidder shall personally inspect the site of the proposed work to arrive at a clear understanding of the conditions under which the work is to be done.

He shall be held to have compared the premises with the Drawings and Specifications and to have satisfied himself as to the conditions of the premises, existing constructions, and any other conditions affecting the carrying out of the work, before delivery of his Proposal.

No allowance or extra consideration on behalf of the Bidder will subsequently be allowed by reason of error or oversight on the part of the Bidder or on account of interferences by the Owner's or by other Bidder's activities.

SOIL CONDITIONS

The Contractor, as such and as bidder, shall make his own determination as to soil and/or rock conditions and he shall complete the work in whatever material and under whatever conditions he may encounter or create, without extra cost to the Owner. This shall apply whether or not borings are shown on the Drawings.

All bidders conducting soil tests shall restore the area of their testing to original condition as closely as possible.

The Owner does not guarantee that the ground encountered during construction will conform with any boring information furnished herein.

The Owner and Hubbell, Roth & Clark, Inc. may have been involved in the design, observation, and/or construction of other underground projects in the area of the proposed construction. The observation reports, soil reports, and any soil information connected with these projects are available for construction observation and review by the prospective bidders.

PROPOSALS

Proposals will be received in accordance with the Invitation for Bids, and shall be submitted only on forms provided by the Engineer.

Proposals shall be enclosed in sealed envelopes marked with the name of the project and bidder and shall be delivered to the designated location on or before the bid time as specified in the Invitation for Bids.

Proposals shall be made in full conformity with all the conditions set forth in the drawings and in these specifications. Bids are firm and cannot be withdrawn for a period of 60 days after opening of the bids, unless otherwise specified in the Invitation for Bids.

COORDINATION AND SCHEDULE OF PROJECT

This contract will be held with Delhi Charter Township under a permit from Ingham County Road Department (ICRD). Hubbell, Roth & Clark, Inc. (HRC) will serve as an authorized agent representing the Township and will provide oversight on the project, including Soil Erosion and Sedimentation Control enforcement, including documentation. Once completed, the project will be turned over to ICRD for future maintenance.

The following schedule illustrates the bidding and award process for this project:

- ≡ Early October – Project is advertised for bid
- ≡ November 3, 2016 – Bid Opening
- ≡ December 6, 2016 – Delhi Township Board receives estimates and passes resolution to hold public hearing for the project
- ≡ December through January – Special Assessment Process
- ≡ February 2017 – Bond sale process begins
- ≡ April 2017 – Bond funds available, Notice to Proceed Issued, Construction Begins
- ≡ April-July 2017 – Construction of Project – HRC oversight
- ≡ September 2017 – Project close out and ICRD acceptance of road

NAME AND STATUS OF BIDDER

The name and legal status of the bidder, either as a corporation, partnership, or individual, shall be stated in the Proposal.

Anyone signing a Proposal as an agent of another or others, must submit with the Proposal, legal evidence of his authority to do so.

The place of residence of each bidder, or the office address and telephone number in the case of a firm or company, with County and State, must be given after his signature.

BIDDER'S QUALIFICATIONS

It is the intention of the Owner to award this Contract to a Bidder fully capable, both financially and with regard to experience to perform and complete the work in a satisfactory manner. If required by the Owner, each bidder under consideration may be required to furnish the Owner, within 48 hours at the Owner's request, the following information sworn to under oath by him:

1. Performance record.
2. The address and description of the bidder's plant and place of business.
3. Itemized list of equipment available for use on the project.

4. A description of any similar project which the bidder has constructed in a satisfactory manner.
5. A certified or authenticated financial statement dated within sixty days prior to the opening of bids. The Owner may require that any items of such statements be further verified.
6. A list of contracts on which the bidder is currently engaged.
7. Such additional information as will satisfy the Owner that the bidder is adequately prepared, in technical experience and otherwise, to fulfill the Contract.

EXPLANATION TO BIDDERS BY ADDENDUMS

Neither the Owner nor the Engineer will give verbal answers to inquiries, regarding the meaning of the Drawings or Specifications, or give verbal instructions, previous to the award of the Contract. Any verbal statements regarding same by any persons, previous to the award, shall be unauthoritative.

Explanations desired by bidders shall be requested of the Engineer in writing and, if explanations are necessary, a reply will be made in the form of an addendum, a copy of which will be forwarded to each bidder whose work is affected.

Addendums issued to bidders prior to date of receipt of proposals shall become a part of the Specifications, and all proposals shall include the work described in the addendums.

No inquiry received within 4 days of the date fixed for the opening of bids will be given consideration.

Failure of the Engineer to send, or of the bidder to receive, any such interpretations shall not relieve the bidder from obligation under his bid as submitted.

RIGHT TO ACCEPT, TO REJECT, AND TO WAIVE DEFECTS

The Owner reserves the right to accept any Proposal, to reject any or all Proposals, and to waive any defects or irregularity in the Proposal if it appears advantageous to the Owner to do so.

Each bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any bid.

TIME OF COMPLETION

The Owner and the individual citizens of the municipality affected by this project are vitally concerned with the prompt completion of the construction together with the cleanup and restoration of roads and lawns within the time allowed in the Proposal.

The Bidder shall use sufficient labor and equipment to complete and place in service all of the work being constructed within this Contract within the time specified in the Proposal. The surface cleanup shall follow closely behind construction with earth spoil removed from lawns and roads and any trenches neatly finished

by the end of each work day. Failure of the Bidder to comply with this type of workmanlike job will result in the suspension of construction operations until the cleanup is effected.

If the Bidder shall be unavoidably delayed in beginning or fulfilling this Contract by reason of excessive storms or floods, or by Acts of Providence, or by strikes, or by court injunction, or by stopping of the work by the Owner because of any emergency or public necessity, or by reason of alterations ordered by the Owner, the Bidder shall have no valid claim for damages on account of any cause or delay; but he shall in such case be entitled to such an extension of the above time limit herein, as the Engineer shall adjudge to be just and reasonable; provided, however, that formal claim for such extension shall be made in writing by the Bidder within a week after the date upon which such alleged cause or delay shall have occurred.

FAIR EMPLOYMENT PRACTICES

Section 4 of the Fair Employment Practices Act PA 1955, No. 251, provides:

Section 4. Every Contract to which the State or any of its political or civil subdivisions is a party shall contain a provision requiring the Bidder and his subcontractors not to discriminate against any employee or applicant for employment, to be employed in the performance of said contract, with respect to his hire, tenure, terms, conditions, or privileges of employment, or any matter directly or indirectly related to employment, because of his race, color, religion, national origin or ancestry. Breach of this covenant may be regarded as a material breach of the Contract.

Section 4A of the Act provides:

Section 4A. Every contract which the State or any of its political or civil subdivisions is a party shall contain a provision requiring the Bidder and his subcontractors not to discriminate against any employee or applicant for employment to be employed in the performance of such contract with respect to his hire, tenure, terms, conditions or privileges of employment or any matter directly or indirectly related to employment because of his age or sex, except where based on a bona fide occupational qualification.

END OF SECTION

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PROPOSAL
FOR
RIVER POINTE SPECIAL ASSESSMENT
ROAD RESURFACING
DELHI CHARTER TOWNSHIP
INGHAM COUNTY, MICHIGAN

Name DELHI CHARTER TOWNSHIP
2074 Aurelius Road
Holt, Michigan 48842

Bids Due: November 3, 2016
On or Before 1:30 pm, Local Time
HRC Job No. 20160615

Gentlemen:

Name of Bidder: _____

Address: _____

Date: _____ Telephone: _____ Fax: _____

The above, as bidder, hereby declares this bid is made in good faith without fraud or collusion with any persons bidding, and that he has examined the plans, specifications, and all other information referenced in the Instructions to Bidders, and is familiar with the location of the work described herein and is fully informed as to the nature of the work and the conditions relating to the performance of the Contract.

The bidder acknowledges that he has not received or relied upon any representations or warranties of any nature whatsoever from the Delhi Charter Township its agents or employees, as to any conditions to be encountered in accomplishing the work and that his bid is based solely upon the bidder's own independent judgment.

The above, as bidder, hereby certifies that he has examined the plans, specifications, and other data provided by the Owner for bidding purposes. Further, the undersigned certifies that he has reviewed the proposed construction methods and finds them acceptable for the conditions which he anticipates from the information provided for bidding.

The Bidder hereby declares that the he/she has inspected the site of work and further declares that no charges in addition to the Individual Unit Prices shall be made on account of any job circumstances or field conditions which were present and/or ascertainable prior to the bidding. In addition, The Contractor, as such and as Bidder, shall make his own determination as to existing soil conditions and he shall also complete the work under whatever conditions he may create by his own sequence of construction, construction methods, or other conditions he may create, at no additional cost to the Owner.

BASE BID

PAY ITEM CODE	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	ITEM COST
1500001	Mobilization, Max	LSUM	1.00	\$	\$
2040020	Curb and Gutter, Rem	Ft	150.00	\$	\$
2040055	Sidewalk, Rem	Syd	120.00	\$	\$
2047021	Surplus Material Delivery	Cyd	1500.00	\$	\$
2050016	Excavation, Earth	Cyd	350.00	\$	\$
2050041	Subgrade Undercutting, Type II	Cyd	10.00	\$	\$
2087050	Erosion Control, Inlet Protection, Fabric Bag	Ea	40.00	\$	\$
3020050	Aggregate Base, Conditioning	Syd	11074.00	\$	\$
4030005	Dr Structure Cover, Adj, Case 1	Ea	32.00	\$	\$
5010002	Cold Milling HMA Surface	Syd	17674.00	\$	\$
5010033	HMA, 13A	Ton	3403.00	\$	\$
8020016	Curb and Gutter, Conc, Det B2	Ft	200.00	\$	\$
8030044	Sidewalk, Conc, 4 inch	Sft	1080.00	\$	\$
8037010	Detectable Warning Surface, Cast Iron	Sft	40.00	\$	\$
8037010	Sidewalk Ramp, ADA, Modified	Sft	1250.00	\$	\$
8120022	Barricade, Type III, High Intensity, Lighted, Furn	Ea	4.00	\$	\$
8120023	Barricade, Type III, High Intensity, Lighted, Oper	Ea	4.00	\$	\$
8120170	Minor Traf Devices	LSUM	1.00	\$	\$
8120250	Plastic Drum, High Intensity, Furn	Ea	50.00	\$	\$
8120251	Plastic Drum, High Intensity, Oper	Ea	50.00	\$	\$
8167011	Slope Restoration, Type I	Syd	100.00	\$	\$
8230431	Gate Box, Adj, Case 1	Ea	4.00	\$	\$
Project Total:					\$

The Owner, at his sole discretion, reserves the right to award to the Bidder who, in the sole determination of the Owner, will best serve the interest of the Owner. The Owner reserves the right to accept any bid, to reject any or all bids, to waive any and all informalities involving price, time, or changes in the work, and to negotiate contract terms with the successful Bidder, and the right to disregard all nonconforming, nonresponsive, unbalanced or conditional bids. However, it is the intention of the Owner to award to the low total bid to one bidder. Also, the Owner reserves the right to reject the bid of any Bidder if the Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the bid is not responsive or the Bidder is unqualified, of doubtful financial ability, or fails to meet any other pertinent standard or criteria established by the Owner.

Each bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any bid.

TAXES

The Bidder affirms that all applicable Federal, State and Local taxes of whatever character and description are included in all prices stated in this Form of Proposal.

ADDENDA

The Bidder acknowledges the following Addenda, covering revisions to the drawings or specifications and the cost, if any, of such revision has been included in the quoted proposal:

Addendum No. _____	Dated _____
Addendum No. _____	Dated _____
Addendum No. _____	Dated _____
Addendum No. _____	Dated _____

FEES

The Bidder shall refer to the General Conditions for allowable Fees for additional work performed, upon Owner's written authorization, by Bidder's own forces and/or for additional work, upon Owner's written authorization, by Bidder's subcontractors.

TIME OF COMPLETION

The Bidder hereby agrees to furnish the required Bonds, Insurance Certificates, and Policies within ten (10) days after acceptance of this Proposal.

Final Completion with all clean-up and punch-list items shall be completed within 25 work days from the issuance of the signed contract.

LIQUIDATED DAMAGES

Time is of the essence for completion of this project. The Bidder guarantees that he/she can and will complete the work within the time limit stated hereinbefore or within the time as extended as provided elsewhere in the Specifications. Inasmuch as the damage and loss to the Owner which will result from the failure of the Bidder to complete the work within the stipulated time, will be most difficult or impossible to accurately determine, it is mutually agreed that the damages to the Owner for such delay and failure on the part of the Bidder shall be liquidated in the amount of Five Hundred Dollars (\$500.00), for each and every work day by which the Bidder shall fail to complete the work or any part thereof within the provisions hereof, and such liquidated damages shall not be considered as a penalty.

The Owner will deduct and retain out of any money due or to become due hereunder the amount of the liquidated damages, and in case those amounts are less than the amount of actual liquidated damages, the Bidder shall pay the difference upon demand of the Owner.

We understand that liquidated damages may be assessed should we fail to meet the stipulated completion dates. Specifically, liquidated damages will be assessed daily beginning 25 work days from issuance of

executed contract, until such a time that Substantial Completion is achieved and further if all work is not completed by the Final Completion Date.

BIDS TO REMAIN FIRM

The price stated in this Proposal shall be guaranteed for a period of not less than 180 days from the bid due date and if authorized to proceed within that period, the bidder agrees to complete the work covered by the Proposal at said price.

If this Proposal is accepted by the Owner and the undersigned shall fail to contract as aforesaid and to furnish the required surety bonds within fifteen (15) days after being notified of the acceptance of their bid, then the undersigned shall be considered to have abandoned the contract, and the Certified Check, Cashier's Check or Bid Bond accompanying this Proposal shall be forfeited to the Delhi Charter Township.

If the undersigned enters into the contract in accordance with his/her proposal, or if his/her proposal is not accepted, then the accompanying bid guarantee shall be returned to the undersigned.

Company Name: _____

Signature: _____ Title: _____

Address: _____

County: _____ State: _____

Telephone No.: _____ Fax No.: _____

Email Address: _____

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LEGAL STATUS OF BIDDER

This Bid is submittal in the name of:

(Print) _____

The undersigned hereby designates below his/her business address to which all notices, directions or other communications may be served or mailed:

Street _____

City _____

State _____ Zip Code _____

The undersigned hereby declares that he/she has legal status checked below:

- INDIVIDUAL
- INDIVIDUAL DOING BUSINESS UNDER AN ASSUMED NAME
- CO-PARTNERSHIP
The Assumed Name of the Co-Partnership is registered in the County of _____, Michigan
- CORPORATION INCORPORATED UNDER THE LAWS OF THE STATE OF _____
_____. The Corporation is
- LICENSED TO DO BUSINESS IN MICHIGAN
- NOT NOW LICENSED TO DO BUSINESS IN MICHIGAN

The name, titles, and home addresses of all persons who are officers or partners in the organization are as follows:

A corporation duly organized and doing business under the laws of the State of _____

NAME AND TITLE	HOME ADDRESS
_____	_____
_____	_____
_____	_____

Signed and Sealed this _____ day of _____, 20__.

By (Signature)

Printed Name of Signer

Title

CONTRACT

ARTICLES OF AGREEMENT, Made and entered into this _____

day of _____, 20__, by and between

DELHI CHARTER TOWNSHIP (A Michigan Municipal Corporation),
2074 AURELIUS ROAD
HOLT, MI 48842

Party of the first part, hereinafter called the Owner, and _____

in the _____, County of _____

and State of Michigan, Party of the second part, hereinafter called the Contractor, to wit:

Item 1) That all proposals, specifications, plans, bonds, etc., hereto attached or herein referred to, shall be and are made a part of this agreement and contract.

Item 2) That the Contractor, under penalty of bond attached, shall furnish all labor, materials, and appliances necessary, and do all the work as set forth in the proposal.

For the construction of the River Pointe Special Assessment District Road Resurfacing

HRC Job No. 20160615

according to the specifications, plans, etc., which have been made a part of this contract in a manner, time, and place, all and singular, as herein set forth.

IN CONSIDERATION WHEREOF, said Party of the First Part, for it and its successors, promises and agrees to pay to said Party of the Second Part, the sum of:

_____ Dollars (\$ _____)

as provided in the attached proposal, all in the time and manner indicated in the specifications.

For the faithful performance of all and singular of the stipulations, terms and conditions of this Agreement, said parties respectfully bind themselves, their successors, heirs, executors, administrators and assigns.

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IN WITNESS WHEREOF, Said Parties have signed this Contract, in duplicate, on the date first above written.

WITNESS:

DELHI CHARTER TOWNSHIP
(A Michigan Municipal Corporation)
Party of the First Part

By: _____

WITNESS:

(A Michigan Corporation)
Party of the Second Part

By: _____

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PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned _____

_____ as Principal,

and _____

of _____ as Sureties,

are hereby held and firmly bound unto the "Delhi Charter Township"

in the full and just sum of _____ Dollars

(\$ _____) for the payment of which well and truly to be made, we hereby jointly and severally

bind ourselves, our heirs, executors, administrators, successors and assigns.

Signed and sealed this _____ day of _____ 20__.

The condition of the above obligation is such that if said _____

shall well and faithfully do and perform the things agreed by _____ to be done and performed by the annexed contract, according to the terms thereof, then this obligation shall be void; otherwise, the same shall remain in full force and effect.

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It is mutually understood and agreed that in cases where changes are required, either by order of the Engineer, or Owner, or by mutual agreement, such changes or changes shall not modify, discharge or release this bond.

(A Michigan Corporation)

(Seal)

(Seal)

Principal

(Seal)

(Seal)

Surety

Signed, Sealed and Delivered
in the Presence of:

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LABOR AND MATERIAL BOND

KNOW ALL MEN BY THESE PRESENTS, That we _____

of _____ hereinafter called the Principal,

and _____

hereinafter called the Surety, are held and firmly bound unto DELHI CHARTER TOWNSHIP

in the sum of _____

_____ Dollars (\$ _____)

to the payment whereof, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Sealed with our seals and dated this _____ day of

_____, A.D., 20__.

WHEREAS, The above named Principal has entered into a contract with _____

DELHI CHARTER TOWNSHIP, 2074 AURELIUS ROAD, HOLT, MICHIGAN 48842

dated the _____ day of _____, A.D., 20__, wherein said Principal has covenanted and agreed as follows, to-wit:

To furnish all the labor and material _____

RIVER POINTE SPECIAL ASSESSMENT DISTRICT ROAD RESURFACING

HRC Job No. 20160615

AND WHEREAS, This bond is given in compliance with and subject to the provisions of Act No. 213 of the Public Acts of Michigan, for the year 1963, and as may be amended by other Public Acts of Michigan.

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NOW, THEREFORE, The condition of this obligation is such that if payment shall be made by the Principal to any Subcontractor or by him or any Subcontractor as the same may become due and payable of all indebtedness which may arise from him to a Subcontractor or party performing labor or furnishing materials or supplies or any Subcontractor to any person, firm or corporation on account of any labor performed or materials or supplies furnished in the performance of said contract, then this obligation shall be void; otherwise, the same shall be in full force and effect.

AND PROVIDED, That any alterations which may be made in the terms of said contract, or in the work to be done under it, or the giving by the party of the first part to said contract, of any extension of time for the performance of said contract, or any other forbearance on the part of either party to the other, shall not in any way release the Principal and the Surety, or either of them, their heirs, executors, administrators, successors or assigns from any liability hereunder, notice to the Surety of any alteration, extension, or forbearance being hereby waived.

(A Michigan Corporation) _____

By: _____

Principal

Surety

Signed, Sealed and Delivered
in the Presence of:

MAINTENANCE AND GUARANTEE BOND

KNOW ALL MEN BY THESE PRESENTS, That we _____

as Principal, and _____

are held and firmly bound unto DELHI CHARTER TOWNSHIP

in the sum of _____ Dollars (\$_____)

good and lawful money of the United States of America, to be paid to the DELHI CHARTER TOWNSHIP
its legal representatives and assigns, and we bind ourselves, our heirs, executors, administrators, successors
and assigns, and each and every one of them jointly and severally, firmly by these presents.

SEALED WITH OUR SEALS AND DATED THIS _____ DAY OF _____ A.D., 20____.

WHEREAS, the above named principal has entered into a certain written contract with the _____
DELHI CHARTER TOWNSHIP, 2074 AURELIUS ROAD, HOLT, MICHIGAN 48842

dated this ___ day of _____ A.D., 20__, where in the said principal covenanted and agreed as follows, to wit:

for the: RIVER POINTE SPECIAL ASSESSMENT DISTRICT ROAD RESURFACING

HRC Job No. 201600615

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that by and under such
contract, the above named principal has agreed with the DELHI CHARTER TOWNSHIP that for a period of
one (1) year from the date of approval of the Final Estimate, to keep in good order and repair any defect in all
the work done under said contract, either by the principal, his subcontractors, or his material suppliers, that
may develop during said period due to improper materials, defective equipment, workmanship or
arrangements, and any other work affected in making good such imperfections, all to be made good without
expense to the Owner, (excepting only such part or parts of said work as may have been disturbed without the
consent or approval of the principal after the final acceptance of the work), and whenever directed so to do by
the Owner, by notice served in writing, either personally or by mail, on the principal at _____

its legal representatives, or successors, or on the surety at _____

to proceed at once to make such repairs as directed by the Owner and in case of failure to do so within one (1) week from the date of service of such notice, or within reasonable time not less than one (1) week, as shall be fixed in said notice, then the Owner shall have the right to purchase such materials and employ such labor and equipment as may be necessary for the purpose, and to undertake, do and make such repairs, and charge the expense thereof to, and be fully reimbursed for same from said principal or surety. If any repair is necessary to be made at once to protect life and property, the Owner may take immediate steps to repair or barricade such defects without notice to the contractor. In such case the Owner shall not be held to obtain the lowest figures for the doing of the work, or any part thereof, but all sums actually paid therefor shall be charged to the principal or surety. In this connection the judgment of the Owner is final and conclusive.

If the principal for a period of one (1) year from the date of approval of a Final Estimate, shall keep the work so constructed under the contract in good order and repair, excepting only such parts of said work which have been disturbed without the consent or approval of the principal after the final acceptance of same, and whenever notice is given as hereinbefore specified, at once proceed to make the repair as the notice directs, or reimburse the Owner for any expenses incurred by it in making such repairs should the principal or surety fail to do so, then the above obligation shall be void; otherwise, it will remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed by their respective authorized officers this _____ day of _____, 20__.

Signed, Sealed and Delivered
in the Presence of:

"Principal"

(L.S.)

Witness

(L.S.)

Witness

"Surety"

(L.S.)

Witness

GENERAL CONDITIONS
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GENERAL CONDITIONS

1. CONTRACT DOCUMENTS

The original and three copies of the Contract shall be signed by the Owner and the Contractor, unless otherwise required.

The work under this Contract shall consist of the items listed in the proposal, including all incidentals necessary to fully complete the project in accordance with the contract Documents. The Contract documents shall consist of the Advertisement, Instructions to Bidders, Proposal, Specifications, General Conditions, General Supplementary Conditions, Contract, Bonds and Contract Drawings.

2. CONTRACT DRAWINGS AND SPECIFICATIONS

The work to be done is shown on the accompanying set of original drawings prepared by Hubbell, Roth & Clark, Inc., Consulting Engineers, Bloomfield Hills, Michigan, and are hereby made a part of this Contract, it being mutually understood and agreed that when taken together, the drawings and contract documents, including the specifications and the general conditions, are complementary, and what is called for by any one shall be binding as if called for by all. The intent of the Contract documents is to include in the contract price the cost of all labor and materials, water, fuel, tools, plant, equipment, light, transportation, and all other expenses as may be necessary for the proper execution and completion of the work.

These original drawings may be supplemented by other drawings furnished by the contractor and approved by the Engineer or supplied to the Contractor by the Engineer during the progress of the work as he may deem to be necessary or expedient. All such supplementary contract drawings or instructions are intended to be consistent with the Contract Documents, true developments thereof and reasonably inferable therefrom. Therefore, no extra charge will be allowed on a claim that particular supplemental contract drawings or instructions differed from the Contract Documents, incurring extra work, unless the Contractor has first brought the matter, in writing, to the Engineer's attention for proper adjustment before starting on the work covered by such and has received from the Engineer an order in writing to so proceed.

These original and supplementary drawings constitute the drawings according to which the work is to be done. The Contractor shall keep at the site of the work an approved or conformed copy of all drawings and specifications and shall at all times give the Engineer or Owner access thereto.

In case any inconsistency, omission or conflict shall be discovered in either specifications or drawings, or if in any place, the meaning of either or both shall be obscure, or uncertain, or in dispute, the Engineer shall decide as to the true intent and his decision shall be final and binding.

3. ENGINEER'S STATUS

The Engineer shall furnish consultation and advice to the Owner during construction. He may advise the Owner to stop the work whenever such stoppage may be necessary to insure that the finished work will be in accordance with the plans and specifications. He may advise the Owner to reject all work

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and material which do not conform to the drawings and specifications. The engineer may stop work only under the written direction of the owner.

4. CONSTRUCTION OBSERVER STATUS

The Owner may appoint on the job construction observer(s) who shall be under the direction of the Engineer. The construction observer on the work will inform the Engineer as to the progress of the work, the manner in which it is being done, and the quality of the materials being used. The construction observer will call to the attention of the Contractor any failure to follow the drawings and specifications that he may observe. The construction observer shall advise the Engineer to reject materials suspend the work until any questions on the performance of the work can be referred to and decided by the Owner. The construction observer shall have no authority to determine the means and methods used to complete the work, direct the Contractor's work or workmen, to supervise the Contractor's operations, to stop work on the project or to change the Contract Drawings or Specifications.

In no instance shall any action or omission on the part of the construction observer release the Contractor of the responsibility of completing the work in accordance with the drawings, specifications and/or, municipal ordinances or established prior practices of the owner, in the municipality in which the project resides.

5. CONTRACTOR'S RESPONSIBILITY

The Contractor shall assume full responsibility for the work, specifically including jobsite safety, and take all precautions for preventing injuries to persons and property on or about the work; shall bear all losses resulting to him on account of the amount or character of the work or because the conditions under which the work is done are different, or because the nature of the ground in which the work is done is different from what was estimated or expected, or on account of the weather, floods, elements or other causes, and he shall assume the defense and save harmless the Owner, the Engineer and their individual officers and agents from all claims relating to labor provided and materials furnished for the work; to inventions, patents, and patent rights used in doing the work; to injuries to any persons or property received or sustained by or from the Contractor, his agents or employees in doing the work or arising out of the work performed or to be performed; and to any act, or neglect of the Contractor, his agents or employees.

The mention of any specific duty or liability of the contractor in this or in any part of the Contract documents shall not be construed as a limitation or restriction upon any general liability or duty imposed on the contractor by the Contract Documents.

6. PERMITS AND REGULATIONS

The Contractor shall secure, at no cost to the Owner, all permits and licenses necessary for the prosecution of the work. The Contractor shall keep himself fully informed of all laws, ordinances, and regulations in any manner affecting those engaged or employed in the work, or the materials used in the work, or in any way affecting the conduct of the work, and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over the same.

He shall at all times observe and comply with, and shall cause all his agents and employees to observe and comply with all existing and future laws, ordinances, regulations, orders, and decrees. Provided that if the drawings and specifications are at variance therewith, the Contractor shall promptly notify the Engineer in writing and any necessary changes shall be adjusted as provided in the Contract Documents.

7. SUBCONTRACTS

The Contractor shall not sublet, assign, or transfer this Contract or any portion thereof or any payments due him thereunder, without the written consent of the Owner.

Assignment or subletting the whole or any portion of this contract shall not operate to release the contractor or his bondsmen hereunder from any of the contract obligations.

The Contractor shall, as soon as practicable after the signing of the Contract, notify the Owner in writing of the names of subcontractors proposed for the work and shall not employ any that the Owner may object to as incompetent or unfit.

If the Contractor shall cause any part of the work under this Contract to be performed by a subcontractor, the provisions of this Contract shall apply to such subcontractor and his officers and employees in all respects as if he and they were employees of the Contractor, and the Contractor shall not be in any manner thereby relieved from his obligation and liabilities; and the work and materials furnished by the subcontractor shall be subject to the same provisions as if furnished by the Contractor.

8. INFORMATION BY THE CONTRACTOR

The Contractor shall submit to the Engineer full information as to the materials, equipment, and arrangements which the Contractor proposes to furnish. This information shall be complete to the extent that the Engineer may intelligently judge if the proposed materials, equipment, and arrangements will meet the contract requirements.

