

City of Mt. Pleasant, Michigan

# **CONTRACT DOCUMENTS**

For Construction  
of

2013 Street Overlay Project



**KATHLEEN LING**  
Mayor

**KATHIE GRINZINGER**  
City Manager

Prepared By:  
Division of Public Works

**STEVE HEIN**  
Interm DPW Director

April 2013



# THE CITY OF MT. PLEASANT, MICHIGAN

## CITY HALL

320 W. Broadway • 48858-2447  
(989) 779-5300  
(989) 773-4691 fax

## PUBLIC SAFETY

804 E. High • 48858-3595  
(989) 779-5100  
(989) 773-4020 fax

## PUBLIC WORKS

1303 N. Franklin • 48858-4682  
(989) 779-5400  
(989) 772-6250 fax

## NOTICE TO BIDDERS 2013 Street Overlay

The City of Mt. Pleasant, Michigan, is requesting sealed bids at the Office of the City Clerk, City Hall, 320 W. Broadway, Mt. Pleasant, Michigan 48858, until 1:30 p.m. (local time), on April 30, 2013, at which time and place the bids will be publicly opened and read. All bids shall be submitted in a sealed envelope, plainly marked "2013 Street Overlay Project – April 30, 2013."

Proposals are solicited on a unit price basis, for the following work:

Cold Milling HMA Surface	19,468 SYD
Curb and Gutter, Conc, Det F4, Modified	490 LFT
Dr Structure Cover, Adj, Case 1	22 EACH
Dr Structure Cover, SAN, Modified	18 EACH
Dr Structure Cover, STM, Modified	4 EACH
220#/SYD Bituminous Pavement Mixture 1300T-20AAA	2,451 TONS
HMA Ultra Thin	562 TONS

All bid proposals must be accompanied by a bid bond, bank cashier's check, bank draft, or certified check for not less than five percent (5%) of the bid price, made payable to the City of Mt. Pleasant.

To view and download complete Plans and Specifications at no charge, visit the City of Mt. Pleasant website at [www.mt-pleasant.org](http://www.mt-pleasant.org) and navigate to the [Bids and Quotes](#) tab.

The City of Mt. Pleasant reserves the right to accept or reject any or all bids, to waive any irregularities in the bids, and to select the bid considered most advantageous to the City.

Jennifer Flachs  
Engineering Aide  
(989) 779-5406

Jeremy Howard  
City Clerk

City of Mt. Pleasant, Michigan  
**INSTRUCTIONS TO BIDDERS**

1. **Proposals**

Proposals must be made upon the forms provided therefore, with the Bid amount both written and shown in figures, and all other data required submitted.

The Proposal, bound together with all Proposal Documents, must be enclosed in a sealed envelope marked as specified in the Notice to Bidders for such Bid and clearly indicating the name and address of the Bidder and must be received by the City Clerk, City Hall, 320 West Broadway Street, Mt. Pleasant, Michigan 48858, no later than the time and date specified in the Notice to Bidders. At such specified time, Proposals shall be publicly opened and read aloud.

2. **Basis of Proposals**

Proposals are solicited on the basis of unit price(s) and/or lump sum(s), as specified on the Proposal form.

The City of Mt. Pleasant (also referred to as "Owner"), reserves the right to accept any Bid, to reject any or all Bids, to waive any irregularities in the Bids, and to select the Bid considered most advantageous to the city.

3. **Comparison of Bids**

In comparing Bids, consideration shall be given to the time proposed for completion of the Contract, qualifications of Bidder, price differentials, alternate Proposals for the alternate items listed in the Proposal (if applicable), and any other pertinent factors. **The City of Mt. Pleasant grants a preference to businesses located within the Mt. Pleasant City Limits. The preference given is a differential above the low bid if the low bid is not from a City of Mt. Pleasant bidder. The differential allowed is 3% of the total for bids between \$5,000 and \$9,999 and 2% of the total for bids over \$10,000. The maximum credit allowed is \$1500.00.** The Owner reserves the right to make an award to the Bidder whose Proposal is deemed to be in the best interest of the Owner.

