

Roscommon County Road Commission

James Porath, Commissioner
Justin Wykoff, Commissioner
Clint Stauffer, Commissioner
Brian Vaughn, Commissioner
John Earley, Commissioner

820 E. West Branch Road
Prudenville, MI 48651

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NOTICE TO BIDDERS

The Roscommon County Road Commission will receive sealed bids until 2:00 p.m. on January 28, 2021. Bids will be opened for tabulation and review at the Roscommon County Road Commission's regularly scheduled board meeting on January 28, 2021 beginning at 7:00 p.m. Our office is located at 820 E. West Branch Road, Prudenville, MI 48651.

2021 County Wide Paving (Hot Mix Asphalt)

Specifications may be obtained by contacting the Roscommon County Road Commission at the above address, by calling (989)-366-0333 ext.1003, emailing to Belangern@roscommoncrc.com or by going to www.roscommoncrc.com. Please check the website for any inquiries pertaining to this bid document.

Submit bids in a sealed envelope that is clearly marked with the words **"2021 County Wide Paving"** in the lower left corner.

The Roscommon County Road Commission reserves the right to reject any or all bids, to waive irregularities in any bid, and to accept the bid deemed to be in the best interest of Roscommon County Road Commission. Bids may be extended for additional years with mutual agreement.

The Roscommon County Road Commission has adopted a Local Contractor Preference Policy. Go to 'Adopted Policies' at www.roscommoncrc.com for details and application form.

ROSCOMMON COUNTY BOARD
OF ROAD COMMISSIONERS

Jim Porath, Chair
Clint Stauffer, Member
Justin Wykoff, Member
John Earley, Member
Brian Vaughn, Member

Roscommon County Road Commission 2021 County Wide Paving (Hot Mix Asphalt)

BID REQUIREMENTS:

The undersigned has examined the location(s) of the work described herein and is fully informed as to the nature of the work and conditions relating to its performance and understands the quantities shown are approximate and are subject to either increase or decrease.

The undersigned hereby proposes to furnish all necessary equipment, tools, apparatus, and other means of construction, do all of the work, furnish all materials except as otherwise specified herein; and, for the unit prices named in the itemized bid, to complete the work herein described in strict accordance with the plans and the requirements of these bid documents.

The undersigned further proposes to perform extra work (for items that are not included with the itemized bid) that may be authorized by the Roscommon County Road Commission. Compensation for extra work will be made on the basis of an agreed upon unit price prior to performing the extra work.

The Roscommon County Road Commission (RCRC) is requesting an FOB price per ton for the road segments requiring wedging and HMA Shoulder Widening shown in the 2021 HMA Paving Bid sheet which contain HMA, 13A, Modified, 0% or 20% RAP. This is shown in Bid Alternate #1, Item #10 and Bid Alternate #3, Item #10.

The Roscommon County Road Commission (RCRC) will allow the bidding contractor to select an alternate equivalent mix type for paving other than mix types requested by RCRC. These alternate equivalent mix types are to be a comparable equivalent to the mix requested by RCRC. These items are found in Alternate Bid #2, and Alternate Bid #3. Mix designs and JMFs for alternate mix types must follow the Mix Design and JMF section directly below.

MIX DESIGN AND JMF:

A mix design and JMF signed by a qualified independent source must be submitted and approved by Roscommon County Road Commission prior to start of work. Submissions must be received 1 week before the start of work. The selected contractor will be required to submit one mix design and one JMF per mix type awarded. Any changes to these after initial approval, must be approved prior to the start of work, by the County Engineer. Mix samples will be taken by Roscommon County Road Commission employees, or other certified sampler and tested by a qualified tester. Samples will be random and at the owners discretion.

SPECIFICATIONS:

All materials, equipment, and construction methods used on the project(s) shall be in accordance with the Michigan Department of Transportation (MDOT) 2012 Standard Specifications for Construction, supplemental specifications, Roscommon County Road Commission Special Provisions and the HMA Application Estimate.

Mainline unit price includes paving of all radius areas and up to a 3 foot extension into all paved driveways to create a smooth transition. An incidental quantity on each road has been

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included in the tonnage calculations. HMA, Curb slope and HMA, Spillway quantities are also included in the incidental tonnage calculations

HMA, Curb Slope shall consist of an 18 to 24 inch wide by variable height "wedge shape" curb. The HMA curb shall be installed at the same time as the new HMA pavement. The height of the HMA curb shall be reduced as directed through all existing or proposed driveways unless otherwise directed by the County Engineer.

The Roscommon County Road Commission shall not allow the cleaning or maintenance of any equipment or tools within the right of way of any county roads or streets. **Any debris or material left at the conclusion of paving for a segment of road must be cleaned up and removed from the Right-of-Way within 48 hours.**

The RCRC will prepare the listed roads prior to the Contractor paving. The Contractor will be required to sweep the surface and apply SS-1h or approved equivalent at a uniform application rate of 0.10 to 0.15 residual gallon/square yard prior to paving where applicable. This work is considered incidental to and included in the unit prices quoted.

PROGRESS SCHEDULE:

Begin all work after receiving notice of award of contract from the County, and after the County provides notification that the base preparation work has been completed and paving can begin.

All paving shall be done on Monday through Thursday or as approved by the Manager. No paving shall be allowed on Friday, Saturday, Sunday or Holidays without prior approval of the Manager. Request to vary from the above schedule must be made in writing 72 hours in advance.

All items of work shall be completed by **October 15th, 2021**, unless a different date is authorized by the County.

Contractor is required to have a Preconstruction Meeting with Roscommon County Road Commission before any work begins.

MAINTAINING TRAFFIC:

Traffic shall be maintained at all times during construction in accordance with Sections 103.05 and 812 of the MDOT 2012 Standard Specifications for Construction, and as specified herein.

The Contractor shall furnish, erect, and maintain barricades, drums or cones adjacent to the work and provide traffic regulators as the construction operations may require. The barricades, drums, or cones shall be furnished, erected and maintained in accordance with the requirements of Section 812 of the MDOT 2012 Standard Specifications for Construction.

All signs, barricades, cones, drums, traffic regulators and other traffic control devices shall be in accordance with the 2011 edition of the Michigan Manual of Uniform Traffic Control Devices (MMUTCD), as amended and shall be the responsibility of the Contractor.

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Temporary pavement markings shall be Type R tape and shall be placed in a single line of 4' strips spaced 50' center-to-center for each course of HMA paving for passing zones and a double line of 4' strips spaced 50' center-to-center for each course of HMA paving for no-passing zones, only when directed by RCRC. Temporary Pavement Markings, Type R shall be measured and paid for separately at the bid unit price.

The furnishing, placement and maintaining of traffic control devices and traffic regulators will not be paid for separately, but is considered included with payment for HMA and HMA Approach items.

BASE PREPARATION:

The existing road surface will be prepared for paving by the County and/or its designated Contractor. Paving work on these projects will be performed on a prepared aggregate base or a crushed HMA base as noted in the bid documents. The County will maintain the prepared base in a graded and compacted condition until such time paving will be performed. Contractor delays may require the County to regrade or prepare the base at the expense of the Contractor.

Note: The Contractor may be required to perform some minor base preparation work in some locations such as the removal of temporary aggregate transitions and minor grading. This work, if required will not be paid separately, but is considered included with payment for HMA and HMA Approach items.

BID GUARANTEES:

The undersigned enclosed a certified or cashier's check, on an open solvent bank, or bid bond in the amount of not less than 5% payable to the Roscommon County Board of Road Commissioners as a guarantee of good faith. If the undersigned is the successful bidder and fails to enter into a contract or to furnish satisfactory bonds to the Board of Roscommon County Road Commissioners within fifteen (15) days after being furnished with the necessary contract and bond forms, said check or bid bond, shall be forfeited to the Board of County Road Commissioners as liquidated damages. It is understood that the check, or bid bond, of the selected bidder will not be returned until the contract has been executed, and that the proposal guarantees of all except the selected bidder will be returned promptly.

INSURANCE REQUIREMENTS:

The successful bidder shall furnish proof of insurance prior to beginning work on the project(s). The following minimum requirements must be included on the certificate of insurance.

1. \$1,000,000 - General Aggregate – General Liability
2. \$1,000,000 – Personal Injury – General Liability
3. \$500,000 – Policy Limit – Worker's Compensation
4. \$100,000 – Each Accident – Worker's Compensation
5. \$1,000,000 – Automobile Liability – Combined single limit for each accident, bodily injury per accident, and property damage per accident, and in an amount not less than \$500,000 for bodily injury per person.

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The additional insured information must also be included to read as follows:

“ADDITIONAL INSURED: The Board of County Road Commissioners for Roscommon County, the Roscommon County Road Commission, and its officers, agents, and employees”.

SAFETY PROGRAM:

The successful bidder will be required to furnish a safety program prior to beginning work on the project(s).

DELAYED ACCEPTANCE, FINAL INSPECTION AND PAYMENT TO CONTRACTOR:

A minimum of 14 days after completion of the HMA paving work, the Road Commission Manager and Engineer (or designated representatives) will inspect the project(s) with the Contractor. If deficiencies are found, corrective work is required. Complete all corrective work within seven working days of the inspection, or by an agreed upon date. All costs associated with completing this corrective work, to the satisfaction of the Road Commission, will be borne by the Contractor.

Final acceptance shall not be granted until all materials and test results pertaining to the project(s) are deemed to be satisfactory.

The Road Commission will not pay the Contractor for the work performed on the project until after the inspection is completed, corrective work is completed (if necessary), and the project is accepted by the Road Commission.

MEASUREMENT AND PAYMENT:

The completed work, including all materials, labor and equipment, as measured, will be paid for at the contract unit price for the following items (pay item), as shown on the itemized bid list for each project

<u>Contract Item</u>	<u>Pay Unit</u>
Item #1 HMA, 13A, Modified, 0% RAP	Ton
Item #2 HMA Approach, Modified, 0% RAP	Ton
Item #3 HMA, 13A, Modified, Less than 20% RAP (100% passing the 5/8" Sieve)	Ton
Item #4 HMA Approach, Modified, Less than 20% RAP (100% passing the 5/8" Sieve)	Ton
Item #5 HMA, Ultra-Thin, Medium Volume, 0% RAP	Ton
Item #6 HMA, Ultra-Thin, Approach, 0% RAP	Ton
Item #7 HMA, Curb Slope	Foot
Item #8 HMA, Spillway	Syd
Item #9 Temporary Pavement Markings, Type R	Foot
Item #10 FOB, HMA, 13A, Modified, 0% RAP or Less than 20% RAP	Ton

HMA and HMA Approach will be paid for by the Ton, based on delivery load tickets received for materials delivered and placed on the project(s).

HMA Ultra-Thin and HMA Ultra-Thin, Approach will be paid for by the Ton, based on delivery load tickets received for materials delivered and placed on the project(s).

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HMA, Curb Slope will be paid for separately by the Foot (to include labor, equipment, etc.). Materials shall be included in the per ton items.

HMA, Spillway will be paid for separately by the Square Yard (to include labor, equipment, etc.). Materials shall be included in the per ton items.

Temporary Pavement Markings, Type R will be paid for separately by the Foot.

FOB, HMA, 13A, Modified, 0% RAP or Less than 20% RAP will be paid for by the ton, based on the loading ticket received at the loading site.

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Unit Price is requested for the potential add-in of Item #4, 8 & 10.