Prior to the approval of materials, equipment, and arrangements by the Engineer based on the information submitted by the Contractor, any work done by the Contractor shall be at his own risk.

The approval of information covering materials, equipment, and arrangements by the Engineer shall in no way release the Contractor from his responsibility for the proper design, installation, and performance of any material, equipment, or arrangement, or from his liability to replace same should it prove defective.

9. GENERAL REQUIREMENTS FOR MATERIALS & WORKMANSHIP

In the specifications where a particular material or piece of equipment is specified by reference to some particular make or type, or equal, it is not the intent to limit competition but to set up by such reference a standard of quality most easily understood and defined. If materials or equipment of other make or type than that specified by name are offered by the Contractor, they will be given full consideration by the Engineer and the Engineer's decision will be final as to whether the materials or equipment offered are equal to those specified.

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Unless otherwise stipulated in the specifications, all equipment, materials, and articles incorporated in the work covered by this Contract are to be new and of the best grade of their respective kinds for the purpose. The Contractor shall, if required, furnish such evidence as to kinds and quality of materials as the Engineer may require.

The Contractor shall furnish suitable tools and building appliances and employ competent labor to perform the work to be done, and any labor or tools or appliances that shall not, in the judgment of the Engineer, be suitable or competent to produce this result may be ordered from the work by the Owner, at the advice of the Engineer, and such labor or tools or appliances shall be substituted therefor by the Contractor as will meet with the approval of the Engineer/Owner.

If not otherwise provided, material or work called for in this contract shall be furnished and performed in accordance with well known established practice and standards recognized by architects, engineers and the trade.

10. TESTING AND SAMPLING

Where called for in the specifications, samples of materials in the quantity named shall be submitted to the Engineer for approval. Where tests are required they shall be made at the expense of the Contractor, except as otherwise called for in the specifications. For materials covered by ASTM or Federal Specifications, unless otherwise stipulated, the required tests are to be made by the manufacturer and his certificate therefor submitted to the Engineer.

11. LINES AND GRADES

All lines and grades shall be established by the Contractor. Establishment of principal reference lines, transfer of line and grade into facilities, location of all piping and equipment shall be the responsibility of the Contractor.

12. PROTECTION OF WORK AND PROPERTY

The Contractor shall continuously maintain adequate protection of all his work from damage and shall protect all public property and private abutting property from injury or loss arising in connection with this Contract. He shall, without delay, make good any such damage, injury or loss, and shall defend and save the Owner and Engineer harmless from all such damages or injuries occurring because of his work. He shall furnish and maintain all passageways, barricades, guard fences, lights and danger signals, provide watchmen and other facilities for protection required by public authority or by local conditions, all at no additional cost to the Owner.

In an emergency affecting the safety of life or of the work or of adjoining property, the Contractor, without special instruction or authorization from the Owner, shall take such action as may be necessary to prevent such threatened damage, injury or loss.

The Contractor shall assume full responsibility of loss or damage to the work during the entire construction period resulting from caving earth and from storms, floods, frosts, and other adverse weather conditions, and from all other causes whatsoever, not directly due to the acts or neglect of the

Owner, including fire, vandalism and malicious mischief, and shall turn the finished work over to the Owner in good condition and repair, at the time of the final estimate.

13. RESPONSIBILITY FOR ADJOINING STRUCTURES & TREES

The Contractor shall assume full responsibilities for the protection of all pavements, curbs, bridges, railroads, poles and any other surface structures and all water mains, sewers, telephone, gas mains, and other underground services and structures along the near the work which maybe affected by his operations, and shall indemnify, defend and save harmless the Owner against all damages or alleged damages to any such structure arising out of his work. The Contractor shall bear the cost of repair or replacement of any such structure damaged as a result of his operations.

No trees or shrubbery of any kind shall be removed or destroyed by the Contractor without the written permission of the Owner, and the Contractor will be held fully responsible for any damages caused by his work to adjoining trees and shrubs. Ample precautions shall be taken by the Contractor to protect such trees and shrubs as are to remain in place by surrounding them with fences or other protection before construction work begins. Shrubby that has to be removed shall be preserved and replaced in a manner acceptable to the Owner.

14. MAINTENANCE OF SERVICE

Drainage through existing sewers and drains shall be maintained at all times during construction and all nearby gutters shall be kept open for drainage. Where existing sewers are encountered in the line of the work which interfere with the construction, the flow in the sewers, including both dry weather flow and storm flow, shall be maintained.

All detours shown on the drawings or required because of the Contractors operations shall be built and maintained at the Contractor's expense.

Safety precautions shall be followed at all street openings, substantial barricades shall be erected as deemed necessary to prevent accidents to vehicular or pedestrian traffic and red flags by day and yellow lights by night shall be diligently posted by the Contractor at all points of possible danger. In case detours or other traffic instructions are necessary, suitable warning or direction signs shall be erected and maintained by the Contractor. Contractor shall be responsible for insuring that all barricades, flags, lights, etc. are in place and functional at the end of each day.

During the progress of the work, the Contractor shall accommodate both vehicular and foot traffic and shall provide free access to fire hydrants, water and gas valves. Except as otherwise specified herein or as noted on the drawings, street intersections may be blocked but one-half at a time, and the contractor shall lay and maintain temporary driveways, bridges and crossings, such as in the opinion of the Owner are necessary to reasonably accommodate the public.

In the event of the Contractor's failure to comply with these provisions, the Owner may with or without notice, cause the same to be done; and will deduct the cost of such work from any money due or to become due the Contractor under this Contract, but the performance of such work by the Owner or at his instance, shall serve in no way to release the Contractor from his general or particular liability for the safety of the public or the work.

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15. STORAGE OF MATERIALS

Materials and equipment distributed, stored and placed upon or near the site of the work shall at all times be so disposed as not to interfere with work being prosecuted by other contractors in the employ of the Owner, or with street drainage, or with fire hydrants or with access thereto, and not to hinder, any more than may be necessary, the ordinary traffic of the street.

16. RELATION TO OTHER CONTRACTORS

The Contractor shall so conduct his operations as not to interfere with or injure the work of other contractors or workmen employed on adjoining or related work and he shall promptly make good any injury or damage which may be done to such work by him or his employees or his agent. Should a contract for adjoining work be awarded to another contractor, and should the work of one of these contracts interfere with that of the other, the Owner shall decide which contractor shall cease work for the time being and which shall continue or whether the work in both contracts shall continue at the same time and in what manner.

17. CONTRACTOR'S SUPERVISION AND ORIGINATION

The work under this Contract shall be under the direct charge and direction of the Contractor. The Contractor shall give efficient superintendence to the work, using his best skill and attention. The Contractor shall at all times keep on the site of the work, during its progress, a competent superintendent and any and all necessary foremen and assistants. The superintendent shall represent and have full authority to act for the Contractor in the latter's absence, and all directions given to him shall be as binding as if given to the Contractor. On written request in each case, all such directions will be confirmed in writing to the Contractor.

The Contractor shall employ only competent, efficient workmen and shall not use on the work any unfit person or one not skilled in the work assigned to him, and he shall at all times enforce strict discipline and good order among his employees. Whenever the Owner shall notify the Contractor, in writing, that any man on the work is, in the opinion of the Owner, careless, incompetent, disorderly, or otherwise unsatisfactory, such man shall be discharged from work and shall not again be employed on it except with the written consent of the Owner.

The Contractor shall establish and maintain an office on the site of the work or at some convenient point adjacent thereto, during the continuance of this Contract and shall have at all times during working hours, a representative authorized to receive and execute any and all orders, when given by the Engineer; and such order, when given out and received by said representative shall be deemed to have been given to and received by the Contractor. Copies of the drawings and specifications shall at all times be kept on file by the Contractor at readily accessible points near the work.

18. FACILITIES FOR INSPECTION

The Owner, the Engineer, and their employees shall at all times have the right to enter upon the premises upon which work is being done, or upon which material is stored for the work under this Contract, and to inspect the work under this Contract, and to inspect the work and materials, and to ascertain whether or not the construction is carried out in accordance with this Contract, and the

Contractor shall furnish all reasonable facilities, and give ample time for such inspection. All materials shall be subject to mill and shop inspection, as provided in the specifications.

The Contractor shall promptly remove from the premises all materials rejected by the Engineer as failing to meet contract requirements, whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute his own work in accordance with the Contractor and without expense to the Owner and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

If the Contractor does not remove such rejected work and materials promptly, after written notice, the Owner may remove them and store the material at the expense of the Contractor.

The Engineer has the right to have removed by the Contractor such portion of the work as he may deem necessary for the discovery of improper work or material, and the Contractor must restore such work at his own expense if improperly done and at the expense of the party of the first part if found to be in proper condition. Any work which, during its progress and before its final acceptance, may become damaged from any cause, shall be removed and replaced by good, satisfactory work at the Contractor's expense.

19. SHOP DRAWINGS

Where called for in the specifications, the Contractor shall submit to the Engineer for review copies of details, specifications, cuts, and drawings of such equipment and structural work as may be required. The Contractor shall make any changes or alterations required by the Engineer and re-submit same without delay. The review of the Engineer shall not relieve the Contractor of responsibility for errors in the drawings, as the Engineer's checking is intended to cover compliance with the drawings and specifications and not to enter into every detail of the shop work. No work shall be undertaken until the Engineer has reviewed the shop drawings.

20. ERRORS AND CORRECTIONS IN DRAWINGS AND SPECIFICATIONS

The Contractor shall examine and check all drawings and specifications furnished by the Owner for dimensions, quantities, and coordination with other parts of the work on this or related contracts and shall notify, in writing, the Engineer of any and all errors, omissions, or discrepancies he may discover by examining and checking of same. The Contractor shall not be allowed to take advantage of any such error, omission, or discrepancy, as full instructions will be furnished by the Engineer, and the Contractor shall carry out such instructions as if originally specified. In no case shall be Contractor proceed with the work in uncertainty, and any work done by the Contractor after the discovery of any error, omission, or discrepancy, until authorized, will be at the Contractor's risk and responsibility. The work is to be made complete and to the satisfaction of the Engineer, notwithstanding any minor omissions in the specifications or drawings.

21. CHANGES IN THE WORK

The Owner shall have the right to require, by written order, changes in, additions to, or deductions from the work required by the contractor documents; provided that if changes, additions, or deductions are made, the general character of the work as a whole is not changed thereby. Adjustments in the contract price, if any, because of any change, addition, or deduction in the work

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shall be determined as hereinafter provided, and any claim for extension of time for completion shall be adjusted at the time of ordering the change, addition, or deduction. No claim for change, addition, or deduction, or adjustment of price, or extension of time for completion thereof, shall be made or allowed unless done in pursuance of a written order from the Owner specifically authorizing such change, addition, or deduction. Drawings without a written order shall not be considered such authority. Written notice of such claims shall be made to the Engineer before the commencement of work. Where the written notice of such claims shall be made to the Engineer before the commencement of work. Where the written order diminished the quantity of work to be done, this shall not constitute a basis for a claim for damages or anticipated profits on the work that may be deleted.

Under circumstances which, in the judgment of the Engineer, so necessitate, the Engineer shall have authority to require, by written order, changes in, additions to, or deductions from the work. Such written order by the Engineer shall be subject to later confirmation by the Owner when the extent and cost have been established.

It is understood and agreed that in case any change in, addition to, or deduction from the work is required, said change shall in no way invalidate the Contract and shall not affect or discharge the bonds furnished by the Contractor.

The Contractor, without extra charge, shall make such slight alternations as may be necessary to make adjustable parts fit to fixed parts, leaving all complete and in proper shape when done.

22. BASIS FOR DETERMINING COST OF CHANGES IN THE WORK

Adjustments, if any, in the contract price by reason of change in the work shall be limited to the amount specified in the written order authorizing the change in the work. Adjustments shall be determined by one or more of the following methods, the Owner reserving the right to select the method or methods at the time the written order is issued:

- A. An acceptable lump sum proposal: To facilitate checking and acceptance, the proposal shall be itemized with quantities and prices given for the various items.
- B. Unit Prices: The unit prices may be the "Unit Price" set in the Agreement, or fixed by subsequent agreement between the Owner and the Contractor.
- C. On a cost-plus-limited basis not to exceed a specified maximum limit of cost:
- D. "COST" as herein used shall be the actual and necessary cost incurred by the Contractor by reasons of the change in the work for:
 - 1. Labor
 - 2. Materials
 - 3. Equipment Rental
 - 4. Insurance Premium
 - 5. Labor costs shall be the amount shown on the Contractor's payroll with payroll taxes added when such taxes can be shown to have been incurred. In no case shall be rates

charged for labor exceed the rates paid by the Contractor for the same class of labor employed by him to perform work under the regular items of the Contract.

6. Material costs shall be the net price paid for material delivered to the site of the work. If any material previously required is omitted by the written order of the Owner after it has been delivered to or partially worked on by the Contractor and consequently will not retain its full value for other uses, the Contractor shall be allowed the actual cost of the omitted material less a fair market value of the material as determined by the Owner.
7. Equipment Rental shall be the actual additional costs incurred for necessary equipment. Costs shall not be allowed in excess of usual rental charged in the area for similar equipment of like size and condition, including the cost of necessary supplies and repairs for operating the equipment. No costs, however, shall be allowed for the use of equipment on the site in connection with other work unless its use incurs actual and additional costs to the Contractor. If equipment not on the site is required for the change in the work only, the cost of transporting such equipment to and from the site shall be allowed.
8. Insurance Premium shall be limited to those based on labor payroll and to the types of insurance required by the Contract. The amount allowed shall be limited to the net costs incurred as determined from the labor payroll covering the work. The Contractor shall, upon request of the Owner, submit verification of the applicable insurance rates and premium computations.

"PLUS" as herein is defined as a percentage to be added to the items of "Cost" to cover superintendence, use of ordinary tools, bonds, overhead expense and profit. The percentage shall not exceed 15 percent on work done entirely by the Contractor and shall not exceed an aggregate total of 20 percent on work done by a subcontractor.

"SPECIFIED MAXIMUM LIMIT OF COST" is the amount stated in the written order of the Owner authorizing the change in the work. The amount to be allowed the Contractor shall be the "cost" and "plus" the percentage or the specified maximum, whichever is the lesser amount.

The Contractor shall keep complete, accurate, daily record of the net actual cost of changes in the work, and shall present such information in such form and at such times as the Owner may request.

23. PATENTS

The Contractor shall pay all royalties and license fees and shall hold and save the Owner and his agent harmless from all liability of any nature or kind, including cost and expenses, for, or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the Contract, including its use by the owner, unless otherwise specifically stipulated in the Contract Documents. In this respect, the Contractor shall defend all suits or claims for infringement of any patent or license right.

In the event that any claim, suit, or action at law or in equity of any kind, whatsoever, is brought against the Owner, involving any such patents or license rights, then the Owner shall have the right to,

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and may, retain from any money due or to become due to the Contractor, such sufficient sum as is considered necessary to protect said Owner, against loss, and such sum maybe retained by the Owner until such claim or suit shall have been settled and satisfactory evidence to that effect shall have been furnished the Owner.

24. "OR EQUAL" CLAUSE

Whenever, in any of the Contract Documents, material, or equipment is defined by describing a proprietary product, or by using the name of a manufacturer or vendor, the term "or equal," if not inserted, shall be implied. The specific article, material, or equipment mentioned shall be understood as indicating the type, function, minimum standard of design, efficiency, and quality desired and shall not be construed in such a manner as to exclude manufacturers' products of comparable quality, design and efficiency. The Contractor shall comply with the requirements of the Contract Documents relative to the Owner's approval of materials and equipment before they are incorporated in the work.

25. CLEANING UP

The Contractor shall remove at his own expense from the Owner's property and from all public and private property, all temporary structures, rubbish and waste materials resulting from his operations. This requirement shall not apply to property used for permanent disposal of rubbish or waste materials in accordance with permission of such disposal granted to the Contractor by the Owner thereof.

26. USE OF COMPLETE PORTIONS OF THE WORK

The Owner may, at any time during progress of the work, after written notice to the Contractor, take over and place in service any completed portions of the work which are ready for service, although the entire work of the Contract is not fully completed, and notwithstanding the time for completion of the entire work or such portion may not have expired. In such event, the Contractor will be relieved of further work on or maintenance of said portion, except as covered by his guarantee of same.

27. PAYMENT WITHHELD

The Owner may withhold or, on account of subsequently discovered evidence, nullify the whole or a part of any certificate for progress payment to such extent as may be necessary to protect itself from loss on account of:

- A. Defective work not remedied.
- B. Claims filled or reasonable evidence indicating probable filing of claims.
- C. Failure of the contractor to make payments properly to subcontractors or for material or labor.
- D. A reasonable doubt that the Contract can be completed for the balance then unpaid.
- E. Damage to another contractor.

When the above grounds are removed, payment shall be made for amounts withheld because of them.

28. CONTRACTOR'S RIGHT TO STOP WORK

If the work should be stopped under an order of any court, or other public authority for a period of three months, through no act or fault of the contractor or of anyone employed by him, or if the Owner should fail to pay to the Contractor within sixty days of its maturity and presentation any sum certified by the Engineer, provided no appeal is taken, the contractor may, upon seven days written notice to the Owner and the Engineer, stop work or terminate this Contract,, and shall receive from the Owner payment in full for all work executed, as determined from the prices contained in the approved detailed estimate as computed by the Engineer, but no claim for extra compensation or damages shall be made or allowed because of such termination of the Contract.

29. FAIR EMPLOYMENT PRACTICES ACT

The Contractor agrees that neither he nor his subcontractor will discriminate against any employee or applicant for employment, to be employed in the performance of this Contract, with respect to his hire, tenure, terms, conditions, or privileges of employment, or any matter directly or indirectly related to employment, because of his race, color, religion, national origin or ancestry. Breach of this covenant may be regarded as a material breach of this Contract.

30. AUTHORITY

No agent of the Owner shall have power to revoke, alter, enlarge, or relax the stipulation or requirements of these specifications, except insofar as such authority may be specifically conferred by the specifications themselves, without the formal authorization to do so, conferred by the Contract of which the specifications are a part, or by ordinance, resolution, or other usual official action by the Owner.

31. STARTING WORK

Material shall be ordered and work shall begin on the ground within thirty (30) days after the Contract is signed, unless otherwise stated.

32. SANITARY REGULATIONS

Necessary sanitary conveniences for the use of laborers on the work, properly secluded from public observation, shall be constructed and maintained in sanitary condition by the Contractor, and their use shall be strictly enforced.

33. SUNDAY AND NIGHT WORK

The Contractor is required to prosecute work done under this Contract during the hours of daylight, and work will be permitted at night or on Sundays if it is in the best interest of the owner to accommodate traffic, service disruptions, and to keep the project on schedule. Contractor is required to get owner approval at least 48 hours prior to requesting night work. Also this provision is superseded if work is required to save property or life or as specifically authorized or directed by the Owner. Tunnel work may be prosecuted at night except on Sundays.

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34. PROGRESS OF WORK

The work shall be prosecuted regularly and uninterruptedly, unless the Owner shall otherwise specifically direct, with such force and at such points as to insure its full completion within the time herein stated.

If, in the opinion of the Owner, it is necessary or advisable that certain portions of the work be done immediately, the Contractor, upon written order, shall proceed with such work without delay. Should he fail to so proceed, the Owner may do or cause to be done, such work, and the cost of the same will be deducted from any money due or to become due the Contractor under this Contract.

35. TIME OF COMPLETION

The time allowed for completion of the work contemplated in this Contract shall be as stated in the proposal or specifications.

36. EXTENSION OF TIME

All days in which work is suspended by order of the Owner, or in accordance with these specifications, shall automatically extend the time for completion an equal number of days.

37. TIME IS ESSENCE OF CONTRACT

It is distinctly understood and agreed to by the parties hereto that the time specified for the completion of the work is the essence of this Contract, and the Contractor shall not be entitled to claim performance of this agreement unless the work is satisfactorily completed, in every respect, within the time herein specified.

38. ESTIMATED QUANTITIES

The quantities of the various classes of work to be done and materials to be furnished under this Contract which have been estimated as stated elsewhere herein, are approximate and only for the purpose of comparing, on a uniform basis, the bids offered for the work under this Contract; and neither the Owner nor his agents is to be held responsible should any of the said estimated quantities be found incorrect during the construction of the work; and the Contractor shall make no claim for anticipated profit, nor for loss of profit, because of a difference between the quantities of the various classes of work actually done or materials actually delivered and the estimated quantities as herein stated.

39. FORFEITURE OF CONTRACT

If the work to be done under the Contract shall be abandoned by the Contractor, or if any time in the judgment of the Owner, the contractor shall fail to prosecute the work at a reasonable rate of progress, or to comply with all or any of the terms and requirements herein set forth, then the Owner shall have the right to take possession of the work, including Contractor's plant, supplies, and materials, at any time after having notified the Contractor in writing to discontinue the work under this Contract for said cause or causes, and such action shall not affect the right of the Owner to recover damages resulting from such failure. Upon receiving such notice, the Contractor shall and will, upon demand,

immediately give the Owner to recover damages resulting from such failure. Upon receiving such notice, the Contractor shall and will, upon demand, immediately give the Owner safe and peaceable possession of the work, including the plant, and shall then cease to have control over any portion thereof or the men employed thereon.

The Owner may then proceed to complete the work herein specified, by contract or otherwise; and the entire cost of the same shall be charged to the Contractor and deducted from any sum or sums due or to become due under the contract; the excess cost, if any, to be paid by the Contractor or his sureties, to said Owner.

40. NO WAIVER OF CONTRACT

Neither the acceptance of the whole or any part of the work by the Owner or his Engineer, or any of its agents, nor any order, measurements, or certificate by the Engineer, nor any order by the Owner for the payment of money, nor any payment for the whole or any part of the work by the Owner, nor any extension of time, nor any possession taken by the Owner or its agents, shall operate as a waiver for any portion of the Contract or any power therein provided; nor shall any waiver of any breach of the Contract by held to be a waiver of any other or subsequent breach.

41. PAYMENT NOT TO BE STOPPED

The Owner shall not, nor shall any officer thereof, be precluded or stopped by any return or certificate made or given by the Engineer, or other officer, agent or appointee, under the provisions of this agreement, at any time (either before or after the final completion and acceptance of the work and payment made therefor pursuant to any such return or certificates showing the true and correct amount of money due therefor, notwithstanding any such return or certificate, or any payment made in accordance therewith) from demanding and receiving from the Contractor or his sureties, separately or collectively, such sums as may have been improperly paid said Contractor by reason of any such return or certificate which has been untruly or incorrectly compiled.

42. GUARANTEE

The Contractor, as a condition precedent to final payment, shall execute a guarantee to the Owner warranting for a period of one year from the date of final payment to keep in good order and repair any defect in all the work done under the contract, either by the Contractor or his subcontractors, or the material suppliers, that may develop during said period due to improper materials, defective equipment,, workmanship, or arrangements, and any other work affected in making good such imperfections shall also be made good, all without expense to the Owner, and the Contractor shall execute, in favor of the Owner, the attached Maintenance and Guarantee Bond.

When the specifications call for a guarantee period greater than one year, the Contractor shall provided such longer guarantee period.

43. ESTIMATES AND PAYMENTS

The Owner shall pay and the Contractor receive the prices bid in the proposal, or agreed upon, less any deduction for any uncompleted portion, based upon measurements made by the Engineer or as otherwise herein stipulated, and such measurements shall be final and conclusive.

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As aid to the Owner in preparing estimates for progress payments, the Contractor may be required to submit to the Owner for approval a breakdown of some or all contract unit prices into their essential component parts. The sum of the component parts shall not exceed the total contract price per unit and the breakdown shall not overrule the contract price per unit.

The Contractor shall submit to the Owner a written request for each payment and a Contractor's Declaration declaring that he has not performed any work, furnished any material, sustained any loss, damage or delay, for any reasons, including soil conditions encountered or created, or otherwise done anything for which he will ask, demand, sue for, or claim compensation from the Owner other than, as indicated on the Contractor's Declaration. When requested by the Owner, the Contractor shall submit receipts or other vouchers showing his payments for materials and labor, including payments to subcontractors.

Payments based on progress estimates will be made on a monthly basis for work completed during the preceding month or since the date of the last preceding progress payment. Payments will be in accordance with the provision of Act 524 of the Michigan Public Acts of 1980 and in accordance with the terms of this Contract. No allowance will be made for materials furnished which are not incorporated in the finished work, unless otherwise stated.

Partial Payment for materials and/or equipment stored on the jobsite may be allowed on the basis of 90% of the invoice cost of the material providing materials are properly stored. Partial Payment will be allowed on the basis of 90% of the invoice cost less the cost of delivery for materials and/or equipment stored off the jobsite providing the following conditions are met:

- Materials can be inspected by the OWNER and are clearly identifiable for the project.
- Items are properly stored in the opinion of the OWNER.
- Evidence of clear title transfer to the OWNER upon such partial payment can be provided.
- Insurance coverage against loss or damage is provided including certificates guaranteeing same.

Pursuant to Act 524, Michigan Public Acts of 1980, the Owner shall designate a person representing it to whom written requests for payments shall be submitted. The Contractor shall designate a person who shall submit written requests for payment to the Owner.

In the event a dispute arises over an avoidable or unacceptable delay in the performance of the work as described in Section 4(3) of Act 524 of Michigan Public Acts of 1980 [MCLA125.1564(3)], the dispute may, at the option of the Owner, be submitted for resolution in accordance with the provisions of Section 4 of Act 524 of the Michigan Public Acts of 1980 to an agent designated pursuant to Section 4(2) of the Act. The dispute resolution process described above shall be used only for the purpose of determining the rights of the parties to retained funds and interest earned on retained funds.

The Owner may withhold the payment of any estimate or portion of estimate until the Contractor shall have furnished satisfactory evidence that he has paid all claims of every nature.

No payment shall be considered as acceptance of the work or any portion thereof prior to the final completion of the work, and the payment of the final estimate.

Within thirty (30) days after the completion of the work under this Contract to the satisfaction of the Owner and the Engineer, in accordance with all and singular terms and stipulations herein contained, the Owner shall make final payment, from a final estimate made by the Engineer. Before final payment is made, the Contractor shall, as directed by the Owner, furnish a Contractor's Affidavit that he has paid or satisfactorily secured all claims of every nature. Also, the Contractor shall furnish a release from the surety or sureties and permit agencies as applicable, approving payment of final estimate by the Owner. The final payment, when made, shall be considered as final approval and acceptance of the completed work herein specified.

The acceptance by the Contractor of the final payment aforesaid shall operate as, and shall be, a release to the Owner and his agents, from all claim and liability to the Contractor for anything done or furnished for, relating to the work, or for any act or neglect of the Owner or of any person relating to or affecting the work.

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CONTRACTOR'S DECLARATION

I hereby declare that I have not, during the period _____
to _____ A.D., 20____, performed any work, furnished any material, sustained any loss, damage or
delay for any reason, including soil conditions encountered or created, or otherwise done anything for which I
shall ask, demand, due for, or claim compensation from _____

_____ the Owner, or his agents, in addition to the regular items set forth in the contract numbered _____ and dated _____
_____ A.D., 20____, for _____

_____ executed between myself and the Owner, and in the Change Orders for work issued by the Owner in writing
as provided thereunder, except as I hereby make claim for additional compensation and/or extension of time
as set forth on the itemized statement attached hereto.

There (is) (is not) an itemized statement attached.

Date: _____

Company: _____

By: _____

Position: _____

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CONTRACTOR'S AFFIDAVIT

STATE OF MICHIGAN)
)SS
County of)

The undersigned _____
hereby represents that on _____ he (it) was awarded a contract by _____
hereinafter called the Owner, to _____
_____, in accordance with the terms and conditions of Contract No. ____; and the undersigned
further represent that the subject work has now been accomplished and the said contract has now been
completed.

The undersigned hereby warrants and certifies that all of his (its) indebtedness arising by reason of the said
contract has been fully paid or satisfactorily secured; and that all claims from subcontractors and others for
labor and material used in accomplishing the said contract, have been fully paid or satisfactorily settled. The
undersigned further agrees that if any such claim should hereafter arise, he (it) shall assume responsibility for
the same immediately upon request to do so by the Owner.

The undersigned, for a valuable consideration, the receipt of which is hereby acknowledged, does further
hereby waive, release and relinquish any and all claims or right of lien which the undersigned now has or may
hereafter acquire upon the subject premises for labor and material used in accomplishing said project owned
by the Owner.