4. **Time**

Time is of the essence in the performance of the Contract, and each Bidder, by submitting a Proposal, certifies his/her acceptance of the time allowed by the Contract for the completion of the work specified.

5. **Indemnification**

The Contractor shall save and hold harmless the city and its employees from and against all claims, damages, losses, or expenses, including attorney's fees, arising out of or resulting from the performance of the work; provided that any such claim, damage, loss or expense is caused in whole or in part by any negligent or willful act of omission of the contractor, subcontractor, employee, or anyone under their direction. The Contractor shall at his/her own expense, defend any and all such actions and shall pay all attorney's fees, costs, and expenses pertaining thereto.

6. **Bid Deposits**

Each Proposal shall be accompanied by a certified check, bank cashier's check, bank draft, or a Bid Bond by a recognized Surety Company similar to a U. S. Government Standard Form Bid Bond, in the amount of five percent (5%) of the total amount of the Bid, made payable to the City of Mt. Pleasant, subject to forfeiture to the Owner in the event of failure on the part of the successful Bidder to enter into the attached form of agreement to do the work specified by said Proposal at the price and within the time stated therein. The Bid Deposit of all Bidders, except the three (3) lowest acceptable Bidders, shall be returned within two (2) weeks after opening of bids. The bid deposits of the three (3) lowest acceptable bidders shall be returned within 48 hours after the executed Contract(s) have been finally approved by the Owner.

7. **Liquidated Damages**

A liquidated damage clause, as given in the Contract form, provides that the Contractor shall pay the Owner as liquidated damages, and not as a penalty, the amount as indicated in Section 108.10 of the 2012 MDOT Standard Specifications for Construction for each and every calendar day that the Contractor may be in default of substantial completion of the work required under said Contract.

8. **Insurance and Bonds**

The successful Bidder will be required to execute (2) Bonds, in the form attached hereto, with Surety acceptable to the Owner and insurance, as follows:

- a. Bond in the amount of 100% of the Estimated Contract Price running to the City of Mt. Pleasant, Michigan, to insure the completion of the entire work, according to the statutes of the State of Michigan in effect at that time.
- b. Bond in the amount of 100% of the Estimated Contract Price running to the People of the State of Michigan for the protection of Subcontractors and Labor and Material Men, according to the statutes of the State of Michigan in effect at that time.
- c. Insurance in the amounts required by City Ordinance as specified in the Section 1 - General Construction Specifications, attached hereto.

The successful bidder shall be required to furnish for each set of executed Contract Documents, and conformed copies thereof, an original conformed Performance Bond, Labor and Materials Bond, and Insurance Certificates.

9. **Permits and Local Codes**

The Owner shall procure the required permits for municipal sanitary sewer construction, municipal water system construction, and soil erosion control.

The Contractor shall obtain, at his/her expense, all other required local construction permits and shall comply with local building code and inspection requirements.

10. **Qualifications of Bidders**

It is the intent of the Owner to award the Contract to a Bidder fully capable, both financially and with regard to experience, to perform and complete all work in a satisfactory and timely manner. Evidence of such competency must be furnished on the forms included in the proposal, listing projects of similar difficulty, scope of work, and size, which the Bidder has satisfactorily undertaken and completed.

It is the intention of the City to award the contract to a Contractor whose ability and financial resources are fully equal to the task of performing the work in a satisfactory manner. With this in view, the Proposal calls for at least five (5) references, using specific names of persons to contact concerning the Contractor's ability to do this particular class of work. References from municipalities are preferred. The mere ability to furnish a Performance Bond shall not be accepted as sufficient evidence of responsibility on the part of the Bidder. The Bidder may also be required to furnish evidence of his current financial status.