	<u>Pay Unit</u>	<u>Unit Price</u>	<u>Proposed Quantity</u>	<u>Total</u>
Item #1 HMA, 13A, Modified, 0% RAP	Ton	_____	727	_____
Item #2 HMA Approach, Modified, 0% RAP	Ton	_____	4	_____
Item #3 HMA, 13A, Modified, Less than 20% RAP (100% passing the 5/8" Sieve)	Ton	_____	11,072	_____
Item #4 HMA Approach, Modified, Less than 20% RAP (100% passing the 5/8" Sieve)	Ton	_____	As Needed	_____
Item #5 HMA, Ultra-Thin, Medium Volume, 0% RAP	Ton	_____	9,843	_____
Item #6 HMA, Ultra-Thin, Approach, 0% RAP	Ton	_____	16	_____
Item #7 HMA, Curb Slope	Ft	_____	354	_____
Item #8 HMA Spillway	Syd	_____	As Needed	_____
Item #9 Temporary Pavement Marking, Type R	Ft	_____	1,700	_____
Item #10 FOB, HMA, 13A, Modified, 0% RAP or Less than 20% RAP	Ton	_____	As Needed	_____

Total Bid: \$ _____

Company Name: _____

Street Address: _____

City: _____ State: _____ Zip Code: _____

Telephone No.: _____ Fax No.: _____

Email Address: _____

Printed Name: _____

Signature: _____

Date: _____

The RCRC has adopted a Local Contractor Preference Policy, check here _____ if registered.

Roscommon County Road Commission 2021 County Wide Paving (Hot Mix Asphalt) ALTERNATE BID #1

The Roscommon County Road Commission will reserve the right to perform the paving work on the road segments being wedged and HMA shoulder widening which contain HMA, 13A, Modified, 0% or 20% RAP on the 2021 HMA Paving Bid List.

Unit Price is requested for the potential add-in of Item #4 & 8.

	<u>Pay Unit</u>	<u>Unit Price</u>	<u>Proposed Quantity</u>	<u>Total</u>
Item #1 HMA, 13A, Modified, 0% RAP	Ton	_____	727	_____
Item #2 HMA Approach, Modified, 0% RAP	Ton	_____	4	_____
Item #3 HMA, 13A, Modified, Less than 20% RAP (100% passing the 5/8" Sieve)	Ton	_____	9,078	_____
Item #4 HMA Approach, Modified, Less than 20% RAP (100% passing the 5/8" Sieve)	Ton	_____	As Needed	_____
Item #5 HMA, Ultra-Thin, Medium Volume, 0% RAP	Ton	_____	9,843	_____
Item #6 HMA, Ultra-Thin, Approach, 0% RAP	Ton	_____	16	_____
Item #7 HMA, Curb Slope	Ft	_____	354	_____
Item #8 HMA Spillway(Unit Price if Needed)	Syd	_____	As Needed	_____
Item #9 Temporary Pavement Marking, Type R	Ft	_____	1,700	_____
Item #10 FOB, HMA, 13A, Modified, 0% RAP or Less than 20% RAP	Ton	_____	1,994	_____

Total Bid: \$ _____

Company Name: _____

Street Address: _____

City: _____ State: _____ Zip Code: _____

Telephone No.: _____ Fax No.: _____

Email Address: _____

Printed Name: _____

Signature: _____

Date: _____

The RCRC has adopted a Local Contractor Preference Policy, check here _____ if registered.

Roscommon County Road Commission 2021 County Wide Paving (Hot Mix Asphalt)

ALTERNATE BID #2

The Roscommon County Road Commission will allow the bidding contractor to select an economical equivalent mix type for paving other than the requested mix types in the Original 2021 County Wide Paving Bid. Mix designs for alternate mix types must be approved by the Road Commission per this bidding document.

Unit Price is requested for the potential add-in of Item #4, 8 & 10.

	<u>Pay Unit</u>	<u>Unit Price</u>	<u>Proposed Quantity</u>	<u>Total</u>
Original Item #1: HMA, 13A, Modified, 0% RAP Item #1 Equivalent Alternate: _____	Ton	_____	727	_____
Original Item #2: HMA Approach, Modified, 0% RAP Item #2 Equivalent Alternate: _____	Ton	_____	4	_____
Original Item #3: HMA, 13A, Modified, Less than 20% RAP (100% passing the 5/8" Sieve) Item #3 Equivalent Alternate: _____	Ton	_____	11,072	_____
Original Item #4: HMA Approach, Modified, Less than 20% RAP (100% passing the 5/8" Sieve) Item #4 Equivalent Alternate: _____	Ton	_____	As Needed	_____
Original Item #5 HMA, Ultra-Thin, Medium Volume, 0% RAP Item #5 Equivalent Alternate: _____	Ton	_____	9,843	_____
Original Item #6 HMA, Ultra-Thin, Approach, 0% RAP Item #6 Equivalent Alternate: _____	Ton	_____	16	_____
Item #7 Curb Slope, HMA	Ft	_____	354	_____
Item #8 HMA Spillway(Unit Price if Needed)	Syd	_____	As Needed	_____
Item #9 Temporary Pavement Marking, Type R	Ft	_____	1,700	_____
Item #10 FOB, HMA, 13A, Modified, 0% RAP or Less than 20% RAP	Ton	_____	As Needed	_____
Total Bid: \$ _____				

Company Name: _____

Street Address: _____

City: _____ State: _____ Zip Code: _____

Telephone No.: _____ Fax No.: _____

Email Address: _____

Printed Name: _____

Signature: _____

Date: _____

The RCRC has adopted a Local Contractor Preference Policy, check here _____ if registered.

Roscommon County Road Commission 2021 County Wide Paving (Hot Mix Asphalt)

ALTERNATE BID #3

The Roscommon County Road Commission will allow the bidding contractor to select an economical equivalent mix type for paving other than the requested mix types in the Original 2021 County Wide Paving Bid. Mix designs for alternate mix types must be approved by the Road Commission per this bidding document. The Roscommon County Road Commission will reserve the right to perform the paving work on the road segments being wedged and HMA shoulder widening which contain HMA, 13A, Modified, 0% or 20% RAP on the 2021 HMA Paving Bid List.

Unit Price is requested for the potential add-in of Item #4 & 8.

	<u>Pay</u> <u>Unit</u>	<u>Unit</u> <u>Price</u>	<u>Proposed</u> <u>Quantity</u>	<u>Total</u>
Original Item #1: HMA, 13A, Modified, 0% RAP Item #1 Equivalent Alternate: _____	Ton	_____	727	_____
Original Item #2: HMA Approach, Modified, 0% RAP Item #2 Equivalent Alternat: _____	Ton	_____	4	_____
Original Item #3: HMA, 13A, Modified, Less than 20% RAP (100% passing the 5/8" Sieve) Item #3 Equivalent Alternate: _____	Ton	_____	9,078	_____
Original Item #4: HMA Approach, Modified, Less than 20% RAP (100% passing the 5/8" Sieve) Item #4 Equivalent Alternate: _____	Ton	_____	As Needed	_____
Original Item #5 HMA, Ultra-Thin, Medium Volume, 0% RAP Item #5 Equivalent Alternate: _____	Ton	_____	9,843	_____
Original Item #6 HMA, Ultra-Thin, Approach, 0% RAP Item #6 Equivalent Alternate: _____	Ton	_____	16	_____
Item #7 Curb Slope, HMA	Ft	_____	354	_____
Item #8 HMA Spillway (Unit Price if Needed)	Syd	_____	As Needed	_____
Item #9 Temporary Pavement Marking, Type R	Ft	_____	1,700	_____
Item #10 FOB, HMA, 13A, Modified, 0% RAP or Less than 20% RAP Item #10 Equivalent Alternate: _____	Ton	_____	1,994	_____
Total Bid: \$ _____				

Company Name: _____

Street Address: _____

City: _____ State: _____ Zip Code: _____

Telephone No.: _____ Fax No.: _____

Email Address: _____

Printed Name: _____

Signature: _____

Date: _____

The RCRC has adopted a Local Contractor Preference Policy, check here _____ if registered.

ROSCOMMON COUNTY ROAD COMMISSION

SPECIAL PROVISION FOR HMA APPLICATION ESTIMATE

RCRC: NAB

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12-22-20

a. Description.

This work shall be done in accordance with the requirements of Division 5 of the Michigan Department of Transportation 2012 Standard Specifications for Construction, except as herein specified.

b. Construction Methods.

Acceptance testing will be done according to the Roscommon County Road Commission Special Provisions for Acceptance of Hot Mix Asphalt on RCRC projects HMA, Ultra-thin, Medium Volume for construction methods.

c. Tests.

The Nuclear Gauge Method or Coring Method for testing compaction, Section 504.01C is hereby waived for this project(s). The Number of Rollers Method shall apply.

d. Materials.

Some material used in this project(s) may contain reclaimed asphalt pavement.

HMA, 13A, Modified, less than 20% RAP, yield shall be as directed.

HMA, Approach, Modified, less than 20% RAP, yield shall be as directed.

HMA, 13A, Modified, 0% RAP, yield shall be as directed.

HMA, Approach, Modified, 0% RAP, yield shall be as directed.

HMA, Ultra-thin, Medium Volume, 0% RAP yield shall be as directed.

HMA, Ultra-Thin, Approach, 0% RAP

The performance graded asphalt binder for the HMA 13A mix shall be PG 58-28 and PG 64-28P for Ultra-Thin.

Aggregate Wear Index (AWI) for the Top course shall be a minimum AWI-260.

The Bond Coat material shall be SS-1h or approved equivalent and applied per Section 501.03.D. The uniform rate of application shall be 0.10 to 0.15 residual gallon/square yard. No separate payment shall be made for the bond coat material.

e. Measurement and Payment.

Measurement and Payment shall be at the contract unit price.

SPECIAL PROVISION
FOR
**ACCEPTANCE OF HOT MIX ASPHALT MIXTURE ON ROSCOMMON COUNTY ROAD
COMMISSION PROJECTS OTHER THAN ULTRA-THIN**

RCRC:TLO

4/4/2017

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a. Description. This special provision provides sampling and testing requirements for Roscommon County Road Commission (herein referred to as RCRC) projects using the roller method and density gauge testing. Provide the hot mix asphalt (HMA) mixture in accordance with the requirements of the standard specifications and RCRC Special Provisions, 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, Leveling and Base Course(s)	
Number	Description		Range 1 (a)	Range 2
1	% Binder Content		-0.10 to +0.30	-0.10 to +0.50
2	% Passing	# 8 and Larger Sieves	±4.0	±6.0
		# 30 Sieve	±3.0	±5.0
		# 200 Sieve	±1.0	±2.0
3	Crushed Particle Content (b)		Below 10%	Below 15%
4	Air Void, %		±0.50	±0.60
	VMA		±0.50	±0.60
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 4 for 2021 is a pilot program only and no penalties will be assessed.

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. Engineer is defined as the Manager or the Engineer or the Technician designated by the Manager, acting directly or through authorized representatives, who is responsible for engineering supervision of the construction when the county is the awarding authority.

Submit a Mix Design and a JMF, signed by a qualified independent source, 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.

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)*. Samples are to be taken from separate hauling loads.

The Engineer will sample and maintain possession of the sample. Each sample will be divided into two parts with one part being for initial testing and the other part being held for possible dispute resolution testing.

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 will 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.

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, 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 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.