This affidavit is freely and voluntarily given with full knowledge of the facts, on this ___ day of _____,
20___.

Company: _____

By: _____

Title: _____

Subscribed and sworn to before me, a Notary Public in and for _____ County, Michigan, on this ___ day
of _____, 20___.

_____ Notary Public

My Commission Expires _____

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SECTION 00800

GENERAL SUPPLEMENTARY CONDITIONS

PART 1 INSURANCE

1.1 Insurance Required of the Contractor

- A. Prior to commencement of the work, the Contractor shall purchase and maintain during the term of the project such insurance as will protect him, the Owner, and the Engineer from claims arising out of the work described in this contract and performed by the Contractor, Subcontractor(s) or Sub-Subcontractor(s) consisting of the below listed policies. **Any and all references to the exclusion of supervision, inspection or observation activities or services shall be removed, by amendment, from these policies.**

1.2 Worker's Compensation Insurance

- A. Worker's Compensation insurance including Employer's Liability to cover employee injuries or disease compensable under the Workers' Compensation Statutes of the states in which work is conducted under this contract; disability benefit laws, if any; or Federal compensation acts such as U. S. Longshoremen or harbor Workers', maritime Employment, or Railroad Compensation Act(s), if applicable.
- B. Self-insurance plans approved by the regulatory authorities in the state in which work on this project is performed are acceptable.

1.3 Comprehensive General Liability

- A. A Comprehensive General Liability policy to cover bodily injury to persons other than employees and for damage to tangible property, including loss of use thereof, including the following exposures:
 - 1. All premises and operations
 - 2. Explosion, collapse and underground damage
 - 3. Contractor's Protective coverage for independent contractors or subcontractors employed by him.
 - 4. Contractual Liability for the obligation assumed in the Indemnification or Hold Harmless agreement found hereinafter.
 - 5. The usual Personal Injury Liability endorsement with no exclusions pertaining to employment.
 - 6. Products and Completed Operations coverage. This coverage shall extend through the contract guarantee period.

B. Additional Insured Requirements:

The policy shall include an endorsement which includes the following as additional insured's:

- 1. The Owner, their counsel, members, Board members, public officials, consultants, agents, and employees

2. The "Engineer"
Hubbell, Roth & Clark, Inc.
Bloomfield Hills, Michigan
Their owners, directors, officers, consultants, agents, and employees
Any and all references to the exclusion of supervision, inspection or observation activities or services shall be removed, by amendment, from this policy.

1.4 Comprehensive Automobile Liability

- A. A Comprehensive Automobile Liability policy to cover bodily injury and property damage arising out of the ownership, maintenance or use of any motor vehicle, including owned, non-owned and hired vehicles and including Michigan "No Fault" coverage.
- B. In light of standard policy provisions concerning (a) loading and unloading and (b) definitions pertaining to motor vehicles licensed for road use vs. unlicensed or self-propelled construction equipment, it is strongly recommended that the Comprehensive General Liability and the Comprehensive Auto Liability be written by the same insurance carrier, though not necessarily in one policy.
- C. Additional Insured Requirements:

The policy shall include an endorsement which includes the following as additional insured's:

1. The Owner, their counsel, members, Board members, public officials, consultants, agents, and employees
2. The "Engineer"
Hubbell, Roth & Clark, Inc.
Bloomfield Hills, Michigan
Their owners, directors, officers, consultants, agents, and employees

1.5 Owner's & Contractors Protective Liability Policy

- A. The Contractor shall purchase for the Owner, a separate Owner's Protective Liability policy to protect the Owner, the Engineer, their consultants, agents, employees and such public corporations in whose jurisdiction the work is located, for their contingent liability for work performed by the Contractor, the Subcontractor(s) or the Sub-Subcontractor(s) under this contract.
- B. Endorsement Form CG20 07 0704, if included as a part of this policy, will be amended in writing, to remove the words supervision and inspection from item B2.

1.6 Builder's Risk-Installation Floater

- A. The Contractor shall purchase a Builder's Risk-Installation Floater in a form acceptable to the Owner covering property of the project for the full cost of replacement as of the time of any loss which shall include, as named insured, (a) the Contractor, (b) all Subcontractors, (c) all Sub-Subcontractors, (d) the Owner, and the Engineer, as their respective interests may prove to be at the time of loss, covering insurable property which is the subject of this contract, whether in place, stored at the job site, stored elsewhere, or in transit at the risk of the insured(s).

- B. Coverage shall be effected on an "All Risk" form including, but not limited to, the Perils of fire, wind, flood, vandalism, collapse, theft and earthquake, with exclusions normal to the cover.
- C. The Contractor may arrange for such deductibles as he deems to be within his ability to self-assume, but he will be held solely responsible for the amount of such deductible and for any coinsurance penalties.
- D. Any insured loss shall be adjusted with the Owner and the Contractor and paid to the Owner and Contractor as trustee for the other insured.

E. Additional Insured Requirements:

The policy shall include an endorsement which includes the following as additional insured's:

- 1. The Owner, their counsel, members, Board members, public officials, consultants, agents, and employees
- 2. The "Engineer"
Hubbell, Roth & Clark, Inc.
Bloomfield Hills, Michigan
Their owners, directors, officers, consultants, agents, and employees

1.7 Umbrella or Excess Liability

- A. The Contractor is granted the option of arranging coverage under a single policy for the full limit required or by a combination of underlying policies with the balance provided by an Excess or Umbrella Liability policy equal to the total limit(s) requested.
- B. Umbrella or Excess policy wording shall be at least as broad as the primary or underlying policy(ies) and shall apply both to the Contractor's general liability and to his automobile liability insurance.
- C. Additional Insured Requirements:

The policy shall include an endorsement which includes the following as additional insured's:

- 1. The Owner, their counsel, members, Board members, public officials, consultants, agents, and employees
- 2. The "Engineer"
Hubbell, Roth & Clark, Inc.
Bloomfield Hills, Michigan
Their owners, directors, officers, consultants, agents, and employees

Any and all references to the exclusion of supervision, inspection or observation activities or services shall be removed, by amendment, from this policy.

1.8 Railroad Protective Liability

- A. Where such an exposure exists, as determined by the Owner, the Contractor will provide coverage in the name of each railroad company having jurisdiction over rights-of-way across which work under the contract is to be performed.

- B. Additional Insured Requirements:
- C. The policy shall include an endorsement which includes the following as additional insured's:
 - 1. The Owner, their counsel, members, Board members, public officials, consultants, agents, and employees
 - 2. The "Engineer"
Hubbell, Roth & Clark, Inc.
Bloomfield Hills, Michigan
Their owners, directors, officers, consultants, agents, and employees

1.9 Limits of Liability

- A. The required limits of liability for insurance coverage shall be **not less than** the following:
 - 1. Workers' Compensation
Coverage A - Compensation Statutory
Coverage B - Employer's Liability \$500,000
 - 2. Comprehensive General Liability
Bodily Injury and Property Damage \$1,000,000 Each Occurrence
Combined Single Limit..... \$2,000,000 Per Job Aggregate
..... \$1,000,000 Completed Operations Aggregate
 - 3. Comprehensive Automobile Liability
Bodily Injury and Property Damage \$1,000,000 Each Accident
Combined Single Limit
 - 4. Owner's Protective
Bodily Injury and Property Damage \$1,000,000 Per Occurrence
Combined Single Limit..... \$1,000,000 Aggregate
 - 5. Builder's Risk & Installation Floater Cost to replace at time of loss
 - 6. Umbrella or Excess Liability \$2,000,000 Per Occurrence
\$2,000,000 Aggregate
 - 7. Insurance - Other Requirements
 - a. Notice of Cancellation or Intent Not to Renew: Policies will be endorsed to provide that at least 30 days written notice shall be given to the Owner and to the Engineer, of cancellation of, or intent not to renew.
 - b. In the cancellation box the words "endeavor to" will be removed. The last two lines of the cancellation statement will also be removed (see sample certificates which follow this section).

1.10 Evidence of Coverage

- A. Prior to commencement of the work, the Contractor shall furnish to the Owner, Certificates of Insurance in force on the Owner's Form of Certificate provided.
- B. Other forms of Certificate are acceptable only if (1) they include all of the items prescribed in the Owner's Form of Certificate, including agreement to cancellation provisions outlined herein, (2) the Engineer's Project Identification Number, and (3) they have written approval of the Owner and the Engineer.
- C. The Owner reserves the right to request complete copies of policies if deemed necessary to ascertain details of coverage not provided by certificates.

- D. Such policy copies shall be "Originally Signed Copies," and so designated.
1. Insurance Required for the Contractor
 - a. Workers' Compensation and Employers' Liability
 - b. Comprehensive General Liability-including:
 - 1) All premises and operations.
 - 2) Explosion, collapse and underground damage.
 - 3) Contractor's Protective.
 - 4) Contractual Liability for obligations assumed in the Indemnification-Hold Harmless Agreement of this Contract.
 - 5) Personal Injury Liability.
 - 6) Products and Completed Operations
 - c. Comprehensive Automobile Liability - including owned, non-owned and hired vehicles and Michigan "No Fault" coverage.
 - d. Umbrella or Excess Liability.
 - e. Builders Risk Installation Floater
 - f. Railroad Protective Liability
 2. Insurance Required for the Owner
 - a. Owners' and Contractor's Protective Liability Policy which names as insured(s) the Owner, the Engineer, their consultants, agents, employees and such public corporations in whose jurisdiction the work is located.
 - b. This policy shall not include any endorsement which excludes coverage to the engineer for supervision, inspection or observation services. Any such exclusions shall be removed from the policy by endorsement.

1.11 Qualification of Insurers

- A. In order to determine financial strength and reputation of insurance carriers, all companies providing the coverages required shall be licensed or approved by the Insurance Bureau of the State of Michigan and shall have a financial rating no lower than XI and a policyholder's service rating no lower than A as listed in A. M. Best's Key Rating Guide, current edition.
- B. Companies with ratings lower than A;XI will be acceptable only upon written consent of the Owner.

1.12 Contract Security

- A. If the Owner is a public entity, the Contractor shall furnish a surety bond (form attached) in an amount at least equal to 100 percent of the contract price as security for the faithful performance of this contract. The Contractor shall furnish, also, a separate surety bond (form attached) in an amount at least equal to 100 percent of the contract price as security for the payment of all persons performing labor on the project under this contract, and furnishing materials in connection with this contract. The surety on each such bond shall be a duly authorized surety company satisfactory to the Owner.
- B. Regardless of whether the Owner is or is not a public entity, the Contractor shall furnish a Maintenance and Guarantee Bond (form attached) covering all work under this contract. The guarantee is to cover a period of one year subsequent to the date of the final estimate, unless otherwise specified.

- C. Surety Companies providing and executing Surety and Guarantee Bonds shall appear on the United States Treasury Departments most current list, Circular 570, as holding certificates of authority as acceptable sureties on federal bonds. The penal sum of such bonds shall not exceed the a company’s limitation as stated therein. A surety company shall be licensed in the State in which it provides a bond and in the State where the contract work is to be performed.

1.13 Indemnification

- A. The contractor agrees to indemnify, defend, and save harmless the Owner and the Engineer, their consultants, agents, and employees, from and against all loss or expense (including costs and attorney's fees) by reason of liability imposed by law upon the Owner and the Engineer, their consultants, agents, and employees for damages because of bodily injury, including death at any time resulting there from, sustained by any person or persons or on account of damage to property, including loss of use thereof, arising out of or in consequence of the performance of this work, whether such injuries to persons or damage to property is due, or claimed to be due, to the negligence of the contractor, his subcontractors, the Owner, the Engineer, and their consultants, agents, and employees, **except** only such injury or damage as shall have been occasioned by the sole negligence of the Owner, the Engineer, or their agents, employees or consultants.
- B. The Contractor also agrees to indemnify, defend and save harmless the Owner and the Engineer, their owners, directors, Board members, officers, directors, officials, and council members, consultants, agents and employees, from and against any and all loss or expense (including costs and attorney’s fees) for any and all claims or allegations of supervision, inspection or observation activities or services which may arise out of, or in consequence of, the performance of this work.

PART 2 PART 2 – NOT USED

PART 3 PART 3 – NOT USED

END OF SECTION

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ACORD™ CERTIFICATE OF LIABILITY INSURANCE		DATE (MM/DD/YY) 02/20/2002
PRODUCER (734)662-4041 FAX (734)662-4065 Professional Concepts Insurance Agency Inc. 2950 S State Street Suite 402 Ann Arbor, MI 48104		THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.
INSURED Contractor's Name Address		INSURERS AFFORDING COVERAGE
		INSURER A: Carrier & Best Rating
		INSURER B: if needed
		INSURER C: if needed
		INSURER D:
		INSURER E:

COVERAGES
THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY CLAIMS MADE <input type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual Liab**	POLICY #	dates	dates	EACH OCCURRENCE \$ 1,000,000
					FIRE DAMAGE (Any one fire) \$
					MED EXP (Any one person) \$
					PERSONAL & ADV INJURY \$ 1,000,000
					GENERAL AGGREGATE \$ 2,000,000
GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC					PRODUCTS - COMP/OP AGG \$ 1,000,000
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS	POLICY #	dates	dates	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000
					BODILY INJURY (Per person) \$
					BODILY INJURY (Per accident) \$
					PROPERTY DAMAGE (Per accident) \$
					AUTO ONLY - EA ACCIDENT \$
	ANY AUTO				OTHER THAN EA ACC \$
					AUTO ONLY: AGG \$
A	EXCESS LIABILITY <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE	POLICY #	dates	dates	EACH OCCURRENCE \$ 2,000,000
					AGGREGATE \$ 2,000,000
					\$
	DEDUCTIBLE				\$
	RETENTION \$				\$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	POLICY #	dates	dates	<input checked="" type="checkbox"/> WC STATU-TORY LIMITS <input type="checkbox"/> OTH-ER
					E.L. EACH ACCIDENT \$ 500,000
					E.L. DISEASE - EA EMPLOYEE \$ 500,000
					E.L. DISEASE - POLICY LIMIT \$ 500,000
C	OTHER Owners & Contractors Protective	POLICY #	dates	dates	\$1,000,000 Per Occurrence
					\$1,000,000 Aggregate

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS
Government Entity Name, their council members, elected officials, officers, consultants, agents and employees; and Hubbell, Roth & Clark, Inc., Bloomfield Hills, Michigan and their owners officers, consultants, agents and employees are named as Additional Insured's with respects to General Liability, Automobile Liability, Excess Liability and OCP Liability coverage.
****Hold Harmless & Indemnification to be included in favor of Additional Insured's.**

CERTIFICATE HOLDER	<input checked="" type="checkbox"/> ADDITIONAL INSURED; INSURER LETTER: A	CANCELLATION
Name of Government Entity		SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ISSUE MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT.
		AUTHORIZED REPRESENTATIVE Agents Name & Signature

PROGRESS CLAUSE:

River Pointe Subdivision Special Assessment District Project

After receiving Notice of Award, start work within ten (10) days, or on or before the date designated as the starting date in the approved Detailed Progress Schedule. In no case shall any work be commenced prior to receipt of formal notice of award by the Township.

Lane closures or detours will not be permitted over the Memorial Day, July 4th or Labor Day holiday weekends, commencing at 3:00 PM on Friday, May 26th, Friday, June 30th, and Friday, September 1st, respectively. Restrictions will be lifted at 7:00 AM on the first business day following the holiday. Top course paving shall not precede completion of adjacent curb and gutter items.

All pavement contract *ITEMS* shall be substantially completed and open to traffic 25 working days after the start of construction. Final completion for restoration work items only shall be completed within 30 days of substantial completion and prior to project acceptance.

The low bidder for the work covered by this proposal will be required to submit Form 1130, Progress Schedule to the Engineer within seven (7) calendar days of confirmation of the low bid by the Township. The Progress Schedule must be approved by the Township in order to receive contract award. Lack of timely submittal by the Contractor will delay award per subsection 102.15.

The Progress Schedule shall include, as a minimum, the controlling work items for the completion of the project and the planned dates (or work day for a work day project) that these work items will be controlling operations. As specified in the bidding proposal, the project completion date and any other controlling dates specified in the proposal shall also be included in the Project Schedule.

The Project Engineer will arrange the time and place for the preconstruction meeting. The named subcontractor(s) for designated and/or specialty Items included in the proposal are recommended to be at the meeting if such items materially affect the work schedule.

The Contractor shall be expected to mobilize sufficient labor and equipment to complete the project within the specified time frames. This includes concurrent crews working at different locations as needed based on the Contractor's progress and schedule.

Liquidated Damages will be assessed according to Section 108.10. Extension(s) of time will not be granted for:

1. Increases in contract quantities or extra work, unless it can be shown that such increases or extras affect the critical item(s) of work.
2. Labor disputes, unless it can be shown that such disputes are industry wide, and that the delay affects the critical item(s) of work.
3. Delays resulting from work stoppages ordered by the Township for Contractor non-compliance.
4. Delays in delivery of critical materials unless the delay can be shown to be industry wide and the delay affects the critical item(s) of work.

DELHI CHARTER TOWNSHIP

SPECIAL PROVISION
FOR
MAINTAINING TRAFFIC

HRC

1 of 2

09-15-2016

a. Description. Maintain traffic at all times during construction in accordance with 812 of the Michigan Department of Transportation 2012 Standard Specifications for Construction, and, as specified herein, and per the MDOT Maintaining Traffic Typical and Special Provision 12SP812(B). Traffic Regulator Control (flagging) operation is required on all high speed two lane/two way roads and higher volume subdivision collector streets to maintain traffic (omit speed limit reduction signing on low speed roads).

Furnish and place all traffic control devices (TCD's) in accordance with requirements of the current edition of the Michigan Manual of Uniform Traffic Control Devices (MMUTCD) as specified in the plans and/or the proposal, and as required by Michigan Compiled Laws MCL 257.079d (Work Zones), MCL 257.601b (Andy's Law), and MCL 257.627 (Speed Limitations).

The **Construction Influence Area (C.I.A.)** shall consist of the width of the existing or proposed right of way (or to the limits of temporary grading and construction permits) extending approximately 500 feet beyond the project point of beginning (POB) and point of ending (POE) in both directions for local low speed (subdivision) streets, and up to 3,000 ft beyond project limits for primary and high speed local roads. The C.I.A. shall also extend up to 500 feet in each direction along all intersecting roads within the project.

b. Materials. Furnish all signs, barricades and other (TCD's), including but not limited to lighted arrow panels, signs including posts or movable frames, Traffic Regulator Control, channeling devices, warning lights, and temporary pavement markings, according to the MMUTCD. Erect and maintain signing and TCD's for lane and shoulder closures according to the attached MDOT Maintaining Traffic Typical. Sign spacing may be modified on some roadway sections upon approval of the Engineer.

c. Construction Methods. Maintain local traffic at all times. Notify emergency services (Police, Fire, and EMS) and all property owners at least 24 hours in advance of any traffic restriction that would prevent local access to property from either direction.

Notify the Project Engineer at least 5 business days in advance work requiring removal of existing signs, or erection or removal of overlays on existing signs by ICRD crews. Notify the Engineer a minimum of 3 working days prior to the implementation of all major traffic shifts and lane closures.

Coordinate work with Ingham County Road Department crews or their agents and utility companies that need to work within the Construction Influence Area (C.I.A.). Avoid conflicts in maintaining traffic operations, signing and the orderly progress of the other Ingham County Road Department work.

1. Traffic Restrictions. Perform no work during the Memorial Day, July 4th, or Labor Day holiday periods, as defined by the Progress Clause, maintaining two-way local traffic during holiday periods.

Once lane restrictions are initialized, perform continuous and efficient work until the lane restrictions can be reopened to traffic. Remove lane restrictions as soon as possible after the work that required the lane restrictions is complete. When practical, remove all lane restrictions at the end of each work-day, except where approved by the Engineer. Protect any uncompleted work area overnight with lighted advance signs (W20-1; "ROAD WORK AHEAD," W21-5b 'RIGHT SHOULDER CLOSED AHEAD,' or W20-5/ W4-2; "LANE CLOSED AHEAD") and plastic drums, according to the plans and MDOT Maintaining Traffic Typical. At the end of each work period, restrict undercuts or excavations immediately adjacent to active traffic lanes to a one-on-four slope from the edge of the roadway. If this condition is not met, implement a night-time lane or shoulder closure according to the appropriate Typical at no additional cost.

2. Temporary Pavement Markings. When specified, furnish and place temporary pavement markings of the proper color and configuration, according to the MMUTCD, Section 812, and as directed. Place 4 inch wide removable (MDOT Type R) pavement marking 2.5 ft long at 40 ft intervals as directed to delineate lane lines and centerlines.

d. Measurement and Payment. Payment for Maintaining Traffic items will be included with the work for other contract pay items, except where contract items include specific traffic control pay items.

MINIMUM MERGING TAPER LENGTH "L" (FEET)

OFFSET FEET	POSTED SPEED LIMIT, MPH (PRIOR TO WORK AREA)									
	25	30	35	40	45	50	55	60	65	70
1	10	15	20	27	45	50	55	60	65	70
2	21	30	41	53	90	100	110	120	130	140
3	31	45	61	80	135	150	165	180	195	210
4	42	60	82	107	180	200	220	240	260	280
5	52	75	102	133	225	250	275	300	325	350
6	63	90	123	160	270	300	330	360	390	420
7	73	105	143	187	315	350	385	420	455	490
8	83	120	163	213	360	400	440	480	520	560
9	94	135	184	240	405	450	495	540	585	630
10	104	150	204	267	450	500	550	600	650	700
11	115	165	225	293	495	550	605	660	715	770
12	125	180	245	320	540	600	660	720	780	840
13	135	195	266	347	585	650	715	780	845	910
14	146	210	286	374	630	700	770	840	910	980
15	157	225	307	400	675	750	825	900	975	1050

TAPER LENGTH "L" IN FEET

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 x 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
- SHIFTING TAPER
- SHOULDER TAPER
- TWO-WAY TRAFFIC TAPER

DOWNSTREAM TAPERS (USE IS OPTIONAL)

TAPER LENGTH

- L - MINIMUM
- 1/2 L - MINIMUM
- 1/3 L - MINIMUM
- 100' - MAXIMUM
- 100' - MINIMUM (PER LANE)

 TRAFFIC AND SAFETY MAINTAINING TRAFFIC TYPICAL	TABLES FOR "L", "D" AND "B" VALUES		
	DRAWN BY: CON:AE:djf	JUNE 2006	M0020a
CHECKED BY: BMM	PLAN DATE:	REV. 08/21/2006	
FILE: K:/DGN/TSR/STDS/ENGLISH/MNTTRF/M0020a.dgn			

DISTANCE BETWEEN TRAFFIC CONTROL DEVICES "D"
AND LENGTH OF LONGITUDINAL BUFFER SPACE ON
"WHERE WORKERS PRESENT" SEQUENCES


"D" DISTANCES	POSTED SPEED LIMIT, MPH (PRIOR TO WORK AREA)									
	25	30	35	40	45	50	55	60	65	70
D (FEET)	250	300	350	400	450	500	550	600	650	700

GUIDELINES FOR LENGTH OF
LONGITUDINAL BUFFER SPACE "B"

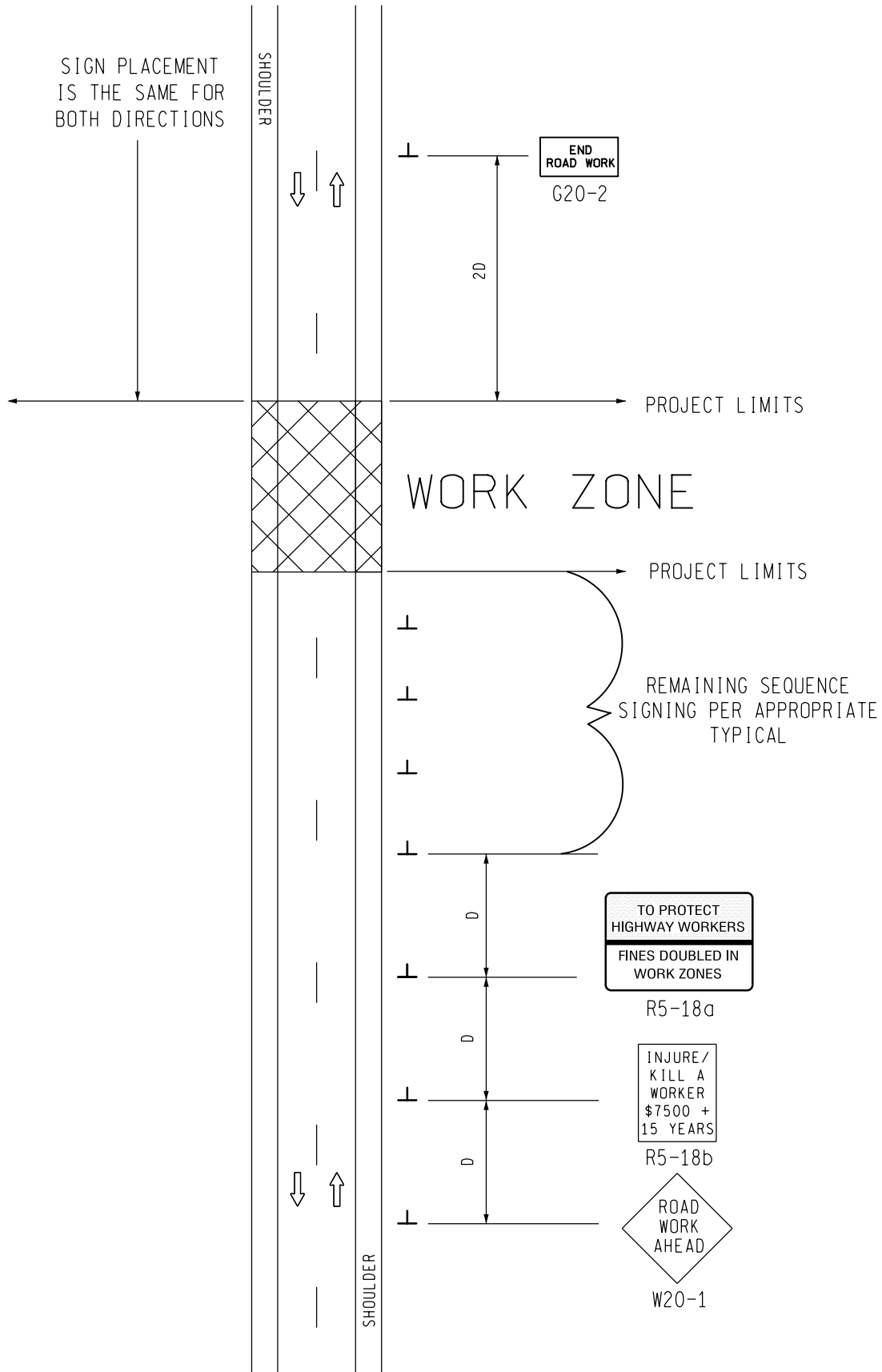
SPEED* MPH	LENGTH FEET
20	33
25	50
30	83
35	132
40	181
45	230
50	279
55	329
60	411
65	476
70	542

* 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.