11. **Interpretation of Documents**

If any Bidder is in doubt as to the true meaning of any part of the Plans, Specifications or any Contract Document, he/she may submit to the Owner a written request for an interpretation thereof. Any interpretation made in response to such a query shall be made only by Addendum, duly issued, and a copy of such Addendum shall be mailed or duly delivered to each prospective Bidder. The Owner shall not be responsible for any other explanation or interpretation of the Contract Documents. Alternative proposals that are suggested by bidders will be given consideration, if presented before the bid opening. If accepted, an addendum will be issued and sent out to all potential bidders, so that they may bid on the alternatives that have been identified.

12. **Execution of Bid Proposal**

A Bid Proposal, which is not signed by the individual making it, should have attached thereto a Power of Attorney evidencing authority to sign the Bid Proposal in the name of the person for whom it is signed.

A Bid Proposal, which is signed by a partnership, shall be signed by all of the partners or by an Attorney-in-Fact. If signed by an Attorney-in-Fact, there should be attached to the Bid a Power of Attorney evidencing authority to sign the Bid Proposal in the name of the partnership and such Power of Attorney shall be signed by all partners of the partnership.

A Bid Proposal, which is signed for a corporation, should have the correct corporate name thereof and the signature of the President, or other authorized officer(s) of the corporation, manually written below the corporate name and on the line indicating "By:\_\_\_\_\_." If such a Bid Proposal is manually signed by an officer other than the President of the corporation, a certified copy of a Resolution of the Board of Directors evidencing the authority of such officer(s) to sign the Bid Proposal should be attached thereto. Such a Bid Proposal should also bear the attested signature of the Secretary of the corporation and an impression of the corporate seal.

13. **Execution of Contract**

The successful Bidder to whom an award is made shall be required to enter into a written agreement, in the form attached hereto, within ten (10) days after receipt of a Notice of Award and copies of the documents to be executed. In the event the successful Bidder fails to comply with this provision, he/she may be considered by the Owner to have abandoned all his/her rights and interests in the award and his/her certified check or amount of the Bid Bond may be declared to be forfeited to the Owner, and the Contract may be awarded to another.

14. **Bidder Responsibility For Conditions of Work and Site**

The Bidder, or his/her representative, shall make personal investigation of the site of work and of existing structures and shall determine to his/her own satisfaction the conditions to be encountered, the nature of the ground, the difficulties involved in making connections to existing structures and pipes, and any and all other factors affecting the work proposed under the Contract.

The Bidder to whom the Contract is awarded shall not be entitled to any additional compensation by reason of conditions being different from those anticipated or by reason of his/her failure to fully acquaint himself/herself with the conditions at the site affecting the work of the Contract.

15. **Changes in Work**

If any change is required to be made in the work of the Contract, a payment adjustment therefore shall be determined as specified in Section 103 of the 2012 MDOT Standard Specifications for Construction.

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Revised: March 2011

[Form24a]

City of Mt. Pleasant, Michigan  
**BID PROPOSAL**  
2012 Street Mill & Overlay Project

TO: City Clerk  
City Hall  
320 W. Broadway Street  
Mt. Pleasant, MI 48858

BID DATE: April 30, 2013  
TIME: 1:30 p.m.

The undersigned, as Bidder, hereby declares that this bid is made in good faith without fraud or collusion with any person or persons bidding of the same Contract; that he has carefully read and examined the Contract Documents, including the Notice to Bidders, Instructions, Bond Forms, Technical and Detailed Specifications, and Contract Drawings, for the designated work and understands all of the same; that he, or his representative, has made such a personal investigation at the site as is necessary to determine the character and difficulties attending the execution of the proposed work; and he proposes and agrees that if this Proposal is accepted, he will contract with the Owner in the form of the Contract hereto annexed, to provide necessary machinery, tools, apparatus and other means of construction, including utility and transportation services, necessary to do all the work and furnish all the materials and equipment specified or referred to in the Contract Documents, including Addenda No. \_\_, \_\_, and \_\_, in the manner and time therein prescribed, and according to the requirements of the Owner as therein set forth to furnish Contractor Bonds and Insurance required of the Contractor by the Contract Documents, and that he will take in full payment therefore the unit prices set forth in the following Proposal.