Roller Method

The Engineer will use the Roller Method with a 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 non-nuclear gauge per the manufacturer's recommended procedures, provided at no cost by the contractor.

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.

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. 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, that mixture parameter will be subject to a 25% penalty. The Contractors QA test results for the corresponding QA test must result in an overall payment greater than QA test results otherwise the QA test will not be allowed to be disputed. The dispute resolution sample will be sent to an independent lab selected by the RCRC, and the resultant dispute test results will be used to determine the penalty per parameter, if any. The independent lab must not have conflicts of interest with the Contractor or RCRC. 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 RCRC will pay for the cost of the dispute resolution testing and no price adjustment is required.

In all cases, when penalties are assessed, the penalty applies to each parameter 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 or production is ended for that run of material.

Each parameter of Table 1 is evaluated with the total price adjustment applied to the contract price based on a sum of the parameter penalties resulting in the highest total price adjustment as per Table 4. If the Engineer approves leaving the mixture in place, the total price adjustment for that quantity of material will be as per Table 4.

Table 4: Calculating Total Price Adjustment

Cost Adjustment as a Sum of the 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% or removal
Three	Range 1, Range 1 & Range 1	30%
	Range 1, Range 1 & Range 2	45%
	Range 1, Range 2 & Range 2	60% or removal
	Range 2, Range 2 & Range 2	75% or removal
Four	Range 1, Range 1, Range 1 & Range 1	40%
	Range 1, Range 1, Range 1 & Range 2	55% or removal
	Range 1, Range 1, Range 2 & Range 2	70% or removal
	Range 1, Range 2, Range 2 & Range 2	85% or removal
	Range 2, Range 2, Range 2 & Range 2	100% or removal

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: _____

ROSCOMMON COUNTY ROAD
COMMISSION
SPECIAL PROVISION
FOR
MARSHALL HOT MIX ASPHALT MIXTURE
HMA, 13A, MODIFIED, 0% RAP
HMA, APPROACH, MODIFIED, 0% RAP

RCRC:LEC

3/21/17

1 of 2

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. 0%

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.

NOTE: P.G. 58-28

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
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. 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. c. Los Angeles abrasion maximum loss must be met for the composite mixture, however, each individual aggregate must be less than 50. 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.					

ROSCOMMON COUNTY ROAD
COMMISSION

SPECIAL PROVISION
FOR
MARSHALL HOT MIX ASPHALT MIXTURE
HMA, 13A, MODIFIED, less than 20%
RAP HMA, APPROACH, MODIFIED, less
than 20% RAP

RCRC:LEC

3/21/17

1 of 2

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. Less than 20% RAP allowed.

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.

NOTE: P.G. 58-28

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	
5/8 inch	-	-	-	100	-
1/2 inch	78 max.	90 max.	91-100	75-95	100
3/8 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
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. 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. c. Los Angeles abrasion maximum loss must be met for the composite mixture, however, each individual aggregate must be less than 50 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.					

100% of the aggregate must pass the 5/8" sieve.

ROSCOMMON COUNTY ROAD COMMISSION

SPECIAL PROVISION
FOR
HMA, Ultra-Thin, Medium Volume

RCRC: NAB

1 of 4

9-24-18

a. Description.

This guide specification 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	Medium Volume Comm. ADT 380 - 3400
Marshall Air Voids %	4.5
VMA % (min.) based on Gsb	15.5
Fines/Binder % Max.	1.4
Flow (0.01 in.)	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
1/2 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	Medium Volume Comm. ADT 380-3400
Percent Crush (min.)	75%
Angularity Index (MTM 118) (min.)	3.0
L.A abrasion loss (max.)	35
Aggregate Wear Index (AWI)	(a)
a. 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.

- 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 MDOT 2012 Standard Specifications for Construction.

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

Medium Volume Comm. ADT 380 - 3400
PG 64 -28P
HMA Ultra-Thin, Medium Volume may not contain reclaimed asphalt pavement.

c. Construction.

- Bond Coat Application. The bond coat material will be applied to completely cover the prepared surface per section 501.03D of the MDOT 2012 Standard Specification for Construction at a rate of 0.10 - 0.15 gal/syd.
- Mixture Application Rate. The target application rate for the HMA, Ultra-thin, Medium Volume for top course shall be 90 lb/syd unless specified by the engineer to address special circumstances.
- Mix Design. The Contractor shall submit to the Engineer a complete mix design for review 5 working days prior to the start of production.
- 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 Engineer shall be provided a copy of the QC plan for review, 5 working days 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 Engineer 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 QA or QC tests, are outside Range 1 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 Engineer's approval, all necessary alterations to the materials or plant so that the job-mix-formula can be maintained. The Engineer, after evaluating for effects on AWI and mix design properties, will approve or disapprove such alterations.**

Additionally, if any one test, Contractor or Engineer, indicates the Binder Content is more than 0.10% below the job-mix-formula, the Contractor shall suspend all operations. Before resuming any production, the Contractor shall propose, for the Engineer's approval, all necessary alterations to the materials or plant so that the job-mix-formula can be maintained.

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.

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 – Minimum Number of Rollers Recommended based on Placement Rate

Average Laydown Rate, Square yards per hour	Number of Rollers Required (a)	
	Compaction Rollers	Finish Rollers
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.

d. Acceptance Sampling and Testing.

Acceptance sampling and testing may be performed by the Engineer. 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 Engineer. 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 Engineer'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 Engineer 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:

Contract Item (Pay Item)	Pay Unit
HMA, Ultra-Thin, Medium Volume	Ton

Payment for HMA, Ultra-Thin, Medium Volume, includes all materials, equipment, labor for preparing the surface, placing the HMA, Ultra-Thin Overlay mixture and complying with all requirements. The placement includes placement of a single course of mixture for full width coverage as specified in the plans.

	2021 HMA PAVING BID** - ROSCOMMON COUNTY															
Paver	Township	Description	Limits	Length	HMA Item 1	Max Width LT/RT Lane Width	Application Rate	Quantity	Unit	HMA Item 2	Application Rate	Quantity	Unit	HMA Special 1	Quantity	Unit
Scheduled Date	Road Name		(Location to Location)	(Miles)	Mainline	Excludes Curb	(Lbs/Syd)			Approach / Wedging	(Lbs/Syd)	Alt Bid				
												FOB Qty				
Backus																
	S. Roscommon Rd.	HMA, 13A	CR 107 (S. Roscommon Rd.) to end of proposed pavement	0.17	HMA, 13A, Modified, 0% RAP	11'/11'	220#	252	Tons	HMA Approach, Modified, 0% RAP	220#	4	Tons	---	---	---
Denton																
	Ann Arbor Dr.	HMA, 13A	Norway Ln. to Level Park Dr.	0.12	HMA, 13A, Modified, Less than 20% RAP*	10.5'/10.5'	135#	108	Tons	---	---	---	---	---	---	---
	Black Squirrel Dr.	HMA, 13A	Deer Track Dr. to End	0.13	HMA, 13A, Modified, Less than 20% RAP*	10'/10'	135#	112	Tons	---	---	---	---	---	---	---
	Bunny Run	HMA, 13A	Deer Track Dr. to End	0.12	HMA, 13A, Modified, Less than 20% RAP*	10'/10'	135#	115	Tons	---	---	---	---	---	---	---
	Cedarwood Ave.	Ultra-thin	M-55 to Houghton Lake	0.18	HMA, Ultra-Thin, Medium Volume, 0% RAP	10'/10'	90#	96	Tons	---	---	---	---	---	---	---
	Chipmunk Ln.	HMA, 13A	Deer Track Dr. to End	0.11	HMA, 13A, Modified, Less than 20% RAP*	10'/10'	135#	107	Tons	HMA, 13A, Modified, Less than 20% RAP*	220#	14	Tons	---	---	---
	Chippewa Trl.	Ultra-thin	M-55 to Iroquois Ave. (CR 401)	1.07	HMA, Ultra-Thin, Medium Volume, 0% RAP	17'/15'	90#	604	Tons	HMA, 13A, Modified, Less than 20% RAP*	135#	16	Tons	---	---	---
	Deer Track Dr.	HMA, 13A	Raccoon Trl. To M-55	0.21	HMA, 13A, Modified, Less than 20% RAP*	18'/18'	135#	216	Tons	HMA, 13A, Modified, Less than 20% RAP*	330#	28	Tons	---	---	---
	Elmwood Ave.	Ultra-thin	M-55 to Houghton Lake	0.19	HMA, Ultra-Thin, Medium Volume, 0% RAP	11'/11'	90#	111	Tons	---	---	---	---	---	---	---
	Festival Ave.	Ultra-thin	Cedarwood Ave. to Jefferson Ave.	0.15	HMA, Ultra-Thin, Medium Volume, 0% RAP	10.5'/10.5'	90#	94	Tons	---	---	---	---	---	---	---
	Jefferson Ave.	Ultra-thin	M-55 to Houghton Lake	0.15	HMA, Ultra-Thin, Medium Volume, 0% RAP	11'/12'	90#	86	Tons	---	---	---	---	HMA Curb	35	Feet
	Norway Ln.	HMA, 13A	Ann Arbor Rd. to S Gladwin Rd. (M-18)	0.12	HMA, 13A, Modified, Less than 20% RAP*	10.5'/10.5'	135#	106	Tons	---	---	---	---	---	---	---
	Ottawa Ln.	Ultra-thin	M-55 to Ashwood Dr.	0.30	HMA, Ultra-Thin, Medium Volume, 0% RAP	13'/13'	110#	213	Tons	---	---	---	---	---	---	---
	Owens Dr.	HMA, 13A	Start of pavement to Nestel Rd.	0.12	HMA, 13A, Modified, Less than 20% RAP*	24'/11'	135#	172	Tons	HMA, 13A, Modified, Less than 20% RAP*	220#	21	Tons	---	---	---
	Pinewood Ave.	Ultra-thin	M-55 to Houghton Lake	0.16	HMA, Ultra-Thin, Medium Volume, 0% RAP	10.5'/10.5'	90#	95	Tons	---	---	---	---	---	---	---
	Pontiac Dr.	HMA, 13A	Norway Ln. to Level Park Dr.	0.12	HMA, 13A, Modified, Less than 20% RAP*	10.25'/10.25'	135#	109	Tons	---	---	---	---	---	---	---
	Racoon Trl.	HMA, 13A	Start of pavement to end of pavement	0.25	HMA, 13A, Modified, Less than 20% RAP*	14'/19'	135#	204	Tons	HMA, 13A, Modified, Less than 20% RAP*	220#	36	Tons	HMA Curb	319	Feet
	Seneca Trl.	Ultra-thin	Chippewa Trl. to Chippewa Trl.	0.57	HMA, Ultra-Thin, Medium Volume, 0% RAP	12'/12'	90#	335	Tons	---	---	---	---	---	---	---
	Twin Elm Ave.	Ultra-thin	M-55 to Festival Ave.	0.14	HMA, Ultra-Thin, Medium Volume, 0% RAP	10.5'/10.5'	90#	82	Tons	---	---	---	---	---	---	---

*HMA with 20 % RAP must have 100% RAP Passing 5/8" Sieve
 ** Some projects are not under agreement and tonnages/locations are subject to change.