 TRAFFIC AND SAFETY MAINTAINING TRAFFIC TYPICAL	TABLES FOR "L", "D" AND "B" VALUES		
	DRAWN BY: CON:AE:djf CHECKED BY: BMM	JUNE 2006 PLAN DATE:	M0020a
FILE: K:/DGN/TSR/STDS/ENGLISH/MNTTRF/M0020a.dgn REV. 08/21/2006			

SIGN PLACEMENT
IS THE SAME FOR
BOTH DIRECTIONS



SIGN = 68 f+2 - TYPE B
FOR ONE DIRECTION OF TRAFFIC
W20-1 QUANTITY INCLUDED
WITH APPROPRIATE TYPICAL
FOR SEQUENCE SIGNING


<p>TRAFFIC AND SAFETY MAINTAINING TRAFFIC TYPICAL</p>	<p>TYPICAL ADVANCE SIGNING TREATMENT FOR LONG, INTERMEDIATE AND SHORT TERM STATIONARY WORK ZONE OPERATIONS OF LESS THAN TWO MILES IN LENGTH WHERE TRAFFIC CONTROL DEVICES MAY REMAIN AT END OF WORK DAY ON AN UNDIVIDED TWO-WAY ROADWAY</p>	
	<p>DRAWN BY: CON:AE:djf CHECKED BY: BMM:CRB</p>	<p>OCTOBER 2011 PLAN DATE:</p>
<p>FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0040a.dgn REV. 10/13/2011</p>		

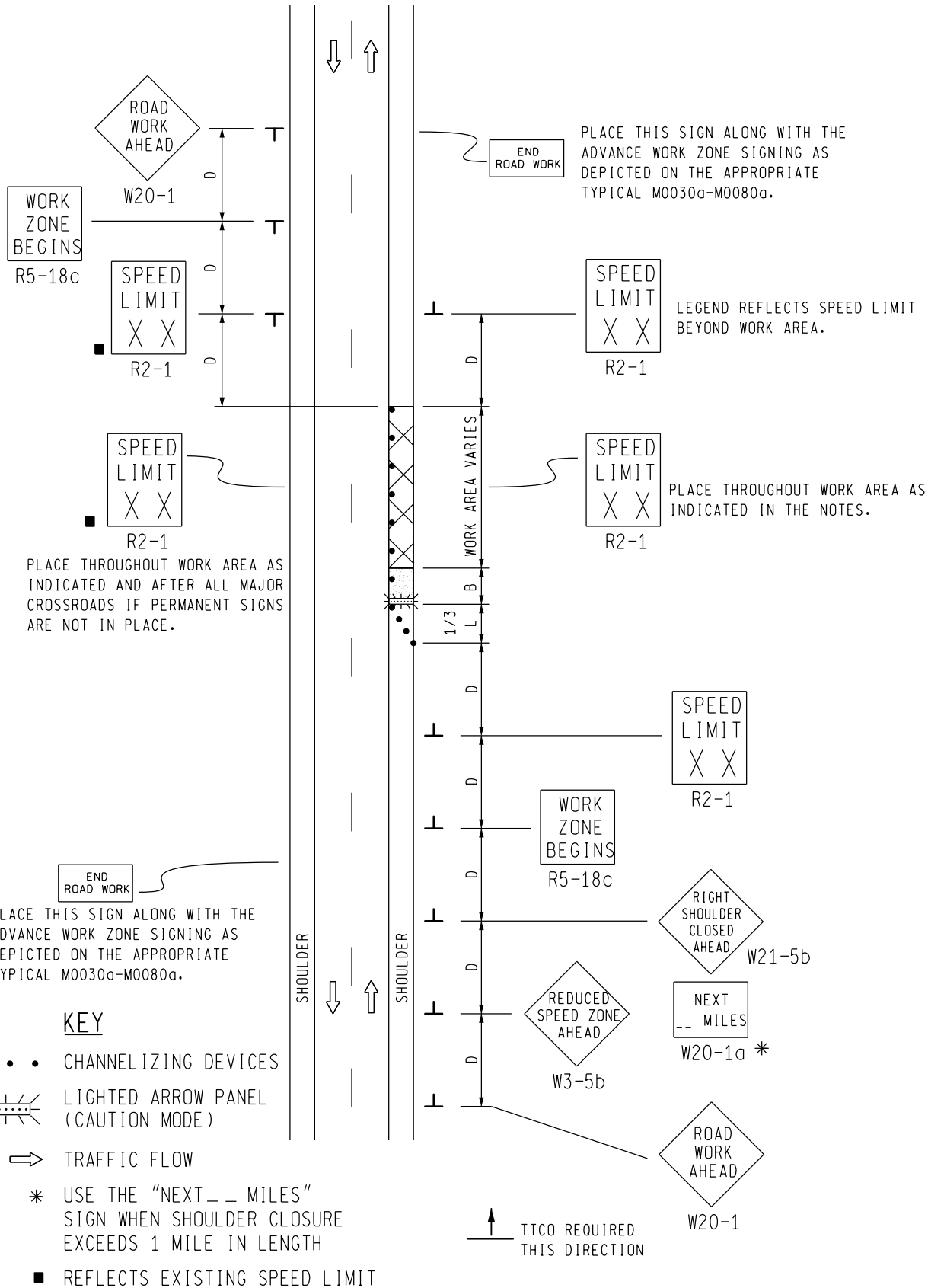
NOTES

- 30. THE APPROPRIATE ADVANCE SIGNING SEQUENCE(S), (M0030a THROUGH M0080a) SHALL BE USED ON ALL PROJECTS.
- 32. THESE SIGNS SHALL BE LEFT IN PLACE AT THEIR PRESCRIBED LOCATIONS FOR THE DURATION OF THE PROJECT AND UNTIL ALL TEMPORARY TRAFFIC CONTROL HAS BEEN REMOVED.
- 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

G20-2	-	48" x 24"
R5-18a	-	96" x 60"
R5-18b	-	48" x 60"
W20-1	-	48" x 48"

 TRAFFIC AND SAFETY MAINTAINING TRAFFIC TYPICAL	TYPICAL ADVANCE SIGNING TREATMENT FOR LONG, INTERMEDIATE AND SHORT TERM STATIONARY WORK ZONE OPERATIONS OF LESS THAN TWO MILES IN LENGTH WHERE TRAFFIC CONTROL DEVICES MAY REMAIN AT END OF WORK DAY ON AN UNDIVIDED TWO-WAY ROADWAY		
	DRAWN BY: CON:AE:djf	OCTOBER 2011	SHEET
CHECKED BY: BMM:CRB	PLAN DATE:	M0040a	2 OF 2
FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0040a.dgn REV. 10/13/2011			



SIGN = 172 ft+2 - TYPE B
 W/PLAQUE = 184 ft+2 - TYPE B
 PLUS ADDITIONAL R2-1's
 THROUGHOUT WORK AREA

MDOT
 Michigan Department of Transportation
 TRAFFIC AND SAFETY
 MAINTAINING TRAFFIC
 TYPICAL

TYPICAL TEMPORARY TRAFFIC CONTROL
 FOR A SHOULDER CLOSURE ON A TWO
 LANE TWO-WAY ROADWAY USING A SINGLE
 STEP DOWN IN SPEED LIMIT IN
 ONE DIRECTION ONLY

DRAWN BY: CON:AE:djf
 CHECKED BY: BMM:CRB

OCTOBER 2011
 PLAN DATE:

M0120a


SHEET
 1 OF 2

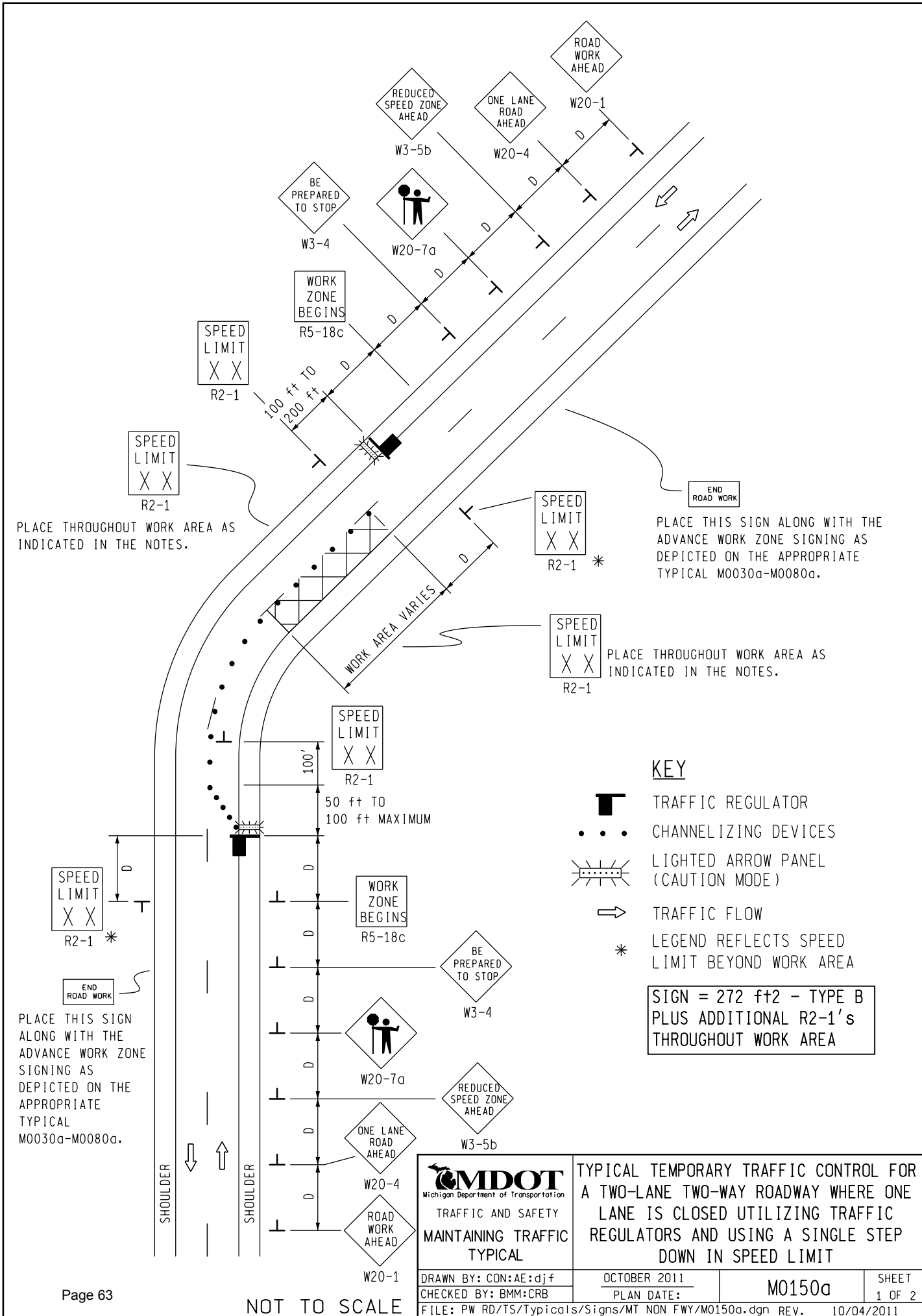
NOTES

1. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
 $1/3 L$ = 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 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 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.
- 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"

 TRAFFIC AND SAFETY MAINTAINING TRAFFIC TYPICAL	TYPICAL TEMPORARY TRAFFIC CONTROL FOR A SHOULDER CLOSURE ON A TWO LANE TWO-WAY ROADWAY USING A SINGLE STEP DOWN IN SPEED LIMIT IN ONE DIRECTION ONLY	
	DRAWN BY: CON:AE:djf CHECKED BY: BMM:CRB	OCTOBER 2011 PLAN DATE:
FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0120a.dgn REV. 10/04/2011		








PLACE THROUGHOUT WORK AREA AS INDICATED IN THE NOTES.

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


PLACE THROUGHOUT WORK AREA AS INDICATED IN THE NOTES.

KEY

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

SIGN = 272 ft ± 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.

 Michigan Department of Transportation TRAFFIC AND SAFETY MAINTAINING TRAFFIC TYPICAL		TYPICAL TEMPORARY TRAFFIC CONTROL FOR A TWO-LANE TWO-WAY ROADWAY WHERE ONE LANE IS CLOSED UTILIZING TRAFFIC REGULATORS AND USING A SINGLE STEP DOWN IN SPEED LIMIT	
DRAWN BY: CON:AE:djf CHECKED BY: BMM:CRB FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0150a.dgn	OCTOBER 2011 PLAN DATE:	M0150a	SHEET 1 OF 2
NOT TO SCALE		REV. 10/04/2011	

NOTES


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

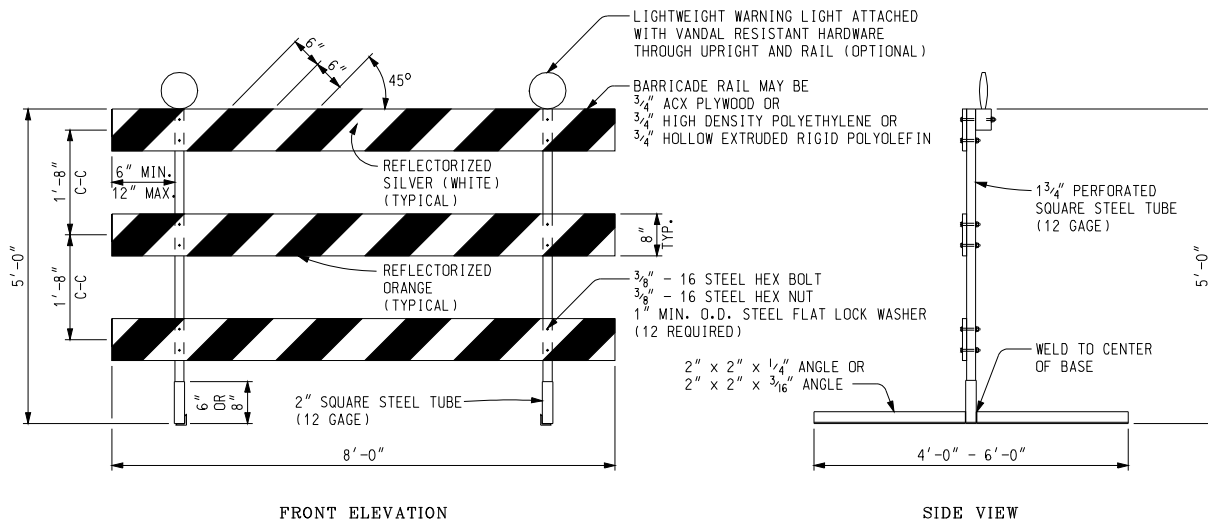
SIGN SIZES

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

Page 64

NOT TO SCALE

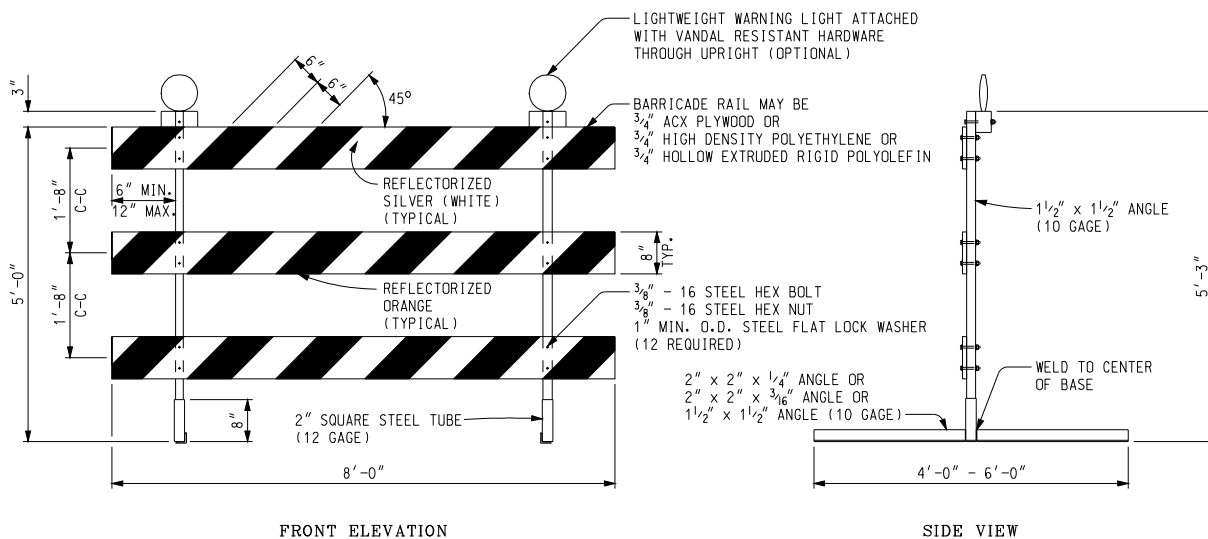
 TRAFFIC AND SAFETY MAINTAINING TRAFFIC TYPICAL	TYPICAL TEMPORARY TRAFFIC CONTROL FOR A TWO-LANE TWO-WAY ROADWAY WHERE ONE LANE IS CLOSED UTILIZING TRAFFIC REGULATORS AND USING A SINGLE STEP DOWN IN SPEED LIMIT
DRAWN BY: CON:AE:djf	OCTOBER 2011
CHECKED BY: BMM:CRB	PLAN DATE:
	M0150a
FILE: PW RD/TS/Typicals/Signs/MT NON FWY/M0150a.dgn	SHEET 2 OF 2 REV. 10/04/2011



FRONT ELEVATION

SIDE VIEW

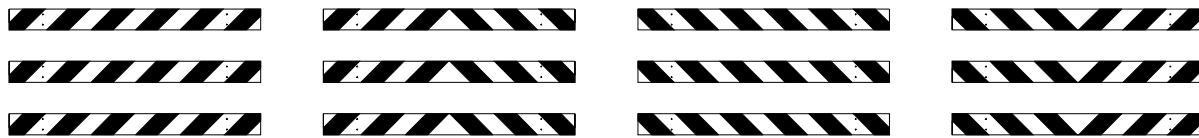
PERFORATED SQUARE STEEL TUBE OPTION



FRONT ELEVATION

SIDE VIEW

ANGLE IRON OPTION



LEFT DIRECTIONAL

BI-DIRECTIONAL

RIGHT DIRECTIONAL

CLOSURES

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

File: T&S/Typ/Signs/WorkZones/wzd 125 d

Rev. 09/22/09 PJ



PREPARED BY
TRAFFIC AND SAFETY

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

Temporary
Traffic Control Devices

DRAWN BY: ECH

(SPECIAL DETAIL)

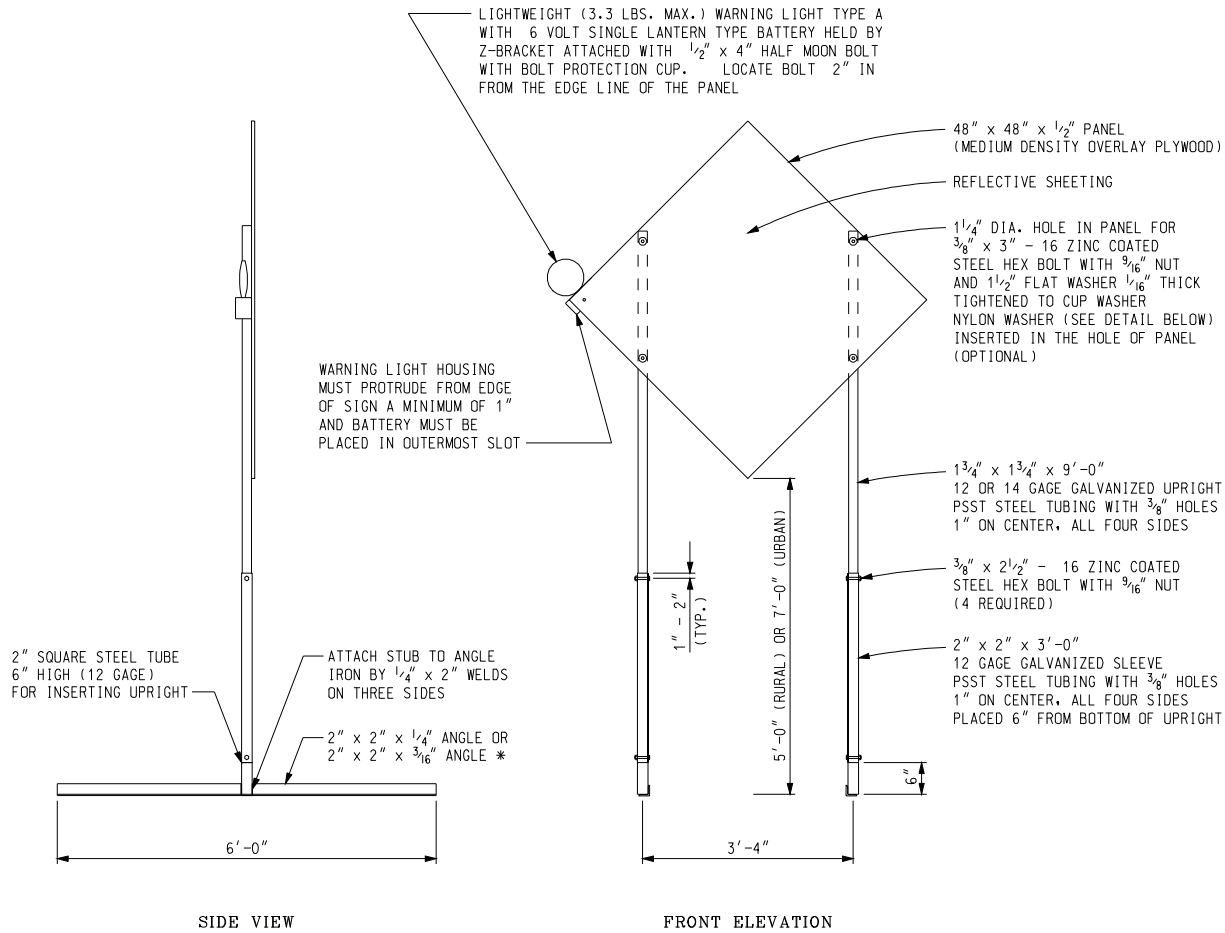
9/22/09
PLAN DATE

WZD-125-E

SHEET
1 of 3

CHECKED BY: MWB

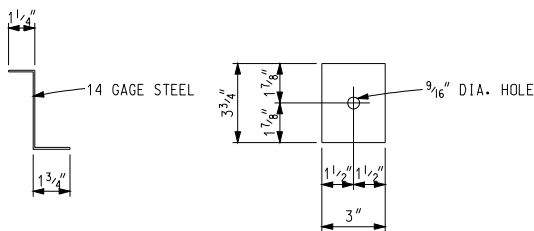
FHWA APPROVAL DATE



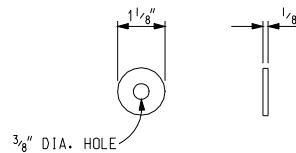
TEMPORARY SIGN SUPPORT

(WARNING LIGHT PLACED ON SIDE CLOSEST TO TRAFFIC)

- * SIGN STAND IS BALLASTED WITH FOUR OR MORE 35 LB SANDBAGS. A MINIMUM OF ONE ON EACH END.
- UPRIGHTS SHALL NOT EXTEND ABOVE THE SIGN PANEL.



Z-BRACKET DETAIL



OPTIONAL NYLON WASHER

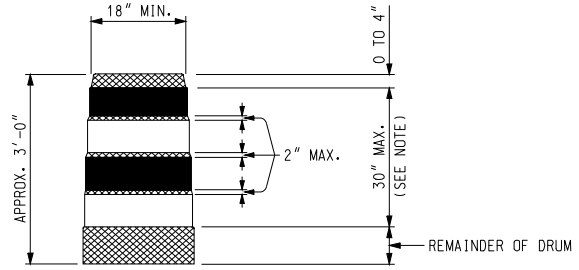
Other temporary sign supports meeting current NCHRP crash worthy criteria can be found on the FHWA Safety website at http://safety.fhwa.dot.gov/roadway_dept/road_hardware/wzd.htm

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	9/22/09 PLAN DATE	WZD-125-E	SHEET 2 of 3
File: T&S/Typ/Signs/WorkZones/wzd 125 d	Rev. 09/22/09 PJ			

- PLASTIC DRUM
- ▲▲▲ PROPOSED TYPE III BARRICADE
- △△△ EXISTING TYPE III BARRICADE

SYMBOLS TO BE USED ON PLANS



- REFLECTORIZED ORANGE
- REFLECTORIZED WHITE
- ▨ NON REFLECTORIZED ORANGE

NOTE:
 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.

PLASTIC DRUM

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 TYPE III BARRICADES.

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

SIGNS, BARRICADES, AND PLASTIC DRUMS SHALL BE FACED WITH PRESSURE-SENSITIVE REFLECTIVE SHEETING ACCORDING TO THE CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

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.

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE	9/22/09	WZD-125-E	SHEET 3 of 3
File: T&S/Typ/Signs/WorkZones/wzd 125 d	Rev. 09/22/09 PJ	PLAN DATE		

NOTE: THE ORIGINAL SIGNED COPY IS KEPT ON FILE AT THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

DELHI CHARTER TOWNSHIP

SPECIAL PROVISION
FOR
EROSION CONTROL, INLET PROTECTION, FABRIC BAG

HRC

1 of 1

09-15-2016

a. Description. Furnish, install, maintain, and dispose of prefabricated geotextile bags and collected sediments to protect drainage structure inlets and storm sewer systems, according to the Michigan Department of Transportation 2012 Standard Specifications, and as specified herein.

b. Materials. Furnish prefabricated bag(s), designed to be suspended from drainage structure inlets, supported either by the existing drainage structure cover and/or by furnished a structural framework. Furnish bags fabricated from high flow (> 100 gal/min/ft²) woven geotextile according to Section 910, with high strength seams and lifting straps capable of supporting the bag and full load of sediment and debris. Furnish curb inlet protection where applicable. Provide one of the following products or approved equal.

<u>Product</u>	<u>Manufacturer</u>
"Dandy Sack"	Mirafi, Inc.
"FloGard T-Bag"	Kristar Enterprises
"FryeFlow"	FryeFlow Systems
"Silt Sack"	ACF

c. Construction Methods. Install and maintain fabric bags strictly according to the manufacturer's published guidelines. Maintain bags throughout the duration of the project, or until the potential for construction sedimentation is eliminated. Prevent flow from short-circuiting the filter bag, particularly at curb inlets. Remove and dispose of sediment according to Standard Specifications and applicable MDEQ regulations.

d. Measurement and Payment.

<u>Pay Item</u>	<u>Pay Unit</u>
Erosion Control, Inlet Protection, Fabric Bag	Each

The completed work for **Erosion Control, Inlet Protection, Fabric Bag**, will be measured per each unit. Payment for **Erosion Control, Inlet Protection, Fabric Bag** includes all equipment, materials, and labor necessary to furnish, place and maintain the unit as specified herein, including periodic removal and disposal of sediment and debris, and final disposal upon completion of the project.

DELHI CHARTER TOWNSHIP

SPECIAL PROVISION
FOR
PROJECT CLEANUP

HRC

1 of 1

09-15-2016

a. Description. This work consists of removing debris and uninstalled materials from the project site in a timely, responsible manner, according to Section 209 of the Michigan Department of Transportation 2012 Standard Specifications Construction.

Examples of debris include, but are not limited to, cold millings, damaged traffic control devices, partially used construction materials, stockpiled soils and aggregate or other debris dropped into sanitary or drainage structures.

b. Construction Methods. Remove fallen debris from sanitary sewers immediately. Perform general cleanup at the end of each work day, as directed by the Engineer to maintain the work site in reasonably neat and orderly condition and safe for public access.

Perform final Project Cleanup within (5) five working days of completion of final paving or other major contract work items, to include inspection of all sanitary and drainage structures to insure no fallen debris from the project remains.

c. Measurement and Payment. Payment for Project Cleanup will not be paid for separately, but will be included with the contract pay item(s) from which the debris or remaining materials were associated.

Failure to complete final Project Cleanup within (5) working days following completion of major work items may result in a penalty of up to \$500 per calendar day until the cleanup is complete as approved by the Engineer.

DELHI CHARTER TOWNSHIP

SPECIAL PROVISION
FOR
**RECYCLING HMA SURFACES
(BY COLD MILLING)**

HRC

1 of 2

09-16-2016

a. Description. This work consists of partial or full depth removal of existing HMA surfaces by cold milling and hauling suitable surplus materials to the off-site location(s) specified on the plans. Perform this work according to the Michigan Department of Transportation 2012 Standard Specifications for Construction, applicable supplemental specifications, special provisions, and as specified herein.

b. Materials. The material produced by this work will be subject to the requirements and Engineer approval for the contract pay item for which it is to be used. The Engineer may direct changes in equipment and/or methods to insure the material produced is of the highest quality and consistency possible. Surplus materials generated by this work shall remain the property of the Delhi Charter Township.

Surplus materials will be removed from the project by Contractor as directed. Deliver surplus material to an off-site location according to the plans (delivery paid for separately). The Engineer will have the sole discretion to determine the quantity of material delivered by the Contractor.

c. Construction Methods.

1. Cold Milling HMA Surface, Modified. Cold mill existing HMA surfaces to the limits and depth shown on the plans and typical sections.

2. Debulking/Disposal. Load surplus material onto trucks as directed for delivery to the location(s) stated on the plans. Furnish load tickets for each load removed from the project site by Contractor truck(s). Dispose of unsuitable materials as determined by the Engineer.

d. Measurement and Payment.

Contract Item (Pay Item)

Pay Unit

Cold Milling HMA Surface, Modified
Surplus Material Delivery

Square Yard
Cubic Yard

The work for **Cold Milling HMA Surface, Modified** will be measured and paid for by the square yard, according to Section 501.04.D, except the work for hauling and disposal will not be included, but will be paid for separately. The loading of trucks will be included with payment for these items. Extra work required to meet surface and texture requirements specified herein are included with payment for this item, and will not be paid for separately.