The Bidder understands that the Owner reserves the right to reject any or all bids and to waive any irregularities in the bidding.

The Bidder agrees that his bid shall be good and may not be withdrawn for a period of sixty (60) calendar days after the scheduled closing time for receiving the bids.

Upon receipt of a written Notice of Award of the Bid, the Bidder shall execute the formal Contract Agreement attached hereto within ten (10) days and shall deliver to the Owner a Surety Bond or Bonds required. In the event the Contract and Bond are not executed within the time above set forth, the Bid Deposit attached in the sum of five percent (5%) of the Bid Proposal shall become the property of the Owner as liquidated damages for the delay and additional expense to the Owner caused thereby.

The Bidder hereby agrees to commence work under this Contract on or before the date to be specified in the written Notice to Proceed executed by the Owner and to fully complete the project as stipulated in the Special Conditions of these Specifications. The Bidder further agrees to pay as liquidated damages the sum indicated in the Special Conditions for each consecutive calendar day thereafter, until substantial completion, that is when all work items in the proposal are complete and notification of substantial completion of work items and final quantities is given to the Director of Public Works by the contractor.

The below unit prices shall include all labor, materials, overhead, profit, insurance, etc., to cover the finished work of the several kinds specified, and the Bidder agrees to perform all of the work described in the Specifications and/or shown on the Plans for the following unit prices:

<u>Pay Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Total</u>
<b>Division – MAJOR</b>				
Cold Milling HMA Surface	15,713	SYD	_____	_____
Curb and Gutter, Conc, Det F4, Modified	490	LFT	_____	_____
Dr Structure Cover, Adj, Case 1	12	EA	_____	_____
Dr Structure Cover, SAN, Modified	9	EA	_____	_____
Dr Structure Cover, STM, Modified	3	EA	_____	_____
Bituminous Pavement Mixture 1300T-20AAA	1,729	TON	_____	_____
<b>TOTAL DIVISION – MAJOR</b>			<b>\$</b> _____	

<b>Division - LOCAL</b>				
Cold Milling HMA Surface	3,755	SYD	_____	_____
Dr Structure Cover, Adj, Case 1	10	EA	_____	_____
Dr Structure Cover, SAN, Modified	9	EA	_____	_____
Dr Structure Cover, STM, Modified	1	EA	_____	_____
Bituminous Pavement Mixture 1300T-20AAA	722	TON	_____	_____
HMA, Ultra-Thin, Medium Volume	562	TON	_____	_____
<b>TOTAL DIVISON - LOCAL</b>			<b>\$</b> _____	

**TOTAL BID**                      **\$** \_\_\_\_\_  
(figures)

\_\_\_\_\_ and \_\_\_\_\_/100 Dollars  
(written)

RESPECTFULLY SUBMITTED,  
COMPANY NAME \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ ST \_\_\_\_\_ ZipCode \_\_\_\_\_

Telephone \_\_\_\_\_ Fax \_\_\_\_\_

Authorized Signature \_\_\_\_\_

Print or Type Name and Title \_\_\_\_\_

Email \_\_\_\_\_ Date \_\_\_\_\_

BID PROPOSAL  
**EXPERIENCE QUESTIONNAIRE**  
TO BE FURNISHED BY BIDDER  
CITY OF MOUNT PLEASANT, MICHIGAN

The signatory of this proposal guarantees the truth and accuracy of all statements and of all answers hereinafter made.

1. How many years have you been in business as a contractor under your present name?

\_\_\_\_\_

2. How many years have you been a principal officer of a firm under a different name?

\_\_\_\_\_

Name of Firm \_\_\_\_\_

3. What projects of a similar nature has your organization contracted for within the past five years? (NOTE: Fill out each blank completely.)