Gerrish																
	Burdell Rd.	Ultra-thin	E Higgins Lake Dr. (CR 103) to N Cut Rd. (CR 100)	0.49	HMA, Ultra-Thin, Medium Volume, 0% RAP	11'/11'	90#	299	Tons	---	---	---	---	---	---	---
	Eastridge Ct.	Ultra-thin	Maplehurst Dr. to Cul-de-sac	0.27	HMA, Ultra-Thin, Medium Volume, 0% RAP	11'/11'	90#	171	Tons	HMA, 13A, Modified, Less than 20% RAP*	200#	6	Tons	---	---	---
	Hitchcock Rd.	Ultra-thin	Pine Bluffs Rd. to End of pavement	0.38	HMA, Ultra-Thin, Medium Volume, 0% RAP	11'-14'/11'-14'	90#	243	Tons	---	---	---	---	---	---	---
	Jack Pine Dr.	Ultra-thin	E Higgins Lake Dr. (CR 103) to White Pines	0.19	HMA, Ultra-Thin, Medium Volume, 0% RAP	12'/12'	90#	119	Tons	---	---	---	---	---	---	---
	Maplehurst Dr.	Ultra-thin	E Higgins Lake Dr. (CR 103) to N. Cut Rd. (CR 100)	0.99	HMA, Ultra-Thin, Medium Volume, 0% RAP	14'/14'	90#	618	Tons	HMA, 13A, Modified, Less than 20% RAP*	165#	64	Tons	---	---	---
	Misty Meadows Ct.	Ultra-thin	Maplehurst Dr. to Cul-de-sac	0.35	HMA, Ultra-Thin, Medium Volume, 0% RAP	10.5'/10.5'	90#	222	Tons	---	---	---	---	---	---	---
	Tall Oaks Ct.	Ultra-thin	Maplehurst Dr. to Cul-de-sac	0.26	HMA, Ultra-Thin, Medium Volume, 0% RAP	10.5'/10.5'	90#	151	Tons	HMA, 13A, Modified, Less than 20% RAP*	220#	36	Tons	---	---	---
	Vista Ct.	Ultra-thin	E Higgins Lake Dr. (CR 103) to Cul-de-sac	0.21	HMA, Ultra-Thin, Medium Volume, 0% RAP	11'/11'	90#	156	Tons	HMA, 13A, Modified, Less than 20% RAP*	220#	4	Tons	---	---	---
	Whispering Pines Ct.	Ultra-thin	Maplehurst Dr. to Cul-de-sac	0.23	HMA, Ultra-Thin, Medium Volume, 0% RAP	11'/11'	90#	142	Tons	---	---	---	---	---	---	---
	White Pine Dr.	Ultra-thin	Jack Pine Rd. to Payer Rd.	0.17	HMA, Ultra-Thin, Medium Volume, 0% RAP	11'/11'	90#	108	Tons	---	---	---	---	---	---	---
	Wildflower Ct.	Ultra-thin	Misty Meadows Ct. to Cul-de-sac	0.09	HMA, Ultra-Thin, Medium Volume, 0% RAP	10.5'/10.5'	90#	59	Tons	HMA, 13A, Modified, Less than 20% RAP*	---	5	Tons	---	---	---
Higgins																
	Blazed Trl.	HMA, 13A	Joyce Kilmer Rd. to Maple Valley Rd.	1.00	HMA, 13A, Modified, Less than 20% RAP*	10.5'/10.5'	135#	850	Tons	---	---	---	Tons	---	---	---
	Maple Valley Rd. (Joint Project w/ Au Sable Twp.)	HMA, 13A	M-18 to End of pavement	0.82	HMA, 13A, Modified, Less than 20% RAP*	11.5'/11.5'	165#	868	Tons	---	---	---	Tons	---	---	---
Lake																
	Long Point Dr.	HMA, 13A	CR 300 (E. Houghton Lake Dr.) to Sundown Point	1.51	HMA, 13A, Modified, Less than 20% RAP*	10.5'/10.5'	135#	1,122	Tons	---	---	---	---	---	---	---
	N. Higgins Lake Rd.	HMA, 13A	Mead Rd. to end of pavement	0.23	HMA, 13A, Modified, Less than 20% RAP*	10.5'/10.5'	135#	200	Tons	HMA, 13A, Modified, Less than 20% RAP*	110#	86	Tons	---	---	---
	Peter Ave.	HMA, 13A	Old 27 to Houghton Lake	0.08	HMA, 13A, Modified, Less than 20% RAP*	10'/10'	135#	67	Tons	---	---	---	---	---	---	---
	River Rd.	HMA, 13A	Old 27 to School Rd.	0.39	HMA, 13A, Modified, 0% RAP	11'/11'	165#	475	Tons	---	---	---	---	---	---	---
	West Shore Dr.	HMA, 13A	River Rd. to end of pavement	0.07	HMA, 13A, Modified, Less than 20% RAP*	10.5'/10.5'	165#	96	Tons	---	---	---	---	---	---	---

*HMA with 20 % RAP must have 100% RAP Passing 5/8" Sieve
 ** Some projects are not under agreement and tonnages/locations are subject to change.

Markey																
	Friar Tuck	Ultra-thin	Maid Marian to Robin Hood	0.12	HMA, Ultra-Thin, Medium Volume, 0% RAP	10.25'/10.25'	90#	80	Tons	HMA, 13A, Modified, Less than 20% RAP*	135#	8	Tons	---	---	---
	Ida St.	Ultra-thin	Marina St. to Kingston Rd.	0.05	HMA, Ultra-Thin, Medium Volume, 0% RAP	10'/10'	90#	35	Tons	---	---	---	---	---	---	---
	Kingston Rd.	Ultra-thin	Start of pavement to CR 100	0.20	HMA, Ultra-Thin, Medium Volume, 0% RAP	10.5'/10.5'	90#	120	Tons	---	---	---	---	---	---	---
	Little John	Ultra-thin	Maid Marian to Robin Hood	0.12	HMA, Ultra-Thin, Medium Volume, 0% RAP	10.25'/10.25'	90#	79	Tons	---	---	---	---	---	---	---
	Maid Marian	Ultra-thin	Robin Hood to Robin Hood	0.37	HMA, Ultra-Thin, Medium Volume, 0% RAP	10.5'/10.5'	90#	225	Tons	---	---	---	---	---	---	---
	Marina St.	Ultra-thin	Start of pavement to end of pavement	0.14	HMA, Ultra-Thin, Medium Volume, 0% RAP	10'/10'	90#	74	Tons	HMA, 13A, Modified, Less than 20% RAP*	135#	50	Tons	---	---	---
	Robin Hood	Ultra-thin	Flint Rd. to School Rd.	0.61	HMA, Ultra-Thin, Medium Volume, 0% RAP	10.5'/10.5'	90#	353	Tons	---	---	---	---	---	---	---
	School Rd.	HMA, 13A	CR 100 to Redwood Rd.	0.50	HMA, 13A, Modified, Less than 20% RAP*	12.5'/12.5'	165#	606	Tons	---	---	---	---	---	---	---
Richfield																
	Huron Ave., Michigan Ave. St. Clair Ave.	Ultra-thin	Erie Ave. to Superior Ave.	0.36	HMA, Ultra-Thin, Medium Volume, 0% RAP	10.5'/10.5'	100#	244	Tons	---	---	---	---	---	---	---
	Superior Ave.	Ultra-thin	Huron Ave. to end	0.40	HMA, Ultra-Thin, Medium Volume, 0% RAP	10'/10'	100#	267	Tons	HMA, 13A, Modified, Less than 20% RAP*	165#	46	Tons	---	---	---
	Tanglewood Dr.	Ultra-thin	Artesia Beach Rd. to Woodbridge Rd.	0.28	HMA, Ultra-Thin, Medium Volume, 0% RAP	10.5'/10.5'	100#	189	Tons	---	---	---	Tons	---	---	---
	Knollwood Dr.	Ultra-thin	Artesia Beach Rd. to Woodbridge Rd.	0.29	HMA, Ultra-Thin, Medium Volume, 0% RAP	10.5'/10.5'	100#	189	Tons	HMA, 13A, Modified, Less than 20% RAP*	135#	59	Tons	---	---	---
	Hollywood Dr.	Ultra-thin	Artesia Beach Rd. to Woodbridge Rd.	0.27	HMA, Ultra-Thin, Medium Volume, 0% RAP	10.5'/10.5'	100#	178	Tons	---	---	---	---	---	---	---
	Windywood Dr. Erie Ave., Ontario Rd.	Ultra-thin	Artesia Beach Rd. to Erie Ave.	0.34	HMA, Ultra-Thin, Medium Volume, 0% RAP	10.5'/10.5'	100#	352	Tons	---	---	---	---	---	---	---
	Oak Rd.	Ultra-thin	Old 76 to Riverside Dr.	0.53					Tons	HMA, 13A, Modified, Less than 20% RAP*	125#	78	Tons	---	---	---
	Jameson St.	HMA, 13A	W . Airport Rd. to Lee Ave.	0.12	HMA, 13A, Modified, Less than 20% RAP*	10.5'/10.5'	165#	137	Tons	---	---	---	---	---	---	---
	Sanford St.	HMA, 13A	W. Airport Rd. to Lee Ave.	0.12	HMA, 13A, Modified, Less than 20% RAP*	9.5'/9.5'	165#	121	Tons	---	---	---	---	---	---	---
	Lee Ave.	HMA, 13A	Old 76 to Sanford St.	0.12	HMA, 13A, Modified, Less than 20% RAP*	10'/10'	165#	131	Tons	---	---	---	---	---	---	---
	Carter Rd. E.	Ultra-thin	Old 76 to end	0.47					Tons	HMA, 13A, Modified, Less than 20% RAP*	100#	24	Tons	---	---	---

*HMA with 20 % RAP must have 100% RAP Passing 5/8" Sieve
 ** Some projects are not under agreement and tonnages/locations are subject to change.