When directed, delivery of surplus material generated by cold milling or pulverizing HMA surfaces by the Contractor to the off-site location(s) specified on the plans will be measured and paid for separately by the cubic yard (LM) as **Surplus Material Delivery**. The Engineer will have sole discretion whether to remove some, all, or none of the RAP millings paid for by this contract item. The Contract quantity will be adjusted accordingly. Extreme adjustments in the quantity of this item will not be grounds for extra compensation or extension of time.

DELHI CHARTER TOWNSHIP
SPECIAL
PROVISION FOR
HMA APPLICATION ESTIMATE

HRC

1 of 2

09-15-2016

a. Description. – Perform this work according to Division 5 of the Michigan Department of Transportation 2012 Standard Specifications for Construction and applicable supplemental specifications and special provisions, and as specified herein.

b. Materials. - Furnish and place HMA Bond Coat material per Section 501.02, at an application rate of 0.10 to 0.15 gallons per square yard. Furnish all HMA mixtures using asphalt cement binder meeting requirements for Performance Grade PG 58 -28. Regress air voids for mainline top course HMA mixtures to 3 percent. Reduce PG Grade low temperature by 6 degrees for Tier II RAP mixes. Furnish all HMA mixtures used for top course with aggregate having 260 minimum aggregate wear index (AWI).

1. Hand Patching. Furnish and place HMA 3C; HMA, 13A; HMA, LVSP or approved alternate HMA mixture for Hand Patching as directed, with a minimum yield of 330 - 440 lbs per square yard, placed in equal lifts according to Table A, shown on the plans, or Table 501-4.

2. Mainline HMA Paving.

Furnish and place HMA, 13A mixture at 165 lbs per square yard for top course and HMA, 13A mixture at 220 lbs per square yard for leveling course (total application rate 385 lbs/syd);

c. Measurement and Payment. Where alternate mixtures are permitted for mainline HMA paving as described above, the completed work will be measured and paid for by the ton as **HMA, Top** or **HMA, Leveling**.

HMA mixtures machine placed on mainline and approach wedge and patch areas will be measured and paid for in place by the ton as **HMA___Patch, Paver Placed**. Payment for **HMA __ Patch, Paver Placed** includes feather joint construction at the start and end of wedge and patch areas and at HMA approaches and driveways. All other HMA mixtures will be measured and paid for according to Standard Specifications except as otherwise specified by related special provisions.

<u>Pay Item</u>	<u>Pay Unit</u>
HMA, Top	Ton
HMA, Leveling	Ton
HMA,___Patch, Paver Placed	Ton

DELHI CHARTER TOWNSHIP

SPECIAL PROVISION
FOR
ADA SIDEWALK RAMPS AND DETECTABLE WARNING SURFACES

HRC

1 of 3

09-15-2016

a. Description. Construct *Americans with Disabilities Act* (ADA) compliant sidewalk ramps as shown on the plans and according to the Michigan Department of Transportation 2012 Standard Specifications for Construction, MDOT Standard Plan R-28 Series, and as specified herein.

Construct new concrete sidewalk ramp(s) of the type specified on the plans with prefabricated cast iron detectable warning surface(s). Where the specified ramp type is not explicitly detailed in Standard Plan R-28, the specified type is a combination of two of the ramp configurations that are detailed. For example, a 'CP' designation would indicate that one side of the ramp is designed as a 'Type C' (Combination) ramp and the other side is designed as a 'Type P' (Parallel).

The Contractor shall be responsible to insure that all sidewalk ramps constructed meet ADA requirements as detailed on Standard Plan R-28. Notify the Engineer in writing prior to constructing sidewalk ramps that will not meet ADA requirements when constructed according to the contract plans and specifications, or if there is any uncertainty as to the ramp design and specification. Any noncompliant work for ADA Sidewalk Ramps as determined by the Engineer shall be removed and replaced at the Contractor's expense.

Additional compensation will not be paid to the Contractor for mobilization, traffic control, or other items of extra work necessary, nor will an extension of time be granted to remove and replace non-compliant ADA Sidewalk Ramps.

b. Materials.

Concrete, Grade P3, S2	601, 701
Granular Material, Class II	902
Epoxy Coated Lane Ties	905

Furnish detectable warning surface (DWS) plates from the Qualified Products List. Furnish only cast iron DWS plates installed in newly cast concrete. Furnish black asphalt-dipped or color coated detectable warning plates to contrast visually with adjacent walking surfaces, either light-on-dark or dark-on-light. Obtain approval from the Engineer for the ADA detectable warning surface color before installation.

c. Construction. Shape and compact the subgrade to the elevations and grades shown on the plans or as directed by the Engineer. Prior to placing concrete, place and compact Granular Material, CL II, sand subbase. Place sand subbase to a minimum

compacted depth equal to the specified sidewalk thickness. The in-place density of sidewalk grades and granular base will be accepted by the Engineer based upon visual inspection. Density testing will be waived except in cases of dispute.

Construct sidewalk ramps according to the plans, section 8.03 and MDOT Standard Plan R-28 Series. Except as otherwise detailed on the plans, install new ADA Sidewalk Ramp(s) with minimum curb opening and traversable surface equal to the approach sidewalk width. Construct sidewalk ramps crossing county primary roads with not less than 6 feet wide traversable surface regardless of approach sidewalk width. Lay out ramp and curb openings to align with the paired (receiving) ramp according to the plans and/or as directed by the Engineer. Use string-line as necessary to ensure paired ramp openings align.

Construct sidewalk ramps with a minimum 4 inch thickness. Where sidewalk ramps are located behind intersection radii, increase concrete thickness to 6 inches minimum, and provide load transfer to the back of curb along the edge of the ADA ramp, consisting of epoxy coated rebar lane ties placed 16 inches on-center at mid-depth of ramp slab. Where ADA ramps are placed adjacent to existing curb, drill and epoxy-anchor ties into existing curb. Omit isolation (fiber) joint where the ramp is tied to the curb. Instead, place the isolation joint at the first perpendicular joint away from the tied joint, or as otherwise directed.

Perform additional excavation, granular backfill or compaction required as necessary to construct ADA Sidewalk Ramp(s) as specified.

Furnish the manufacturer’s published installation guidelines for Detectable Warning Surface. Install Detectable Warning Surface across the full width of the curb opening, and according to the manufacturer’s published installation guidelines. Clean off all excess concrete, adhesives and debris from the plate following installation.

d. Measurement and Payment. The completed work as measured will be paid for at the contract unit prices for the following contract items (pay items):

Contract Item (Pay Item)	Pay Unit
Sidewalk Ramp, ADA, Modified	Square Foot
Detectable Warning Surface, Cast Iron	Square Foot
Detectable Warning Surface, Retrofit	Square Foot
Sidewalk Ramp, ADA, Detectable Warning Surface, Extension	Each

Sidewalk Ramp, ADA, Modified will be measured in-place from the back of curb to the limits of new construction, and paid for by the square foot of the ramp, including area of monolithic rolled curb. Payment includes all materials, equipment, and labor required to construct the sidewalk ramp as shown on the plans, including increased concrete thickness, monolithic rolled curbs along the longitudinal edges of the ramp, and load transfer. Additional excavation, granular backfill and compaction required to

construct sidewalk ramps located behind intersection radii as specified herein will be included in this item of work and will not be paid for separately. The cast iron detectable warning surface will be paid for separately as described below.

The curb and gutter opening for sidewalk ramps will be paid for as curb, or curb and gutter item(s) as applicable and will NOT be included with sidewalk ramp quantities.

Detectable Warning Surface, Cast Iron and **Detectable Warning Surface, Retrofit** will be measured in-place and paid for by the square foot. Payment includes all equipment, materials, and labor necessary to furnish and install detectable warning surfaces as specified.

The work for **Sidewalk Ramp, ADA, Detectable Warning Surface, Extension** includes removal of a portion of existing concrete sidewalk ramp adjacent to the detectable warning surface, installing load transfer (1 bar each cut face), placing fresh concrete and mitered detectable warning surface, according to the detail shown on the plans.

Sidewalk Ramp, ADA, Detectable Warning Surface, Extension will be measured and paid separately for each side of the existing detectable warning surface that is extended (i.e. if both sides of the existing detectable warning surface on an ADA ramp are extended, per the plans, the pay quantity for that ramp will be 2 each). The Contractor will be permitted to remove a larger portion of the existing ADA ramp to facilitate construction; however, payment for this work, regardless of removal limits, will be made with the **Sidewalk Ramp, ADA, Detectable Warning Surface, Extension** contract pay item at the quantity shown on the plans (either 1 or 2 each) for each ramp.

DELHI CHARTER TOWNSHIP

SPECIAL PROVISION
FOR
SLOPE RESTORATION

HRC

1 of 5

09-15-2016

a. Description. This work consists of preparing disturbed areas and installing turf restoration and/or stabilization materials, including topsoil, fertilizer, seed, mulch, mulch anchoring, mulch blanket, high velocity mulch blanket, permanent turf reinforcement mat (TRM), geotextiles, and stone (Open Graded Aggregate) to those areas. Perform this work as shown on the plans, according to the Michigan Department of Transportation 2012 Standard Specifications for Construction and Standard Plan R-100 Series, except as modified herein or otherwise directed by the Engineer.

b. Materials. Furnish materials and follow application rates as specified in sections 816 and 917, except as modified herein.

1. Furnish the permanent seed mixture(s) specified on the plans, selected from the Approved Manufacturer's list. If the seed mixture is not specified on the plans, use THV seed mixture.

2. Furnish Fertilizer, Chemical Nutrient, Class A.

3. Furnish processed or salvaged Topsoil Surface, free of stones greater than 1 inch diameter.

4. Furnish Straw Mulch as approved by the Engineer. Furnish Mulch Anchoring from the Qualified Products List.

5. Furnish *Temporary Mulch Blanket* (single side netting) and *Temporary High Velocity Mulch Blanket* (double sided netting) with excelsior or straw mulch and accelerated photodegradable netting from the Qualified Products List.

6. Long-term or permanent mulch blankets may be desirable in critical areas where moderate root reinforcement is beneficial, or sensitive areas where vegetation establishment will be difficult or prolonged. Where specified, furnish long-term or permanent Mulch Blanket as follows:

i. *Long Term Mulch Blankets.* Furnish excelsior or straw mulch and single sided netting without chemical accelerators.

ii. *Permanent High Velocity Mulch Blanket.* Furnish excelsior, straw, and/or coconut mulch with double sided UV-stabilized netting approved by the Engineer.

7. Furnish Turf Reinforcement Mat (TRM) consisting of 100 percent ultraviolet

(UV) stabilized polyolefin synthetic fibers sewn between two layers of black UV stabilized polypropylene netting with polyolefin thread. The TRM shall meet the following “minimum average roll value” requirements:

<u>Property</u>	<u>Test Method</u>	<u>Requirement</u>
Mass/Unit Area	ASTM D 5261	10 oz/syd
Ultraviolet Stability @ 1000 hrs	ASTM D 4355	80 percent
Tensile Strength (MD)	ASTM D 5035	165 lbs/ft

Acceptance. Furnish ‘Test Data Certification’ for permanent TRM prior to installation, except the following manufacturer’s products will be accepted by General Certification:

- Recyclex - American Excelsior Co., Arlington, TX (800) 777-7645.
- P300 - North American Green, Evansville, IN (800) 772-2040.
- Landlok 450 – Propex, Inc., Chattanooga, TN (800) 621-1273.
- PP5-10 - Western Excelsior Corp., Loveland, CO (800) 967-4009.

8. Furnish Coarse Aggregate, 4AA or approved alternate gradation per section 902. Furnish rounded stone of neutral/granite mixed color appearance suitable for landscaping purposes unless otherwise shown on the plans.

9. Furnish Geotextile Separator, consisting of either woven or spun-bonded fibers, according to Standard Specification Section 910.

c. Construction. Construct according to subsection 816 and as specified herein. Begin this work as soon as possible after final grading of the areas designated for slope restoration but no later than the maximum time frames stated in subsection 208. Where directed, place slope restoration materials by hand to prevent spill-over beyond specified work limits.

Prior to placing topsoil, shape, compact and assure all areas to be restored are weed free. Except for Type V Slope Restoration, place topsoil at 4 inch minimum depth to meet proposed finished grades. If the restoration area requires more than the minimum depth of topsoil to meet finished grade, fill the additional depth using embankment or topsoil. Furnishing and placing this additional material will be paid for separately as Embankment, (CIP or LM).

Prior to placing seed, furnish and place friable, weed and seed free topsoil. Remove all stones greater than one (1) inch diameter from the finished topsoil surface. Apply seed mixture and fertilizer to the prepared soil surface according to subsection 816.03.C.

Apply Mulch at a rate of 2 tons per acre. Place Mulch Anchoring over the mulch at a rate specified in subsection 816.03.F.

Place and anchor manufactured rolled blankets (Mulch Blanket, High Velocity Mulch Blanket, and TRM's) according to the manufacturer's published installation guidelines, subsection 816.03.H, and as shown on Standard Plan R-100 Series. Use wood stakes only. Metal pins and staples are prohibited. On slopes and ditches, anchor the top edge of TRM's in a 6 inch deep trench. Do not operate equipment on the installed TRM.

Install components of Slope Restoration according to the types described herein, where indicated on the plans or as directed by the Engineer:

1. **Slope Restoration, Type I**, consists of topsoil, chemical fertilizer, seeding mixture, mulch and mulch anchoring. Place Type I Slope Restoration on all disturbed areas not restored with other types of restoration or permanent soil erosion and sedimentation control (SESC) treatments.

2. **Slope Restoration, Type II**, consists of topsoil surface, chemical fertilizer, seeding mixture, and *Temporary Mulch Blanket* (single side, accelerated photodegradable netting). In general, place Type II Slope Restoration as directed on 1 on 3 and flatter slopes, ditch bottoms flatter than 1.5 percent slope, and in a single roll width strip along roadside curbs and shoulders.

Where **Slope Restoration, Type IIA** is specified, place *Long Term Mulch Blanket* (single sided, non-accelerated netting), on the fertilized, seeded topsoil.

3. **Slope Restoration, Type III**, consists of topsoil surface, chemical fertilizer, seeding mixture, and *Temporary High Velocity Temporary Mulch Blanket* (double sided, accelerated photodegradable netting). In general, place Type III Slope Restoration as directed on 1 on 2 and steeper slopes and ditch bottoms flatter than 4 percent slope.

Where **Slope Restoration, Type IIIA** is specified, place *Permanent High Velocity Mulch Blanket* (double sided, UV-stabilized netting) on the fertilized, seeded topsoil.

4. **Slope Restoration, Type IV**, consists of TRM placed in conjunction with Type I, Type II, or Type III slope restoration, as directed. In general, place TRM blankets on bare soil, prior to mulch blanket in areas of concentrated flow or discharge, high flow or steep ditches, and extended steep slopes.

5. **Slope Restoration, Type V**, consists of stone placed on Geotextile Separator. In general, place Type V Slope Restoration in urban areas where turf will be difficult to establish or maintain, or in areas with existing stone landscaping.

Place Geotextile Separator on prepared grades, anchored sufficiently to resist displacement upon spreading the stone. Place and uniformly spread 3 inches of coarse graded aggregate 4AA on the geotextile. Grade finished surface approximately 1 inch below top of curb or as directed. Match finished surface to all

other adjacent surfaces (e.g. sidewalk). Where applicable, overlap placement of stone to adjacent existing stone landscaping left-in-place to blend existing and proposed stone appearance.

If an area washes out after slope restoration work has been properly completed and approved by the Engineer, make the required corrections to prevent future washouts and replace the topsoil, fertilizer, seed and mulch. This replacement will be paid for as additional work using the applicable contract items.

If an area washes out for reasons attributable to the Contractor's activity or failure to take proper precautions, replacement will be at the Contractor's expense.

The Engineer will inspect the seeded turf to ensure the end product is well established, weed free, in a vigorous growing condition, and contains the species called for in the seeding mixture.

If the seeded turf is not well established at the end of the first growing season, the Contractor will be responsible to re-seed until the turf is well established and approved by the Engineer.

If weeds cover more than ten percent of the total area of slope restoration, as determined by the Engineer, provide weed control according to subsection 816.03.J. Weed control will be at the Contractor's expense, with no additional charges to the project for materials, labor or equipment.

d. Measurement and Payment. The completed work for **Slope Restoration, Type __**, will be measured in place by the square yard. No credit or additional compensation will be made for splices, overlaps, embedment, or wasted material will be made for mulch blankets, TRM's, and geotextiles.

Payment for Slope Restoration, Types I, II, IIA, III, and IIIA will be made at fifty (50) percent of the contract bid price upon completion of installation per this specification. The remaining fifty percent payment will be made after vegetation is established, as determined by the Engineer. Full payment for Types IV and V Slope Restoration will be made upon the Engineer's acceptance of the completed installation.

The completed work as described will be paid for at the contract unit price for the following contract item (pay item):

Contract Item (Pay Item)	Pay Unit
Slope Restoration, Type____.....	Square Yard

Except for Type IV and V Restoration, Payment for **Slope Restoration, Type____**, includes all materials, labor and equipment required to prepare grades, furnish and

place topsoil, chemical fertilizer, seed, mulch, mulch anchoring, mulch blankets, and stakes as specified herein.

Payment for **Slope Restoration, Type IV**, includes all materials, labor and equipment necessary to furnish, place, and anchor only the the TRM material prior to placing mulch blanket. Topsoil, seed, fertilizer, and mulch blanket will be included with payment for Type I, Type II, or Type III Restoration, paid for separately.

Payment for **Slope Restoration, Type V**, includes all materials, labor and equipment necessary to furnish, and place geotextiles and Open Graded Aggregate, as described herein.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
ACCEPTANCE OF HOT MIX ASPHALT MIXTURE ON LOCAL AGENCY PROJECTS

CFS:KPK

1 of 7

APPR:CJB:JWB:07-05-16
FHWA:APPR:07-05-16

a. Description. This special provision provides sampling and testing requirements for local agency projects using the roller method and the nuclear density gauge testing. Provide the hot mix asphalt (HMA) mixture in accordance with the requirements of the standard specifications, except where modified herein.

b. Materials. Provide aggregates, mineral filler (if required), and asphalt binder to produce a mixture proportioned within the master gradation limits shown in the contract, and meeting the uniformity tolerance limits in Table 1.

Table 1: Uniformity Tolerance Limits for HMA Mixtures

Parameter		Top and Leveling Course		Base Course		
Number	Description	Range 1 (a)	Range 2	Range 1 (a)	Range 2	
1	% Binder Content	-0.30 to +0.40	±0.50	-0.30 to +0.40	±0.50	
2	% Passing	# 8 and Larger Sieves	±5.0	±8.0	±7.0	±9.0
		# 30 Sieve	±4.0	±6.0	±6.0	±9.0
		# 200 Sieve	±1.0	±2.0	±2.0	±3.0
3	Crushed Particle Content (b)	Below 10%	Below 15%	Below 10%	Below 15%	
a. This range allows for normal mixture and testing variations. The mixture must be proportioned to test as closely as possible to the Job-Mix-Formula (JMF). b. Deviation from JMF.						

Parameter number 2 as shown in Table 1 is aggregate gradation. Each sieve will be evaluated on one of the three gradation tolerance categories. If more than one sieve is exceeding Range 1 or Range 2 tolerances, only the one with the largest exceedance will be counted as the gradation parameter.

The master gradation should be maintained throughout production; however, price adjustments will be based on Table 1. Aggregates which are to be used in plant-mixed HMA mixtures must not contain topsoil, clay, or loam.

c. Construction. Submit a Mix Design and a JMF to the Engineer. Do not begin production and placement of the HMA until receipt of the Engineer's approval of the JMF. Maintain the binder content, aggregate gradation, and the crushed particle content of the HMA mixture within the Range 1 uniformity tolerance limits in Table 1. For mixtures meeting the definition of top or leveling course, field regress air void content to 3.5 percent with liquid asphalt cement unless

specified otherwise on HMA application estimate. For mixtures meeting the definition of base course, field regress air void content to 3.0 percent with liquid asphalt cement unless specified otherwise on HMA application estimate.

Ensure all persons performing Quality Control (QC) and Quality Assurance (QA) HMA field sampling are "Local Agency HMA Sampling Qualified" samplers. At the Pre-Production or Pre-Construction meeting, the Engineer will determine the method of sampling to be used. Ensure all sampling is done in accordance with *MTM 313 (Sampling HMA Paving Mixtures)* or *MTM 324 (Sampling HMA Paving Mixtures Behind the Paver)*. Samples are to be taken from separate hauling loads.

For production/mainline type paving, obtain a minimum of two samples, each being 20,000 grams, each day of production, for each mix type. The Engineer will sample and maintain possession of the sample. Sampling from the paver hopper is prohibited. Each sample will be divided into two 10,000 gram parts with one part being for initial testing and the other part being held for possible dispute resolution testing. Obtain a minimum of three samples for each mix type regardless of the number of days of production.

Obtain samples that are representative of the day's paving. Sample collection is to be spaced throughout the planned tonnage. One sample will be obtained in the first half of the tonnage and the second sample will be obtained in the second half of the tonnage. If planned paving is reduced or suspended, when paving resumes, the remaining sampling must be representative of the original intended sampling timing.

Ensure all persons performing testing are Bit Level One certified or Bit QA/QC Technician certified.

Ensure daily test samples are obtained, except, if the first test results show that the HMA mixture is in specification, the Engineer has the option of not testing additional samples from that day.

At the Pre-Production or Pre-Construction meeting, the Engineer and Contractor will collectively determine the test method for measuring asphalt content (AC) using *MTM 319 (Determination of Asphalt Content from Asphalt Paving Mixtures by the Ignition Method)* or *MTM 325 (Quantitative Extraction of Bitumen from HMA Paving Mixtures)*. Back calculation will not be allowed for determining asphalt content.

Ensure all labs performing local agency acceptance testing are qualified labs per the *HMA Production Manual* and participate in the MDOT round robin process, or they must be *AASHTO Materials Reference Laboratory (AMRL)* accredited for *AASHTO T 30* or *T 27*, and *AASHTO T 164* or *T 308*. Ensure on non-National Highway System (NHS) routes, Contractor labs are made available, and may be used, but they must be qualified labs as previously stated. Contractor labs may not be used on NHS routes. Material acceptance testing will be completed by the Engineer within 14 calendar days, except holidays and Sundays, for projects with less than 5,000 tons (plan quantity) of HMA and within 7 calendars days, except holidays and Sundays, for projects with 5,000 tons (plan quantity) or more of HMA, after the Engineer has obtained the samples. QA test results will be provided to the Contractor after the Engineer receives the QC test results. Failure on the part of the Engineer or the laboratory to provide Quality Assurance test results within the specified time frame does not relieve the Contractor of their responsibility to provide an asphalt mix within specifications.

The correlation procedure for ignition oven will be established as follows. Asphalt binder content based on ignition method from MTM 319. Gradation (*ASTM D 5444*) and Crushed particle content (*MTM 117*) based on aggregate from *MTM 319*. The incineration temperature will be established at the Pre-Production Meeting. The Contractor will provide a laboratory mixture sample to the acceptance laboratory to establish the correction factor for each mix. Ensure this sample is provided to the Engineer a minimum of 14 calendar days prior to production.

For production/mainline type paving, the mixture may be accepted by visual inspection up to a quantity of 500 tons per mixture type, per project (not per day). For non-production type paving defined as driveways, approaches, and patching, visual inspection may be allowed regardless of the tonnage.

The mixture will be considered out-of-specification, as determined by the acceptance tests, if for any one mixture, two consecutive tests per parameter, (for Parameter 2, two consecutive aggregate gradations on one sieve) are outside Range 1 or Range 2 tolerance limits. If a parameter is outside of Range 1 tolerance limits and the second consecutive test shows that the parameter is outside of Range 2, then it will be considered to be a Range 1 out-of-specification. Consecutive refers to the production order and not necessarily the testing order. Out-of-specification mixtures are subject to a price adjustment per the Measurement and Payment section of this special provision.

Contractor operations will be suspended when the mixture is determined to be out-of-specification, but contract time will continue to run. The Engineer may issue a Notice of Non-Compliance with Contract Requirements (Form 1165), if the Contractor has not suspended operations and taken corrective action. Submit a revised JMF or proposed alterations to the plant and/or materials to achieve the JMF to the Engineer. Effects on the Aggregate Wear Index (AWI) and mix design properties will be taken into consideration. Production and placement cannot resume until receipt of the Engineer's approval to proceed.

Pavement in-place density will be measured using one of two approved methods. The method used for measuring in-place density will be agreed upon at a pre-production or pre-construction meeting.

Pavement in-place density tests will be completed by the Engineer during paving operations and prior to traffic staging changes. Pavement in-place density acceptance testing will be completed by the Engineer prior to paving of subsequent lifts and being open to traffic.

Option 1 – Direct Density Method

Use of a nuclear density gauge requires measuring the pavement density using the Gmm from the JMF for the density control target. The required in-place density of the HMA mixture must be 92.0 to 98.0 percent of the density control target. Nuclear density testing and frequency will be in accordance with the *MDOT Density Testing and Inspection Manual*.

Option 2 – Roller Method

The Engineer may use the Roller Method with a nuclear or non-nuclear density gauge to document achieving optimal density as discussed below.

Use of the density gauge requires establishing a rolling pattern that will achieve the required in-place density. The Engineer will measure pavement density with a density gauge using the Gmm from the JMF for the density control target.

Use of the Roller Method requires developing and establishing density frequency curves, and meeting the requirements of Table 2. A density frequency curve is defined as the measurement and documentation of each pass of the finished roller until the in-place density results indicate a decrease in value. The previous recording will be deemed the optimal density. The Contractor is responsible for establishing and documenting an initial or QC rolling pattern that achieves the optimal in-place density. When the density frequency curve is used, the Engineer will run and document the density frequency curve for each half day of production to determine the number of passes to achieve the maximum density. Table 5, located at the end of this special provision, can be used as an aid in developing the density frequency curve. The Engineer will perform density tests using an approved nuclear or non-nuclear gauge per the manufacturer's recommended procedures.

Table 2: Minimum Number of Rollers Recommended Based on Placement Rate

Average Laydown Rate, Square Yards per Hour	Number of Rollers Required (a)	
	Compaction	Finish
Less than 600	1	1 (b)
601 - 1200	1	1
1201 - 2400	2	1
2401 - 3600	3	1
3601 and More	4	1

a. Number of rollers may increase based on density frequency curve.
b. The compaction roller may be used as the finish roller also.

After placement, roll the HMA mixture as soon after placement as the roller is able to bear without undue displacement or cracking. Start rolling longitudinally at the sides of the lanes and proceed toward the center of the pavement, overlapping on successive trips by at least half the width of the drum. Ensure each required roller is 8 tons minimum in weight unless otherwise approved by the Engineer.

Ensure the initial breakdown roller is capable of vibratory compaction and is a maximum of 500 feet behind the paving operations. The maximum allowable speed of each roller is 3 miles per hour (mph) or 4.5 feet per second. Ensure all compaction rollers complete a minimum of two complete rolling cycles prior to the mat temperature cooling to 180 degrees Fahrenheit (F). Continue finish rolling until all roller marks are eliminated and no further compaction is possible. The Engineer will verify and document that the roller pattern has been adhered to. The Engineer can stop production when the roller pattern is not adhered to.

d. Measurement and Payment. The completed work, as described, will be measured and paid for using applicable pay items as described in subsection 501.04 of the Standard Specifications for Construction, or the contract, except as modified below.

Base Price. Price established by the Department to be used in calculating incentives and adjustments to pay items and shown in the contract.

If acceptance tests, as described in section c. of this special provision, show that a Table 1 mixture parameter exceeds the Range 1, but not the Range 2, tolerance limits, that mixture parameter will be subject to a 10 percent penalty. The 10 percent penalty will be assessed based on the acceptance tests only unless the Contractor requests that the 10,000 gram sample part retained for possible dispute resolution testing be tested. The Contractor has 4 calendar days from receipt of the acceptance test results to notify the Engineer, in writing, that dispute resolution testing is requested. The Contractor's QC test results for the corresponding QA test results must result in an overall payment greater than QA test results otherwise the QA tests will not be allowed to be disputed. The Engineer has 4 calendar days to send the dispute resolution sample to the lab once dispute resolution testing is requested. The dispute resolution sample will be sent to an independent lab selected by the Local Agency, and the resultant dispute test results will be used to determine the penalty per parameter, if any. Ensure the independent lab is a MDOT QA/QC qualified lab or an AMRL HMA qualified lab. The independent lab must not have conflicts of interest with the Contractor or Local Agency. If the dispute testing results show that the mixture parameter is out-of-specification, the Contractor will pay for the cost of the dispute resolution testing and the contract base price for the material will be adjusted, based on all test result parameters from the dispute tests, as shown in Table 3 and Table 4. If the dispute test results do not confirm the mixture parameter is out-of-specification, then the Local Agency will pay for the cost of the dispute resolution testing and no price adjustment is required.