Name of Owner & Location	Name/Address/Phone # of Person in Charge as Reference	Type of Work	Value of Work	Date Completed
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____

## **SUPPLEMENTAL SPECIFICATIONS 2013 STREET MILL & OVERLAY PROJECT**

The work under this contract shall be completed following the 2012 MDOT Standard Specifications for Construction along with the City of Mt. Pleasant 2012 Standard Special Provisions, except as modified herein. This is not a state sponsored project; therefore, the payment of prevailing wages is not a requirement of this contract.

### **Scope of Work**

This project includes the cold-milling and resurfacing of city streets. The bituminous material to be used shall be 1300T 20AAA and an HMA Ultra Thin.

The following streets shall be cold-milled a depth of two inches (2") and resurfaced with bituminous mixture 1300T 20AAA at a rate of 220# SYD:

Adams Street	-	Broadway Street to High Street
Preston Street	-	East Campus to Raised Crosswalk
Andre Street	-	Mission Street to Brown Street

The following streets shall receive a full two inch (2") overlay with bituminous mixture 1300T-20AAA at a rate of 220#/SYD:

Chippewa Street	-	East Drive to Dead End
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The following streets shall receive a one inch (1") thin overlay with a HMA Ultra-Thin material as outlined in the attached special provision.

Canal Street	-	Greenbanks to Riverview
Riverview	-	Watson Street to Canal Street
Boultan Street	-	Maxwell Street to Adams Street
Maxwell Street	-	Boultan Street to Broadway Street
Park Street	-	Harris Street to Adams Street

*\*\*All street overlays will be done between existing curb and gutter structures. Overlay of the gutter pan will not be permitted unless directed by the city inspector.*

### **Contractor Schedule**

The contractor shall provide to the Engineering Aide a schedule indicating the order in which the streets will be resurfaced, and an approximate schedule of when the work will be done on each street. This schedule must be given to the Engineering Aide at least two weeks prior to beginning the project so that area residents can be notified.

## **Time Constraint**

The Contractor shall complete this work between May 20, 2013 and August 16, 2013. The overlay of Andre Street must be coordinated with the Street Department so that sewer work can be completed prior to the mill and overlay. Work on Preston Street must be coordinated with CMU due to the reconstruction of CMU Parking Lot 18. Preston Street shall not be overlaid prior to the completion of Parking Lot 18 and shall be completed prior to the start of fall CMU classes. All work on this project shall be completed by August 16, 2013.

## **Holidays**

No work is to be scheduled by the contractor on Sundays, nor on the following holidays or holiday weekends:

Memorial Day	5/25/13 to 5/28/13
4 <sup>th</sup> of July	7/4/13 to 7/5/13

**Permits** - No Permits are anticipated for this project

**Ultra-Thin Overlay Thickness** – The Ultra-thin overlay shall be placed at a yield rate of between 70 and 110 Pounds per Square Yard (#/SYD). The overlay thickness shall be varied at manholes and other structures including adjacent roadways to provide smooth transitions in the road surface.

**Street and Drive Approaches** – The contractor shall place 1300T-20AAA bituminous mixture at a yield rate of 220 Pounds per Square Yard (#/SYD) in the street and drive approaches, as necessary, to maintain positive drainage.

## **Residential and Commercial Access**

Access to driveways for local residents and businesses shall be maintained and available for use. All driveways shall be opened by the contractor when the contractor is not working, including all evenings, nights, Sundays, and holidays, except as approved in writing by the inspector and with written notification to the residents/owners by the contractor.

## **Road Closure**

Streets and alleys may be closed to through traffic, open to adjacent residential and commercial properties as stipulated above.

## Detours

No detours are anticipated for this project. Should the contractor's operations require a detour, all costs of setting up the detour including signage and all notifications (list available from DPW) shall be covered by the contractor. The Director of Public Works/City Engineer must approve all detours. Detour request shall be submitted in writing with back up information as to route, signage, time, dates and notifications to be made by the contractor.