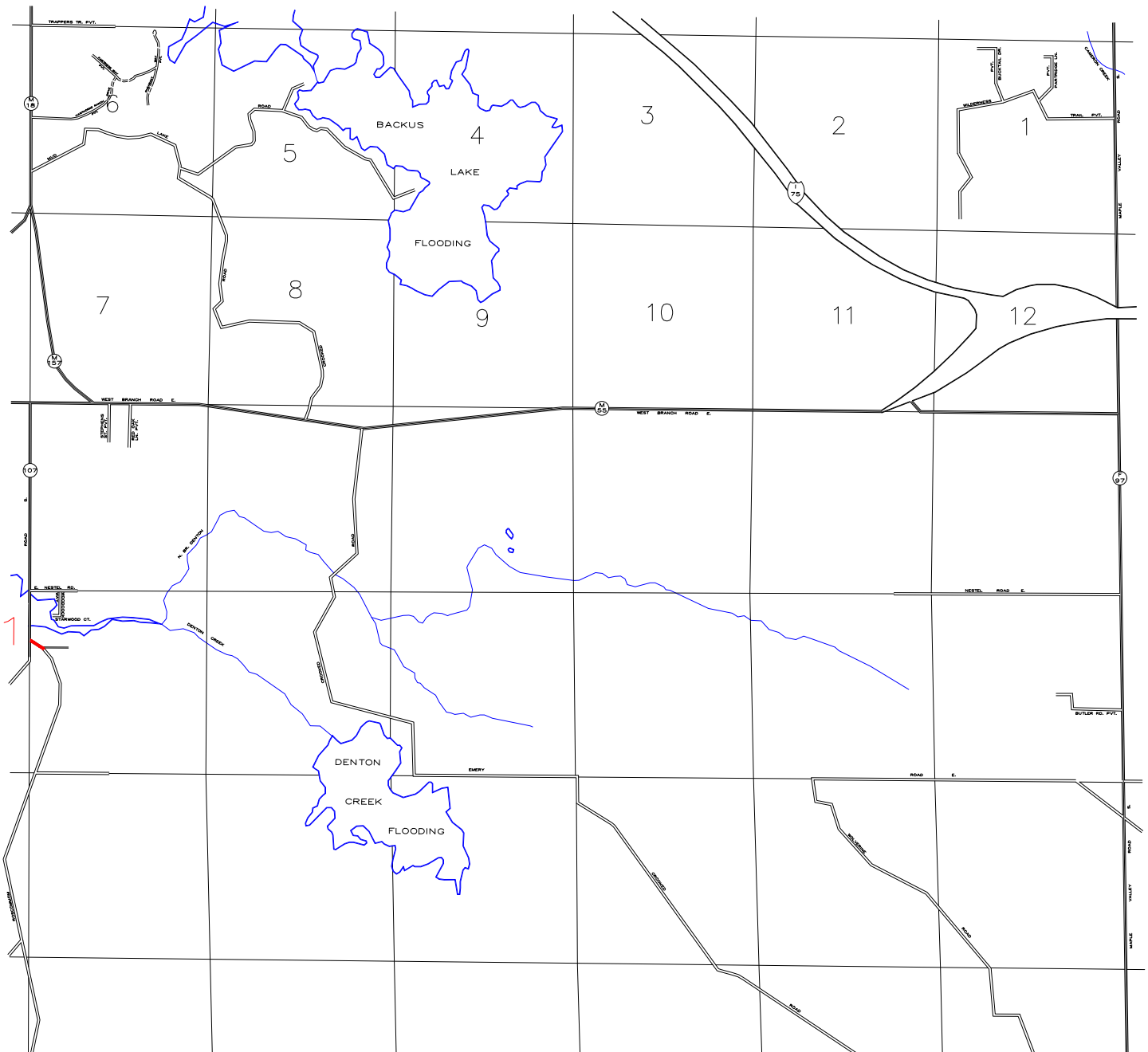
Roscommon																
	Bambi Ct. & Thomas Ct.	HMA, 13A	Towerhill Rd. to Terrace Dr.	0.13	HMA, 13A, Modified, Less than 20% RAP*	9.5'/9.5'	135#	108	Tons	HMA, 13A, Modified, Less than 20% RAP*	110#	20	Tons	---	---	---
	Chippendale Dr.	HMA, 13A	Silverhill Rd. to Goldenrod Dr.	0.43	HMA, 13A, Modified, Less than 20% RAP*	10'/10'	135#	236	Tons				Tons	---	---	---
	Crestview Dr.	HMA, 13A	Towerhill Rd. to M-55	0.69	HMA, 13A, Modified, Less than 20% RAP*	10.5'/10.5'	135#	612	Tons				Tons	---	---	---
	Oak Marr Dr.	HMA, 13A	CR 400 (Emery Rd.) to CR 400 (Emery Rd.)	0.68	HMA, 13A, Modified, Less than 20% RAP*	10'/10'	135#	581	Tons	---	---	---	---	---	---	---
	Pepperell Ave.	HMA, 13A	Goldenrod Dr. to Goldenrod Dr.	0.72	HMA, 13A, Modified, Less than 20% RAP*	10.5'/10.5'	135#	503	Tons	---	---	---	---	---	---	---
	Radcliff Dr.	HMA, 13A	Redwine Dr. to Redwine Dr.	0.53	HMA, 13A, Modified, Less than 20% RAP*	10.5'/10.5'	135#	460	Tons	HMA, 13A, Modified, Less than 20% RAP*	110#	47	Tons	---	---	---
	Snowflake Way	HMA, 13A	Goldenrod Dr. to Goldenrod Dr.	0.45	HMA, 13A, Modified, Less than 20% RAP*	10'/10'	135#	387	Tons	HMA, 13A, Modified, Less than 20% RAP*	110#	22	Tons	---	---	---
	Teaberry Ln.	HMA, 13A	Silverhill Rd. to Chippendale Dr.	0.43	HMA, 13A, Modified, Less than 20% RAP*	10.5'/10.5'	135#	400	Tons	HMA, 13A, Modified, Less than 20% RAP*	110#	24	Tons	---	---	---
	Winding Dr.	HMA, 13A	Goldenrod Dr. to Chippendale Dr.	0.40	HMA, 13A, Modified, Less than 20% RAP*	10'/10'	135#	344	Tons	---	---	---	---	---	---	---
RCRC Primary																
	CR 300 (E. Houghton Lake Dr.)	HMA, 13A	Long Point Dr. to CR 100 (N. Markey Rd.)	3.59		3' Shldr			---	HMA, 13A, Modified, Less than 20% RAP*	220#	700	Tons	---	---	---
	CR 400E (Snowbowl Rd.)	HMA, 13A Spot Wedging	Old 27 West to end of Pavement	1.18	---	11'/11'	---	---	Tons	HMA, 13A, Modified, Less than 20% RAP*	135#	250	Tons	---	---	---
	CR 401 (Reserve Rd)	HMA, 13A Spot Wedging	CR 400 south to end of Pavement	2.44	---	11'/11'	---	---	Tons	HMA, 13A, Modified, Less than 20% RAP*	135#	350	Tons	---	---	---
	Old 76	Ultra-thin	M-55 to F-97 (Artesia Beach Rd.)	3.17	HMA, Ultra-Thin, Medium Volume, 0% RAP	18'/18'	90#	3,454	Tons	Temporary Pavement Marking, Type R	N/A	1,700	Feet	---	---	---

HMA Item	Item 1 Qty	Item 2 Qty	TOTAL HMA 1 & 2	Unit
HMA, 13A, Modified, 0% RAP	727	0	727	Ton
HMA Approach, Modified, 0% RAP	0	4	4	Ton
HMA, 13A, Modified, Less than 20% RAP*	9078	1994	11072	Ton
HMA, 13A, Approach, Modified, Less than 20% RAP*	0	0	0	Ton
HMA, Ultra-Thin, Medium Volume, 0% RAP	9843	0	9843	Ton
HMA, Ultra-Thin, Approach, 0% RAP	0	0	0	Ton
HMA, 13A, Modified, Less than 20% RAP* FOB	0	0	0	Ton
HMA Curb	0	354	354	Feet
HMA Spillway	0	0	0	Syd
Temporary Pavement Marking, Type R	0	1700	1700	Feet

*HMA with 20 % RAP must have 100% RAP Passing 5/8" Sieve
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ROSCOMMON COUNTY ROAD COMMISSION