If acceptance tests, as described in section c. of this special provision, show that a Table 1 mixture parameter exceeds the Range 2 tolerance limits, the 10,000 gram sample part retained for possible dispute resolution testing will be sent, within 4 calendar days, to the MDOT Central Laboratory for further testing. The MDOT Central Laboratory's test results will be used to determine the penalty per mixture parameter, if any. If the MDOT Central Laboratory's results do not confirm the mixture parameter is out-of-specification, then no price adjustment is required. If the MDOT Central Laboratory's results show that the mixture is out-of-specification and the Engineer approves leaving the out-of-specification mixture in place, the contract base price for the material will be adjusted, based on all parameters, as shown in Table 3 and Table 4.

In the case that the Contractor disputes the results of the test of the second sample obtained for a particular day of production, the test turn-around time frames given would apply to the second test and there would be no time frame on the first test.

The laboratory (MDOT Central Laboratory or independent lab) will complete all Dispute Resolution testing and return test results to the Engineer, who will provide them to the Contractor, within 13 calendar days upon receiving the Dispute Resolution samples.

In all cases, when penalties are assessed, the penalty applies to each parameter, up to two parameters, that is out of specification.

Table 3: Penalty Per Parameter

Mixture Parameter out-of-Specification per Acceptance Tests	Mixture Parameter out-of-Specification per Dispute Resolution Test Lab	Price Adjustment per Parameter
NO	N/A	None
YES	NO	None
	YES	Outside Range 1 but not Range 2: decrease by 10%
		Outside Range 2: decrease by 25%

The quantity of material receiving a price adjustment is defined as the material produced from the time the first out-of-specification sample was taken until the time the sample leading to the first in-specification test was taken.

Each parameter of Table 1 is evaluated with the total price adjustment applied to the contract base price based on a sum of the two parameter penalties resulting in the highest total price adjustment as per Table 4. For example, if three parameters are out-of-specification, with two parameters outside Range 1 of Table 1 tolerance limits, but within Range 2 of Table 1 limits and one parameter outside of Range 2 of Table 1 tolerance limits and the Engineer approves leaving the mixture in place, the total price adjustment for that quantity of material is 35 percent.

Table 4: Calculating Total Price Adjustment

Cost Adjustment as a Sum of the Two Highest Parameter Penalties		
Number of Parameters Out-of-Specification	Range(s) Outside of Tolerance Limits of Table 1 per Parameter	Total Price Adjustment
One	Range 1	10%
	Range 2	25%
Two	Range 1 & Range 1	20%
	Range 1 & Range 2	35%
	Range 2 & Range 2	50%
Three	Range 1, Range 1 & Range 1	20%
	Range 1, Range 1 & Range 2	35%
	Range 1, Range 2 & Range 2	50%
	Range 2, Range 2 & Range 2	50%

Table 5: Density Frequency Curve Development

Tested by: _____ Date/Time: _____

Route/Location:		Air Temp:
Control Section/Job Number:		Weather:
Mix Type:	Tonnage:	Gauge:
Producer:	Depth:	Gmm:

Roller #1 Type: _____

Pass No.	Density	Temperature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
Optimum			

Roller #2 Type: _____

Pass No.	Density	Temperature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
Optimum			

Roller #3 Type: _____

Pass No.	Density	Temperature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
Optimum			

Summary: _____

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
SAMPLING ASPHALT BINDER ON LOCAL AGENCY PROJECTS

CFS:MF

1 of 1

APPR:JAR:JTL:12-19-01
FHWA:CON. APPR:06-06-11

For informational purposes, original samples of asphalt binder will be taken by the Contractor and delivered to the Engineer prior to incorporation into the mixture. The frequency of sampling will be determined by the Engineer. The cost of obtaining and delivering the samples to the Engineer will be included in the hot mix asphalt (HMA) pay items.

The Contractor must certify in writing that the materials used in the HMA mixture are from the same source as the materials used in developing the HMA mixture design and the bond coat is from an approved supplier as stated in the *Material Quality Assurance Procedures Manual*.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
MARSHALL HOT MIX ASPHALT MIXTURE

CFS:JWB

1 of 2

APPR:EHR:CJB:09-25-06

FHWA:APPR:06-06-11

a. Description. Furnish hot mix asphalt (HMA) mixture, designed using Marshall Mixture Design Methods, in accordance with the standard specifications except as modified by this special provision.

b. Mix Design. Submit the mix design for evaluation in accordance with the Department's HMA Production Manual. Use a 50 blow Marshall hammer when compacting mixtures for developing Marshall mix designs.

c. Recycled Mixtures. Substituting reclaimed asphalt pavement (RAP) for a portion of the new material required to produce HMA mixture is allowed provided that the mixture is designed and produced to meet all criteria specified herein, unless otherwise prohibited. RAP materials must be in accordance with the standard specifications.

d. Materials. Table 1 provides the mix design criteria and volumetric properties. Table 2 provides the required aggregate properties. Use aggregates of the highest quality available to meet the minimum specifications. Use the mixture designation number shown in the contract item name when determining mix design properties from Tables 1 and 2.

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

Pay Item**Pay Unit**

HMA, (type)..... Ton

Table 1: Mix Design Criteria and Volumetric Properties

	Mixture No.				
	2C	3C	4C	13A	36A
Target Air Void, % (a)	3.00	4.00	4.00	4.00	4.00
VMA (min) (b)	11.00	13.00	14.00	14.00	15.00
VFA	65-78	65-78	65-78	65-78	65-78
Fines to Binder Ratio (max) (c)	1.2	1.2	1.2	1.2	1.2
Flow (0.01 inch)	8 -16	8 -16	8 -16	8 -16	8 -16
Stability (min), lbs	1200	1200	1200	900	900
a. Lower target air voids by 1.00% if used in a separate shoulder paving operation. Consider reducing air void targets to 3.00% for lower traffic volume roadways when designing 13A and 36A mixtures for local agency use. b. VMA calculated using Gsb of the combined aggregates. c. Ratio of the weight of aggregate passing the No. 200 sieve to total asphalt binder content by weight; including fines and binder contributed by RAP.					

Table 2: Aggregate Properties

	Mixture No.				
	2C	3C	4C	13A	36A
	Percent Passing Indicated Sieve or Property Limit				
1½ inch	100				
1 inch	91-100	100			
¾ inch	90 max.	91-100	100	100	
½ inch	78 max.	90 max.	91-100	75-95	100
⅜ inch	70 max.	77 max.	90 max.	60-90	92-100
No. 4	52 max.	57 max.	67 max.	45-80	65-90
No. 8	15-40	15-45	15-52	30-65	55-75
No. 16	30 max.	33 max.	37 max.	20-50	
No. 30	22 max.	25 max.	27 max.	15-40	25-45
No. 50	17 max.	19 max.	20 max.	10-25	
No. 100	15 max.	15 max.	15 max.	5-15	
No. 200	3-6	3-6	3-6	3-6	3-10
Crushed (min), % (MTM 117)	90	90	90	25	60
Soft Particle (max), % (a)	12.0	12.0	8.0	8.0	8.0
Angularity Index (min) (b)	4.0	4.0	4.0	2.5	3.0
L.A. Abrasion (max), % loss (c)	40	40	40	40	40
Sand Ratio (max) (d)	-	-	-	50	50
<p>a. The sum of the shale, siltstone, structurally weak, and clay-ironstone particles must not exceed 8.0 percent for aggregates used in top course. The sum of the shale, siltstone, structurally weak, and clay-ironstone particles must not exceed 12.0 percent for aggregates used in base and leveling courses.</p> <p>b. The fine aggregate angularity of blended aggregates, determined by MTM 118, must meet the minimum requirement. In mixtures containing RAP, the required minimum fine aggregate angularity must be met by the virgin material. NAA fine aggregate angularity must be reported for information only and must include the fine material contributed by RAP if present in the mixture.</p> <p>c. Los Angeles abrasion maximum loss must be met for the composite mixture, however, each individual aggregate must be less than 50</p> <p>d. Sand ratio for 13A and 36A no more than 50% of the material passing the No. 4 sieve is allowed to pass the No. 30 Sieve.</p>					

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
PAYMENT FOR MINOR TRAFFIC DEVICES AND TRAFFIC REGULATOR CONTROL

OPR:JJG

1 of 1

APPR:BJO:DBP:07-19-11
FHWA:APPR:07-19-11

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 Traf Devices and Traffic Regulator Control

Percent of Original Contract Amount Earned	Total Percent of Unit Price Paid
First Use	15
25	30
50	55
75	80
90	100

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
MEASUREMENT AND PAYMENT OF TEMPORARY TRAFFIC CONTROL DEVICES

OFS:CRB

1 of 1

APPR:MWB:JJG:02-27-14

FHWA:APPR:03-04-14

Delete subsection 812.04.A.4, on page 624 of the Standard Specifications for Construction in its entirety.

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

SPECIAL PROVISION
FOR
WORK ZONE SIGNING ON LOCAL AGENCY PROJECTS

OPR:MWB

1 of 3

APPR:MSBJKG:09-25-06

FHWA:APPR:06-01-11

a. Description. In addition to all other maintaining traffic signs required on this project, place work zone signing in accordance to the MDOT Traffic and Safety *Maintaining Traffic Typical(s)* contained in the proposal, except as modified herein.

On all “Advance Signing Treatment...” *Maintaining Traffic Typical(s)* (M0030 - M0080):

Replace the R5-18b sign “INJURE/KILL A WORKER \$7500 + 15 YEARS” sign with the R5-18bLA “INJURE/KILL A WORKER // FINE - \$ 7500 // JAIL - 15 YRS” sign, as detailed in the attached graphics.

Delete the R5-18 “TRAFFIC FINES DOUBLED IN WORK ZONES” sign or the R5-18a “TO PROTECT HIGHWAY WORKERS FINES DOUBLED IN WORK ZONES” sign, along with the prescribed ‘D’ spacing distance.

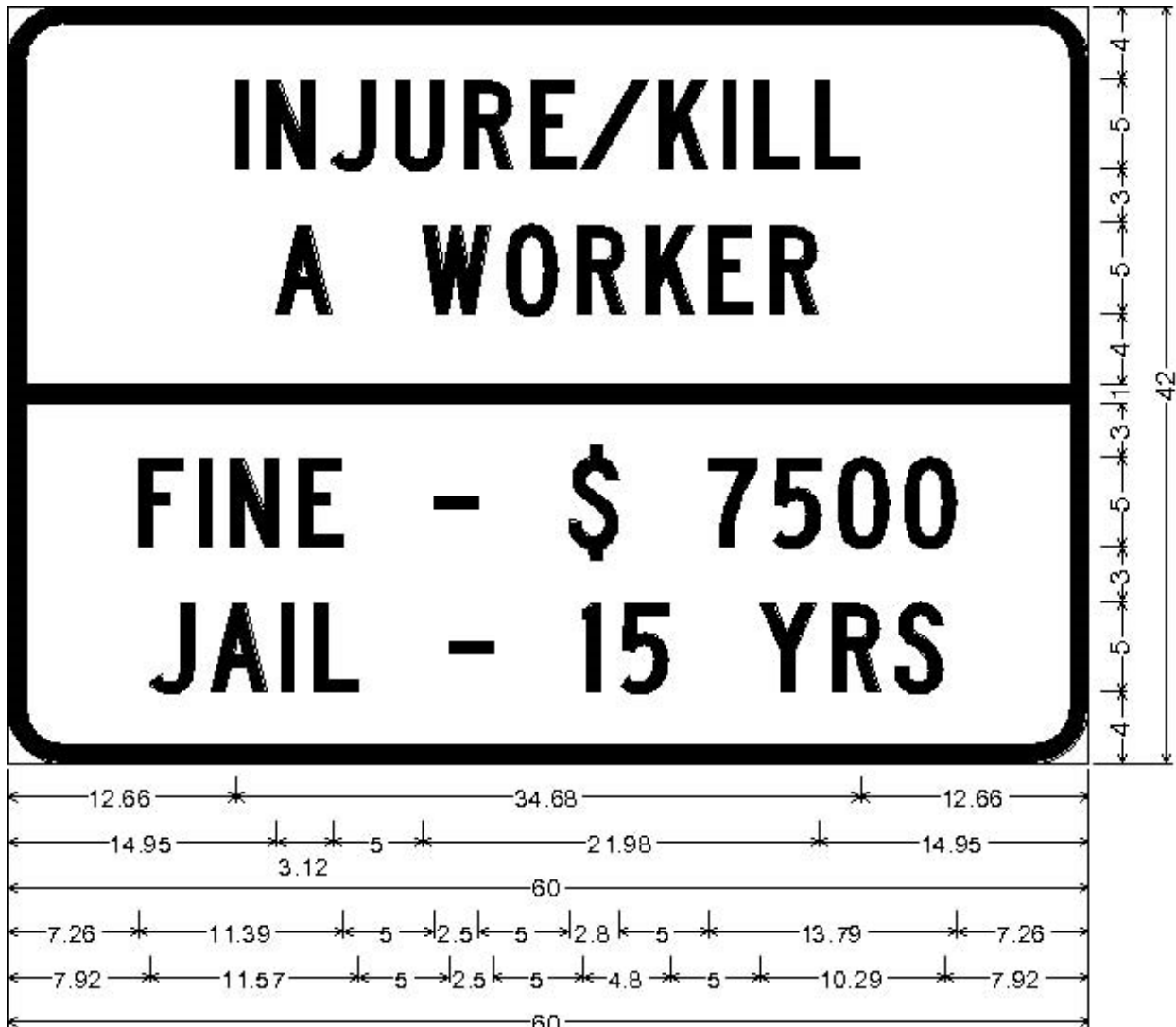
On all other “Typical Temporary Traffic Control...” *Maintaining Traffic Typical(s)* (M0110 et. al.):

Replace the R5-18c “WORK ZONE BEGINS” sign with the R5-18cLA “WORK ZONE BEGINS // TRAFFIC FINES DOUBLED” sign, as detailed in the attached graphics.

Place the G20-1 “ROAD WORK NEXT ___ MILES” sign and the G20-2 “END ROAD WORK” sign in accordance to the appropriate MDOT Traffic and Safety *Maintaining Traffic Typical*.

Place all other work zone signing in accordance to the project plans and specifications, including the appropriate MDOT Traffic and Safety *Maintaining Traffic Typical(s)*. Place all work zone signing in accordance to the standard specifications.

b. Measurement and Payment. Quantities for Local Agency work zone signs will be included in the plan quantities for the pay items **Sign, Type B, Temp, Furn** and **Sign, Type B, Temp, Oper** or **Sign, Type B, Temp, Prismatic, Furn** and **Sign, Type B, Temp, Prismatic, Oper**. Payment for the signs will be made at the contract unit prices.

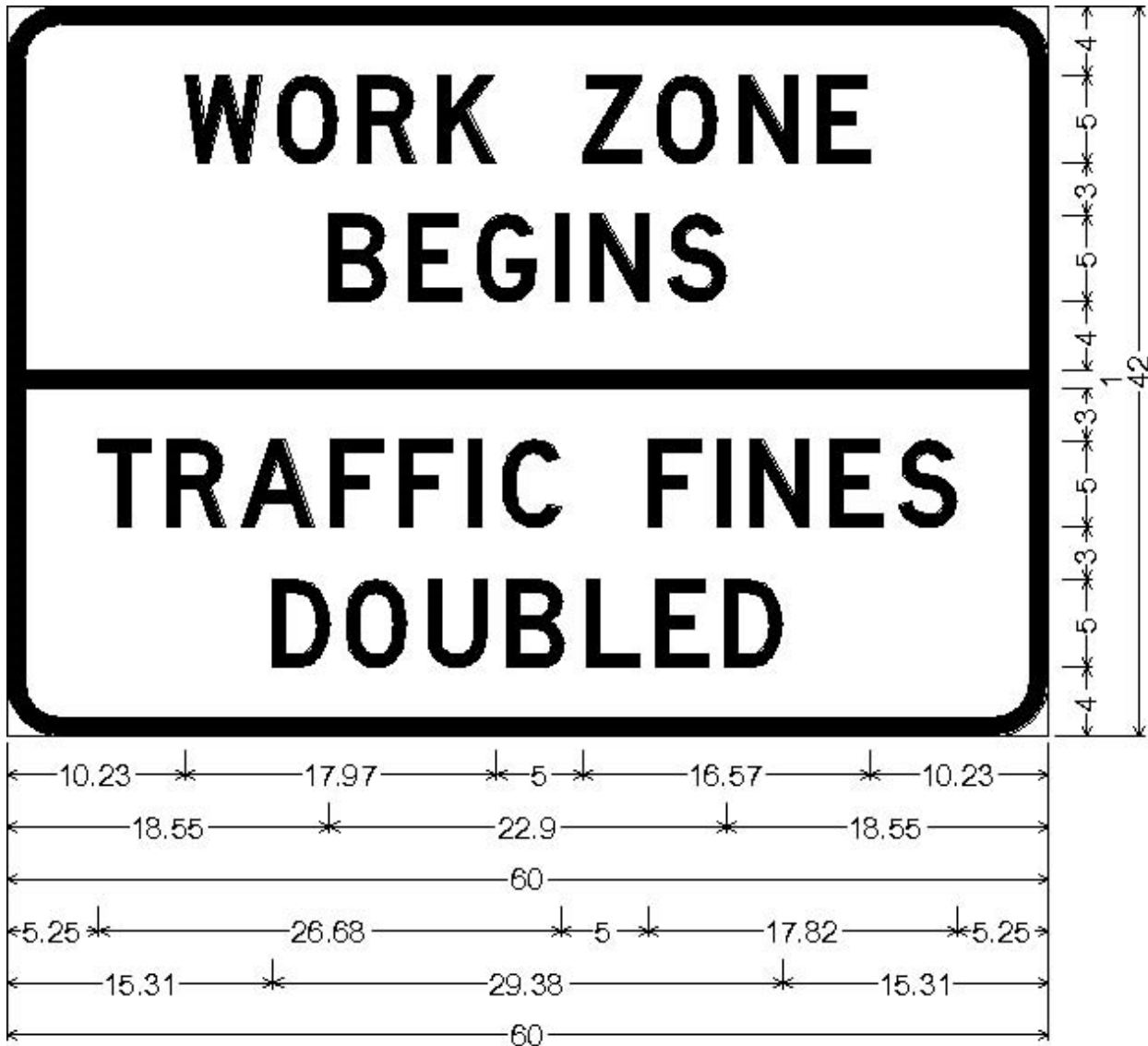


3.00" Radius, 1.00" Border, Black on White;

"INJURE/KILL" C; "A WORKER" C; "FINE - \$ 7500" C; "JAIL - 15 YRS" C;

- All dimensions in inches.
- Not to Scale.

R5-18bLA



3.00" Radius, 1.00" Border, Black on White;

"WORK ZONE" D; "BEGINS" D; "TRAFFIC FINES" D; "DOUBLED" D;

- All dimensions in inches
- Not to scale

R5-18cLA

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TYPE III BARRICADES

DES:DBP

1 of 1

APPR:MWB:CRB:08-07-15
FHWA:APPR:08-23-15

Delete the first sentence for the second paragraph in subsection 812.03.D.8 on page 606 of the Standard Specifications for Construction, and replace with the following:

Light Type III barricades with two, Type C or Type D warning lights, fastened to the uprights above the top rail, provided these warning lights each weigh 3.3 pounds or less.

Delete the following pay items from the list in subsection 812.04 on page 622 of the Standard Specifications for Construction.

Barricade, Type III, High Intensity, Furn.....	Each
Barricade, Type III, High Intensity, Oper	Each
Barricade, Type III, High Intensity, Double Sided, Furn	Each
Barricade, Type III, High Intensity, Double Sided, Oper	Each

Renumber the existing subsection 812.04.A.5 on page 624 of the Standard Specifications for Construction, as follows:

4. The manufacturer's invoiced cost for damaged equipment included in a lump sum pay item for maintaining traffic.

DELHI CHARTER TOWNSHIP

**NOTICE TO BIDDERS
UTILITY
COORDINATION**

HRC

1 of 1

09-15-2016

River Pointe Road Resurfacing

a. Description. The Contractor shall cooperate and coordinate construction activities with the owners of utilities as stated in Section 104.08 of the 2012 MDOT Standard Specifications for Construction. In addition, for the protection of underground utilities, the Contractor shall follow the requirements in Section 107.12 of the 2012 MDOT Standard Specifications for Construction. Contractor delay claims, resulting from a utility, will be determined based upon Section 108.09 of the 2012 MDOT Standard Specifications for Construction.

b. Utilities. The following Public/Private Utilities have facilities located within the Right-of-Way:

AT&T – Phone/Fiber Optic

Contact: Darnell Taylor
337 North Abbott Road
East Lansing, MI 48823
517-337-3509
dt5439@att.com

Comcast – Broadband

Contact: David Morris
1401 E Miller Rd
Lansing, MI 48911
616-307-8603
david_morris2@cable.comcast.com

Consumers Energy – Electric

Contact: Daniel Smith
530 West Willow Street
Lansing, MI 48906
517-374-2259
daniel_smith@cmsenergy.com

Consumers Energy – Gas

Contact: Douglas Furman
530 West Willow Street
Lansing, MI 48906
517-374-2375
Douglas_furman@cmsenergy.com

Lansing Board of Water & Light

Contact: Randall Roost
730 E. Hazel Street
Lansing, MI 48901
517-702-6114
rwr@lbwl.com

**Delhi Charter Township –
Sanitary**

Contact: Sandra Diorka
1492 Aurelius Road
Holt, MI 48842
517-699-3874
Sandra.diorka@delhitownship.com

The owners of the existing service facilities that are within grading or structure limits will move them to locations designated by the Engineer or will remove them entirely from the Right-of-Way. Owners of the public utilities will not be required by the Township to move additional poles or structures in order to facilitate the operation of construction equipment unless it is determined by the Engineer that such poles or structure constitute a hazard to the public or are extraordinarily dangerous to the Contractor's operation.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION
FOR
ERRATA TO THE 2012 STANDARD SPECIFICATIONS

1 of 29

07-29-16

Page	Subsection	Errata
3	101.02	Modify the abbreviation reading "AIS" to read "AISI".
4	101.02	Delete the following abbreviations and the long forms MDELEG 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.Army 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.

- 64 107.12 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.”
- 65 107.15.A Change "MDNRE" to "MDEQ" in four instances in this subsection.
- 66 107.15.A.3 Add the following to the end of the paragraph "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."
- 67* 107.16 The third sentence should read "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."

 Delete the last sentence of the first paragraph of this subsection.
- 80 108.08.F Delete the second paragraph in its entirety.
- 80 108.08.G Add the following new subsection:
 “G. The Contractor may propose and the Engineer may approve another equitable method, supported by an acceptable rationale to determine time extensions for any of the excusable delays listed in subsection 108.08.
- 83 108.10.C Change the last sentence of the first paragraph to read:
 “The liquidated damages may contain one or more components of damages added together.”
- 83 108.10.C.1 In Table 108-1 delete the last row of the table and replace it with the following:

≥50,000,000	4,500
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- 102 109.05.E.1 Change the second sentence of the third paragraph to read:
 “Provide the content specified in subsection 109.05.D.11 for the applicable items in this statement and as follows.”
- 107 150.04 Change the following pay item reading “Mobilization, Max ___” to read “Mobilization, Max (dollar)” at nine locations throughout the subsection.
- 112 201.03.A.3.b Change "MDNRE" to "MDNR" in three instances in this subsection.
- 150 208.01 Change "MDNRE" to "MDEQ" in this subsection.
- 180 308.03.A Change the first sentence of the second paragraph to read:

- “Do not operate equipment required to place backfill directly on geotextile products.”
- 185 401.03.A 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.
- 188 401.03.H Change the second sentence of the paragraph to read “Jack steel pipes in place in accordance with subsection 401.03.G”.
- 189 401.03.N Add the following sentence to the end of the first paragraph "Where possible, maintain the stream flow thru a temporary channel or temporary culvert."

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."
- 190 401.04 Change the fourth pay item from the end of the list to read as follows:
“Steel Casing Pipe, ___ inch, Tr Det ___.”
- 195 402.03.C Change the third sentence of the first paragraph to read as follows:
“Wrap pipe joints, with a diameter greater than 24 inches, using geotextile blanket.”
- 200 402.04 Change the third pay item from the top of the list to read as follows:
“Sewer, CI ___, ___ inch, Jacked in Place”
- 200 402.04.A Change the last sentence of the subsection to read as follows:
“The unit price for **Sewer** and **Sewer, Reinf Conc, Ellip** includes the cost of excavation, backfill, geotextile blanket and mandrel testing.”
- 201* 402.04.H 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**."
- 208 403.04.D.3 Change the sentence to read:
“Removing and replacing pavement adjacent to the adjusted cover per Standard Plan R-37 Series.”
- 218 406.03.A.2 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.”

- 219 406.03.B 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.”
- 219 406.03.C.1 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.”
- 223 406.03.G 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.”
- 224 406.03.G 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. Attach cast-in-place wing walls or headwalls as shown on the shop drawings.”
- 225 406.03.G.2 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.”
- 226 406.03.G.2 Change the first sentence of the second paragraph of this subsection to read:
 "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."
- 226 406.04.A.9 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.”
- 226* 406.04.A 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.”
- 227 406.04.B 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;

Renumber the exist items 2 through 4 in this list to read 3 through 5.

Delete existing item numbered 5 and replace with the following:

6. Inserts for bars and connection hardware; and

Renumber the existing item 6 in this list to read 7.

- | | | |
|-----|------------|--|
| 227 | 406.04.B | 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." |
| 239 | 501.03.C.6 | The first sentence of this subsection should read "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." |
| 247 | 501.03.O | Change footnote e in Table 501-5 to read:
"Flushing severe enough to significantly affect surface friction (Friction Number <35)." |
| 249 | 501.04.H | 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." |
| 257 | 503.03.E | Delete this subsection in its entirety. |
| 265 | 504.03.E.3 | Delete this subsection in its entirety. |
| 269 | 504.04.A | 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." |
| 299 | 601.04 | In table 601-2 delete the row for Grade P-NC concrete in its entirety. |
| 300 | 601.04 | 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." |

		countersunk screws with 3/4-inch or 1/2-inch diameter inserts for use in expansion joint cover plates."
389	706.03.D.4.b	Change the first sentence of the fourth paragraph to read "Design forms, form supports, and attachments to carry dead loads, and resultant horizontal loads due to forming of cantilever overhangs."
390	706.03.E.4	Change the fourth sentence of the first paragraph to read: "Use wire ties to secure all bar intersections for the top mat. Use wire ties to secure all bar intersections for other mats where the product of the length and width of bar intersection spacing exceeds 120 square inches."
391	706.03.E.8	Change the first sentence of the second paragraph of this subsection to read: "Patch sawed or sheared ends and visible defects in accordance with ASTM A 775."
392	706.03.E.8	Change the last sentence of the third paragraph of this subsection to read: "Coat mechanical splices after splice installation in accordance with ASTM A 775 for patching damaged epoxy coating."
394	706.03.H.1	Delete the last paragraph on page 394 and replace it with the following: "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."
406*	706.03.N.1.b	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."
416	707.03.C.1	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."
426	707.03.C.17	Change the second sentence in the first paragraph of this subsection to read: "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."
430	707.03.D.7.b	Delete the first sentence of the last paragraph of this subsection.