## Residential Refuse and Recyclable Collection

The City contractor for trash (refuse) collection is Sunset Waste of Pierson, Michigan and the contractor for recycling collection is Mid Michigan Industries (MMI) of Mt. Pleasant. Collection of both refuse and recycle begins at 7:30 a.m., Monday through Thursday. Specific collection days for each street to be resurfaced will be provided to the contractor prior to the start of the project. The contractor shall schedule the work to allow and provide access for refuse and recycling contractors to collect these materials. If the refuse and recycling contractors are unable to collect materials due to construction operations, then the construction contractor shall collect and dispose of the refuse, and collect and deliver the recyclable material to the Material Recovery Facility (MRF) on River Road at no cost to the city. It is the responsibility of the construction contractor to contact the refuse and recycling contractors to coordinate operations and to resolve complaints.

## Quantities

Although a compilation of measurements was taken, all quantities are estimated only. Any increase or decreases in the quantities are at the discretion of the City Inspector.

## Estimated Quantities by Street

The estimated quantities for each street are as follows:

### MAJOR STREET OVERLAY

#### Adams: Broadway to High - Division 1

ITEM NO.	DESCRIPTION	QTY	UNIT
#1	Cold Milling HMA Surface	8833	SYD
#2	Curb and Gutter, Conc, Det F4, Modified	490	LFT
#3	Dr Structure Cover, Adj, Case 1	12	EACH
#4	Dr Structure Cover, SAN, Modified	9	EACH
#5	Dr Structure Cover, STM, Modified	3	EACH
#4	220 #/SYD Bituminous Pavement Mixture 1300T-20AAA	972	TONS

**Preston: East Campus to Crosswalk - Division 2**

ITEM NO.	DESCRIPTION	QTY	UNIT
#1	Cold Milling HMA Surface	6880	SYD
#2	220 #/SYD Bituminous Pavement Mixture 1300T-20AAA	757	TONS

**LOCAL STREET OVERLAY**

**Andre: Mission to Brown - Division 1**

ITEM NO.	DESCRIPTION	QTY	UNIT
#1	Cold Milling HMA Surface	3755	SYD
#2	Dr Structure Cover, Adj, Case 1	3	EACH
#3	Dr Structure Cover, SAN, Modified	2	EACH
#4	Dr Structure Cover, STM, Modified	1	EACH
#5	220 #/SYD Bituminous Pavement Mixture 1300T-20AAA	413	TONS

**Chippewa: West Grand to East Drive - Division 2**

ITEM NO.	DESCRIPTION	QTY	UNIT
#1	Dr Structure Cover, Adj, Case 1	1	EACH
#2	Dr Structure Cover, SAN, Modified	1	EACH
#3	220 #/SYD Bituminous Pavement Mixture 1300T-20AAA	309	TONS

**Canal: Greenbanks to Riverview - Division 3**

ITEM NO.	DESCRIPTION	QTY	UNIT
#1	Dr Structure Cover, Adj, Case 1	3	EACH
#2	Dr Structure Cover, SAN, Modified	3	EACH
#3	110 #/SYD Bituminous Pavement	167	TONS

**Riverview: Watson to Canal - Division 4**

ITEM NO.	DESCRIPTION	QTY	UNIT
#1	Dr Structure Cover, Adj, Case 1	3	EACH
#2	Dr Structure Cover, SAN, Modified	3	EACH
#3	110 #/SYD Bituminous Pavement	127	TONS

**Boultan: Maxwell to Adams - Division 5**

ITEM NO.	DESCRIPTION	QTY	UNIT
#1	110 #/SYD Bituminous Pavement	35	TONS

**Maxwell: Boultan to Broadway - Division 6**

ITEM NO.	DESCRIPTION	QTY	UNIT
#1	110 #/SYD Bituminous Pavement	100	TONS

**Park: Harris to Adams - Division 7**

ITEM NO.	DESCRIPTION	QTY	UNIT
#1	110 #/SYD Bituminous Pavement	133	TONS

City of Mt. Pleasant  
SPECIAL PROVISION  
FOR

**HMA Ultra-Thin**

City of MtPleasant

1 of 4

April 13

**A) Description**

This special provision provides acceptance testing requirements for use on HMA Ultra-Thin Overlay mixture.