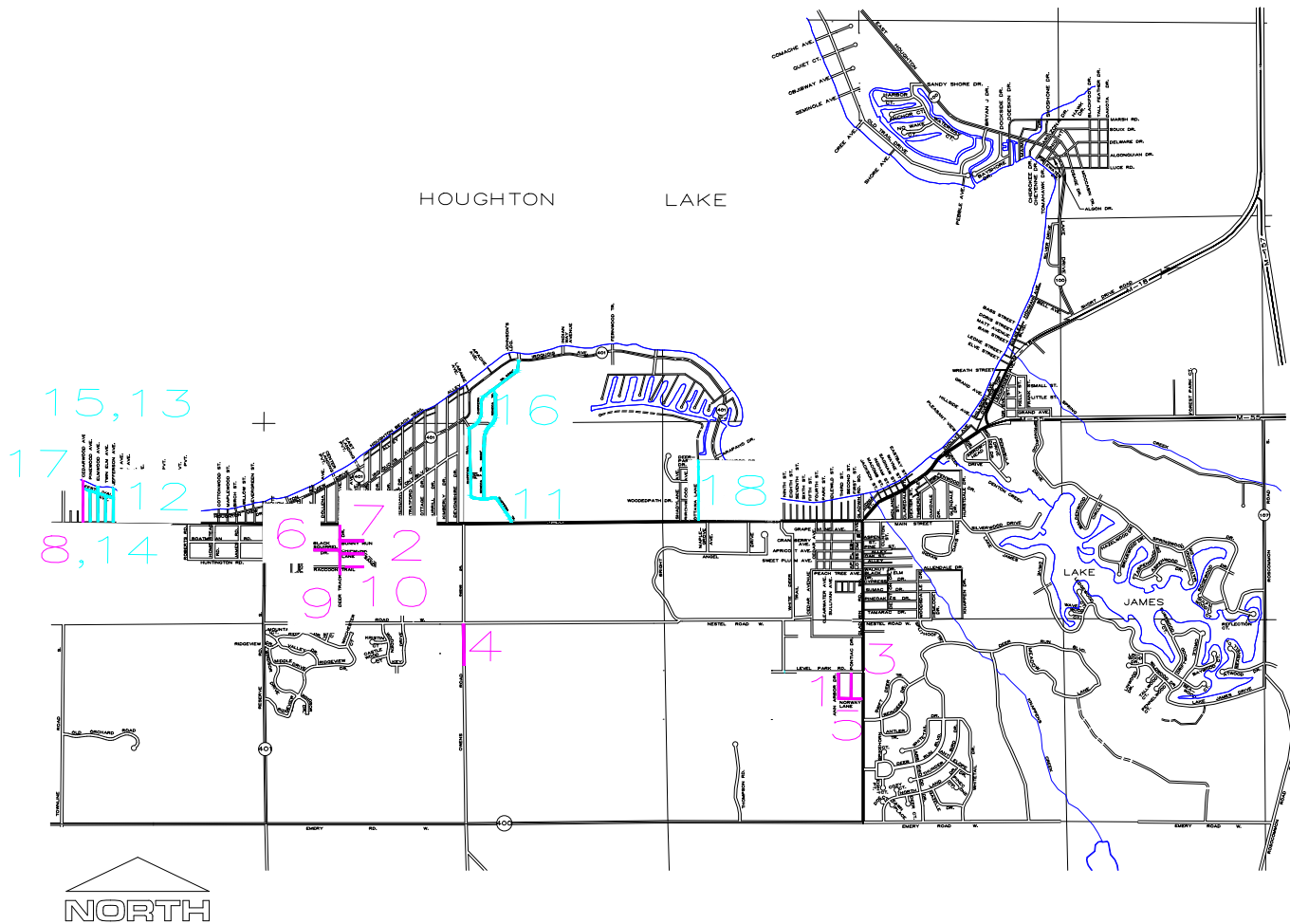
BACKUS TWP 2021 LOCAL ROAD PROJECTS



2021 ROAD PLAN	SEGMENT	MILEAGE	TREATMENT	KEY
S. Roscommon Rd	driveway to CR 107	0.17	HMA 13A	1

ROSCOMMON COUNTY ROAD COMMISSION

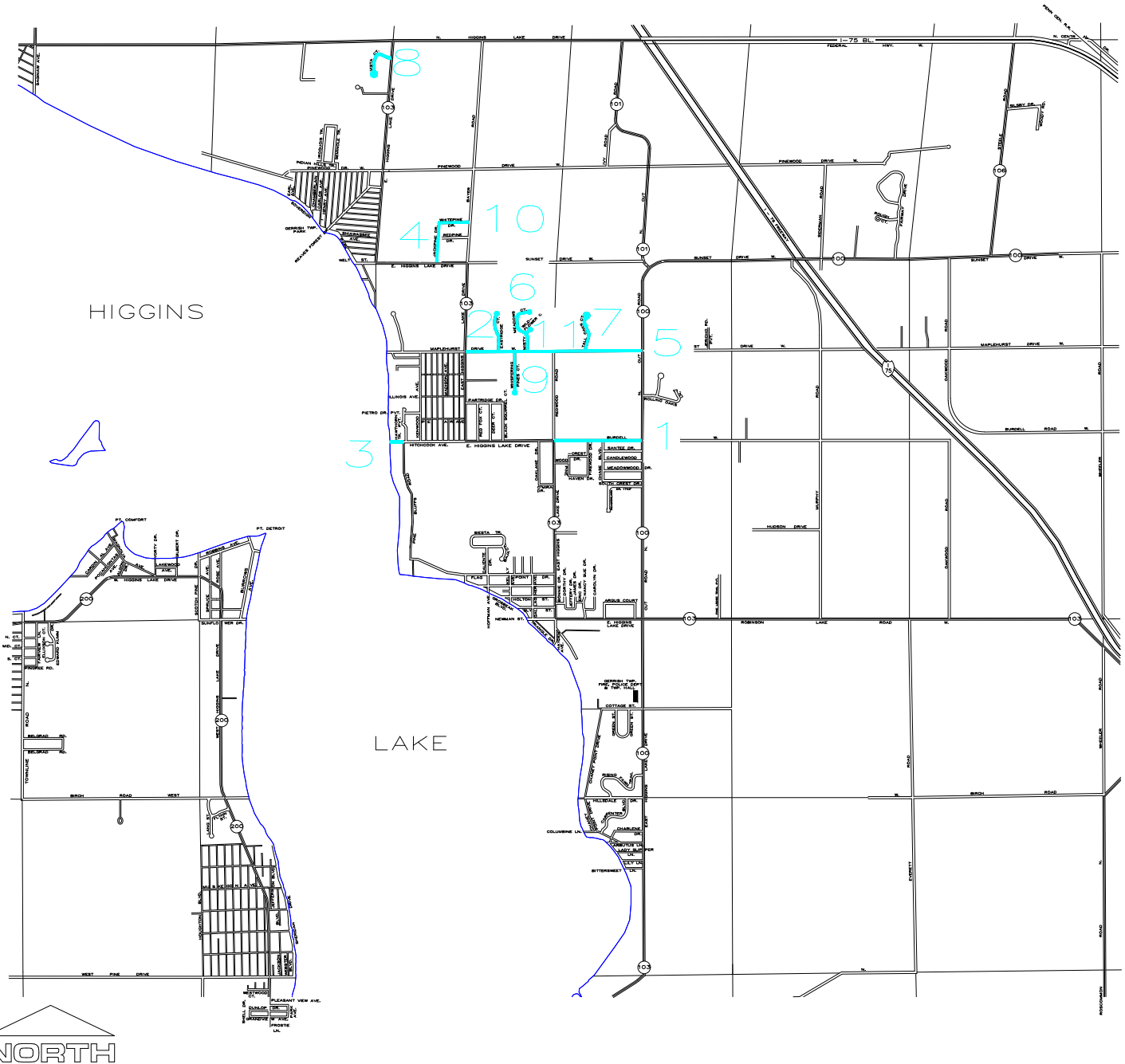
DENTON TWP 2021 LOCAL ROAD PROJECTS



2021 ROAD PLAN	SEGMENT	MILEAGE	TREATMENT	KEY
Ann Arbor	Norway Ln to Level Park Dr	0.12	HMA Wedging	1
Chipmunk Ln	Deer Track Dr to end of public road	0.12	HMA Wedging	2
Pontiac Dr	Norway Ln to Level Park Dr	0.12	HMA Wedging	3
Owens Dr	Start of pavement to Nestel Rd	0.12	HMA Wedging	4
Norway Ln	Ann Arbor Dr to M-18	0.12	HMA Wedging	5
Black Squirrel	Start of pavement to Deer Track Dr	0.13	HMA Wedging	6
Bunny Run	Deer Track Dr to end of pavement	0.12	HMA Wedging	7
Cedarwood Ave	M-55 to Houghton Lakw	0.20	HMA Wedging	8
Deer Track Dr	Racoon Tr to M-55	0.22	HMA Wedging	9
Racoon Trl	Start of pavement east to end	0.57	HMA Wedging	10
Chippewa Tr	M-55 to CR 401	1.07	HMA Ultra-thin	11
Jefferson Ave	M-55 to end of pavement	0.15	HMA Ultra-thin	12
Twin Elm Ave	M-55 to Festival Ave	0.14	HMA Ultra-thin	13
Pinewood Ave	M-55 to Festival Ave	0.16	HMA Ultra-thin	14
Elmwood Ave	M-55 to end of pavement	0.19	HMA Ultra-thin	15
Seneca Tr	Chippewa Tr to Chippewa Tr	0.57	HMA Ultra-thin	16
Festival Ave	Cedarwood Ave to Jefferson Ave	0.15	HMA Ultra-thin	17
Ottawa Ln	M-55 to start of private road	0.30	HMA Ultra-thin	18

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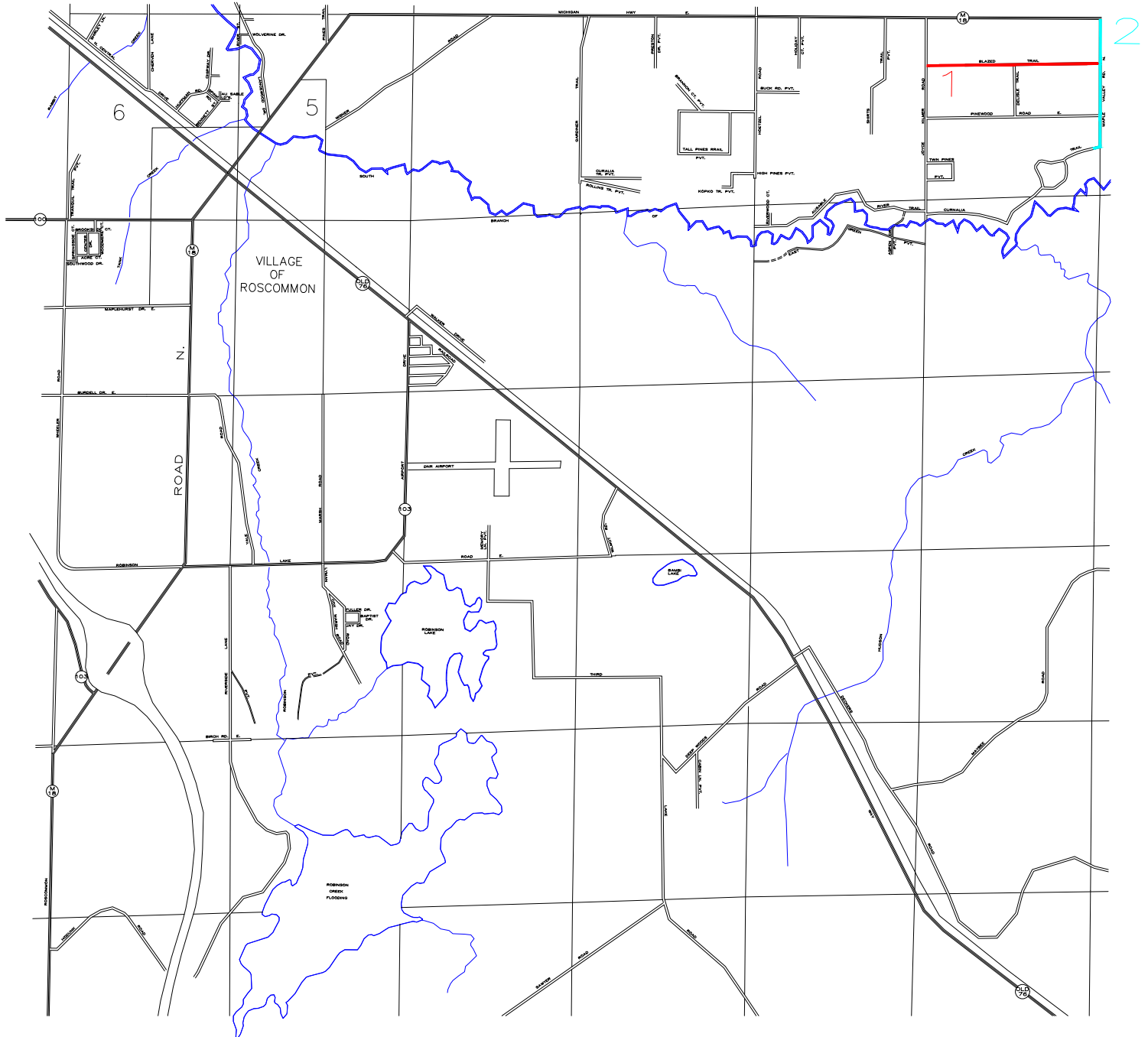
GERRISH TWP 2021 LOCAL ROAD PROJECTS



2021 ROAD PLAN	SEGMENT	MILEAGE	TREATMENT	KEY
Burdell Rd	CR 103 to CR 100	0.49	HMA Ultra-thin	1
Eastridge Ct	Maplehurst Dr to end	0.27	HMA Ultra-thin	2
Hitchcock Rd	Pine Bluffs Rd to end	0.05	HMA Ultra-thin	3
Jack Pine Dr	CR 103 to White Pine Dr	0.19	HMA Ultra-thin	4
Maplehurst Dr	CR 103 to CR 100	0.99	HMA Ultra-thin	5
Misty Meadows Ct	Maplehurst Dr to end	0.35	HMA Ultra-thin	6
Tall Oaks Ct	Maplehurst Dr to end	0.26	HMA Ultra-thin	7
Vista Ct	CR 103 to end	0.21	HMA Ultra-thin	8
Whispering Pines Ct	Maplehurst Dr to end	0.23	HMA Ultra-thin	9
White Pine Dr	Jack Pine Dr to Bayer Rd	0.17	HMA Ultra-thin	10
Wildflower Ct	Maplehurst Dr to end	0.09	HMA Ultra-thin	11