430*	707.03.D.7.b	Change the title of the Table 707-4 to read: "Minimum Bolt Tension for ASTM A 325 Bolts"
430	707.03.D.7.b	Change "104,000" to "103,000" in the last row under the column titled Minimum Bolt Tension.
431	707.03.D.7.c	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."
431*	707.03.D.7.c	Change the first sentence of the second paragraph to read: "Do not reuse ASTM A 325 bolts and nuts."
434	707.04.A	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."
438	708.03.A.2	Change the title of the subsection from "Shop Plans to read "Shop Drawings". Change the first sentence to read: "Submit shop drawings in accordance with subsection 104.02." Change the fourth sentence to read: "Do not start production until the Engineer approves the shop drawings."
441*	708.03.A.11	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".
441	708.03.A.11	Change the fourth sentence of the fourth paragraph to read "Do not exceed a maximum concrete temperature of 150 °F during the curing cycle."
458	711.03.A	Change the first sentence in the first paragraph to read: "Shop drawings for structural steel and pipe railings are not required."
460	711.04.A	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."
461	711.04.F	The title of this subsection should read " Reflective Marker, Permanent Barrier. "
467	712.03.C	Add the following to the end of the third paragraph of the subsection:

“Notify the Engineer of any saw cuts in the top flange. Saw cuts equal to or less than 1/32 inch deep in steel beams must be repaired by grinding, to a surface roughness no greater than 125 micro-inches per inch rms, and tapering to the original surface using a 1:10 slope. Saw cuts in excess of 1/32 inch deep in steel beams require a welded repair to be submitted to the Engineer for approval. Weld in accordance with subsection 707.03.D.8 and provide adequate notice to allow the Engineer to witness the repair work. Inspect and test all saw cut repairs (including grinding repairs) using ultrasonic testing in accordance with 707.03.D.8.c at no additional cost to the Department.”

- 471 712.03.J Add the following to the end of the second paragraph of the subsection:
“Select adhesive anchor systems from the Qualified Products List.”
- 471 712.03.J.1 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 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 Plates713"
- 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."
- 521 717.04.B 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."
- 522 718.02 Change the section number "906" in the third material in the list to read "919."
- 533 718.04 Delete the following pay item from the list:
Temp CasingFoot
- 533 718.04.B.2 Delete this subsection in its entirety.
- 533 718.04.B.3 Renummer this subsection as follows:
"2. **Permanent Casing.**"
- 540 802.04 Change "Non reinf" in the last pay item of the list with "Nonreinf".
- 545* 803.04.E 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."
- 560 807.04 Delete the following pay item from the list:
Guardrail Buffered EndEach
- 560 807.04.B 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.”
- 567 808.04.C 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."
- 569 809.04.A Change the first sentence to read:
“The unit price for **Field Office, CI** ___ includes the cost of setup, providing access, grading, maintaining, plowing snow, and utility hook-up charges.”
- 570 809.04.B 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.”
- 570 809.04.B 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.”
- 575 810.03.K Change the subsection to read
"K. **Drilled Piles for Cantilever and Truss Foundations.** Construct drilled piles for cantilever and truss foundations in accordance with section 718."
- 578 810.03.N.2 Add the following sentence after the first sentence of the second paragraph on this page:
"Mark each nut and bolt to reference the required rotation."
- 584 810.04 Delete the last pay item in the list:
Truss Fdn Anchor Bolts, Replace.....Each
- 596 811.03.G Delete this subsection in its entirety.
- 597* 811.03.H Rename this subsection as follows:
“G. **Raised Pavement Marker (RPM) Removal.**”
- 597* 811.04 Change "Crosshatching" in the last pay item of the list on this page to "Cross Hatching".
- 598* 811.04 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:
“Pavt Mrkg, Polyurea, (legend).....Each

Pavt Mrkg, Polyurea, (symbol).....Each”

Change the sixth item down the list to read:
“Pavt Mrkg, Polyurea, __ inch, Cross Hatching, (color)”

Change the eleventh item down the list to read:
“Rem Curing Compound, for Longit Mrkg, __ inch.....Foot”

Change the last item in the list to read:
“Witness, Log, Layout, \$1000.00”

- | | | |
|-----|---------------|---|
| 599 | 811.04.B | Delete this subsection in its entirety. |
| 599 | 811.04 | Rename the following subsections as follows:
B. Call Back.
C. Pavement Marking Removal.
D. Material Deficiency.” |
| 602 | 812.03.D | Change the first sentence to read "Provide and maintain traffic control devices meeting the requirements in the ATSSA Quality Guidelines for Work Zone Traffic Control Devices and Features." |
| 603 | 812.03.D.1 | The last sentence on this page should read "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." |
| 604 | 812.03.D.2 | The first sentence of the fourth paragraph should read "Do not use burlap or similar material to cover Department or Local Government owned signs." |
| 604 | 812.03.D.5 | The fifth sentence of the first paragraph should read "Do not mix drums and cones within a traffic channeling sequence." |
| 605 | 812.03.D.6.b | Change the first sentence of the first paragraph to read:
“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.” |
| 605 | 812.03.D.7 | Add the following sentence after the first sentence of the first paragraph:
“Place a shoulder closure taper in advance of the lighted arrows placed on the shoulders.” |
| 607 | 812.03.D.9 | Delete the second paragraph of this subsection and replace with the following: “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.” |
| 608 | 812.03.D.10.b | Delete the second sentence of the second paragraph of this subsection beginning with "Install sand module attenuators..." |

- 608 812.03.D.10.b Add the following sentence after the second paragraph of this subsection:
"Install impact attenuation devices as shown on the plans, as directed by the Engineer, or both."
- 609 812.03.D.10.e Delete the second paragraph of this subsection.
- 613 812.03.D.14.a.iii Change the sentence in this subsection to read "Place an ET Type or SKT Type extruder guardrail ending on both blunt guardrail ends."
- 615 812.03.F The second sentence of the second paragraph of this subsection should read: "The Contractor may use a Type R temporary pavement marking cover, per subsection 812.03.D.12 when authorized by the Engineer."
- 616 812.03.F.2 The last sentence of the first paragraph should read: "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."
- 617 812.03.G.3 The first sentence of the second paragraph should read: "Sweep the shoulder and remove debris prior to placing traffic on the shoulder and throughout the time the shoulder is used to maintain traffic."
- 617 812.03.G.4.a Delete "48 inch by 48 inch" from the first sentence of this subsection.
- 618* 812.03.G.7 The first sentence of the first paragraph should read: "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."
- 619 812.03.G.8 The second sentence of the third paragraph from the end of the subsection should read: "Illuminate traffic regulator stations at night per subsection 812.03.H."
- 621 812.03.I.6 Delete "48 inch by 48 inch" from the second sentence of this subsection.
- 622* 812.03.J The second paragraph should read "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."
- 622 812.04 Change the second item down the list to read:
"Traf Regulator Control"
- Change the sixth item down the list to read:
"Sign Cover, Type I"
- 626 812.04.I Change the reference "812.04.E" in the first sentence to "812.04.D".
- 628 812.04.M.4 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."

- 629 812.04.N.1 Change the reference "811.04.D" in the second paragraph of this subsection to read "811.04.C".
- 630 812.04.S Change the first sentence to read: "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."
- 634 813.03.C.3 Change the reference "903.07.A" in the paragraph of this subsection to read "907.07.B".
- 646 815.04 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"
- 646 815.04.C.1 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.
- 646 815.04.C.1.b Delete this subsection in its entirety.
- 646 815.04.C.1.c Rename this subsection to read:
"b. Removal and disposal of unacceptable plants."
- 646 815.04.C.2 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.
- 647 815.04.C.2 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."
- 650 816.03.B Delete the first paragraph of this subsection and replace with the following:
"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."
- 650 816.03.B.1 Change the sentence to read: "For Class A fertilizer, evenly apply 176 pounds of chemical fertilizer nutrient per acre on a prepared seed bed."

650	816.03.B.2	Change the sentence to read: "For Class B fertilizer, evenly apply 120 pounds of chemical fertilizer nutrient per acre on a prepared seed bed."
650*	816.03.B.3	Change the sentence to read: "For Class C fertilizer, evenly apply 80 pounds of chemical fertilizer nutrient per acre on established turf."
663*	819.01	<p>Delete the first paragraph in the subsection and replace it with the following:</p> <p>"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 Safety Code, and the MDLARA for those items not identified in the contract."</p> <p>Change the third sentence of the second paragraph in this subsection to read:</p> <p>"Contact the MDLARA for electrical service inspection and pay the applicable fees."</p>
671	819.03.F.1	<p>Change the paragraph to read:</p> <p>"Install light standard foundations as shown on the plans and the standard plans, as applicable."</p>
673	819.03.G.4.b	<p>Change the last sentence of the first paragraph to read:</p> <p>"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."</p>
673	819.03.G.4.b	<p>Delete the first two sentences of the second paragraph and replace with the following:</p> <p>"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."</p>
678*	819.04	<p>Delete the last item in the list on this page reading:</p> <p>"DB Cable, in Conduit, 600 Volt, (number) 1/C# (size) Foot"</p>
680	819.04	<p>Change the first paragraph to read:</p> <p>"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."</p>
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:
“The unit prices for **Cable, Rem** and **Cable, (type), Rem** include the cost of dead ending, circuit cutting, installing guying, work required to leave circuits operable, and disposing of the removed cables, wire, hardware, and other appurtenances.”
- 681 819.04.D Change the first paragraph of the subsection to read:
“The unit price for **Cable, Pole, (type), Disman** includes the cost of dismantling and off-site disposal of the following:”
- 685 820.01.D Change the sentence to read:
“Excavate, backfill, restore the site in kind in accordance with section 816, and dispose of excess or unsuitable material;”
- 688 820.03.C Change the seventh paragraph of this subsection to read:
“Tighten top anchor bolt nuts, snug, in accordance with the first four paragraphs of subsection 810.03.N.2, except beeswax will not be required.”
- 696 820.04 Add the following pay items to the list:
“Pedestal, Pushbutton, Alum.....Each
Pedestal, Pushbutton, Rem.....Each”
- 697 820.04.A.2 Change the sentence to read:
“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.”
- 698 820.04.B Delete the second paragraph of this subsection found on this page.
- 698 820.04.C Change "**Fdns**" to read "**Fdn**" in four instances in this subsection.
- 701 820.04.J.3 Change the sentence to read: "Installing wires in the saw slots and to the handholes;"
701. 820.04.J Add the following as a new subsection:

- “7. A 3/4 inch minimum flexible conduit (non-metallic and rated for underground use) from the pavement to the handhole.”
- 706 821.01.B Change the website address listed after the second paragraph on this page to read:
“<http://www.ngs.noaa.gov/heightmod/GuidelinesPublications.shtml>”
- 711 822.03.B Change the second paragraph to read:
 “If corrugations are required on concrete shoulders and the method of installation is not shown on the plans or directed by the Engineer, construct corrugations by grinding, or cutting.”
- 720 823.04 Change the pay item seventh from the bottom of the list to read:
 “Water Shutoff, Adj, Temp, Case ___”
- 730 824.03.Q Change the third sentence of the fourth paragraph to read:
 “Ensure placement of monumentation in accordance with section 821.”
- 730 824.03.Q Change the first sentence of the last paragraph to read:
 “The Department will not pay for work dependent on lost or destroyed stakes until the Contractor replaces the stakes.”
- 732 824.04 Change the first sentence of the first paragraph following the list of pay items to read:
 “If the Engineer determines the Contractor will perform staking as extra work, the Department will pay for staking in accordance with section 103.”
- 733 824.04 Change the left column header in Table 824-2 to read:
“Percent of Original Contract Amount Earned”
- 739 902.02 Change the last aggregate testing description to read:
 “Determining Specific Gravity and Absorption of
 Fine Aggregates.....MTM 321”
- 742 902.03.C.1.a Change the sentence to read:
 “Coarse aggregate includes all aggregate particles greater than or retained on the 3/4-inch sieve.”
- 742 902.03.C.2.a Change the sentence to read:
 “Intermediate aggregate includes all aggregate particles passing the 3/4-inch sieve through those retained on the No. 4 sieve.”
- 742 902.03.C.2.b.iii Change the sentence to read as follows:
 “Maximum Loss by Washing per MTM 108 of 3.0 percent”.
- 744 902.07 Delete the fourth paragraph of the subsection and replace it with the following:
 “The Engineer will only allow the use of granular material produced from crushed portland cement concrete for embankment and as trench

backfill for non-metallic culvert and sewer pipes without associated underdrains. However, granular material produced from crushed portland cement concrete is not permitted as swamp backfill, nor within the top 3 feet below subgrade regardless of the application.

746*	902.11	<p>Change the Item of Work by Section Number column in Table 902-1 for the 6AA row to read: "406, 601, 602, 706, 708, 806".</p> <p>Change the Item of Work by Section Number column in Table 902-1 for the 6A row to read: "206, 401, 402, 406, 601, 602, 603, 706, 806".</p> <p>Change the Item of Work by Section Number column in Table 902-1 for the 34R row to read: "401, 404, 406".</p>
751*	902.11	Replace Table 902-6 with the Table 902-6 below.
751	Table 902-7	Under the Material column in the fourth row change the "FA2" to read "2FA".
751	Table 902-7	Under the Material column in the fifth row change the "FA3" to read "3FA".
752	Table 902-8	Under the Material column in the fourth row change the "FA2" to read "2FA".
752	Table 902-8	Under the Material column in the fifth row change the "FA3" to read "3FA".
761	Table 904-2	Delete the footnote f and any other reference to footnote f from the table.
767	905.03	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".
767*	905.03	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".
767	905.03	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".
768	905.03.C	Change the first sentence in the subsection to read:

		"Epoxy coated steel reinforcement, if required, must be coated in accordance with ASTM A 775, with the following exceptions and additions."
768	905.03.C.3	Change the first sentence of this subsection to read: "Include written certification that the coated reinforcing bars were cleaned, coated, and tested in accordance with ASTM A 775 with the coating applicator."
768	905.05	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)".
768	905.06	Delete this subsection in its entirety and replace it with the following: "Deformed wire fabric for prestressed concrete and fabric for concrete pavement reinforcement must meet the requirements of ASTM A 1064 and fabricated as required."
772	906.07	Change the first paragraph to read: "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."
777*	907.03.D.2.a	Change the first sentence of the second paragraph to read: "Angle sections must be nominal 2½ inch by 2½ inch by ¼ inch."
777*	907.03.D.2.b	Change the first sentence of the first paragraph to read: "Angle section braces must be nominal 1¾ inch by 1¾ inch by ¼ inch or nominal 2 inch by 2 inch ³/₁₆ inch."
782	908.04	Change the first sentence of the first paragraph of this subsection to read: "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."
783*	908.09.A	Change the title of this subsection and the first sentence to read "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".

- 783* 908.09.B Change the title of this subsection and the first sentence to read
"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".
- 784* 908.09.C Change this subsection to read:
"C. **Hardware.** Railing anchor studs must meet the requirements of ASTM A 449. Heavy hex nuts must meet the requirements of ASTM A 563. Bolts, used as rail fasteners, must meet the requirements of ASTM A 325, Type 1. Where called for, round head bolts must meet the requirements of ASTM A 449. The material for the railing hand hole screws must meet the requirements of ASTM A 276, Type 304. All nuts must meet the requirements of ASTM A 563 Grade DH or AASHTO M 292 Grade 2H. All flat washers must meet the requirements of ASTM F 436. Lock washers must be steel, regular, helical spring washers meeting the requirements of ANSI B18.21.1 - 1972. Bolts, nuts, washers and other hardware must be hot-dip galvanized in accordance with AASHTO M 232. 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."
- 785 908.11.B 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."
793	909.06	Change the first sentence of the second paragraph of this subsection to read: "Provide Corrugated Polyvinyl Chloride Pipe (CPV) and required fittings meeting the requirements of AASHTO M 304."
793*	909.05.D	Change the second sentence of the paragraph to read "Provide a continuous welded joint to create a watertight casing that is capable of withstanding handling and installation stresses. Perform field welding by the SMAW process using E7018 electrodes."
794*	909.08.A	Change the first sentence to read: "Provide bridge deck downspouts of PE pipe meeting the requirements of ASTM F 714, PE 4710, DR 26."
804	Table 909-9	In the note area at the bottom of the table change the designation of the second note from "c." to "b."
811	910.04	Add the following sentence to the end of this subsection: "Fabricate silt fence according to subsection 916.02."
814	Table 911-1	In the 4 th row of the 5 rows in the table change the Property listed as "Total Organic Content (TOC)" to read "Total Organic Carbon (TOC)".
829*	912.08.K	Replace Table 912-10 with the Table 912-10 below.
833*	913.03.B	Change the first sentence of the first paragraph to read: "Clay brick, to construct manholes, catch basins, and similar structures, must meet the requirements of ASTM C 32, for Grade MS."
837*	914.04	Add the following as subsection 914.04.C:

“C. Lubricant-Adhesive for Neoprene Joint Seals. The lubricant-adhesive must be a single-component moisture-curing polyurethane and aromatic hydrocarbon solvent mixture meeting ASTM D 2835, Type I. Ship in containers plainly marked with the lot or batch number of the material and date of manufacture. Store at temperatures between 58 and 80°F. Do not exceed 12 months shelf-life prior to use.”

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| 840 | 914.08 | Change the first sentence of the second paragraph to read: “Straight tie bars for end-of-pour joints must consist of bars of the diameter and length shown on the plans meeting the requirements of ASTM A 615, ASTM A 706, or ASTM A 996 (Type R or Type A only)”. |
| 840* | 914.09.A | Change the first sentence of the first paragraph to read: “Straight tie bars for longitudinal pavement joints must consist of bars of the diameter and length shown on the plans meeting the requirements of ASTM A 615, ASTM A 706, or ASTM A 996 (Type R or Type A only)”. |
| 840 | 914.09.B | Change the first sentence of the first paragraph to read: “Bent tie bars for bulkhead joints must consist of bars of the diameter and length shown on the plans.” |
| 841 | 914.12 | In the first sentence of this subsection change "AASHTO Division II" to read "AASHTO LRFD Bridge Construction Specifications". |
| 841* | 914.13 | In the first sentence of this subsection change "ASTM D 1248, for Type III, Class B" to read "ASTM D 4976, Group 2, Class 4, Grade 4". |
| 844 | 916.01.A | Change the first sentence to read: "Cobblestone must consist of rounded or semi-rounded rock fragments with an average dimension from 3 inches to 10 inches." |
| 845 | 916.01.D.1 | Change the second sentence to read: "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." |
| 851* | 917.10.B.1 | 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.” |
| 851 | 917.10.B.1 | Add the MSU Soil Testing Lab Recommendations for Phosphorus Applications to Turfgrass, found below, after the first paragraph of this subsection. |
| 853 | 917.15.B.1 | 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.”
- 857 918.01 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.”
- 858 918.01.E Delete the first three sentences of the second paragraph shown on page 858.
- 863 918.06.F.1 Delete the third paragraph in this subsection in its entirety and replace it with the following:
 "Provide smooth or deformed welded wire fabric in accordance with ASTM A 1064."
- 864 918.07.C 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.”
- 864 918.07.C Delete the second sentence of the second paragraph.
- 864 918.07.C Change the third sentence to read:
 “Provide anchor bolts threaded 4 inches beyond the anchor bolt projection shown on the plans.”
- 867 918.08.C 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.”
- 867 918.08.C Change the last sentence of the subsection to read:
 “Provide each frangible base with manufacturer access covers as shown on the plans.”
- 867* 918.08.D Delete this subsection in its entirety and replace with the following:
 "Provide galvanized anchor bolts, studs, nuts, couplings, and washers in accordance with subsection 908.14."
- 879 918.10.J Change the third sentence of the second paragraph of this subsection to read:
 "Provide anchor bolts and associated nuts, washers, and hardware meeting the requirements of subsection 908.14."
- 887 919.06 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.”

- 887 919.07.C Change the sentence to read:
“Galvanized high-strength steel bolts, nuts, and washers for connecting arm connection flanges must meet the requirements of subsection 906.07.”

- 903 921.03.D Delete the last three sentences of the first paragraph of this subsection.

- 914 921.05.D Change the first sentence of this subsection to read:
"Provide anchor bolts meeting the requirements of subsection 908.14.C, including elongation and reduction of area requirements."

- 916 921.07 Change the first sentence of the first paragraph to read: "Provide LED case signs internally illuminated by LEDs and changeable message case signs internally illuminated with LED light sources."

- 936 922.04.B In the first sentence of the first paragraph change the "R-52" to "R-126".

- 936 922.04.B 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).”

- 936 922.04.B In the first sentence of the second paragraph delete "R-52".

- 936 922.04.B Change the fourth paragraph of this subsection to read as follows:
For all endings requiring impact attenuators provide a NCHRP-350 Test Level 3 or MASH Test Level 3 approved impact attenuation system, unless otherwise approved by the Engineer.

- 953* Pay Item Index Delete the following pay item reading:
“DB Cable, in Conduit, 600 Volt, (number) 1/C# (size)678 819”

- 957 Pay Item Index Delete the following pay item from the list:
Guardrail Buffered End560 807

- 960 Pay Item Index Change the following pay item to read:
“Mobilization, Max (dollar)107 150”

- 961 Pay item Index Delete the following pay items from the list:
Pavt Mrkg, (material), 4 inch, SRSM, (color).....598.....811
Pavt Mrkg, (material), 4 inch, SRSM, 2nd Application,
(color).....598.....811

- 961 Pay Item Index Change the following pay items in the list to read:
Pavt Mrkg, Ovly Cold Plastic, 12 inch, Cross Hatching, (color)
Pavt Mrkg, Polyurea, __ inch, Cross Hatching, (color)

Add the following pay items to the list:

“Pavt Mrkg, Polyurea, (legend).....	598.....	811
Pavt Mrkg, Polyurea, (symbol).....	598.....	811
Pedestal, Pushbutton, Alum.....	696.....	820
Pedestal, Pushbutton, Rem.....	696.....	820”

962	Pay Item Index	Change the following pay items in the list to read: “Pile Driving Equipment, Furn (Structure No.) Pile, Galv (Structure No.)”
963	Pay Item Index	Change the following pay item to read: “Rem Curing Compound, for Longit Mrkg, __ inch598 811”
964	Pay Item Index	Change the following pay item to read: “Sewer, CI __, __ inch, Jacked in Place200 402” “Sign Cover, Type I.....622 812”
965*	Pay Item Index	Change the following pay item in the list to read: “Steel Casing Pipe, __ inch, Tr Det __ Site Preparation, Max (dollar)646 815”
966	Pay Item Index	Delete the following pay item form the list; Temp Casing.....533.....718
967*	Pay Item Index	Delete the following pay item from the list; Truss Fdn Anchor Bolts, Replace.....584.....810
967	Pay Item Index	Change the following pay item in the list to read: “Traf Regulator Control”
968*	Pay item Index	Change the following pay item in the list to read: “Water Shutoff, Adj, Temp, Case __ Watering and Cultivating, First Season, Min (dollar).....646 815 Watering and Cultivating, Second Season, Min (dollar)646 815”
969	Pay item Index	Change the following pay item in the list to read: “Witness, Log, Layout, \$1000.00”
993	General Index	Change “Shop Plans (see Plans and Working Drawings)” to read “Shop Drawings (see Plans and Working Drawings)”.

**Table 701-1
Concrete Structure Mixtures**

Concrete Grade (e,h)	Section Number Reference (i)	Cement Content per cyd (b,c)		Type A, D or no Admixture	Slump (inches)			Minimum Strength of Concrete (f)					
		lb	sack		Type MR, F, or G Admixtures (g)			Flexural (psi)			Compressive (psi)		
					Before Admixture	After Admixture (Type MR)	After Admixture (Type F or G)	7 Day	14 Day	28 Day (Class Design Strength)	7 Day	14 Day	28 Day (Class Design Strength)
D (a)	706, 711, 712	658 (d)	7.0	0 - 3	0 - 3	0 - 6	0 - 7	625	700	725	3,200	4,000	4,500
S1	705	611	6.5	3 - 5	0 - 3	3 - 6	3 - 7	600	650	700	3,000	3,500	4,000
T	705, 706	611	6.5	3 - 7	0 - 4	3 - 7	3 - 8	550	600	650	2,600	3,000	3,500
S2 (a)	401, 705, 706, 712, 713, 801, 802, 803, 810	564	6.0	0 - 3	0 - 3	0 - 6	0 - 7	550	600	650	2,600	3,000	3,500
		526 (d)	5.6										
S3	402, 403, 803, 804, 806	517	5.5	0 - 3	0 - 3	0 - 6	0 - 7	500	550	600	2,200	2,600	3,000
		489 (d)	5.2										

- 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.
- i. Section Number Reference:

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

**Table 902-6
Superpave Final Aggregate Blend Physical Requirements**

Est. Traffic (million ESAL)	Mix Type	Percent Crushed Minimum Criteria		Fine Aggregate Angularity Minimum Criteria		% Sand Equivalent Minimum Criteria		Los Angeles Abrasion % Loss Maximum Criteria		% Soft Particles Maximum Criteria (b)		% Flat and Elongated Particles Maximum Criteria (c)	
		Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course	Top & Leveling Courses	Base Course
< 0.3	LVSP	55/—	—	—	—	40	40	45	45	10	10	—	—
< 0.3	E03	55/—	—	—	—	40	40	45	45	10	10	—	—
≥0.3 - <1.0	E1	65/—	—	40	—	40	40	40	45	10	10	—	—
≥1.0 - <3	E3	75/—	50/—	40(a)	40(a)	40	40	35	40	5	5	10	10
≥3 - <10	E10	85/80	60/—	45	40	45	45	35	40	5	5	10	10
≥10 - <30	E30	95/90	80/75	45	40	45	45	35	35	3	4.5	10	10
≥30 - <100	E50	100/10 0	95/90	45	45	50	50	35	35	3	4.5	10	10

(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.

Table 912-10 Minimum Retention Requirements				
Preservative	Minimum Retention, (pcf)			AWPA Standard
	Guardrail Posts	Sign Posts	Blocks	
Pentachlorophenol	0.60	0.50	0.40	A6
CCA, ACZA	0.60	0.50	0.40	A11
ACQ (a)	0.60	Not Allowed	0.40	A11
CA-B (a)	0.31	Not Allowed	0.21	A11
CA-A (a)	0.31	Not Allowed	0.15	A11
Other Waterborne preservatives	AWPA Commodity Specification A, Table 3.0, Use Category 4B	Not Allowed	AWPA Commodity Specification A, Table 3.0, Use Category 4A	A11
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.				

MSU Soil Testing Lab Recommendations for Phosphorus Applications to Turfgrass
3/8/2012

		Sand based rootzone establishment	Golf greens and tees est. or mature; Kentucky bluegrass or perennial ryegrass athletic fields est. or mature; sand based rootzone mature	Lawns, golf course fairways; establishment or mature	Establishment without soil test
Bray P1, Mehlich 3 Soil Test Value (ppm): pH<7.4	Olsen Soil Test Value (ppm) pH>7.4	Recommendation (lbs. P ₂ O ₅ /1000 ft. ²)	Recommendation (lbs. P ₂ O ₅ /1000 ft. ²)	Recommendation (lbs. P ₂ O ₅ /1000 ft. ²)	Recommendation (lbs. P ₂ O ₅ /1000 ft. ²)
0	0	4.4	3.4	2.5	2.5 lbs. year (Maximum single application of 1.5 lbs.)
2	1.3	4.1	3.1	2.2	
4	2.7	3.9	2.7	1.9	
6	4	3.6	2.4	1.6	
8	5.3	3.4	2.0	1.3	
10	6.7	3.1	1.7	1.0	
12	8	2.8	1.4	0.7	
14	9.3	2.6	1.0	0.4	
16	10.7	2.3	0.7	0.1	
18	12	2.1	0.3	0.0	
20	13.3	1.8	0.0		
22	14.7	1.5			
24	16	1.3			
26	17.3	1.0			
28	18.7	0.8			
30	20	0.5			
32	21.3	0.2			
34	22.7	0.0			

Web resources: www.turf.msu.edu or www.bephosphorusmart.msu.edu

PUBLIC UTILITIES

UNDERGROUND UTILITIES / MISS DIG

For protection of underground utilities and in conformance with Public Act 53, 1974, the Contractor shall dial 1-800-482-7171 a minimum of three full working days, excluding Saturdays, Sundays, and holidays prior to beginning each excavation in areas where public utilities have not been previously located. Members will thus be routinely notified. This does not relieve the Contractor of the responsibility of notifying utility owners who may not be a part of the "Miss Dig" alert system.

If plan information indicates an existing underground utility is or will be out of service within the limits of this contract. The Contractor is cautioned to treat such a line as if it were still in service and notify "Miss Dig" when working in the area of the out of service facility.

The existing utilities listed in the Special Provision for Utility Coordination and shown on these plans represent the best information available as obtained on our surveys. This information does not relieve the Contractor of the responsibility to be satisfied as to its accuracy and the location of existing utilities.

PROJECT SPECIFIC NOTES

The improvements covered by these plans shall be performed according to the Michigan Department of Transportation 2012 Standard Specifications for Construction, Special Provisions, and Supplemental Specifications.