**B) Materials**

The HMA and materials shall meet the following requirements:

- 1) Bond Coat. The bond coat material will be emulsified asphalt conforming to the requirements of Section 904 of the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, Type SS1h.
- 2) HMA Ultra-Thin Overlay. The Ultra Thin HMA Overlay shall be composed of a mixture of aggregate, asphalt binder, and if required, mineral filler, as listed in Table 1.

**Table 1 - HMA Ultra-Thin Overlay Mixture Requirements**

Parameter	Low Volume Comm. ADT <380	Medium Volume Comm. ADT 380 - 3400	High Volume Comm. ADT >3400
Marshall Air Voids %	4.5	4.5	5.0
VMA % (min.) based on Gsb	15.5	15.5	15.5
Fines/Binder % Max.	1.2	1.4	1.4
Flow (0.01 in.)	8-16	8-16	8-16
Stability Min. (lbs)	1200		

- 3) Aggregate Gradation and Physical Properties. The combined gradation of the aggregate portion of the mixture, including the mineral filler, shall be within the limits of Table 2. The physical properties of the combined aggregates shall meet the criteria of Table 3.

**Table 2 - HMA Ultra-Thin Overlay Aggregate Gradation**

Sieve Size	Total Passing Percent by Weight
½ inch	100
3/8 inch	99-100
No. 4	75-95
No. 8	55-75
No. 30	25-45
No. 200	3-8

**Table 3 - HMA Ultra-Thin Overlay Aggregate Physical Requirements**

Parameter	Low Volume Comm. ADT <380	Medium Volume Comm. ADT 380 - 3400	High Volume Comm. ADT >3400
Percent Crush (min.)	50%	75%	95%
Angularity Index (MTM 118) (min.)	2.5	3.0	4.0
L.A abrasion loss (max.)	40	35	35
Aggregate Wear Index (AWI)	(a)	(a)	(a)
AWI of 220 is required for projects with less than or equal to 2000 ADT, projects with ADT greater than 2000 the minimum AWI requirement is 260.			

In addition, the sum of the shale, siltstone, ochre, coal, clay-ironstone and particles which are structurally weak or are found to be non-durable in service shall not exceed 8.0 percent.

- 4) Performance Graded (PG) Asphalt Binder. Binder selection is based on present day two-way commercial ADT as listed in Table 4. The PG binder shall meet all the requirements in Section 904 of the 2012 MDOT Standard Specifications for Construction.

**Table 4 - Asphalt Binder Selection for HMA Ultra-Thin Overlay**

Low Volume Comm. ADT <380	Medium Volume Comm. ADT 380 - 3400	High Volume Comm. ADT >3400
PG 64 -22*	PG 64 -28P**	PG 70-22P*
* In areas North of M-46, May use PG 58-28 (Low) or PG 70-28P (High)		
** May use another "readily available" polymer modified (P) grade.		

### C) Construction

- 1) Bond Coat Application. The bond coat material will be applied to completely cover the prepared surface at a rate of 0.11 - 0.15 gal/yd<sup>2</sup>.
- 2) Mixture Application Rate. The target application rate shall be 83 lb/yd<sup>2</sup>, unless specified by the engineer to address special circumstances.
- 3) Mix Design. The Contractor shall submit to the Owner a complete mix design for review prior to the start of production.
- 4) Quality Control. The Contractor shall provide and follow a Quality Control (QC) plan for the Ultra Thin HMA Overlay that will maintain adequate QC for production and construction processes applicable to this specification and the contract documents. For QC purposes, the Contractor must perform at least one QC test per day for gradation, AC content, and air voids, and is allowed to take informational cores for application rates. The Owner shall be provided a copy of the QC plan for review, prior to mix production and placement. After the job-mix-formula is established, the aggregate gradation and the binder content of the HMA mixture furnished for the work shall be maintained within the Range 1 uniformity tolerance limits permitted for the job-mix-formula specified in Table 5. However, if deviations are predominantly either below or above the job-mix-formula, the Owner may