ROSCOMMON COUNTY ROAD COMMISSION

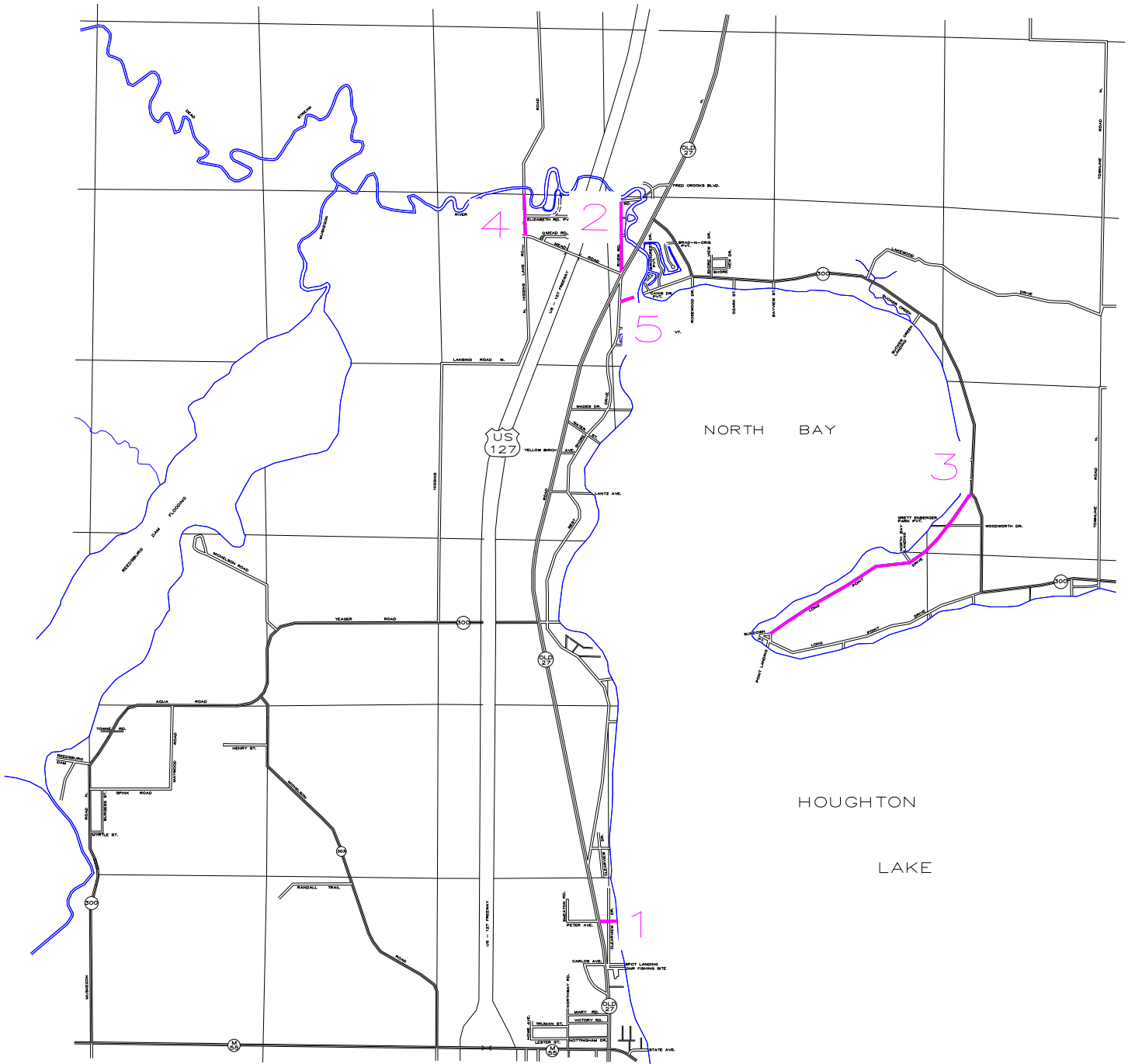
HIGGINS TWP 2021 LOCAL ROAD PROJECTS



2021 ROAD PLAN	SEGMENT	MILEAGE	TREATMENT	KEY
Blazed Tr	Joyce Kilmer Rd to Maple Valley Rd	1.00	HMA 13A	1
Maple Valley Rd (Shared with Higgins Twp)	M-18 to end of pavement	0.73	HMA Wedge and Ultra-Thin	2

ROSCOMMON COUNTY ROAD COMMISSION

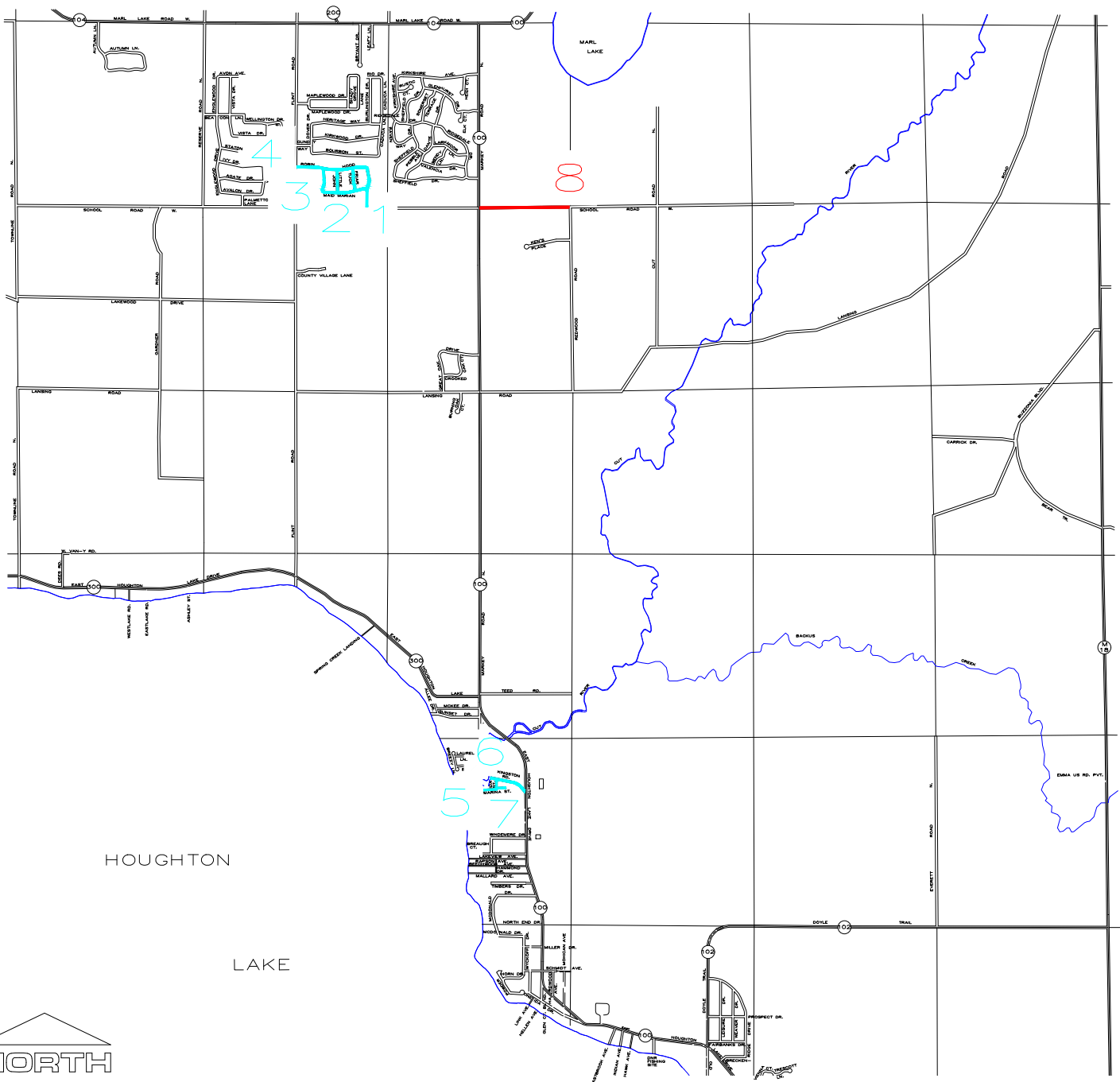
LAKE TWP 2021 LOCAL ROAD PROJECTS



2021 ROAD PLAN	SEGMENT	MILEAGE	TREATMENT	KEY
Peter Ave	Old 27 to the end at the lake	0.08	HMA Wedging	1
River Rd	Old 27 to School Rd	0.39	HMA Wedging	2
Long Point Dr	CR 300 to CR 300	0.67	HMA Wedging	3
N Higgins Lake Rd	Old Mead Rd to end at the river	0.23	HMA Wedging	4
West Shore Dr	River Rd to the end at the canal	0.07	HMA Wedging	5

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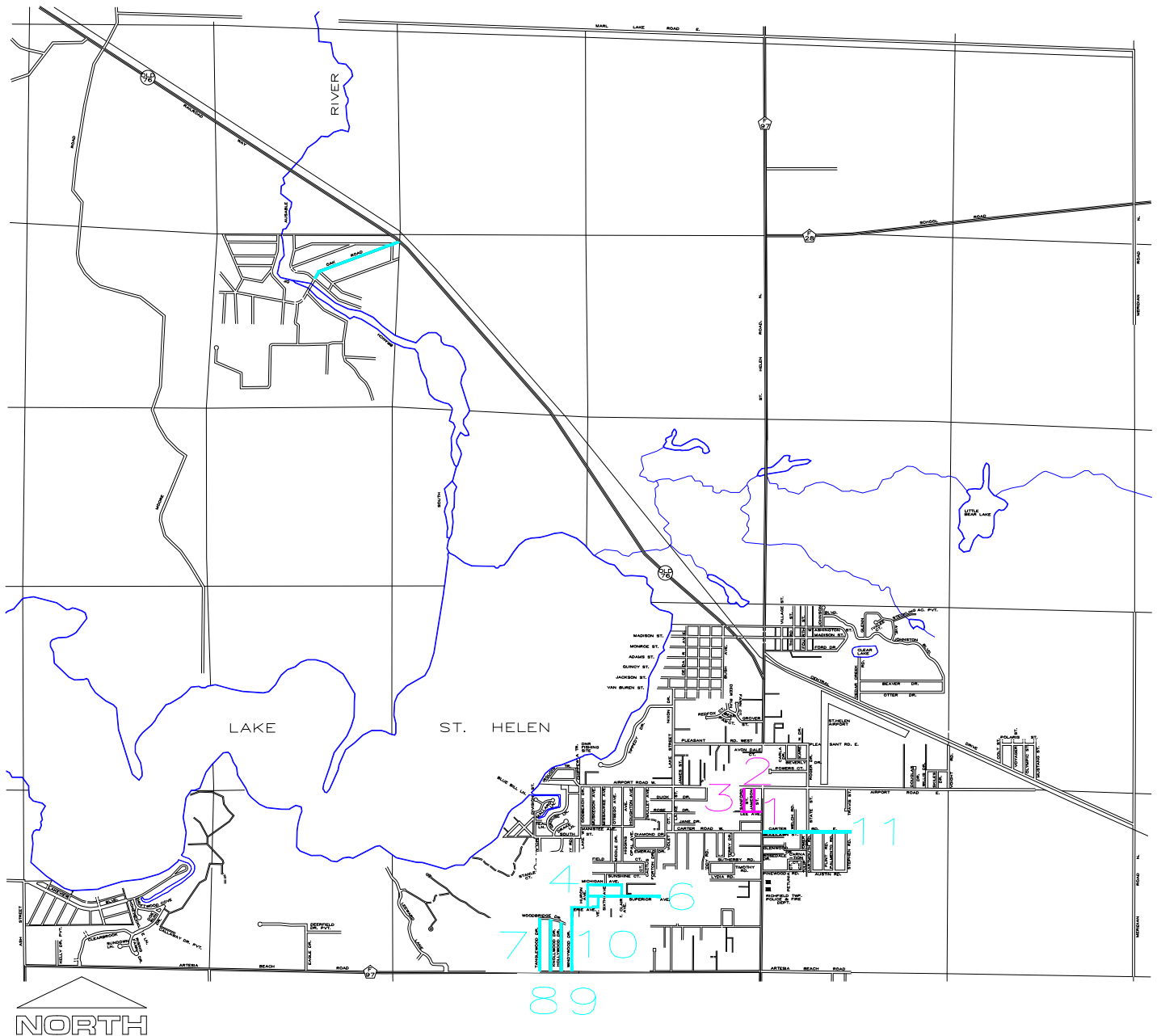
MARKEY TWP 2021 LOCAL ROAD PROJECTS