The improvements covered by these plans are designed in accordance with the following design guideline references, except as otherwise noted herein:

- A Policy on Design of Highways and Streets, American Association of State Highway and Transportation Officials, 2011 edition.
- Michigan Department of Transportation Local Agency Programs Guidelines for Geometrics, 2014 Edition (Part C, 3R)

All work performed under this contract shall be according to the Manual on Uniform Traffic Control Devices, Michigan 2011 edition.

NOTES APPLYING TO STANDARD PLANS

Where the following items are called for on plans, they are to be constructed according to the standard plan given below opposite each item unless otherwise indicated.

Title	Plan No.
ROAD	
SIDEWALK RAMP AND DETECTABLE WARNING DETAILS	R-28-J *
DRIVEWAY OPENINGS & APPROACHES AND CONCRETE SIDEWALK	R-29-I
CONCRETE CURB AND CONCRETE CURB & GUTTER	R-30-G
SOIL EROSION & SEDIMENTATION CONTROL MEASURES	R-96-E
SEEDING AND TREE PLANTING	R-100-H
SUPERELEVATION AND PAVEMENT CROWNS	R-107-H

* Denotes Special Detail

Note: Special Details indicated above are included in the contract plans herein.

CONTRACT QUANTITIES

Contract quantities are subject to change to keep project costs within budgetary constraints. The Contractor should anticipate that the quantities of major items of work (Cold Milling HMA, HMA paving) could be reduced by the Engineer. The Contractor is advised that the item "Mobilization, Max \$___" has been included in the contract to fairly compensate for mobilization costs in the event of consequential quantity reductions. Significant quantity reduction(s) to major work item(s) shall not be grounds for claims for additional compensation.

The Contractor is also advised that the project budget may be subject to increase if contract unit pricing is determined to be favorable to Ingham County. The Engineer will determine the priority of project segment(s) to be reduced or eliminated following tabulation of bids.

REMOVALS

LAWN SPRINKLER SYSTEMS AND LANDSCAPING

Owners of existing lawn sprinkler systems and/or landscaping shall be notified (in writing with a copy sent to the Engineer) by the Contractor two weeks in advance of any work to be done that will affect those systems and/or landscaping. If the property owner fails to relocate the lawn sprinkler system prior to the Contractor beginning work, and if the Contractor cuts the system during the construction, the Contractor shall cap the system pipe and witness the location of the cap with a wooden stake for the property owner's use. The Contractor shall place the salvaged sprinkler heads on the property owner's property for the property owner. Any other modification to the lawn sprinkler systems and/or landscaping is the responsibility of the owner and not part of this contract. This work is included in other items of the project.

MAILBOXES

Relocate mailboxes within grading limits or that otherwise interfere with construction methods according to standard specifications, except that post replacement will remain the discretion of the property owner and the Engineer.

Place temporary heat protection when necessary to shield remaining mailboxes (not in direct interference but within close proximity) from damage due to HIPR equipment.

SURPLUS MATERIALS (MILLINGS)

Deliver milled material to the following location(s), according to the "Special Provision for Recycling HMA Surfaces."

Item I. Deadman's Winter Complex,
S. Cedar St. Holt, MI 48842

EARTHWORK

SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

Appropriate soil erosion and sedimentation control measures shall be in place prior to earth-disturbing activities. Place turf establishment items as soon as possible on potential erodible slopes as directed by the Engineer. Critical ditch grades shall be protected with either sod or seed/mulch or mulch blanket as directed by the Engineer.

Soil erosion & sedimentation control (SESC) measures shall be placed in accordance with section 208 of the 2012 Standard Specifications for Construction Standard Plan R-96 series, and the MDOT Soil Erosion and Sedimentation Control Manual. Maintain temporary SESC measures as directed until vegetation is well established.

Indicates soil erosion/sedimentation control measure detailed by Standard Plan R-96.

The Contractor shall provide inlet sedimentation filters per special provision or as otherwise approved by the Engineer at all existing and new catch basins and reconstructed structures. Payment will be made at the contract unit price for 'Erosion Control, Inlet Protection, Fabric Bag.'

Place and maintain erosion & sedimentation control measures as designated on the drawings and as directed by the Engineer. Place all temporary measures prior to the start of construction and remove after establishment of vegetative cover as approved by the Engineer.

SUBGRADE IMPROVEMENTS

Except as otherwise shown on the plans and typical sections, perform subgrade improvements as directed by the Engineer.

Subgrade Undercutting will be paid for as 'Subgrade Undercutting, Type II' to the limits as directed. Backfill undercuts with pulverized or milled recycled asphalt pavement as directed.



DATE: 09/15/2016

DESIGN UNIT: HRC

TSC: DELHI

CS: _____

JN: 20160615

PROJECT INFORMATION SHEET

River Pointe Subdivision Special Assessment

Road Resurfacing

DRAWING

PROJ
001

SHEET

SECT 1

141

DRAINAGE

DRAIN COMMISSIONER RULES

Construct drainage structures and drainage structure taps according to applicable sections of the "Rules of Ingham County Drain Commissioner," 2005 Edition, as amended. See "Special Provision for Storm Sewer Work on Facilities of the Ingham County Drain Commissioner." In particular:

- A) Unless otherwise shown on plans, construct catch basins according to Standard Plan R-1, except that a 3 ft sump is required per section 8.C. of the Ingham County Drain Commissioner (ICDC) "Rules."
- B) Construct taps for new holes in existing structures according to section 10.b. of the ICDC "Rules," as amended.
- C) Use specified casting with ICDC logo where shown on the plans.

Salvage drainage structure covers and lids whenever possible. Drainage structure covers which become damaged as a result of removals or structure reconstructs shall be replaced and will be paid for at the contract unit price.

Where shown on the plans, temporarily lower drainage structure castings prior to HMA Base Crushing or Cold Milling. Final adjust castings prior to top course paving unless other methods are approved.

Partial reconstruction of existing drainage structures will be paid for as 'Drainage Structure Cover, Adj, Case _' and 'Drainage Structure, Adj, Add Depth' below 6 inches.

Use only precast concrete adjustment rings on all drainage structures. Do not place castings on a mortar bed. Set the top adjusting ring to the correct grade, slope, and cross slope. Place a double perimeter of butyl rope on the top adjusting ring. Firmly seat the casting in the correct position on the butyl rope seal.

UNDERDRAINS

Install underdrains per typical sections and details where shown on the plans. Outlet roadway underdrains to catch basins where possible. Outlet foundation underdrains according to the plan detail. Outlet all other drains into the roadside ditch. Use a minimum of 10 ft of 'Underdrain Outlet, _ inch' and an 'Underdrain Outlet Ending, _ inch' at each ditch outlet.

EXCAVATION

The quantity included for Excavation, Earth is intended to be used in areas where less than 3.5" of asphalt exists so the full depth cannot be milled. Aggregate Base Conditioning is included to prepare this base material prior to placing new asphalt.

SANITARY SEWER WORK

Where necessary new sanitary sewer castings will be furnished by Delhi Township. Installation of new sanitary sewer castings will be included with payment for the 'Sanitary Structure Cover, Adj, Case _' pay item.

CONCRETE WORK

Fresh concrete will be tested for acceptance by Delhi Charter Township as determined by the Engineer. Contractor quality control testing will not be required. Submit mix design to the Engineer for approval at least 3 business days prior to first placement of each mixture.

The Contractor is responsible for layout of sidewalk ramps, subject to approval by Engineer.

DENSITY TESTING

Density testing for acceptance will be waived for HMA patching and wedge paving <165 lbs/syd on mainline and for aggregate and HMA approaches on private drives. Density testing for acceptance will be at the discretion of the Engineer for HMA patching and wedge paving ≥ 165 lbs/syd on mainline, and aggregate base and HMA approaches on public roads. Where density testing is waived, density will be accepted by the Engineer based upon visual inspection following compaction and proof rolling.

TURF ESTABLISHMENT

RESTORATION

Provide restoration of disturbed areas, consisting of topsoil surface, seeding, fertilizer and mulch, mulch blankets or permanent turf reinforcement mats, according to the "Special Provision for Slope Restoration." Use the seed mixture THV or as otherwise directed. The Engineer reserves the right to change the seed mixture depending on the type of topsoil material furnished by the Contractor.

Place the specified slope restoration type as shown on the plans, or as directed by the Engineer. Place Type II slope restoration on side slopes steeper than 1 on 3 and around yard basin inlets. Place Type IIIA or Type IV slope restoration on concentrated flow areas such as curb endings that discharge runoff. The exact limits of slope restoration will be determined by the Engineer.

SIGNS

PERMANENT SIGNS

Existing permanent signing requiring relocation will be removed by the Ingham County Road Department (ICRD). Coordinate sign removal and provide a minimum 5 business days advance notice to the Engineer. Upon completion of construction the ICRD will install all permanent signing.



DATE: 09/15/2016	CS: _____	PROJECT INFORMATION SHEET		DRAWING	SHEET
DESIGN UNIT: HRC	JN: 20160615	River Pointe Subdivision Special Assessment		PROJ	SECT 1
TSC: DELHI		Road Resurfacing		002	142

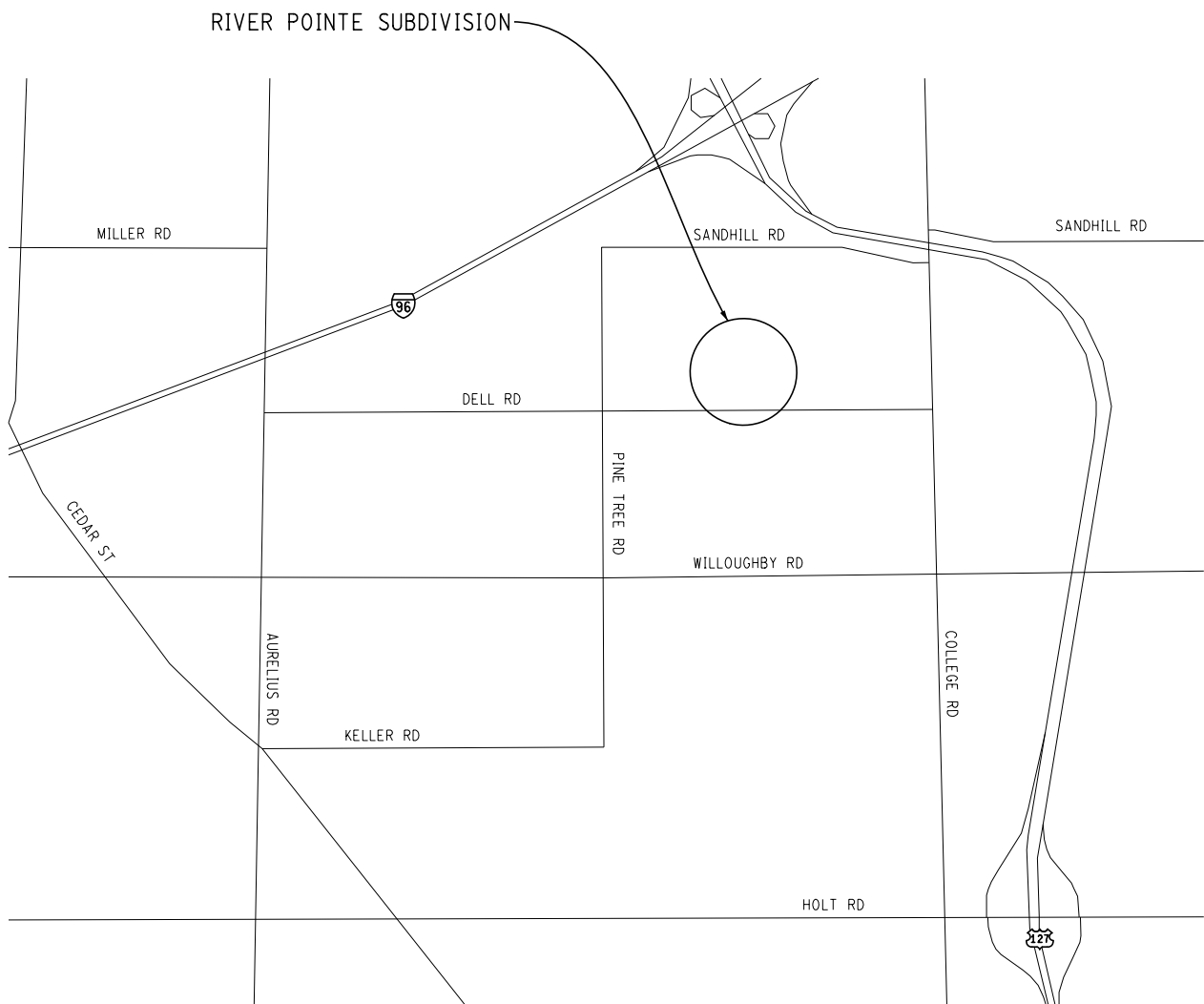
DELHI TOWNSHIP

IN COOPERATION WITH

INGHAM COUNTY ROAD DEPARTMENT

PROPOSED

RIVER POINTE SUBDIVISION SPECIAL ASSESSMENT

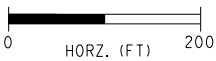
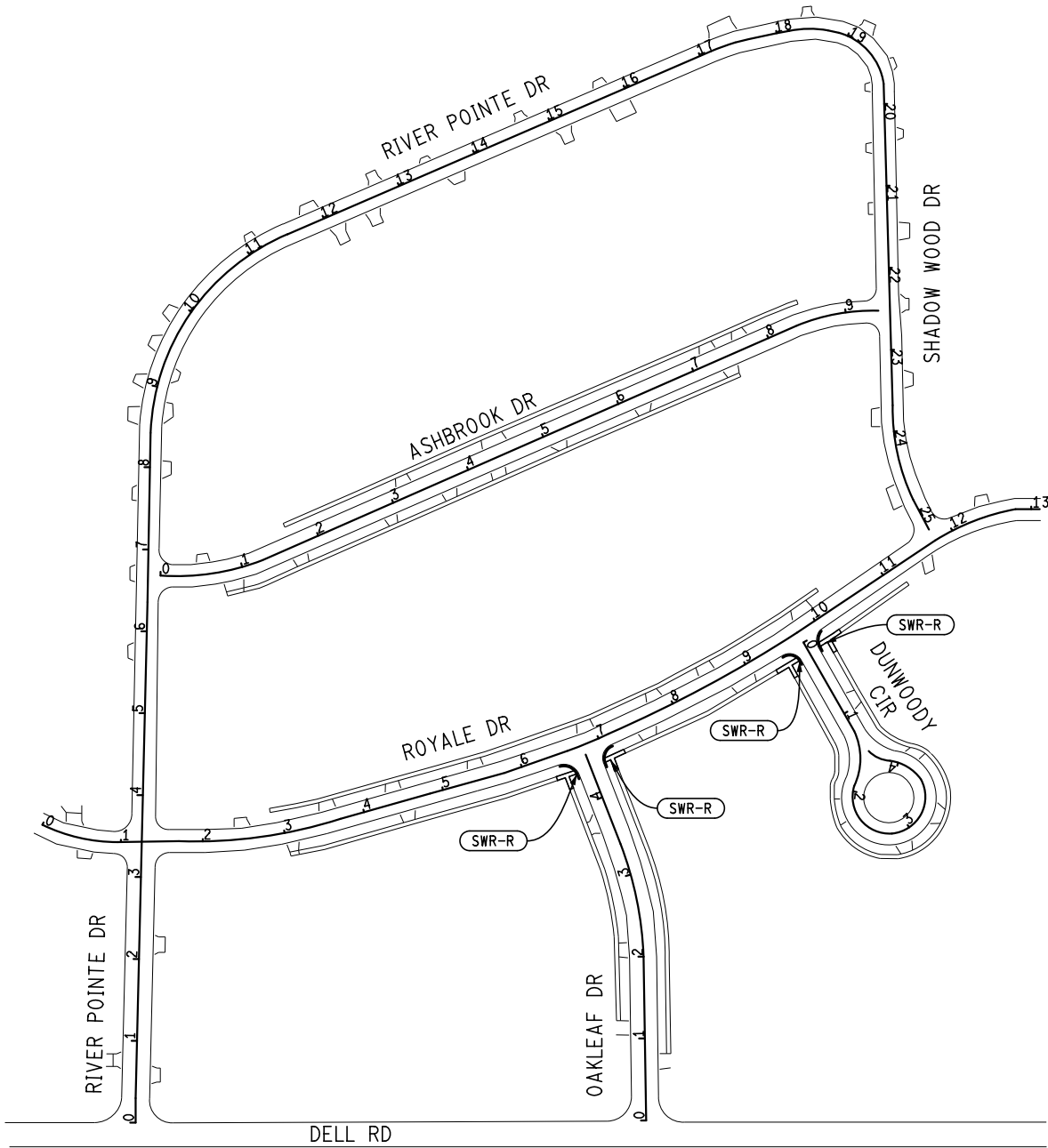


FILE:

DESIGN UNIT:	TSC:
CS:	LOCATION MAP
JN:	DELHI TOWNSHIP
	RIVER POINTE SUBDIVISION

DATE: 2016
DRAWING SHEET
TITLE

RIVER POINTE SUBDIVISION
CONSTRUCTION PLAN

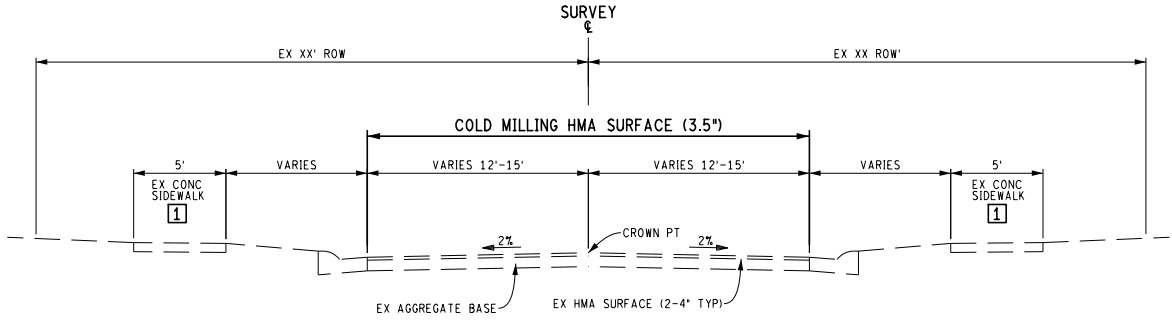


DESIGN UNIT:
CS:
JN:

TSC:
PLAN - RIVER POINTE SUBDIVISION
DELHI TOWNSHIP
LOCAL ROADS

DATE: 2016
DRAWING SHEET
TYP

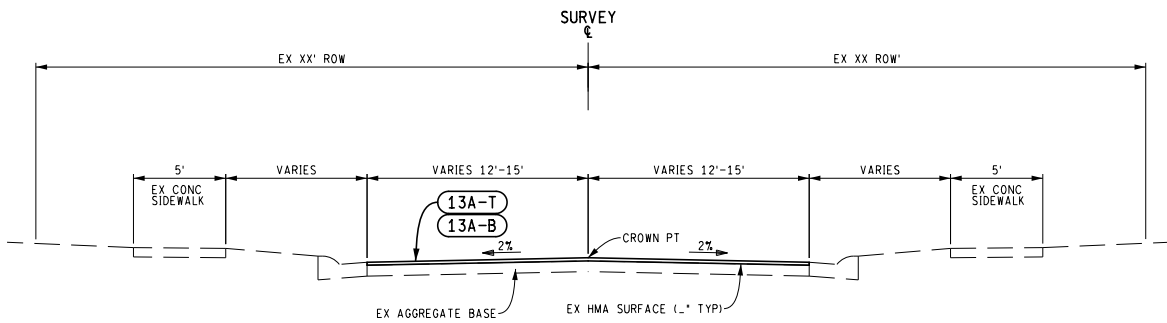
FILE:



EXISTING SECTION

SECTION APPLIES TO:
RIVER POINTE SUBDIVISION

NOTES:
 1 EXISTING SIDEWALK ONLY ON THE FOLLOWING STREETS:
 ASHBROOK DR
 ROYALE DR
 OAKLEAF DR
 DUNWOODY CIR



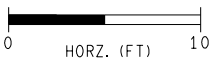
PROPOSED SECTION

SECTION APPLIES TO:
RIVER POINTE SUBDIVISION

HMA APPLICATION ESTIMATE

IDENT NO.	ITEM	RATE LBS PER SYD	PERFORMANCE GRADE	REMARKS
13A-T	HMA, 13A	165	58-28	TOP COURSE, 1.5" PLACED
13A-B	HMA, 13A	220	58-28	BASE COURSE, 2.0" PLACED
HP	HAND PATCHING	330-440	58-28	HMA 13A

1. APPLY BOND COAT AT 0.10-0.15 GAL/SYD
2. REGRESS AIR VOIDS TO 3% FOR ALL TOP COURSE MIXTURES
3. LOWER PG GRADE LOW TEMPERATURE 6° FOR TIER II RAP MIXTURES



DESIGN UNIT: HRC

TSC: DELHI

DATE: 2016

CS:

EXISTING TYPICALS

DRAWING SHEET

JN: 20160615

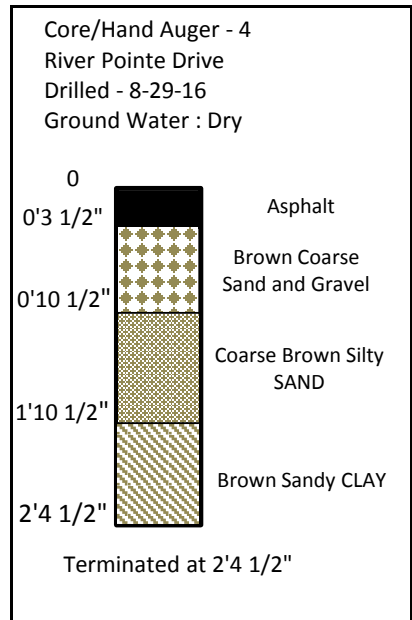
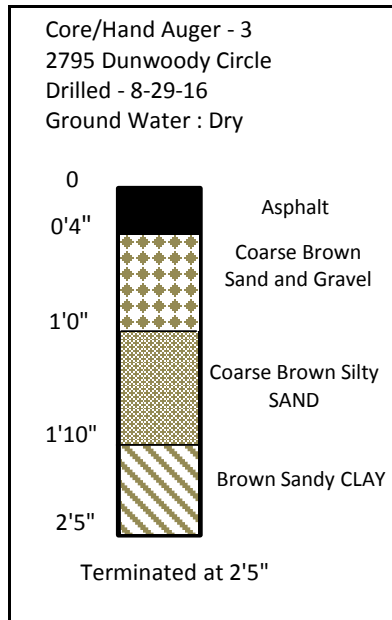
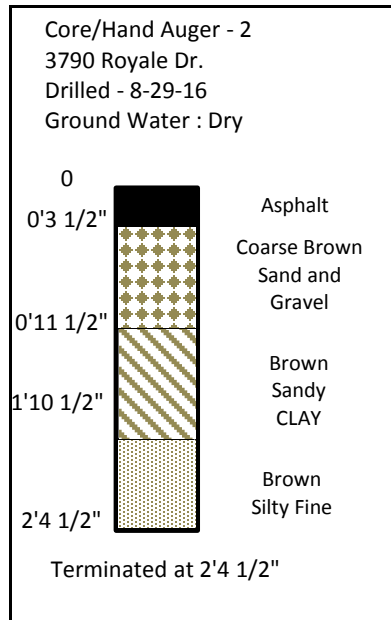
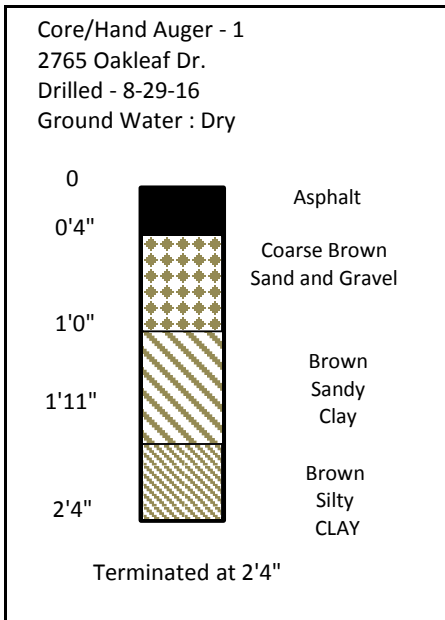
RIVER POINTE SUBDIVISION - DELHI TOWNSHIP

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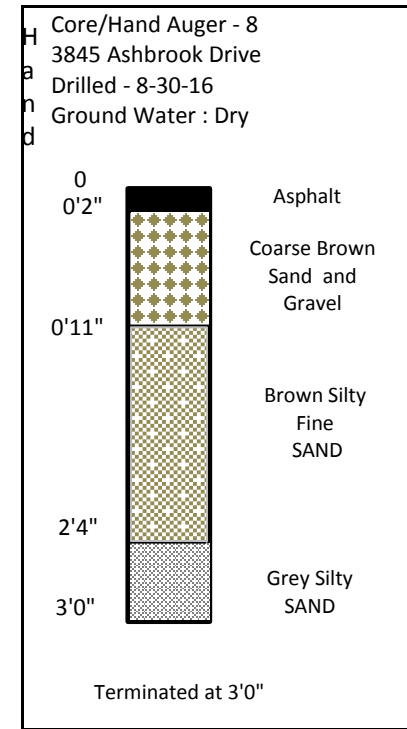
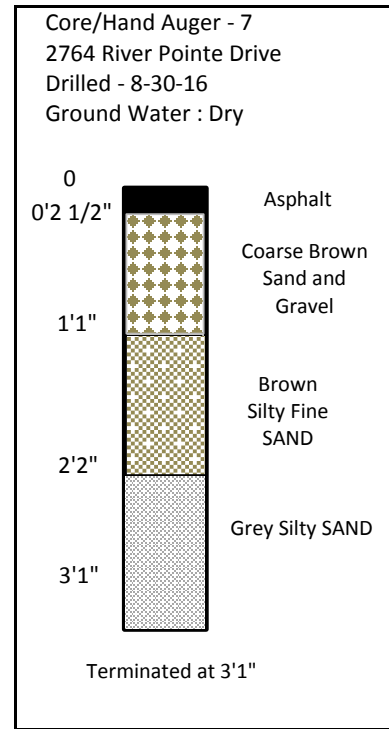
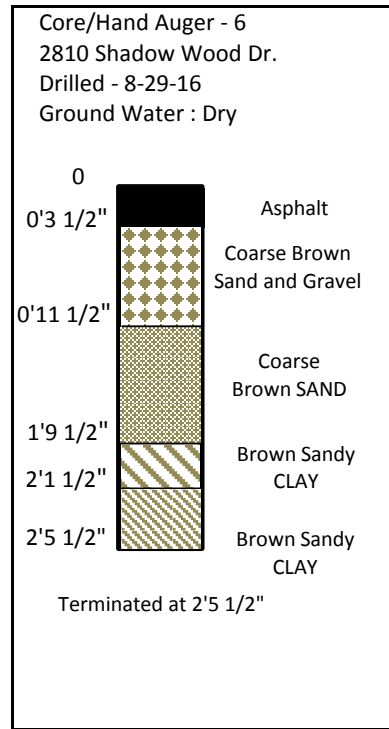
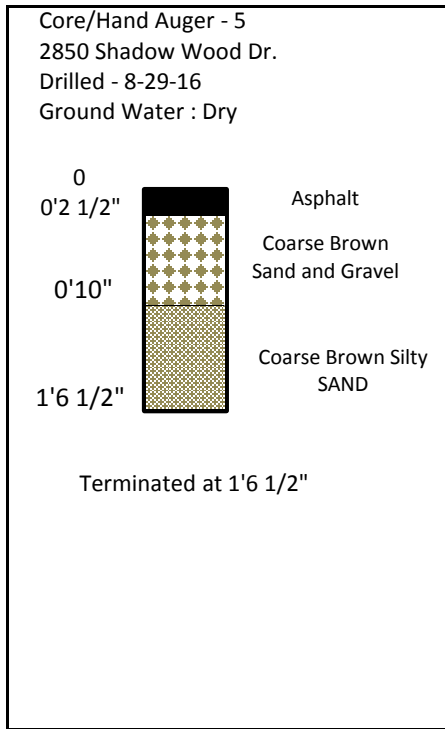
ROAD RESURFACING

FILE:





Core 4 was not recovered as the HMA broke into several pieces after coring



Core 5 was not recovered as the HMA broke into several pieces after coring

Core 6 was not recovered as the HMA broke into several pieces after coring