order alterations in the plant to bring the mixture to the job-mix-formula. If two consecutive aggregate gradations on one sieve, or binder contents as determined by the QC tests, are outside Range1 but within Range 2 tolerance limits, the Contractor shall suspend all operations. Contract time will continue during these times when the plant is down. Before resuming any production, the Contractor shall propose, for the Owner's approval, all necessary alterations to the materials or plant so that the job-mix-formula can be maintained. The Owner, after evaluating for effects on AWI and mix design properties, will approve or disapprove such alterations.

**Table 5 – Uniformity Tolerance Limits (for QC and Acceptance)**

PARAMETER	* Range 1	Range 2
Air Voids**	± 1.0	± 2.0
Binder Content	± 0.40	± 0.50
% Passing # 8 and Larger Sieves	± 5.0	± 8.0
% Passing # 30 Sieve	± 4.0	± 6.0
% Passing # 200 Sieve	± 1.0	± 2.0
* This range allows for normal mixture and testing variations. The mixture shall be proportioned to test as closely as possible to the Job-Mix-Formula.		
** Air Void limits apply to QC testing and are optional for Acceptance testing.		

- 5) **Crushed Particle Content.** The crushed particle content of the aggregate used in the HMA mixture shall not be more than 10 percentage points above or below the crushed particle content used in the job-mix-formula nor less than the minimum specified for the aggregate in the project documents.
- 6) **Density.** Thoroughly compact the mixture immediately after placement using the number of rollers method.
  - i) **Number of Rollers Method.** The number of compactive and finish rollers used shall be as specified in Table 6 based on the square yards per hour of Ultra Thin HMA Overlay being placed.

**Table 6 – Number of Rollers Required based on Placement Rate**

Average Laydown Rate, square yards per hour	Number of Rollers Required	
	Compaction Rollers	Finish Rollers
Less than 800	1	1*
801 – 2000	1	1
2001 – 5500	2	1
5501 – 7200	3	1

\*The compaction roller may be used as the finish roller also.

**D) Acceptance Sampling and Testing.** Acceptance sampling and testing may be performed by the Owner. Each day of production, a minimum of two samples will be obtained for each mix

type. Acceptance testing will be performed at the frequency specified by the Owner. No less than three samples shall be obtained for each mix type.

**E) Rejected Mixtures.** If for any one mixture, two consecutive aggregate gradations on one sieve or binder contents as determined by acceptance tests exceed the uniformity tolerance of Range 2 under Table 5, or do not meet the minimum requirements for crushed particle content specified in the project documents, the mixture will be rejected. If such mixtures are placed in a pavement, the remaining portions of the failing acceptance samples (split sample) will be sent to an independent Laboratory to confirm the acceptance test results. If the Laboratory's results do not confirm the acceptance test results, then no price adjustments will be made for the mixture involved. If the Laboratory's results confirm the acceptance test results and if, in the Owner's judgment, the defective mixture can remain in place, the contract unit price for the defective mixture involved, as determined from acceptance tests, will be decreased on the following basis: The contract unit price for material outside of Range 2 will be decreased 25 percent.

The Owner may take into account the Contractor's QC test results when making acceptance decisions and price adjustments.

**F) Measurement and Payment.** The completed work as measured will be paid for at the contract unit price for the following contract item:

**G) Measurement and Payment**

This work will be measured and paid as specified in section 403 & 802 of the Standard Specifications using the following contract items (pay items).

<b>Contract Item (Pay Item)</b>	<b>Pay Unit</b>
HMA, Ultra-Thin, Low Volume.....	Ton
HMA, Ultra-Thin, Medium Volume.....	Ton
HMA, Ultra-Thin, High Volume.....	Ton
HMA, Ultra-Thin, Mix, Special.....	Ton