2021 ROAD PLAN	SEGMENT	MILEAGE	TREATMENT	KEY
Friar Tuck	Maid Marian to Robin Hood	0.12	HMA Ultra-thin	1
Little John	Maid Marian to Robin Hood	0.12	HMA Ultra-thin	2
Maid Marian	Robin Hood to Robin Hood	0.37	HMA Ultra-thin	3
Robin Hood	Flint Rd to School Rd	0.61	HMA Ultra-thin	4
Ida St	Marina St to Kingston Rd	0.05	HMA Ultra-thin	5
Kingston Rd	Start of pavement to CR 100	0.2	HMA Ultra-thin	6
Marina St	Start of pavement to end of pavement	0.14	HMA Ultra-thin	7
School Rd	CR 100 to Redwood Rd	0.5	HMA 13A	8

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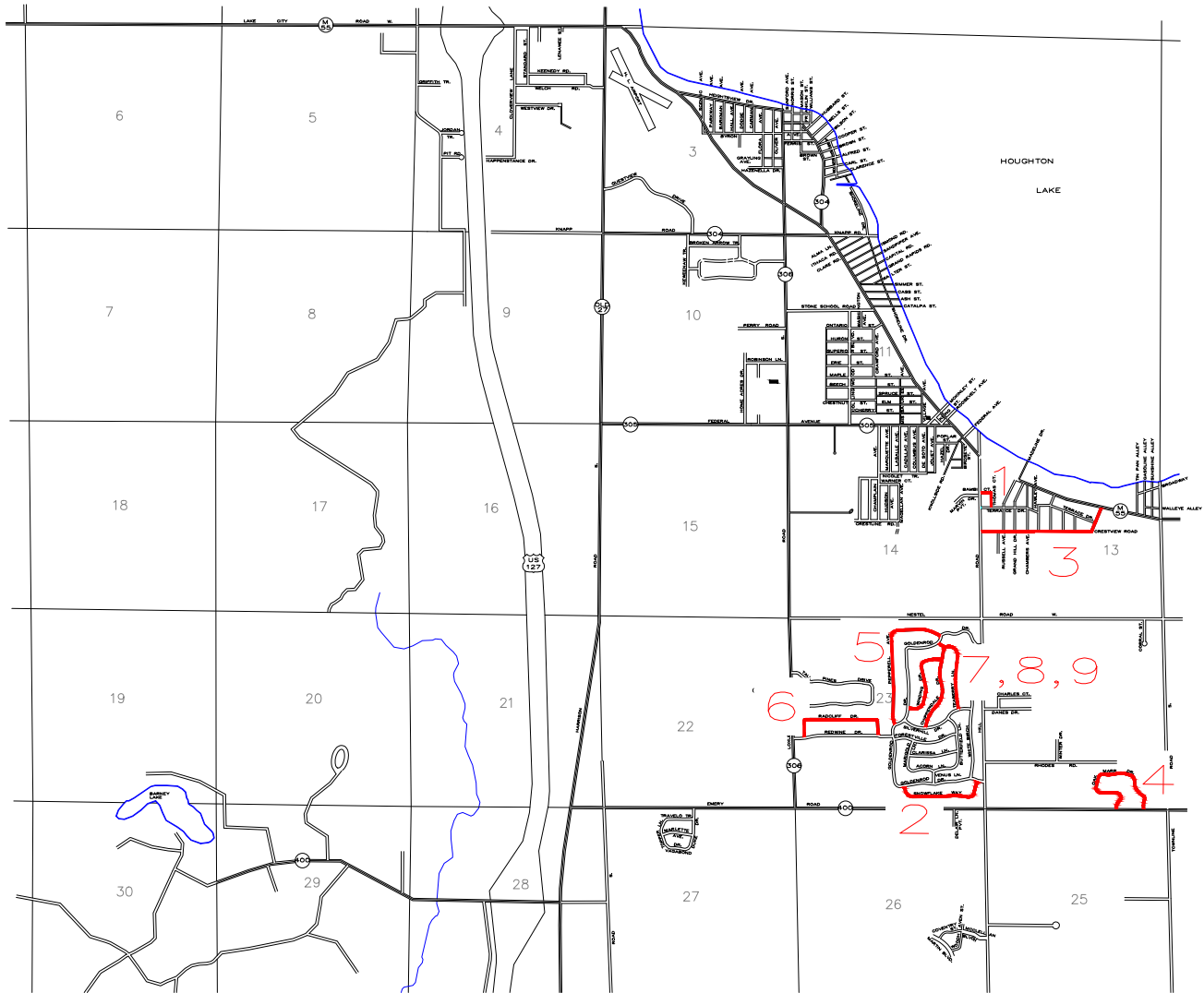
RICHFIELD TWP 2021 LOCAL ROAD PROJECTS



2021 ROAD PLAN	SEGMENT	MILEAGE	TREATMENT	KEY
Jameson St	W. Airport Rd to Lee Ave	0.12	HMA Wearing	1
Sanford St	W. Airport Rd to Lee Ave	0.12	HMA Wearing	2
Lee Ave	End to Old-76	0.1	HMA Wearing	3
Huron Ave, Michigan Ave, St. Clair Ave	Erie Ave to Superior Ave	0.36	HMA Ultra-thin	4
Oak Rd	Old 76 to Riverside Dr	0.53	HMA Wearing	5
Superior Ave	Huron Ave to end	0.40	HMA Ultra-thin	6
Tanglewood Dr	F-97 to Woodbridge Dr	0.28	HMA Ultra-thin	7
Knollwood Dr	F-97 to Woodbridge Dr	0.29	HMA Ultra-thin	8
Hollywood Dr	F-97 to Woodbridge Dr	0.27	HMA Ultra-thin	9
Windwood Dr, Erie Ave, Ontario Rd	F-97 to Superior Ave	0.53	HMA Ultra-thin	10
Carter Rd E	St.Helen Rd to end	0.47	HMA Wearing	11

ROSCOMMON COUNTY ROAD COMMISSION

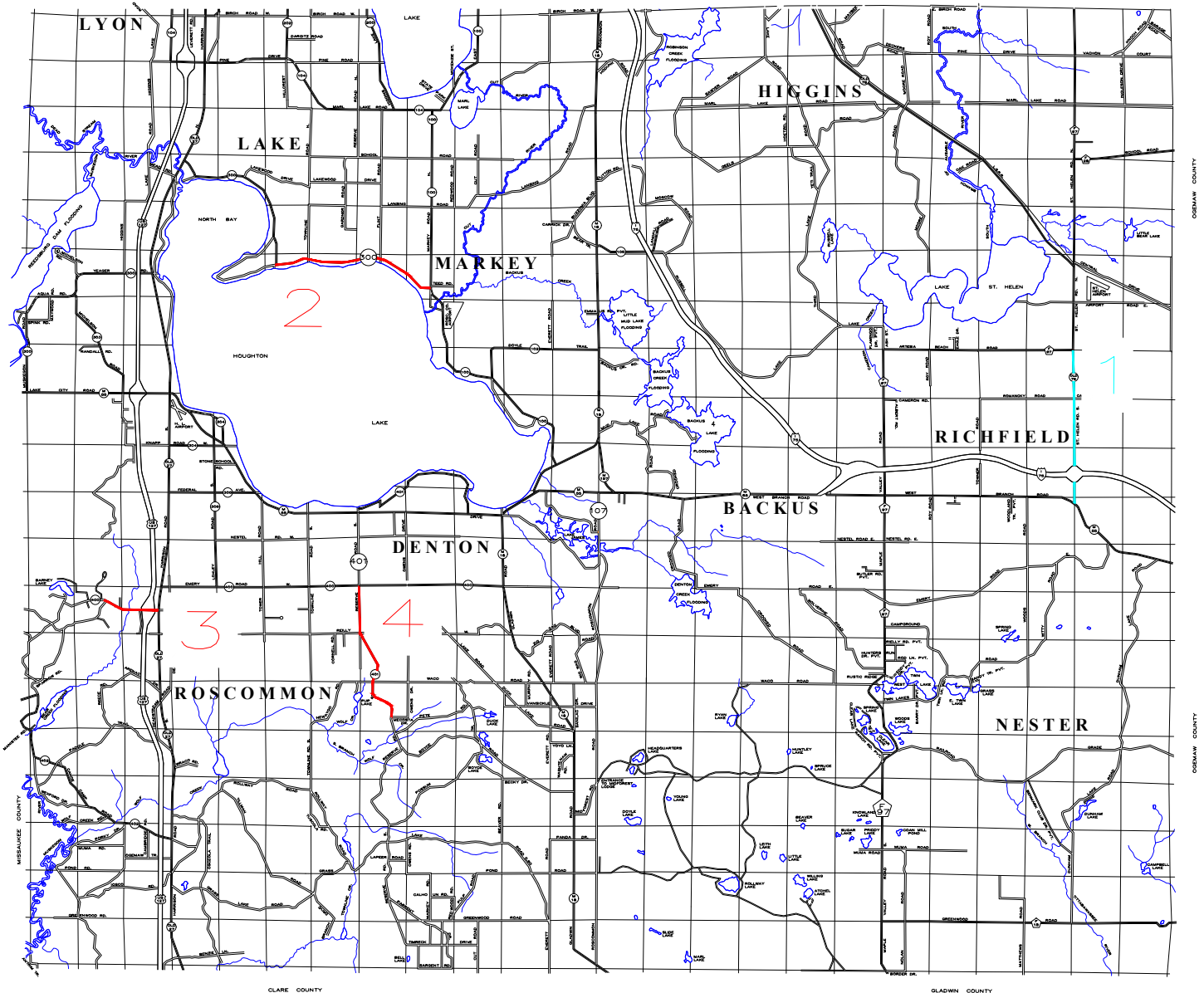
ROSCOMMON TWP 2021 LOCAL ROAD PROJECTS



2021 ROAD PLAN	SEGMENT	MILEAGE	TREATMENT	KEY
Bambi Ct & Thomas Ct	Towerhill Rd to Terrace Dr	0.13	HMA 13A	1
Snowflake Way	Goldenrod Dr to Goldenrod Dr	0.45	HMA 13A	2
Crestview Dr	Towerhill Rd to M-55	0.69	HMA 13A	3
Oak Marr Dr	CR 400 to CR 400	0.68	HMA 13A	4
Pepperell Ave	Goldenrod Dr to Goldenrod Dr	0.72	HMA 13A	5
Radcliff Dr	Redwine Dr to Redwine Dr	0.53	HMA 13A	6
Chippendale Dr	Silverhill Rd to Teaberry Ln	0.44	HMA 13A	7
Teaberry Ln	Silverhill Dr to Goldenrod Dr	0.43	HMA 13A	8
Winding Dr	Goldenrod Dr to Chippendale Dr	0.39	HMA 13A	9

ROSCOMMON COUNTY ROAD COMMISSION

2021 PRIMARY ROAD PROJECTS



2021 ROAD PLAN	SEGMENT	MILEAGE	TREATMENT	KEY
Old 76	M-55 to F-97 (Artesia Beach Rd)	3.17	HMA Ultra-thin	1
CR 300 (E. Houghton Lake Dr)	S. Long Point Dr to CR 100	3.59	HMA 13A	2
CR 400 (Snowbowl Rd)	Old 27 west to end of pavement	1.18	HMA 13A	3
CR 401 (Reserve Rd)	CR 400 south to end of pavement	2.44	HMA 13A	4